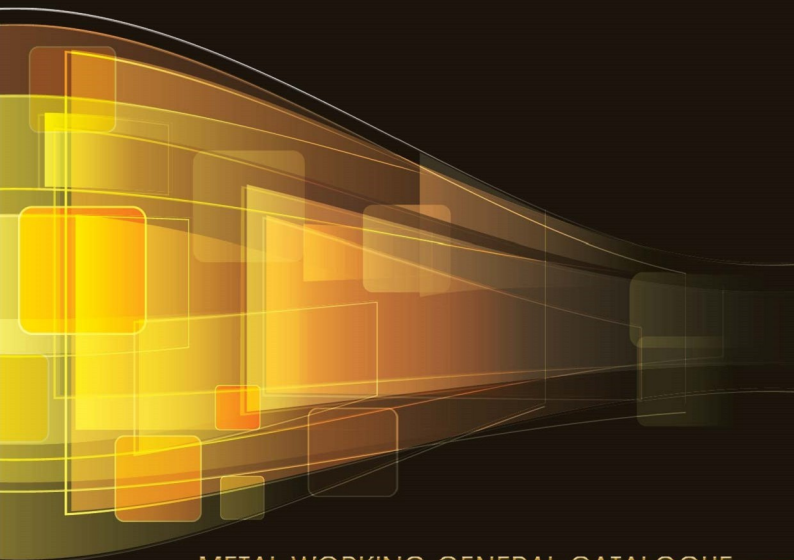




# FREJOTH

## CNC SERIES



### METAL WORKING GENERAL CATALOGUE

# FREJO TH DOUBLE COLUMN VERTICAL MACHINING CENTER :

1. FIXED CROSS RAIL (SD)
2. MOVING CROSS RAIL : (SDW)



## MODEL INFO

SD - 42 90 - 5A  
5 axis simultaneous head  
X travel 9m  
Between Columns 4250mm  
Sliding Double Columns

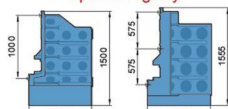


Column & Slider one piece casting



X travel by rack pinion servo control (2 pcs)

## Optimal Rigidity



SD - 24 / 28 / 32  
with 2 guideways

SD - 36 / 42 / 48 / 54 & GM  
with 3 guideways

## CROSS RAIL (BEAM)

- Box in box unity casting frame
- Optimum bending section modulus
- Optimum rigidity & damping design

## MODEL INFO

SDW-48220

Sliding Double Columns  
W type Moving Cross-Rail

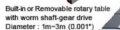
X travel 22m  
Between Columns 4850 mm



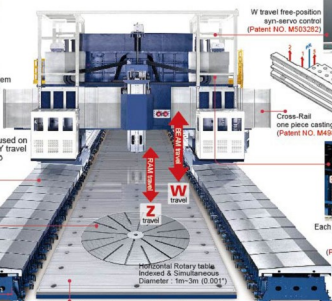
Free position ATC system  
(Patent NO. M503282)



Rack-pinion used on  
X travel and Y travel  
SD-48 and up



Built-in or Removable rotary table  
with worm shaft-gear drive  
Diameter : 1m~3m (0.001°)



W travel free-position  
syn-servo control  
(Patent NO. M503282)

Cross-Rail one piece casting  
(Patent NO. M459072)



Each column with 3 linear  
guide-ways and  
1 position rail (P.R.)  
(Patent NO. M511309)

SDW



Heavy-large-base



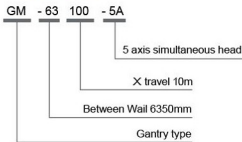
Horizontal Rotary table  
Indexed & Simultaneous  
Diameter : 1m~3m (0.001°)

Table height based on specific customization

## SPECIFICATIONS

|                             |              | SD(W)-24 | SD(W)-28                                               | SD(W)-32   | SD(W)-36   | SD(W)-42         | SD(W)-48   | SD(W)-54   |            |
|-----------------------------|--------------|----------|--------------------------------------------------------|------------|------------|------------------|------------|------------|------------|
| Between columns             |              | mm       | 2450                                                   | 2850       | 3250       | 3650             | 4250       | 4850       | 5450       |
| Travel                      | X - travel   | m        | 6 m ~ 36 m every 1 m add                               |            |            |                  |            |            |            |
|                             | Y - travel   | mm       | 2400                                                   | 2800       | 3200       | 3600             | 4200       | 4800       | 5400       |
|                             | Z - travel   | mm       | SD : 1100 (1400) SDW : 1100                            |            |            |                  |            |            |            |
|                             | W - travel   | mm       | SD : 1100 (1400/1500) SDW : 1100 (1400/1500)           |            |            |                  |            |            |            |
| Table                       | W - travel   | mm       | 1500 / 2000 for SDW series                             |            |            |                  |            |            |            |
|                             | Table wide   | mm       | 1600                                                   | 2000       | 2400       | 2800             | 3400       | 4000       | 4600       |
|                             | Table length | m        | Table length = X travel                                |            |            |                  |            |            |            |
| Spindle nose to table       |              | mm       | SD : 1080 ~ 2180 (1020 ~ 2420) SDW : 800 ~ 800 + Z + W |            |            |                  |            |            |            |
| Power - speed               |              | kw       | 22 / 26 - 6000 rpm                                     |            |            |                  |            |            |            |
| X axis rack - pinion        |              | -        | O                                                      | O          | O          | O                | O          | O          | O          |
| Y axis rack - pinion        |              | -        | X                                                      | X          | X          | X                | X          | O          | O          |
| ATC capacity                |              | pcs      | 32 pcs                                                 |            |            |                  |            |            |            |
| X / Y / Z / W feed rate G00 |              | m/min    | 12 / 12 / 10 / 1                                       |            |            | 10 / 10 / 10 / 1 |            |            |            |
| Machine size                | Length       | m        | 13.5 m ~ 43.5 m every 1 m add                          |            |            |                  |            |            |            |
|                             | Width        | m        | 6.5                                                    | 6.9        | 7.3        | 7.7              | 8.1        | 8.5        | 8.9        |
|                             | Height       | m        | SD : 6.5 / SDW : 7.2                                   |            |            |                  |            |            |            |
| Machine weight (app.)       |              | ton      | 50 + 2/m                                               | 53 + 2.3/m | 56 + 2.5/m | 60 + 3/m         | 65 + 3.3/m | 70 + 3.5/m | 75 + 3.8/m |

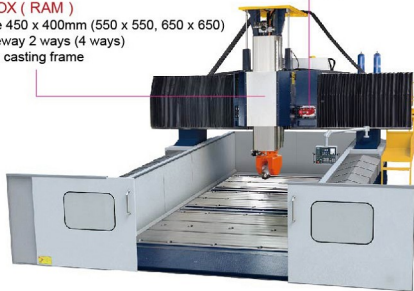
### MODEL INFO



Y travel by rack pinion  
SD(W) - 48 and up & GM - 45 and up

### SPINDLE BOX ( RAM )

- Section size 450 x 400mm (550 x 550, 650 x 650)
- Roller guideway 2 ways (4 ways)
- High rigidity casting frame



GM



Y travel by rack pinion  
SD(W) - 48 and up & GM - 45 and up



### SPECIFICATIONS

|                             |              | GM-33                     | GM-39    | GM-45      | GM-51    | GM-57      | GM-63    | GM-70      |
|-----------------------------|--------------|---------------------------|----------|------------|----------|------------|----------|------------|
| Between columns             | mm           | 3350                      | 3950     | 4550       | 5150     | 5750       | 6350     | 7050       |
| Travel                      | X - travel   | 6 m ~ 36 m every 1 m add  |          |            |          |            |          |            |
|                             | Y - travel   | 2600                      | 3200     | 3800       | 4400     | 5000       | 5600     | 6300       |
|                             | Z - travel   | 1100 (1400 / 1500)        |          |            |          |            |          |            |
|                             | W - travel   | N / A                     |          |            |          |            |          |            |
| Table                       | Table wide   | 2800                      | 3400     | 4000       | 4600     | 5200       | 5800     | 6500       |
|                             | Table length | Table length = X travel   |          |            |          |            |          |            |
| Spindle nose to table       | mm           | 500 ~ 500 + Z             |          |            |          |            |          |            |
| Power - speed               | kw           | 22 / 26 - 6000 rpm        |          |            |          |            |          |            |
| X axis rack - pinion        | -            | O                         | O        | O          | O        | O          | O        | O          |
| Y axis rack - pinion        | -            | X                         | X        | O          | O        | O          | O        | O          |
| ATC capacity                | pcs          | 32 pcs                    |          |            |          |            |          |            |
| X / Y / Z / W feed rate G00 | m/min        | 15 / 10 / 10              |          |            |          |            |          |            |
| Machine size                | Length       | 15 m ~ 45 m every 1 m add |          |            |          |            |          |            |
|                             | Width        | 8.3                       | 8.9      | 9.5        | 10.1     | 10.7       | 11.3     | 12         |
|                             | Height       | 5.4                       |          |            |          |            |          |            |
| Machine weight (app.)       | ton          | 65 + 5/m                  | 68 + 2/m | 70 + 2.5/m | 75 + 3/m | 80 + 3.5/m | 85 + 4/m | 90 + 4.5/m |

# FREJOTH DOUBLE COLUMN MACHINING CENTER (MOVING CROSS TYPE)

## Special Milling Head (Exchange Type)



| TYPE           | Automatic        | Semi-Automatic   | Manual             |
|----------------|------------------|------------------|--------------------|
| Head exchanger | Auto (hydraulic) | Manual (8 bolts) | Manual (8 bolts)   |
| Head indexed   | Auto (5°)        | Auto (5°)        | Manual (5° / free) |
| Tool clamped   | Booster          | Booster          | Bolt               |



90° head



Extension head



Extension 90° head



AC swiveling head



## Special Milling Head (Fixed Type)



Universal head



5 Face head  
(dual tool shank)



5 Axis simultaneous head

## Auto Head exChanger (AHC)



For Auto-Special Milling Head



## SPECIFICATIONS

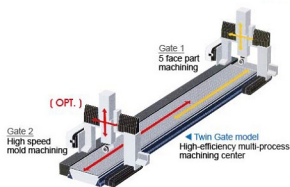
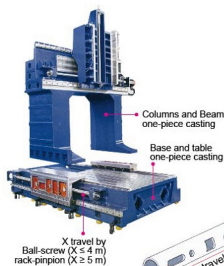
| Item                          | FDW-18                                |      |      |      |      | FDW-21                                |      |      |      |      | FDW-24                                |      |      |      |      |
|-------------------------------|---------------------------------------|------|------|------|------|---------------------------------------|------|------|------|------|---------------------------------------|------|------|------|------|
| Model - FDW                   | 1822                                  | 1832 | 1842 | 1852 | 2122 | 2132                                  | 2142 | 2152 | 2432 | 2452 | 2442                                  | 2452 | 2462 | 2472 | 2482 |
| Distance between columns (mm) | 1850                                  |      |      |      |      | 2150                                  |      |      |      |      | 2450                                  |      |      |      |      |
| Table size                    | Length (mm) 2000 3000 4000 5000       |      |      |      |      | Length (mm) 2000 3000 4000 5000       |      |      |      |      | Length (mm) 3000 4000 5000 6000       |      |      |      |      |
|                               | Width (mm) 1500                       |      |      |      |      | Width (mm) 1800                       |      |      |      |      | Width (mm) 2000                       |      |      |      |      |
| Max. table load (ton)         | 12 15 18 20                           |      |      |      |      | 12 15 18 20                           |      |      |      |      | 15 18 20                              |      |      |      |      |
| T - slot                      | Width x Pitch x No. (mm)              |      |      |      |      | Width x Pitch x No. (mm)              |      |      |      |      | Width x Pitch x No. (mm)              |      |      |      |      |
|                               | 2200 3200 4200 5200                   |      |      |      |      | 2200 3200 4200 5200                   |      |      |      |      | 2200 3200 4200 5200                   |      |      |      |      |
| Travel                        | X - axis (mm) 1800                    |      |      |      |      | X - axis (mm) 2100                    |      |      |      |      | X - axis (mm) 2400                    |      |      |      |      |
|                               | Z - axis (mm) 800 (1100)              |      |      |      |      | Z - axis (mm) 1000 (opt. 1500)        |      |      |      |      | Z - axis (mm) 1200 (opt. 1500)        |      |      |      |      |
|                               | W - axis (mm) 120 ~ 1920              |      |      |      |      | W - axis (mm) 120 ~ 1920              |      |      |      |      | W - axis (mm) 120 ~ 1920              |      |      |      |      |
| Spindle                       | Noose to table (mm) 450 x 400         |      |      |      |      | Noose to table (mm) 450 x 400         |      |      |      |      | Noose to table (mm) 450 x 400         |      |      |      |      |
|                               | Taper / Power / Speed (rpm/kw)        |      |      |      |      | Taper / Power / Speed (rpm/kw)        |      |      |      |      | Taper / Power / Speed (rpm/kw)        |      |      |      |      |
|                               | Cutting (m/min)                       |      |      |      |      | Cutting (m/min)                       |      |      |      |      | Cutting (m/min)                       |      |      |      |      |
|                               | X axis (m/min)                        |      |      |      |      | X axis (m/min)                        |      |      |      |      | X axis (m/min)                        |      |      |      |      |
|                               | Y / Z / W axis (m/min)                |      |      |      |      | Y / Z / W axis (m/min)                |      |      |      |      | Y / Z / W axis (m/min)                |      |      |      |      |
|                               | Accuracy (mm)                         |      |      |      |      | Accuracy (mm)                         |      |      |      |      | Accuracy (mm)                         |      |      |      |      |
| ATC & tool magazine           | Capacity / dia (mm)                   |      |      |      |      | Capacity / dia (mm)                   |      |      |      |      | Capacity / dia (mm)                   |      |      |      |      |
|                               | Max. length / weight (mm/kg)          |      |      |      |      | Max. length / weight (mm/kg)          |      |      |      |      | Max. length / weight (mm/kg)          |      |      |      |      |
|                               | Tool selection                        |      |      |      |      | Tool selection                        |      |      |      |      | Tool selection                        |      |      |      |      |
| Machine size                  | Length (m) 7.2 9.2 11.2 13.2          |      |      |      |      | Length (m) 7.2 9.2 11.2 13.2          |      |      |      |      | Length (m) 9.2 11.2 13.2              |      |      |      |      |
|                               | Width (m) 5.1                         |      |      |      |      | Width (m) 5.4                         |      |      |      |      | Width (m) 5.7                         |      |      |      |      |
|                               | Height (m) 5.1 (6.0)                  |      |      |      |      | Height (m) 5.1 (6.0)                  |      |      |      |      | Height (m) 5.1 (6.0)                  |      |      |      |      |
| Machine weight (±10%) (ton)   | 40 44 48 52 56                        |      |      |      |      | 40 44 48 52 56                        |      |      |      |      | 40 44 48 52 56                        |      |      |      |      |
| Item                          | FDW-28                                |      |      |      |      | FDW-32                                |      |      |      |      | FDW-36                                |      |      |      |      |
| Model - FDW                   | 2832                                  | 2842 | 2852 | 2860 | 3232 | 3242                                  | 3252 | 3260 | 3642 | 3652 | 3660                                  | 4242 | 4250 | 4260 | 4270 |
| Distance between columns (mm) | 2850                                  |      |      |      |      | 3250                                  |      |      |      |      | 3650                                  |      |      |      |      |
| Table size                    | Length (mm) 3000 4000 5000 6000       |      |      |      |      | Length (mm) 3000 4000 5000 6000       |      |      |      |      | Length (mm) 3000 4000 5000 6000       |      |      |      |      |
|                               | Width (mm) 2200                       |      |      |      |      | Width (mm) 2600                       |      |      |      |      | Width (mm) 3000                       |      |      |      |      |
| Max. table load (ton)         | 18 20 22 24                           |      |      |      |      | 18 20 22 24                           |      |      |      |      | 22 24 26 28                           |      |      |      |      |
| T - slot                      | Width x Pitch x No. (mm)              |      |      |      |      | Width x Pitch x No. (mm)              |      |      |      |      | Width x Pitch x No. (mm)              |      |      |      |      |
|                               | 3200 4200 5200 6000                   |      |      |      |      | 3200 4200 5200 6000                   |      |      |      |      | 3200 4200 5200 6000                   |      |      |      |      |
| Travel                        | X - axis (mm) 2800                    |      |      |      |      | X - axis (mm) 3200                    |      |      |      |      | X - axis (mm) 3600                    |      |      |      |      |
|                               | Z - axis (mm) 1100                    |      |      |      |      | Z - axis (mm) 1100                    |      |      |      |      | Z - axis (mm) 1100                    |      |      |      |      |
|                               | W - axis (mm) 1000 (opt. 1500 / 2000) |      |      |      |      | W - axis (mm) 1000 (opt. 1500 / 2000) |      |      |      |      | W - axis (mm) 1000 (opt. 1500 / 2000) |      |      |      |      |
| Spindle                       | Noose to table (mm) 145 ~ 2245        |      |      |      |      | Noose to table (mm) 145 ~ 2245        |      |      |      |      | Noose to table (mm) 145 ~ 2245        |      |      |      |      |
|                               | Taper / Power / Speed (rpm/kw)        |      |      |      |      | Taper / Power / Speed (rpm/kw)        |      |      |      |      | Taper / Power / Speed (rpm/kw)        |      |      |      |      |
|                               | Cutting (m/min)                       |      |      |      |      | Cutting (m/min)                       |      |      |      |      | Cutting (m/min)                       |      |      |      |      |
|                               | X axis (m/min)                        |      |      |      |      | X axis (m/min)                        |      |      |      |      | X axis (m/min)                        |      |      |      |      |
|                               | Y / Z / W axis (m/min)                |      |      |      |      | Y / Z / W axis (m/min)                |      |      |      |      | Y / Z / W axis (m/min)                |      |      |      |      |
|                               | Accuracy (mm)                         |      |      |      |      | Accuracy (mm)                         |      |      |      |      | Accuracy (mm)                         |      |      |      |      |
| ATC & tool magazine           | Capacity / dia (mm)                   |      |      |      |      | Capacity / dia (mm)                   |      |      |      |      | Capacity / dia (mm)                   |      |      |      |      |
|                               | Max. length / weight (mm/kg)          |      |      |      |      | Max. length / weight (mm/kg)          |      |      |      |      | Max. length / weight (mm/kg)          |      |      |      |      |
|                               | Tool selection                        |      |      |      |      | Tool selection                        |      |      |      |      | Tool selection                        |      |      |      |      |
| Machine size                  | Length (m) 9.2 11.2 13.2 15.0         |      |      |      |      | Length (m) 11.2 13.2 15.0 17.2        |      |      |      |      | Length (m) 13.2 15.0 17.2 19.2        |      |      |      |      |
|                               | Width (m) 6.0                         |      |      |      |      | Width (m) 6.4                         |      |      |      |      | Width (m) 6.8                         |      |      |      |      |
|                               | Height (m) 5.9                        |      |      |      |      | Height (m) 5.9                        |      |      |      |      | Height (m) 5.9                        |      |      |      |      |
| Machine weight (±10%) (ton)   | 55 60 65 70 75                        |      |      |      |      | 55 60 65 70 75                        |      |      |      |      | 55 60 65 70 75                        |      |      |      |      |



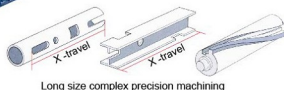


## SPECIFICATIONS

| Item                          | FD-14                                                                                  |      |      |      | FD-18                                                                                                                                         |      |      |      | FD-21                                      |      |      |      | FD-24A                                     |       |       |       |
|-------------------------------|----------------------------------------------------------------------------------------|------|------|------|-----------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|--------------------------------------------|------|------|------|--------------------------------------------|-------|-------|-------|
| Model - FD                    | 1422                                                                                   | 1427 | 1432 | 1822 | 1827                                                                                                                                          | 1832 | 1842 | 1852 | 2122                                       | 2127 | 2132 | 2142 | 2152                                       | 2427A | 2432A | 2442A |
| Distance between columns (mm) | 1400                                                                                   |      |      |      | 1850                                                                                                                                          |      |      |      | 2150                                       |      |      |      | 2450                                       |       |       |       |
| Table size                    | Length (mm)<br>2000 2500 3000<br>Width (mm)<br>1200                                    |      |      |      | 2000 2500 3000<br>1500                                                                                                                        |      |      |      | 2000 2500 3000<br>1800                     |      |      |      | 2500 3000 4000<br>2000                     |       |       |       |
| T - slot                      | Max. table load (ton)<br>10 12 15                                                      |      |      |      | 12 13 15 18 20                                                                                                                                |      |      |      | 12 13 15 18 20                             |      |      |      | 13 15 18 20                                |       |       |       |
| Travel                        | Width x Pitch x No. (mm)<br>22 x 150 x 7                                               |      |      |      | 22 x 150 x 9                                                                                                                                  |      |      |      | 22 x 150 x 11                              |      |      |      | 22 x 150 x 13                              |       |       |       |
|                               | X - axis (mm)<br>2200 2700 3200                                                        |      |      |      | 2200 2700 3200 4200 5200                                                                                                                      |      |      |      | 2200 2700 3200 4200 5200                   |      |      |      | 2700 3200 4200 5200                        |       |       |       |
|                               | Y - axis (mm)<br>1300                                                                  |      |      |      | 1800                                                                                                                                          |      |      |      | 2100                                       |      |      |      | 2400                                       |       |       |       |
|                               | Z - axis (mm)<br>800                                                                   |      |      |      | 800 (opt. 1100)                                                                                                                               |      |      |      | 800 (opt. 1100)                            |      |      |      | 800 (opt. 1100)                            |       |       |       |
| Spindle                       | Nose to table (mm)<br>30 ~ 830                                                         |      |      |      | 180 ~ 980                                                                                                                                     |      |      |      | 180 ~ 980                                  |      |      |      | 130 ~ 930                                  |       |       |       |
|                               | 430                                                                                    |      |      |      | BBT 50 - 6000 rpm - 22 / 26 kw + 2 stage gearbox                                                                                              |      |      |      | 430                                        |      |      |      | 430                                        |       |       |       |
| Feedrate                      | Center to column<br>Taper / Speed / Power<br>Cutting (m/min)<br>10                     |      |      |      | 8                                                                                                                                             |      |      |      | 7                                          |      |      |      | 6                                          |       |       |       |
|                               | X axis (m/min)<br>22 20 20 20                                                          |      |      |      | 22 20 20 20                                                                                                                                   |      |      |      | 20 18 18 15                                |      |      |      | 15 12 18 15                                |       |       |       |
|                               | Y / Z axis (m/min)<br>18 / 18                                                          |      |      |      | 18 / 15                                                                                                                                       |      |      |      | 18 / 15                                    |      |      |      | 15 / 15                                    |       |       |       |
|                               | Accuracy (mm)<br>Capacity / dia (mm)<br>Max. length / weight (kg/mm)<br>Tool selection |      |      |      | Positioning ± 0.015 / full travel / Repeatability ± 0.003<br>24 tools / max. dia Ø 110 (Full tool) ; Ø 200 (Adjacent empty)<br>18 kg / 380 mm |      |      |      | Random shortest direction / M24 P3.0 - 45° |      |      |      | Random shortest direction / M24 P3.0 - 45° |       |       |       |
| Machine size                  | Length (m)<br>6.4                                                                      |      |      |      | 8.4                                                                                                                                           |      |      |      | 8.4                                        |      |      |      | 11.1                                       |       |       |       |
|                               | Width (m)<br>4.00                                                                      |      |      |      | 4.55                                                                                                                                          |      |      |      | 4.85                                       |      |      |      | 5.15                                       |       |       |       |
|                               | Height (m)<br>4.10                                                                     |      |      |      | 4.57 (5.47)                                                                                                                                   |      |      |      | 4.57 (5.47)                                |      |      |      | 4.57 (5.47)                                |       |       |       |
|                               | Machine weight (app.) (ton)<br>20                                                      |      |      |      | 22 24 24 26 28 32 36 25 27 29                                                                                                                 |      |      |      | 33 37 28 30 35 40                          |      |      |      | 33 37 28 30 35 40                          |       |       |       |
| Item                          | FD-28                                                                                  |      |      |      | FD-32                                                                                                                                         |      |      |      | FD-36                                      |      |      |      | FD-42                                      |       |       |       |
| Model - FD                    | 2832                                                                                   | 2842 | 2852 | 2860 | 3232                                                                                                                                          | 3242 | 3252 | 3260 | 3642                                       | 3652 | 3660 | 4242 | 4252                                       | 4260  |       |       |
| Distance between columns (mm) | 2850                                                                                   |      |      |      | 3250                                                                                                                                          |      |      |      | 3650                                       |      |      |      | 4250                                       |       |       |       |
| Table size                    | Length (mm)<br>3000 4000 5000 6000                                                     |      |      |      | 3000 4000 5000 6000                                                                                                                           |      |      |      | 5000 6000 4000 5000 6000                   |      |      |      | 4000 5000 6000 5000 6000                   |       |       |       |
| T - slot                      | Width x Pitch x No. (mm)<br>18 20 22 24                                                |      |      |      | 18 20 22 24                                                                                                                                   |      |      |      | 20 22 24 22 24 26                          |      |      |      | 24 22 24 26 24 26                          |       |       |       |
|                               | X - axis (mm)<br>3200 4200 5200 6000                                                   |      |      |      | 3200 4200 5200 6000                                                                                                                           |      |      |      | 4200 5200 6000 4200 5200 6000              |      |      |      | 4200 5200 6000 4200 5200 6000              |       |       |       |
|                               | Y - axis (mm)<br>2800                                                                  |      |      |      | 3200                                                                                                                                          |      |      |      | 3600                                       |      |      |      | 4200                                       |       |       |       |
|                               | Z - axis (mm)<br>1100 (opt. 1400)                                                      |      |      |      | 150 ~ 1250                                                                                                                                    |      |      |      | 1100 (opt. 1400 / 1500)                    |      |      |      | 260 ~ 1360                                 |       |       |       |
| Spindle                       | Nose to table (mm)<br>180 ~ 1280                                                       |      |      |      | 430                                                                                                                                           |      |      |      | 470                                        |      |      |      | 470                                        |       |       |       |
|                               | Center to column<br>Taper / Speed / Power<br>Cutting (m/min)<br>6                      |      |      |      | BBT 50 - 6000 rpm - 22 / 26 kw + 2 stage gearbox                                                                                              |      |      |      | 6                                          |      |      |      | 6                                          |       |       |       |
| Feedrate                      | X axis (m/min)<br>15 12 10 10                                                          |      |      |      | 15 12 10 10                                                                                                                                   |      |      |      | 12 10 10 10                                |      |      |      | 12 10 10 10                                |       |       |       |
|                               | Y / Z axis (m/min)<br>15 / 12                                                          |      |      |      | 15 / 12                                                                                                                                       |      |      |      | 12 / 12                                    |      |      |      | 12 / 12                                    |       |       |       |
|                               | Accuracy (mm)<br>Capacity / dia (mm)<br>Max. length / weight (kg/mm)<br>Tool selection |      |      |      | Positioning ± 0.015 / full travel / Repeatability ± 0.003<br>32 tools / max. dia Ø 125 (Full tool) ; Ø 220 (Adjacent empty)<br>20 kg / 400 mm |      |      |      | Random shortest direction / M24 P3.0 - 45° |      |      |      | Random shortest direction / M24 P3.0 - 45° |       |       |       |
|                               | Length (m)<br>9.4 11.4 13.4 15.4                                                       |      |      |      | 9.4 11.4 13.4 15.4                                                                                                                            |      |      |      | 11.4 13.4 15.4 11.4 13.4 15.4              |      |      |      | 11.4 13.4 15.4 11.4 13.4 15.4              |       |       |       |
| Machine size                  | Width (m)<br>6.00                                                                      |      |      |      | 6.40                                                                                                                                          |      |      |      | 6.80                                       |      |      |      | 7.40                                       |       |       |       |
|                               | Height (m)<br>5.2 (6.1)                                                                |      |      |      | 5.55 (6.45)                                                                                                                                   |      |      |      | 5.55 (6.45)                                |      |      |      | 5.55 (6.45)                                |       |       |       |
|                               | Machine weight (app.) (ton)<br>44                                                      |      |      |      | 49 54 59 50 55 60 65                                                                                                                          |      |      |      | 62 67 72 68                                |      |      |      | 73 78                                      |       |       |       |
|                               |                                                                                        |      |      |      |                                                                                                                                               |      |      |      |                                            |      |      |      |                                            |       |       |       |

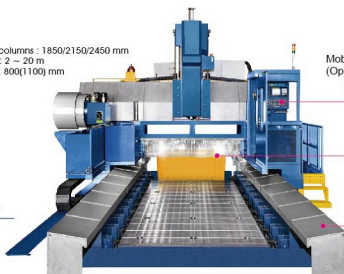


AHRP

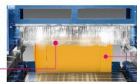


Between columns : 1350 mm  
X - travel : 2 ~ 20 m  
Z - travel : 800 mm

Between columns : 1850/2150/2450 mm  
X - travel : 2 ~ 20 m  
Z - travel : 800(1100) mm



Mobile control room  
(Opt. for AHRP, AHTD)



▲ Coolant protection



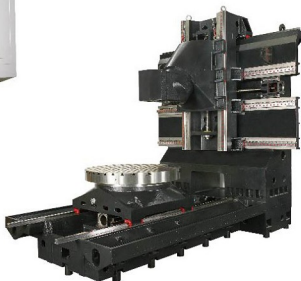
AHTD

## SPECIFICATIONS

|                                     |                     | AHRP-13      | AHTD-18                   | AHTD-21      | AHTD-24      |
|-------------------------------------|---------------------|--------------|---------------------------|--------------|--------------|
| Travel                              | Between columns(mm) | 1350         | 1850                      | 2150         | 2450         |
|                                     | X - Travel (m)      |              | 2 M ~ 20 M Every 1m add   |              |              |
|                                     | Y - Travel (mm)     | 1300         | 1800                      | 2100         | 2400         |
|                                     | Z - Travel (mm)     | 800          |                           | 800 (1100)   |              |
|                                     | W - Travel (mm)     |              |                           | N / A        |              |
| Table                               | Table wide (mm)     | 1000         | 1200                      | 1500         | 1800         |
|                                     | Table length (m)    |              | Table length = X Travel   |              |              |
| Spindle nose to table (mm)          |                     | 220 ~ 1020   |                           | 555 ~ 1355   |              |
| Power - speed (kw)                  |                     |              | 18.5 / 22 - 6000 rpm      |              |              |
| X axis rack-pinion                  |                     | $x \geq 5$ m | $x \geq 5$ m              | $x \geq 5$ m | $x \geq 5$ m |
| Y axis rack-pinion                  |                     | x            | x                         | x            | x            |
| ATC capacity (pcs)                  |                     |              | 24 pcs                    |              |              |
| X / Y / Z / W Feed rate G00 (m/min) |                     |              | 15 / 15 / 12              |              |              |
| Machine size                        | Length (m)          |              | 6.5m ~ 23.5m Every 1m add |              |              |
|                                     | Width (m)           | 4.5          | 5.9                       | 6.2          | 6.5          |
|                                     | Height (m)          | 4.6          |                           | 4            |              |
| Machine weight (app.) (ton)         |                     | 18 + 2/m     | 20 + 1.5/m                | 22 + 2/m     | 24 + 2.5/m   |



UMC-1600

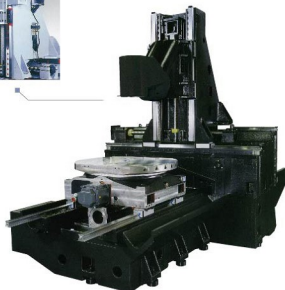
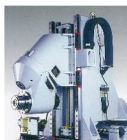


## SPECIFICATIONS

|                             |                                    | UMC-1600 (mill)                     | UMTC-1600 (mill turn)      |
|-----------------------------|------------------------------------|-------------------------------------|----------------------------|
| Travel                      | X / Y / Z axis                     | 1620 / 1260 / 1050 mm               |                            |
|                             | Vertical to horizontal time        | 3 seconds                           |                            |
| Swivel head (B axis)        | Transmission                       | DD torque motor                     |                            |
|                             | Rotary angle                       | 0° / 180°                           |                            |
| Motor spindle               | Maximum spindle speed              | 8,000 RPM                           |                            |
|                             | Spindle power S1 / S6              | 29.6 / 54.2 KW                      | 42 / 53 KW                 |
|                             | Spindle torque S1 / S6             | 128 / 320 Nm                        | 392 / 506 Nm               |
|                             | Spindle taper                      | # 50 / HSK-A100                     | HSK-T100                   |
|                             | Front bearing diameter             | 100 mm                              |                            |
| Distances                   | V : spindle nose to table top      | 150 ~ 1200 mm                       |                            |
|                             | H : spindle center to table top    | 100 ~ 1150 mm                       |                            |
|                             | V : spindle nose to table center   | -300 ~ 960 mm                       |                            |
|                             | H : spindle center to table center | -250 ~ 1010 mm                      |                            |
|                             | Spindle center to column           | 1105 mm                             |                            |
| Rotary table (C axis)       | Table dimension                    | Ø 1320 mm                           |                            |
|                             | Table to floor                     | 1085 mm                             | 1110 mm                    |
|                             | Maximum loading                    | 4000 KG                             | Mill / turn 4000 / 1500 KG |
|                             | Maximum rotation                   | 30 RPM                              | 300 RPM                    |
|                             | Transmission                       | DD torque motor                     |                            |
|                             | Indexing increment                 | 0.001°                              |                            |
| Ball screw                  | T slots                            | 13 x 18H x P100                     |                            |
|                             | X / Y / Z Diameter x pitch         | Ø 55 / 55 / 63 mm x 16 / 12 / 12 mm |                            |
| X / Y / Z axis Roller guide | Number x width                     | 4 / 2 / 2 slide ways x 55 mm        |                            |
|                             | Runner blocks number               | 8 / 4 / 6                           |                            |
| Feed rate                   | Rapid feed X / Y / Z               | 24 / 24 / 24 m / min                |                            |
|                             | Cutting feed                       | 20 / 20 / 20 m / min                |                            |
| ATC                         | Tools number                       | 60 pieces                           |                            |
|                             | Maximum tool diameter              | Ø 150 mm                            |                            |
|                             | Maximum tool length                | 350 mm                              |                            |
|                             | Maximum tool weight                | 20 kgs                              |                            |
|                             | Tools exchanging position          | horizontal                          |                            |
| 06 Weight                   | Before packing                     | 32000 KG                            | 33000 KG                   |



UMC-1000



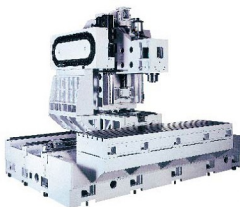
UMC-1000 / UMC-1000 mill-turn

## OPTIONAL:

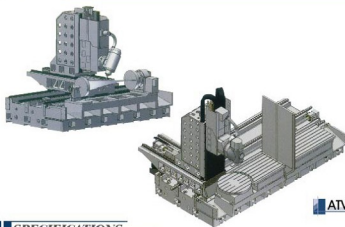
1000 mm diameter torque motor drive rotary table  
with maximum rotation 60 RPM, 1820 Nm peak torque,  
4000 Nm brake torque, 1200 kg load, +5° / +2.5°  
positioning / repeatability accuracy, German made !

## SPECIFICATIONS

|                         |                                    | UMC-1000 Milling center             | UMC-1000 Mill-turn center |
|-------------------------|------------------------------------|-------------------------------------|---------------------------|
| Travel                  | Linear axis X / Y / Z              | 1000 / 800 / 700 mm                 | 1000 / 800 / 610 mm       |
|                         | Swivel head B axis                 | 0° ~ 180°                           |                           |
|                         | Rotary table C axis                | 0.001 degree x 360,000              |                           |
| Swivel head (B axis)    | Maximum spindle speed              | 14000 (18000, 24000) RPM            | 12000 RPM                 |
|                         | Spindle power & torque             | 29.3 & 35 KW, 70 & 160 Nm (S1 & S6) |                           |
|                         | Spindle taper                      | BT (CAT/SK) 40, (HSK-A63)           | KM 63                     |
|                         | Front bearings diameter            | 70 mm                               |                           |
|                         | Vertical spindle nose to table     | 100 mm ~ 800 mm,                    | 29 mm ~ 729 mm,           |
|                         | Hor. spindle center to table top   | 50 mm ~ 750 mm                      | 9 mm ~ 709 mm             |
| Rotary table (C axis)   | Hor. spindle nose to table center  | -230 mm ~ 570 mm                    | -262 mm ~ 538 mm          |
|                         | Table dimension                    | 800 x 1000 mm                       | Ø 800 mm                  |
|                         | Maximum loading                    | 1500 kg                             | 1000 kg                   |
|                         | Indexing increment                 | 0.001 degree                        |                           |
|                         | T slots (size x No.x pitch)        | 18 mm x 7 x 100 mm                  | 18 mm x 7 x 120 mm        |
| Feed rate               | Table top to floor                 | 1000 mm                             | 1036 mm                   |
|                         | Rapid linear axis X / Y / Z        | 24M / 24M / 24M                     |                           |
|                         | Rotary axis B / C                  | 10 (60) RPM                         | 500 RPM                   |
| Transmission            | Cutting feed                       | 20 m / min                          |                           |
|                         | Linear axis XYZ                    | Ø 50 mm C3 ball screw               |                           |
|                         | Swivel head B axis                 | Torque motor                        |                           |
| Axis Accuracy (VDI3441) | Rotary table C axis                | Worm wheel (Torque motor)           | Torque motor              |
|                         | Positioning linear axis XYZ / BC   | 12 microns / 10 "                   |                           |
|                         | Repeatability linear axis XYZ / BC | 8 microns / 5 "                     |                           |
| ATC                     | Tools number                       | 40 (52, 80) stations                |                           |
|                         | Max. tool dia. / length / weight   | 120 mm / 300 mm / 7 kg              |                           |
|                         | Tools exchanging                   | vertical position                   |                           |
| Weight                  | Net (before packing)               | 15 ton                              | 16 ton                    |


**ATVMC-4000**
**SPECIFICATIONS**

|                                     |                 | ATVMC-2000                                        | ATVMC-3000            | ATVMC-4000            | ATVMC-5000              |
|-------------------------------------|-----------------|---------------------------------------------------|-----------------------|-----------------------|-------------------------|
| X / Y / Z axis                      | BT - 40 spindle | 2320 / 710 / 610 mm                               | 3320 / 710 / 610 mm   | 4320 / 710 / 610 mm   | 5320 / 710 / 610 mm     |
|                                     | BT - 50 spindle | 2320 / 680 / 610 mm                               | 3320 / 680 / 610 mm   | 4320 / 680 / 610 mm   | 5320 / 680 / 610 mm     |
| Table size / max. loading           |                 | 2400 x 700 mm / 3 ton                             | 3400 x 700 mm / 4 ton | 4400 x 700 mm / 5 ton | 5400 x 700 mm / 5.5 ton |
| Spindle nose to table / column ways |                 | 150 ~ 760 mm / 750 mm                             |                       |                       |                         |
| Spindle taper / speed               |                 | BT / CAT / SK40 or 50 / 10000 Rpm up to 24000 rpm |                       |                       |                         |
| Spindle motor                       |                 | 7.5 / 11 kw (up to 34 kw)                         |                       |                       |                         |
| Cutting feed rate                   |                 | 10 M / min.                                       |                       |                       |                         |
| Rapid feed rate                     |                 | 30 / 30 / 30 m                                    | 24 / 30 / 30 m        | 24 / 30 / 30 m        | 18 / 30 / 30 m          |
| ATC - type / No.                    |                 | Swing arm type 24 / 32 / 40 tools                 |                       |                       |                         |
| X / Y / Z Ballscrew dia.            |                 | 63 / 50 / 50 mm                                   | 70 / 50 / 50 mm       | 80 / 50 / 50 mm       | 80 / 50 / 50 mm         |
| Net weight                          |                 | 21000 kgs                                         | 23500 kgs             | 28680 kgs             | 32620 kgs               |

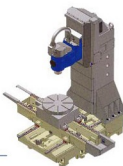
**FREJOTH** TRAVELLING COLUMN & FIXED TABLE VMC - 5 Axis Base on above ATVMC models

**ATVMC-5XC**

**SPECIFICATIONS**

|                                                   | ATVMC-5XA                                   | ATVMC-5XC                         |
|---------------------------------------------------|---------------------------------------------|-----------------------------------|
| Rotary table - type                               | Worm wheel or DD motor                      | DD motor only                     |
| Rotary table size                                 | 250 ~ 800 mm dia                            | 700 mm (opt. 1000 mm)             |
| Rotary table loading capacity                     | up to 600 kgs with tailstock                | 500 kgs (opt. 1000 kgs)           |
| Rotation speed                                    | 11.1 ~ 16.6 rpm                             | 30 rpm                            |
| X / Y / Z linear travel - axis                    | 2320 / 3320 / 4320 / 5320 mm / 760 / 760 mm |                                   |
| A / B / C rotary axis                             | A / B : 0.001° x 360,000 ± 120°             | B / C : ± 120° / 0.001° x 360,000 |
| Swivel milling head - B axis spindle              |                                             |                                   |
| Spindle taper / speed                             | 14000 rpm - BT40 / CAT40 / SK40 / HSK - A63 |                                   |
| Spindle motor                                     | 29.3 / 35 Kw                                |                                   |
| B axis swivel spindle driven system - by DD motor |                                             |                                   |
| ATC type and tool number                          | Swing arm type - 24 tools.                  |                                   |
| Spindle - V to column way                         | 891 mm                                      |                                   |
| Spindle - V to table surface                      | 115 ~ 875 mm                                |                                   |
| Floor to table surface                            | 860 mm                                      |                                   |
| Net weight                                        | from 22000 kg to 40000 kgs                  |                                   |



**FHSM-5XC**



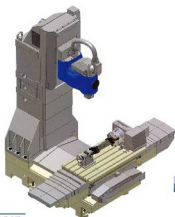
■ with optional Ø 610 mm torque motor rotary table integrated into 1100 mm x 600 mm plain table

## SPECIFICATIONS

### FHSM-5XC

|                                          |                                                            |
|------------------------------------------|------------------------------------------------------------|
| X / Y / Z linear axis                    | 1020 / 610 / 610 mm (opt. 1500 / 700 / 800 mm)             |
| B-Rotary head axis                       | +30°-120°                                                  |
| C-rotary table                           | 0.001° x 360,000                                           |
| Rotary table type                        | integrated built in saddle                                 |
| Rotary table-size / T slot / loading cap | Ø 610 mm (opt. Ø 700 mm) / 18H7 / 500 kgs                  |
| Rotary table speed / hydraulic pressure  | 10 rpm / 50 kg / cm <sup>2</sup>                           |
| Rotary table center height / bore        | 50 H7                                                      |
| Spindle to column cover                  | 629 mm                                                     |
| Spindle motor power & Torque             | 29.3 / 35 kw or 70/160 Nm                                  |
| Spindle taper / speed                    | BT40-14000 rpm ~ 24000 rpm (opt.)                          |
| Rapid feed-cutting feed                  | 36 / 36 / 24 m / min - 1-20000 mm / min                    |
| ATC-Type/No.of tool                      | Swing arm with 430 mm travel-32 tools (opt. 40 / 60 tools) |
| Machine net weight                       | 9000 kgs                                                   |

# FREJOTH 5 AXES MACHINING CENTER - Swing milling head and rotary table tailstock design



**FHSM-5XA**



## SPECIFICATIONS

### FHSM-5XA

|                                          |                                                      |
|------------------------------------------|------------------------------------------------------|
| X / Y / Z linear axis                    | 1020 / 610 / 810 mm                                  |
| B-Rotary head axis                       | +30°-120°                                            |
| A-rotary table                           | 0.001° x 360,000                                     |
| Rotary table type                        | add on main plain table                              |
| Rotary table-size / T slot / loading cap | 250 ~ 320 mm Dia. / 12 H7 / 250 kgs with tailstock   |
| Rotary table speed / hydraulic pressure  | 16.6 rpm / 50 kg / cm <sup>2</sup>                   |
| Rotary table center bore                 | 40 H7                                                |
| Spindle to column cover                  | 629 mm                                               |
| Spindle motor power & Torque             | 29.3 / 35 kw or 70/160 Nm                            |
| Spindle taper / speed                    | BT40-14000 rpm ~ 24000 rpm (opt.)                    |
| Rapid feed-cutting feed                  | 36/36/24 m/min - 1-20000 mm/min                      |
| ATC-Type/No.of tool                      | Swing arm with 430mm travel-32 tools (opt. 40 tools) |
| Machine net weight                       | 9000 kgs                                             |



## FREJOTH 5 AXES VERTICAL MACHINING CENTER ( 2 axis Trunnion table )



HSM-250U



HSM-400U



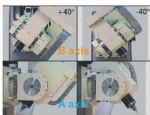
### SPECIFICATIONS

|                                                         | HSM-250U                              | HSM-400U                         |
|---------------------------------------------------------|---------------------------------------|----------------------------------|
| X / Y / Z linear axis                                   | 610 / 400 / 510 mm                    | 800 / 610 / 510 mm               |
| B axis tilting table                                    | -30 deg. ~ +120 deg.                  | -42 deg. ~ +120 deg.             |
| C axis rotary table                                     | 360 degree                            |                                  |
| Spindle motor / taper / front bearing diameter          | 7.5 / 11 (~22/26) kw / BT# 40 / 70 mm |                                  |
| Max. spindle speeds                                     | 8000 ~ 30000 rpm                      | 8000 ~ 30000 rpm                 |
| Spindle nose to table top                               | 72 ~ 582 mm                           | 130 ~ 640 mm                     |
| Tilting rotary table - Dimension / loading (0°/tilting) | 255 mm / 100 / 50 kgs                 | 600 x 365 mm / 200 / 100 kgs     |
| Indexing increment                                      | 0.001 degree                          | 0.001 degree                     |
| Feed rate                                               | X / Y / Z rapid/cutting feed          | 30 / 30 / 24 M / min - 8 M / min |
|                                                         | Rapid - B / C                         | 25 / 25 rpm                      |
| Transmission - X / Y / Z - B / C                        | 40, 40, 50 mm dia. C3 - worm gear     |                                  |
| ATC                                                     | 24 (32, 40) arm type                  |                                  |
| Net weight                                              | 5500 kgs                              | 7800 kgs                         |

## FREJOTH 5 AXIS MACHINING CENTER : $\pm 40^\circ$ ultra High Speed Spindle (A,B axes)



CH5-3000



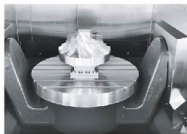
### SPECIFICATIONS

|                                              | CH5-3000                                          |
|----------------------------------------------|---------------------------------------------------|
| X / Y / Z / A / B axis travel                | 3000 / 1000 / 750 mm A, B AXIS : - 40 + 40 DEGREE |
| Table size / T slot (no. x width x distance) | 3250 x 800 mm / 5 x 18 x 150 mm                   |
| Table loading                                | 3000 kgs                                          |
| Spindle motor / taper / spindle speeds       | 25 / 30 kw, 7 / 24 Taper, no.50, 12000 rpm        |
| Spindle rotating feed rate                   | 2000 degree / min                                 |
| Spindle nose to table                        | 100 ~ 850 mm                                      |
| Feed rate                                    | X / Y / Z rapid / cutting feed                    |
|                                              | Jog feed rate                                     |
| Transmission - X / Y / Z                     | 20 / 20 / 10 M/min / 1-10000 mm/min               |
| ATC                                          | 1260 mm / min                                     |
| Net weight                                   | 4 / 4 / 9 kw                                      |
|                                              | arm 32 pcs                                        |
|                                              | 28000 kgs                                         |

## FREJO TH 5 AXES MACHINING CENTER - Trunnion table



LU-1200



### SPECIFICATIONS

|                                       | LU-1200                      |
|---------------------------------------|------------------------------|
| X / Y / Z axis                        | 1100 / 1370 + 380 / 800 mm   |
| Spindle nose to worktable             | 150 ~ 950 mm                 |
| Working table size / loading capacity | dia. 1150 x 900 W / 2000 kgs |
| Rapid feed rate - X / Y / Z           | 48 / 48 / 48 M / min         |
| Cutting feed rate - X / Y / Z         | 0.001 - 20 M / min           |
| Rapid feed rate - A / C axis          | 26 / 50 rpm                  |
| C axis rotating range                 | 360 degree                   |
| A axis rotating range                 | ±120 degree                  |
| Spindle drive method                  | Direct drive (opt. built-in) |
| Max spindle speed                     | 8000 rpm                     |
| Spindle power                         | 27 kw                        |
| Spindle taper / torque                | BBT50 / 400 Nm               |
| ATC system / number of tools          | 24 pcs Drum                  |
| Machine net weight                    | 32000 kgs                    |

## FREJO TH 5 AXES MACHINING CENTER GANTRY TYPE



GVM-800



### SPECIFICATIONS

|                             |                            | GVM-800 Milling                                   | GVM-800 Milling turning |
|-----------------------------|----------------------------|---------------------------------------------------|-------------------------|
| Travel                      | X / Y / Z axis             | 800 / 900+330 / 620 mm                            |                         |
| Rotary table tilt A axis    | Maximum rotation           | 50 rpm                                            | 25 rpm                  |
|                             | Tilt angle                 | ± 125°                                            | ± 135°                  |
| Rotary table tilt C axis    | Table dimension            | Ø800 mm                                           |                         |
|                             | Maximum loading            | 1200 kg                                           |                         |
| Motor spindle               | Maximum spindle speed      | 18000 rpm                                         | 10000 rpm               |
|                             | Spindle power S1 / S6      | 26 / 32 kw                                        | 27 / 31 kw              |
|                             | Spindle taper              | HSK - A63                                         | HSK - T63               |
| Ball screws                 | X / Y / Z diameter x pitch | Ø50 / 50 x 2 / 50 mm x 16 mm FDC, oil thru cooled |                         |
| X / Y / Z axis roller guide | Width                      | 55 / 55 / 45 mm                                   |                         |
|                             | Runner blocks number       | 4 / 4 / 4                                         |                         |
| Feed rate                   | Rapid feed X / Y / Z       | 48 / 48 / 48 M / min.                             |                         |
|                             | Cutting feed               | 20 M / min.                                       |                         |
| ATC                         | Tool holder type           | HSK - A63                                         | HSK - T63               |
|                             | Tools number               | 32 (40, 64, 80, 120)                              |                         |
| Weight                      | Before packing             | 24 tons                                           | 25 tons                 |

## FREJOTH 5 AXES MACHINING CENTER-rotary table ( B, C axis )



LU-800



### SPECIFICATIONS

|                                       | LU-800A                        | LU-800B                            |
|---------------------------------------|--------------------------------|------------------------------------|
| X / Y / Z axis                        | 800 / 900 + 330 / 620 mm       | 760 / 900 + 330 / 620 mm           |
| Spindle nose to worktable             | 100 ~ 720 mm                   | 75 ~ 695 mm                        |
| Working table size / loading capacity | 800 mm dia. / 1000 kgs         |                                    |
| Rapid feed rate - X / Y / Z           | 48 / 48 / 48 M / min.          |                                    |
| Cutting feed rate - X / Y / Z         | 0.001 ~ 20 M / min.            |                                    |
| A Axis rotating range                 | + / - 120 degree               |                                    |
| C Axis rotating angle                 | 360 degree                     |                                    |
| A / C Axis Max. speed                 | 75 rpm / 100 rpm               |                                    |
| Spindle drive method                  | Direct drive : (Opt. Built-in) | Two stage gear box (Opt. Built-in) |
| Max spindle speed                     | 12000 rpm                      | 8000 rpm                           |
| Spindle power (Cont. / 30 min.)       | 17 / 20.4 kw                   | 18 / 21 kw                         |
| Spindle taper / max torque            | #40 BBT                        | #50 BBT                            |
| ATC system / number of tools          | arm 32                         | arm 24                             |
| Machine net weight                    | 21000 kgs                      | 21000 kgs                          |

## FREJOTH 5 AXES MACHINING CENTER-rotary table ( B, C axis )



LU-620



LU-400



### SPECIFICATIONS

|                                 | LU-400                                 | LU-620                                 |
|---------------------------------|----------------------------------------|----------------------------------------|
| X / Y / Z axis travel           | 400 / 350 / 350 mm                     | 620 / 520 / 460 mm                     |
| Spindle nose to worktable       | 150 ~ 500 mm                           | 150 ~ 610 mm                           |
| Working table size              | 450 mm dia.                            | 650 mm dia.                            |
| Table loading capacity          | 150 / 200 kgs (90 degree / Horizontal) | 200 / 300 kgs (90 degree / Horizontal) |
| Rapid feed rate - X / Y / Z     | 48 / 48 / 48 M / min.                  | 36 / 36 / 36 M / min.                  |
| Cutting feed rate - X / Y / Z   |                                        | 1 ~ 20000 mm / min.                    |
| B Axis tilting range            |                                        | -50° ~ +110°                           |
| C Axis rotating angle           |                                        | 360 degree                             |
| B / C Axis Max. speed           |                                        | 25 rpm / 25 rpm                        |
| Spindle drive method            |                                        | Direct drive                           |
| Max spindle speed               |                                        | 12000 rpm                              |
| Spindle power (Cont. / 30 min.) | 5.5 / 7.5 kw (Fanuc)                   | 18 / 21 kw (Siemens)                   |
| Spindle taper                   | #40 BBT                                | #40 BBT                                |
| ATC system / number of tools    | arm 30 T                               | arm 32 T                               |
| Machine net weight              | 6000 kgs                               | 8800 kgs                               |

## FREJO TH 5 AXES MACHINING CENTER - Mill / Turn function



TM-2500



1<sup>st</sup> Turning Spindle + W-Axis Tailstock



1<sup>st</sup> Turning Spindle + 2<sup>nd</sup> Turning Spindle

### SPECIFICATIONS

|                                     | TM-2500                                        |
|-------------------------------------|------------------------------------------------|
| Max rotating radius                 | ø 530 mm                                       |
| Max machining dia / length          | ø 500 / 500 mm                                 |
| Max rod diameter                    | ø 65 mm                                        |
| X / Y / Z / W axis travel           | 560 / ±125 / 560+93 / 910 mm                   |
| B / C axis rotating angle           | -20° ~ 200° / 360°                             |
| X / Y / Z / W rapid feedrate        | 40 / 40 / 40 / 8 mm                            |
| B / C axis feed rate                | 25 / 250 rpm                                   |
| Turning spindle speed / power       | 4500 rpm / 11 / 15 kw                          |
| Chuck / nose / hole diameter        | 8" / A2-6 / ø75 mm                             |
| Milling spindle speed / power       | 12000 rpm / 11 / 22 kw                         |
| B axis indexing angle               | 0.001°                                         |
| Tool indexing angle / position      | 90° / 4 positions                              |
| Tool type / no.                     | HSK-63T / 36 pcs                               |
| Max. tool dia. / length / weight    | ø 90 (125 mm no adjacent tool) / 250 mm / 8 kg |
| Quill type tailstock                | MT 5                                           |
| Machine height / occupancy / weight | 2715 mm / 2947 x 2820 mm / 6500 kgs            |

## FREJO TH 5 AXES HIGH SPEED DRILLING & TAPPING CENTER



ADT-A5X403



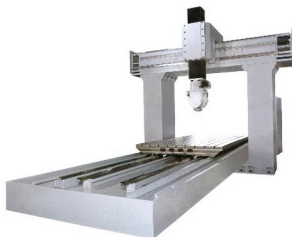
ADT-A5X404

### SPECIFICATIONS

|                                          | ADT-A5X403                 | ADT-A5X404                  |
|------------------------------------------|----------------------------|-----------------------------|
| Travel - X / Y / Z axis                  | 400 x 500 x 400 mm         | 400 x 500 x 450 mm          |
| Spindle nose to table                    | 30 ~ 430 mm                | 40 ~ 490 mm                 |
| Spindle speed                            | BT30 10000 rpm             | BT40 8000 rpm               |
| Min. indexing precision of C axis rotary | 0.001 degree               | 0.001 degree                |
| Cumulative indexing precision of C axis  | 15 sec                     | 15 sec                      |
| C axis repeatability accuracy            | 4 sec                      | 6 sec                       |
| Slope angle of A axis                    | ±110 degree                | +120 / -40 degree           |
| Cumulative indexing precision of A axis  | 60 sec                     | 45 sec                      |
| A axis repeatability accuracy            | 8 sec                      | 8 sec                       |
| Max. Speed for A, C axis                 | 33.3 rpm                   | 13.3 / 22.2 rpm             |
| 3 axes rapid traverse                    | 48 / 48 / 48 m / min       | 48 / 48 / 48 m / min        |
| Spindle motor                            | 5.5 / 3.7 kw               | 7.5 / 5.5 kw                |
| X / Y / Z / A / C motor                  | 1.6 / 1.6 / 3 / 1.6 / 1 kw | 1.6 / 1.6 / 3 / 4 / 1.6 kw  |
| ATC - taper / No / type                  | BT30 20+1 Arm type         | BT40 24+1 Arm type          |
| Table size / loading cap                 | Ø255 mm / 50 kgs           | Ø250 / Ø320(OP) mm / 75 kgs |
| Net weight                               | 3900 kgs                   | 4300 kgs                    |



ADVM-4025



VH-5F



VH-1 / VH-2.5



ORT-2.5



HT



M21



M21U

## SPECIFICATIONS

|                         | ADVM-2017                                                                                                                             | ADVM-3017   | ADVM-2021   | ADVM-3021   | ADVM-3025   | ADVM-4021   | ADVM-4025 | ADVM-4030 | ADVM-4035 |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-----------|-----------|-----------|
| X axis                  | 2200 mm                                                                                                                               | 3200 mm     | 2150 mm     | 3200 mm     | 3200 mm     | 4200 mm     | 4200 mm   | 4200 mm   | 4200 mm   |
| Y axis                  | 1750 mm                                                                                                                               | 1750 mm     | 2200 mm     | 2200 mm     | 2600 mm     | 2200 mm     | 2600 mm   | 3100 mm   | 3600 mm   |
| Z axis                  | 700mm (Opt. 900/1100/1300mm)                                                                                                          |             |             |             |             |             |           |           |           |
| Between two column      | 1750 mm                                                                                                                               | 1750 mm     | 2130 mm     | 2130 mm     | 2530 mm     | 2130 mm     | 2530 mm   | 3030 mm   | 3530 mm   |
| Spindle nose to table   | Standard long nose-130~830 mm (Opt. 130~1030/130~1230/130~1430 mm)<br>Opt. short nose-240~940 mm (Opt. 240~1140/240~1340/240~1540 mm) |             |             |             |             |             |           |           |           |
| Table size-mm           | 2000 x 1600/3000 x 1600/2000 x 1700/3000 x 2100/4000 x 1700/4000 x 2100/4000 x 2600/4000 x 3100                                       |             |             |             |             |             |           |           |           |
| Max. loading cap.-ton   | 6 Ton                                                                                                                                 | 8 Ton       | 8 Ton       | 11 Ton      | 14 Ton      | 13 Ton      | 16 Ton    | 20 Ton    | 24 Ton    |
| Ram size                | 380 mm x 380 mm (Opt. 420 mm x 420 mm)                                                                                                |             |             |             |             |             |           |           |           |
| Spindle taper and power | BT50(DIN69817)-(CAT50)                                                                                                                |             |             |             |             |             |           |           |           |
| Rapid feed              | 15 / 15 / 10 (15) M / min.                                                                                                            |             |             |             |             |             |           |           |           |
| ATC-No. / dia. / length | Tools- 24 / 40 / 60 / 120 / 180-110 dia x 350 L                                                                                       |             |             |             |             |             |           |           |           |
| Net weight              | 22 Ton                                                                                                                                | 26 Ton      | 24 Ton      | 28 Ton      | 30 Ton      | 35 Ton      | 38 Ton    | 42 Ton    | 44 Ton    |
|                         | ADVM-5021                                                                                                                             | ADVM-5025   | ADVM-5030   | ADVM-5035   | ADVM-6030   | ADVM-6035   |           |           |           |
| X axis                  | 5200 mm                                                                                                                               | 5200 mm     | 5200 mm     | 5200 mm     | 6200 mm     | 6200 mm     |           |           |           |
| Y axis                  | 2200 mm                                                                                                                               | 2600 mm     | 3100 mm     | 3600 mm     | 3100 mm     | 3600 mm     |           |           |           |
| Z axis                  | 700 mm (Opt. 900/1100/1300 mm)                                                                                                        |             |             |             |             |             |           |           |           |
| Between two column      | 2130 mm                                                                                                                               | 2530 mm     | 3030 mm     | 3530 mm     | 3030 mm     | 3530 mm     |           |           |           |
| Spindle nose to table   | Standard long nose-130~830 mm (Opt. 130~1030/130~1230/130~1430 mm)<br>Opt. short nose-240~940 mm (Opt. 240~1140/240~1340/240~1540 mm) |             |             |             |             |             |           |           |           |
| Table size-mm           | 5000 x 1700                                                                                                                           | 5000 x 2100 | 5000 x 2600 | 5000 x 3100 | 6000 x 2600 | 6000 x 3100 |           |           |           |
| Max. loading cap.-ton   | 15 Ton                                                                                                                                | 18 Ton      | 21 Ton      | 25 Ton      | 23 Ton      | 28 Ton      |           |           |           |
| Ram size                | 380 mm x 380 mm (Opt. 420 mm x 420 mm)                                                                                                |             |             |             |             |             |           |           |           |
| Spindle taper and power | BT50(DIN69817)-(CAT50)                                                                                                                |             |             |             |             |             |           |           |           |
| Rapid feed              | 10(12) / 10(12) / 10(12) M / min                                                                                                      |             |             |             |             |             |           |           |           |
| ATC-No. / dia. / length | Tools- 24 / 40 / 60 / 120 / 180-110 dia x 350 L                                                                                       |             |             |             |             |             |           |           |           |
| Net weight              | 44 Ton                                                                                                                                | 49 Ton      | 53 Ton      | 56 Ton      | 70 Ton      | 75 Ton      |           |           |           |

# FREJOTH ADM CNC DOUBLE COLUMN MACHINING CENTER (3 LINEAR GUIDE WAYS)

ADM - XX A XX B A ( x 100 mm ) : X Axis Travel  
B ( x 100 mm ) : Distance Between Columns



ADM-4228

## SPECIFICATIONS

( ) : As Option  
\*Specifications are subject to change without prior notice.

|           | ADM-4228                                                                                                                                                            | ADM-5228 | ADM-6228 | ADM-4232 | ADM-5232 | ADM-6232 | ADM-7232 | ADM-4236 | ADM-5236 | ADM-6236 | ADM-7236 |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Table     | Table size<br>4000 x 2500 mm/5000 x 2500 mm/6000 x 2500 mm/4000 x 2900 mm/6000 x 2900 mm/7000 x 2900 mm/4000 x 3000 mm/5000 x 3000 mm/6000 x 3000 mm/7000 x 3000 mm |          |          |          |          |          |          |          |          |          |          |
|           | T-slots<br>22 mm                                                                                                                                                    |          |          |          |          |          |          |          |          |          |          |
|           | Maximum load<br>16 tons 20 tons 24 tons 16 tons 20 tons 24 tons 24 tons 16 tons 20 tons 24 tons 24 tons                                                             |          |          |          |          |          |          |          |          |          |          |
| Travel    | X axis<br>4200 mm 5200 mm 6200 mm 4200 mm 5200 mm 6200 mm 7200 mm 4200 mm 5200 mm 6200 mm 7200 mm                                                                   |          |          |          |          |          |          |          |          |          |          |
|           | Y axis<br>3200 mm 3200 mm 3200 mm 3200 mm 3200 mm 3200 mm 3200 mm 3200 mm 3200 mm 3200 mm 3200 mm                                                                   |          |          |          |          |          |          |          |          |          |          |
|           | Z axis<br>800 (1000, 1200) mm 4000 mm                                                                                                                               |          |          |          |          |          |          |          |          |          |          |
| Spindle   | Spindle servo motor<br>( Cont / 30 min )<br>15 / 18.5 (22 / 26) kw                                                                                                  |          |          |          |          |          |          |          |          |          |          |
|           | speed<br>4000 (6000) mm                                                                                                                                             |          |          |          |          |          |          |          |          |          |          |
|           | Taper<br>7/24 taper No.50, BT-50                                                                                                                                    |          |          |          |          |          |          |          |          |          |          |
| Distances | Between two Columns<br>2800 mm 3200 mm 3600 mm                                                                                                                      |          |          |          |          |          |          |          |          |          |          |
|           | Spindle nose to Table center<br>200 ~ 1000 (200 ~ 1200, 200 ~ 1400) mm                                                                                              |          |          |          |          |          |          |          |          |          |          |

# FREJOTH ADM CNC DOUBLE COLUMN MACHINING CENTER (2 LINEAR GUIDE WAYS)

ADM - XX A XX B A ( x 100 mm ) : X Axis Travel  
B ( x 100 mm ) : Distance Between Columns



ADM-3221

## SPECIFICATIONS

( ) : As Option  
\*Specifications are subject to change without prior notice.

|           | ADM-2216                                                                                                                                                            | ADM-3216 | ADM-4216 | ADM-2221 | ADM-3221 | ADM-4221 | ADM-5221 | ADM-3226 | ADM-4226 | ADM-5226 |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Table     | Table size<br>2000 x 1400 mm/3000 x 1400 mm/4000 x 1400 mm/2000 x 1800 mm/3000 x 1800 mm/4000 x 1800 mm/5000 x 1800 mm/3000 x 2200 mm/4000 x 2200 mm/5000 x 2200 mm |          |          |          |          |          |          |          |          |          |
|           | T-slots<br>22 mm                                                                                                                                                    |          |          |          |          |          |          |          |          |          |
|           | Maximum load<br>6 tons 9 tons 10 tons 8 tons 10 tons 12 tons 15 tons 12 tons 14 tons 18 tons                                                                        |          |          |          |          |          |          |          |          |          |
| Travel    | X axis<br>2200 mm 3200 mm 4200 mm 2200 mm 3200 mm 4200 mm 5200 mm 3200 mm 4200 mm 5200 mm                                                                           |          |          |          |          |          |          |          |          |          |
|           | Y axis<br>1600 mm 1600 mm 1600 mm 1600 mm 1600 mm 1600 mm 1600 mm 1600 mm 1600 mm 1600 mm                                                                           |          |          |          |          |          |          |          |          |          |
|           | Z axis<br>800 (1000, 1200) mm 2100 mm 2600 mm                                                                                                                       |          |          |          |          |          |          |          |          |          |
| Spindle   | Spindle servo motor<br>( Cont / 30 min )<br>15 / 18.5 (22 / 26) Kw                                                                                                  |          |          |          |          |          |          |          |          |          |
|           | speed<br>4000 (6000) rpm                                                                                                                                            |          |          |          |          |          |          |          |          |          |
|           | Taper<br>7/24 taper No.50, BT-50                                                                                                                                    |          |          |          |          |          |          |          |          |          |
| Distances | Between two Columns<br>1600 mm 2100 mm 2600 mm                                                                                                                      |          |          |          |          |          |          |          |          |          |
|           | Spindle nose to Table center<br>200 ~ 1000 ( 200 ~ 1200, 200 ~ 1400) mm                                                                                             |          |          |          |          |          |          |          |          |          |



## FREJOTH ADM CNC DOUBLE COLUMN MACHINING CENTER



ADM-3212

### SPECIFICATIONS

( ): As Option  
\*Specifications are subject to change without prior notice.

|           | ADM-2212                                                                | ADM-3212                                                       |
|-----------|-------------------------------------------------------------------------|----------------------------------------------------------------|
| Travel    | X axis<br>2200 mm                                                       | Y axis<br>1200 mm<br>Z axis<br>760 mm                          |
| Distances | Spindle nose<br>To table surface<br>Between two column                  | 200 ~ 960 mm<br>1300 mm                                        |
| Table     | Table size<br>2000 x 1100 mm                                            | 3000 x 1100 mm                                                 |
|           | T - slots<br>Maximum load<br>3500 kgs                                   | 22 mm<br>4500 kgs                                              |
| Spindle   | Spindle servo motor<br>( Cont / 30 min )<br>speed (gear type )<br>taper | 11 / 15 (22 / 26) kw<br>6000 rpm<br>7 / 24 Taper ISO 50, BT-50 |

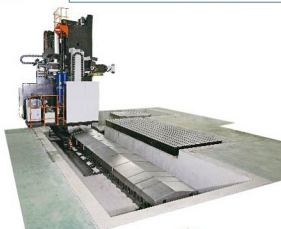
## FREJOTH ADM CNC DOUBLE COLUMN MACHINING CENTER



ADM-1422/1432

### SPECIFICATIONS

|                           | ADM-1422                | ADM-1432              |
|---------------------------|-------------------------|-----------------------|
| Dis. Between column       |                         | 1400 mm               |
| Table size - length       | 2000 mm                 | 3000 mm               |
| Table size - width        |                         | 1200 mm               |
| Table loading capacity    | 8 Ton                   | 10 Ton                |
| Travels - X / Y / Z       | 2200 / 1300 / 800 mm    | 3200 / 1300 / 800 mm  |
| Spindle taper             |                         | BT 40 (BT50)          |
| Spindle power / speed     | 20Kw - BT40 / 15000 rpm | BT50 / 10000 rpm      |
| Spindle nose to table top |                         | 100 ~ 900 mm          |
| X / Y / Z rapid feed      |                         | 25M / 25M / 25M / min |
| X / Y / Z cutting feed    |                         | 15 M / min            |
| ATC                       |                         | Arm Type 24 Tools     |
| Machine weight            | 20 Ton                  | 25 Ton                |



CBFP-160CNC



- Range :
  - X – 4M ~ 20 M, every 2 M modular
  - Y – 2M ~ 4M, every 0.5 M modular
  - Z – 1.2 M
  - A –  $\pm 180^\circ$
  - B – up to 3M rotary table
  - C –  $\pm 360^\circ$
  - V – 1.5M ~ 3M, every 0.5 M modular
  - W – 0.7M or 1M

## SPECIFICATIONS

| CBFP-160CNC                       |                                                                                                                     |                                                                                                                                                                                                                                                                      |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Axis Travel                       | X – column right & left<br>Y – spindle head up & down<br>Z – ram forward & backward<br>W – quill forward & backward | 4M, 6M, 8M, 10M, 12M, 14M, 16M, 18M, 20M<br>2M, 2.5M, 3M, 3.5M, 4M<br>1.2M<br>0.7M                                                                                                                                                                                   |
| Guide ways Dimension              | X – column right & left<br>Y – spindle head up & down<br>Z – ram forward & backward<br>W – quill forward & backward | 2 x 65 mm rails, total 10 runner blocks<br>2 x 65 mm + 2 x 45 mm rails, total 8 runner blocks<br>4 x 45mm rails, total 8 runner blocks<br>2 x 20mm rails, total 4 runner blocks<br>Ø 100mm rotating nut up to 6M travel<br>Starting from 8M travel, with twin drives |
| Axis Transmission                 | X axis Ball screw<br>Rack pinion<br>Y axis Ball screw<br>Z axis Ball screw<br>W axis Ball screw                     | Ø 70mm x 2 pieces<br>Ø 50mm x 1 piece<br>Ø 40mm x 1 piece                                                                                                                                                                                                            |
| Feed rate                         | Rapid X / Y / Z / W axis<br>Cutting X / Y / Z / W feed<br>Minimum setting                                           | 20M / 20M / 10M / 5M per minute<br>10M / 10M / 8M / 5M per minute<br>0.001 MM                                                                                                                                                                                        |
| Castings Dimension L / W / H      | X axis machine bed<br>Y axis machine column<br>Z axis sliding ram<br>Diameter                                       | X axis travel + 5300 mm / 1373 mm / 420 mm<br>1200 mm / 1710 mm / Y axis travel + 3355 mm<br>3500 / 460 / 520 mm<br>160 mm dia                                                                                                                                       |
| Boring Spindle (W axis)           | Taper & speed<br>Power<br>Torque (2 gearboxes)                                                                      | BT#50 & 3000 RPM<br>37 & 45KW(Fanuc) / 37 & 51KW(Siemens)<br>3300 Nm maximum at 180 RPM                                                                                                                                                                              |
| Automatic tool changer (optional) | Tools number<br>Max. tool dia. / length / weight<br>Location                                                        | 40, 60, 90, 120 stations<br>Ø 150 mm / 300 mm / 25 kg<br>fixed on traveling column                                                                                                                                                                                   |
| CNC                               | Brands                                                                                                              | Fanuc, Heidenhain, Siemens                                                                                                                                                                                                                                           |

Optional milling heads :

Various optional tables available :



EXT



EXT90



HF50



VAR3



VH2.5



ORT



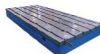
M21U



M21F



M21F with automatic head change



Floor plate



Angle plate



Rotary table



Sliding table



Rotary & sliding table



Rotary & sliding & tilting table



LB-110/LB-130



## SPECIFICATIONS

|                                           | LB-110         | LB-130                |
|-------------------------------------------|----------------|-----------------------|
| Boring spindle diameter                   | 110 mm         | 130 mm                |
| X axis travel (table longitudinal travel) | 3000 mm        | 4000 (3000) (5000) mm |
| Y axis travel (spindle head travel)       | 2100 mm        | 2500 (3000) mm        |
| Z axis travel (table cross travel)        | 1500 mm        | 1800 mm               |
| W axis travel (spindle stroke)            | 500 mm         | 800 mm                |
| Table size                                | 1440 x 1600 mm | 1800 x 2000 mm        |
| Table loading                             | 8 ton          | 15 ton                |
| Table indexing                            | 0.001 degree   | 0.001 degree          |
| X Y Z rapid traverse                      | 10 m / min     | 21 m / min            |
| W rapid traverse                          | 4 m / min      | 4 m / min             |
| Spindle motor                             | 22 / 26 kw     | 30 / 37 kw            |

## FREJOTH CNC BED TYPE UNIVERSAL MILLING MACHINE



FBE-2600



Versatile various milling head :



VH-2



VH-90



ORT-2.5



VH-2.5



VH-1

## SPECIFICATIONS

|                                                                              | FBE-1500                        | FBE-2000       | FBE-2600       | FBE-3000       | FBE-4000       |
|------------------------------------------------------------------------------|---------------------------------|----------------|----------------|----------------|----------------|
| X axis                                                                       | 1500 mm                         | 2000 mm        | 2600 mm        | 3000 mm        | 4000 mm        |
| Y / Z axis                                                                   | 1000 mm / 950 mm (opt 1500 mm)  |                |                |                |                |
| Table size                                                                   | 1600 x 1050 mm                  | 2100 x 1050 mm | 2700 x 1050 mm | 3100 x 1050 mm | 4100 x 1050 mm |
| Table loading capacity                                                       | 3000 kgs                        | 5000 kgs       | 6000 kgs       | 8000 kgs       | 9000 kgs       |
| T slot                                                                       | 22 H8 x 7 slots                 |                |                |                |                |
| Horizontal spindle (W / O vertical heads VH - 5 / VH - 2.5 / VH - 1 heads)   |                                 |                |                |                |                |
| Taper and speed                                                              | DIN 69871 #50 / 3500 (5000) rpm |                |                |                |                |
| output 40% duty cycle / constant output                                      | 25 kw / 17 kw                   |                |                |                |                |
| Max. torque                                                                  | 650 Nm                          |                |                |                |                |
| Universal milling head - standard manual head - B axis and C axis are manual |                                 |                |                |                |                |
| Taper / speed                                                                | DIN 69871 #50 / 3500 rpm        |                |                |                |                |
| output 40% duty cycle / constant output                                      | 25 kw / 17 kw                   |                |                |                |                |
| Max. torque                                                                  | 650 Nm                          |                |                |                |                |
| Feedrate rapid / cutting                                                     | 10 m / min / 1- 5000 mm / min   |                |                |                |                |
| 24 station swing arm type ATC as option                                      |                                 |                |                |                |                |
| Net weight                                                                   | 11000 kgs                       | 14000 kgs      | 15000 kgs      | 18000kgs       | 23600kgs       |



**CBFK-110CNC**

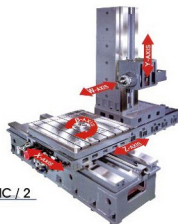
## SPECIFICATIONS

|                                 | CBFK - 110CNC                                 |
|---------------------------------|-----------------------------------------------|
| Spindle diameter                | 110 mm                                        |
| X axis                          | 2000 mm (Opt. 3000 mm)                        |
| Y / Z axis                      | 1500 / 1400 mm                                |
| W axis                          | 550 mm                                        |
| Table size / loading capacity   | 1500 x 1200 mm / 5000 kgs                     |
| T - slot                        | 22H8 x No.7 x 150 mm                          |
| B axis                          | 0.001 deg. / Every 90 deg. With locating Pin. |
| B axis rapid feed               | 2 rpm                                         |
| Spindel nose to table center    | -30 ~ 1520 mm                                 |
| Spindle center to table top     | 0 ~ 1500 mm                                   |
| Spindle taper                   | BT50                                          |
| Spindle motor / Max. torque     | 22 / 26 kw / 135 kg - m                       |
| Spindle speed                   | L : 5 ~ 625 rpm H : 626 ~ 2500 rpm            |
| Rapid feed - X / Y / Z / W axis | 10 / 10 / 10 / 5M / min.                      |
| Feed rate - X / Y / Z axis      | 1 ~ 6000 mm / min.                            |
| Feed rate - W axis              | 1 ~ 4000 mm / min.                            |
| ATC                             | 60 tools                                      |
| X / Y / Z / B / W axis motor    | 6 / 6 / 6 / 7 / 7 kw                          |
| Net weight                      | 24000 kgs                                     |

# FREJOTH AHORIZONTAL BORING, MILLING & DRILLING MACHINE-Column Moveable type



**CBFK-110CNC / 2**



## SPECIFICATIONS

|                                       | CBFK-110CNC / 2            | CBFK-130CNC                 |
|---------------------------------------|----------------------------|-----------------------------|
| Boring spindle diameter               | 110 mm                     | 130 mm                      |
| X axis travel (table longitudinal)    | 2000 Opt. - 2500 / 3200 mm | 3200 / 4200 mm              |
| Y axis travel (spindle vertical)      | 2000 Opt. 2500 mm          | 2500 Opt. - 3000 mm         |
| Z axis travel (table cross)           | 1700 mm                    | 2000 mm                     |
| W axis travel (spindle axial)         | 550 mm                     | 700 Opt. - 900 mm           |
| Distance from table to spindle center | 0 ~ 2000 Opt. - 2500 mm    | 0 ~ 2500 Opt. - 0 - 3000 mm |
| Table top profile                     | 24 mm x 7 T - slot         | 28 mm x 9 T - slot          |
| Table auto indexing                   | 0.001 deg                  | 0.001 deg                   |
| Rapid traverse-X-Y-Z                  | 10 M / min                 | 10 M / min                  |
| Rapid traverse-W                      | 10 M / min                 | 6 M / min                   |
| Cutting feedrate-X-Y-Z                | 1 ~ 5000 mm / min          |                             |
| Spindle motor                         | 15 / 18 kw Opt. 22 / 26 kw |                             |



CBFT-110CNC/1

## SPECIFICATIONS

|                                 | CBFT-110CNC/1                                           |
|---------------------------------|---------------------------------------------------------|
| X / Y / Z axis                  | 2000 / 1400 / 1150 mm                                   |
| W axis                          | 500 mm                                                  |
| Table size / loading capacity   | 1000 x 1000 mm / 3000 kgs                               |
| T - Slot                        | 22 mm x No.9 x 100 mm                                   |
| Table indexing                  | 1 deg. x 360                                            |
| Spindle nose to table center    | -175 ~ 1475 mm                                          |
| Spindle center to table top     | 0 ~ 1400 mm                                             |
| Spindle diameter                | 110 mm                                                  |
| Spindle taper                   | BT50                                                    |
| Spindle motor / Max. torque     | 22 / 26 kw / 135 kg-m                                   |
| Spindle speed                   | 2 range - (auto) - L - 5 ~ 625 rpm / H - 626 ~ 2500 rpm |
| Rapid feed - X / Y / Z / W axis | 15 / 12 / 15 / 5 M / min                                |
| Feed rate - X / Y / Z axis      | 1 - 6000 mm / min                                       |
| Feed rate - W axis              | 1 - 4000 mm / min                                       |
| ATC                             | 60 tools                                                |
| X / Y / Z / B / W axis motor    | 7 / 6 / 7 / 4 / 7 kw                                    |
| Net weight                      | 21000kgs                                                |

# FREJOTH HORIZONTAL BORING, MILLING & DRILLING MACHINE - Table Type



CBFT-110CNC



## SPECIFICATIONS

|                                   | CBFT-110CNC/2             | CBFT-110CNC           |
|-----------------------------------|---------------------------|-----------------------|
| X / Y / Z axis travel             | 2000 / 1800 / 1400 mm     | 2000 / 1800 / 1400 mm |
| W axis travel                     | 400 mm (500 mm)           | 400 mm (500 mm)       |
| Table size / loading capacity     | 1250 x 1250 mm / 5000 kgs |                       |
| T - Slot                          | 22 x 7 mm                 |                       |
| Table indexing                    | 360 deg                   | 0.001 deg             |
| Spindle center to table           | 0 ~ 1800 mm               |                       |
| Spindle nose to table center      | 90 ~ 1890 mm              | 90 ~ 1890 mm          |
| Spindle diameter                  | 110 mm                    | 110 mm                |
| Spindle taper                     | 7 / 24 taper ISO50 , BT50 |                       |
| Spindle motor                     | 15 / 18.5 kw (22 / 26 kw) |                       |
| Spindle speed                     | 10 ~ 2500 rpm (3000 rpm)  |                       |
| Rapid feed - X / Y / Z / W axis   | 12 / 12 / 12 / 10 M / min |                       |
| Cutting feedrate - X / Y / Z axis | 1 - 5000 mm / min         |                       |
| ATC -                             | 40 tools (60 tools)       |                       |
| X / Y / Z / B / W axis motor      | 4 / 4 / 4 / 4 / 4 kw      | 4 / 4 / 4 / 7 / 4 kw  |



EBM-2150



## SPECIFICATIONS

|                                | EBM-1000          | EBM-2150                                    | EBM-2600         | EBM-3200        |
|--------------------------------|-------------------|---------------------------------------------|------------------|-----------------|
| X / Z axis                     | 1400 / 1000 mm    | 2150 / 1100 mm                              | 2600 / 1100 mm   | 3250 / 1100 mm  |
| Y axis                         | 1200 (1400) mm    | 1400 mm                                     | 1400 mm          | 1400 mm         |
| Table size                     | 1500 x 710 mm     | 2200 x 1220 mm                              | 2650 x 1220 mm   | 3250 x 1220 mm  |
| Table Max. loading cap         | 1500 kgs          | 4000 kgs                                    | 4500 kgs         | 5000 kgs        |
| T - slot                       | 18 x 6 x 125 mm   | 22 x 7 x 125 mm                             | 22 x 7 x 125 mm  | 22 x 7 x 125 mm |
| Spindle nose to table edge     | 246.5 ~ 1246.5 mm |                                             | - 249 ~ 930 mm   |                 |
| Spindle nose to column surface | 250 mm            |                                             | 249 mm           |                 |
| Spindle center to table top    | 250 ~ 1450 mm     |                                             | 190 ~ 1590 mm    |                 |
| Spindle taper and speed        |                   | BT50 - 4000 rpm (opt 6000 rpm)              |                  |                 |
| Spindle motor                  |                   | 15 kw                                       |                  |                 |
| X / Z axis motor - Nm          | 22 / 22 Nm        | 27 / 27 Nm                                  | 27 / 50 Nm       | 70 / 70 Nm      |
| Y axis motor - Nm              | 22 Nm with brake  |                                             | 27 Nm with brake |                 |
| ATC type / number              |                   | swing arm type 32 tools (opt 40 / 60 tools) |                  |                 |
| Net weight                     | 15000 kgs         | 21000 kgs                                   | 23000 kgs        | 25000 kgs       |

## FREJO TH HORIZONTAL MACHINING CENTER - without "W" axis



AHM-630



AHM-800



## SPECIFICATIONS

|                                 | AHM-630                             | AHM-800                             |
|---------------------------------|-------------------------------------|-------------------------------------|
| X / Y / Z axis                  | 1500 (1600) / 1200 / 1000 (1100) mm | 2000 / 1500 (1800) / 1400 (1600) mm |
| Spindle nose to table center    | 225 ~ 1225 mm (175 ~ 1175 mm)       | 220 ~ 1620 mm (220 ~ 1820 mm)       |
| Spindle center to table surface | 0 ~ 1200 mm                         | 0 ~ 1500 mm (1800 mm)               |
| Table size / loading capacity   | 630 x 630 mm / 2000 (2500) kgs      | 800 x 800 mm / 4000 kgs             |
| Table indexing unit             | 1 deg. / 360                        | 1 deg. / 360                        |
| Spindle taper / speeds          | BT 50 / 4000 rpm (6000 rpm)         |                                     |
| Spindle motor                   | 11 / 15 kw (15 / 18.5 kw)           | 15 / 18.5 kw                        |
| Rapid feed rate                 | 15 / 12 / 15 M / min.               |                                     |
| Cutting rate                    | 1 ~ 5000 mm / min.                  |                                     |
| ATC                             | 40 tools (60 tools)                 |                                     |
| Net weight                      | 11000 kgs                           | 14500 kgs                           |





**MH-1250B/1250P**



## SPECIFICATIONS

|                                           | MH-1250B                                      | MH-1250P |
|-------------------------------------------|-----------------------------------------------|----------|
| Travel - X / Y / Z                        | 2100 / 1235 / 1235 mm                         |          |
| Spindle center to pallet surface / center | 100 - 1335 / 280 - 1480 mm                    |          |
| Rotary pallet size / number / loading     | 1250 x 1250 / 2 / 3500 kgs / 5000 kgs (for P) |          |
| Pallet indexing / surface configuration   | 1 degree / 80 - M 20 tapped                   |          |
| Max. work piece size - dia / height       | dia 2000 / 1500 mm                            |          |
| Spindle taper / speed                     | BT50 / 6000 rpm                               |          |
| Max. torque with 2 speed gearbox          | 660 N/m                                       |          |
| ATC number                                | 60 / opt 90 - 120                             |          |
| Spindle bearing I.D                       | 100 mm                                        |          |
| X / Y / Z rapid / cutting feed rate       | 24 m/min / 10 m/min                           |          |
| Spindle motor                             | 22 / 26 kw                                    |          |
| X / Y / Z / B axis motor                  | 7 / 6 / 7 / 3 kw                              |          |
| Net weight                                | 32 ton                                        | 35 ton   |

# FREJOTH HORIZONTAL MACHINING CENTER W / PALLET CHANGE



**MH-800A**

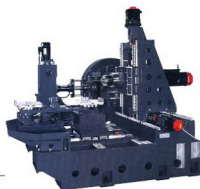


## SPECIFICATIONS

|                                           | MH-550A                          | MH-550B     | MH-800A                          | MH-800B     | MH-1000B                   |
|-------------------------------------------|----------------------------------|-------------|----------------------------------|-------------|----------------------------|
| Travel - X / Y / Z                        | 700 / 650 / 650 mm               |             | 1000 / 850 / 950 mm              |             | 1300 / 1200 / 1200 mm      |
| Spindle center to pallet surface / center | 50 - 700 / 150 - 800 mm          |             | 60 - 910 / 150 - 1100 mm         |             | 80 - 1280 / 200 - 1400 mm  |
| Rotary pallet size / number / loading     | 550 x 550 / 2 / 700 kgs          |             | 800 x 800 / 2 / 1000 kgs         |             | 1000 x 1000 / 2 / 2000 kgs |
| Pallet indexing / surface configuration   | 1 degree (opt 0.001 deg)         |             | 24 - M16 tapped                  |             | 48 - M20 tapped            |
| Max. work piece size - dia / height       | dia. 700 / 800 mm                |             | dia. 1000 / 1000 mm              |             | dia. 1300 / 1300 mm        |
| Spindle taper / speed                     | BT40 - 10000 rpm BT50 - 6000 rpm |             | BT40 - 10000 rpm BT50 - 6000 rpm |             | BT50 - 6000 rpm            |
| Max. torque with 2 speed gearbox          | 660 N/m                          |             | 660 N/m (opt)                    |             | 660 N/m                    |
| ATC number                                | 60 tools                         | 40 (opt 60) | 60 tools                         | 40 (opt 60) | 60 (opt 90 / 120)          |
| Spindle bearing I.D                       | 70 mm                            | 100 mm      | 70 mm                            | 100 mm      | 100 mm                     |
| X / Y / Z rapid / cutting feed rate       | 36 m/min / 10 m/min              |             | 32 m/min / 10 m/min              |             | 32 m/min / 10 m/min        |
| Spindle motor                             | 15 / 18.5 kw                     |             | 22 / 26 kw                       |             | 22 / 26 kw                 |
| X / Y / Z / B axis motor                  | 7 / 7 / 4 / 1.6 kw               |             | 7 / 7 / 7 / 1.6 kw               |             | 7 / 6 / 7 / 3 kw           |
| Net weight                                | 15 ton                           | 15 ton      | 18.5 ton                         | 18.5 ton    | 28.5 ton                   |



LH-300/300A



## SPECIFICATIONS

|                                     | LH-300                           | LH-300A          |
|-------------------------------------|----------------------------------|------------------|
| Travel - X / Y / Z                  | 460 / 460 / 350 mm               |                  |
| Spindle center to worktable surface | 60 ~ 520 mm                      |                  |
| Spindle nose to worktable center    | 60 ~ 410 mm                      |                  |
| Table size / loading cap. / number  | 300 x 300 mm / 250 kgs / 2 piece |                  |
| Workpiece height / worktable layout | 475 mm / 8 - M12 Pitch 100       |                  |
| Working table indexing              | 0.001 deg.                       |                  |
| Spindle taper / speed               | BT30 - 15000 rpm                 | BT40 - 12000 rpm |
| Spindle transmission / torque       | direct drive - 70 Nm             |                  |
| Spindle motor                       | 7.5 / 11 kw                      |                  |
| Rapid feed X / Y / Z                | 48 / 48 / 48 M / min             |                  |
| Cutting feed                        | 1 - 12000 mm / min.              |                  |
| ATC                                 | 30 tools                         | 30 tools         |
| Net weight                          | 6000 kgs                         | 6300 kgs         |

# FREJO TH VERTICAL MACHINING CENTERS - HEAVY CUTTING CAPACITY

- 4 box ways & gear head



FMV-1590



## SPECIFICATIONS

|                               |        | FMV-1170                                                              | FMV-1370         | FMV-1470         | FMV-1590         | FMV-1790         | FMV-2090         |
|-------------------------------|--------|-----------------------------------------------------------------------|------------------|------------------|------------------|------------------|------------------|
| X / Y / Z axis                | mm     | 1100 / 710 / 600                                                      | 1300 / 710 / 600 | 1400 / 710 / 600 | 1500 / 900 / 850 | 1700 / 900 / 850 | 2000 / 900 / 850 |
| Table size                    | mm     | 1300 x 700                                                            | 1500 x 700       | 1600 x 700       | 1700 x 850       | 2000 x 850       | 2200 x 850       |
| Table loading capacity        | kgs    | 1000                                                                  | 1200             | 1500             | 2000             | 2500             | 3000             |
| Spindle nose to table surface | mm     | 100 ~ 710                                                             | 100 ~ 710        | 100 ~ 710        | 150 ~ 1000       | 150 ~ 1000       | 150 ~ 1000       |
| Spindle taper / speeds        | rpm    | ISO 50 (40) / 6000 (8000) Low Speed 40 ~ 1750, High Speed 1751 ~ 8000 |                  |                  |                  |                  |                  |
| Spindle motor                 | kw     | 7.5 / 11 (11 / 15) 11 / 15 (15 / 18.5)                                |                  |                  |                  |                  |                  |
| Spindle transmission method   |        | Gear (Belt)                                                           |                  |                  |                  |                  |                  |
| ATC                           | tools  | Random 20 (24, 32)                                                    |                  |                  |                  |                  |                  |
| Rapid feed X / Y / Z          | m/min  | 20 / 20 / 16                                                          |                  |                  |                  | 16 / 16 / 12     |                  |
| Cutting feed                  | mm/min | 10000                                                                 |                  |                  |                  | 80000            |                  |
| Net weight                    | kas    | 9000                                                                  | 10000            | 11000            | 14000            | 15000            | 16000            |



ABM-1500



## SPECIFICATIONS

|                                    |                      | ABM-1000                 | ABM-1500                  | ABM-2000                  |
|------------------------------------|----------------------|--------------------------|---------------------------|---------------------------|
| Table                              | Overall size         | 1220 x 600 mm            | 1600 x 1000 mm            | 2100 x 1600 mm            |
|                                    | T - slot             | 18 x 5 x 100 mm          | 18 x 7 x 125 mm           | 22 x 9 x 180 mm           |
|                                    | Maximum loading      | 1500 kgs                 | 3000 kgs                  | 6000 kgs                  |
| Travel                             | X axis               | 1100 mm table in & out   | 1750 mm head left & right | 2200 mm table in & out    |
|                                    | Y axis               | 600 mm head left & right | 1000 mm table in & out    | 1750 mm head left & right |
|                                    | Z axis               | 500 mm head up & down    | 750 mm head up & down     | 650 mm head up & down     |
|                                    |                      |                          | 1750 mm                   |                           |
| Distance                           | Between 2 columns    | 700 mm                   |                           |                           |
|                                    | Spindle to table top | 45 ~ 545 mm              | 107 ~ 857 mm              | 254 ~ 904 mm              |
|                                    | Motor                | 18 / 25 KW               | 26 / 32 KW                | 35 KW                     |
| Spindle (built - in motor spindle) | Taper                | HSK-A63                  | HSK-A63 (BT#40)           |                           |
|                                    | Speed                | 24000 RPM                | 18000 RPM UP TO 24000 RPM | 18000 RPM                 |
|                                    | Cutting              | UP TO 10 M / min         | UP TO 20 M / min          |                           |
| Feed rate                          | Rapid X / Y / Z      | 36 / 36 / 36 M / min     | 30 / 30 / 30 M / min      | 24 / 30 / 30 M / min      |
|                                    | Minimum setting      |                          | 0.001 mm                  |                           |
| Accuracy                           | Machine net weight   | 11000 kgs                | 15000 kgs                 | 20000 kgs                 |

## FREJOTH UNIVERSAL MACHINING CENTER ROTARY TABLE TYPE

Options :



- Vt-2.5 Head with automatic 2.5 degree index 2 axis milling head, total 144 x 144 positions.



- Ø2000 / 2500 / 3000mm rotary tables, with 3 jaw manual chuck & 3 extra loading tracks etc.



YZC-1650

## SPECIFICATIONS

|                                     |                                                | YZC-1650                         |
|-------------------------------------|------------------------------------------------|----------------------------------|
| Y axis                              | milling head forward & backward by sliding ram | 1000 mm                          |
| Z axis                              | milling head up & down by sliding saddle       | 952 mm                           |
| C axis                              | rotary table size / loading capacity           | 1650 mm dia / 8000 kgs           |
|                                     | indexing increment                             | 0.001° x 360000 positions        |
|                                     | table T - slot                                 | radial type 12 slots 22 mm H7    |
|                                     | Max. speed                                     | 3500 rpm                         |
| V / H milling head                  | spindle power S1 / S6                          | 17 kw / 22 kw                    |
|                                     | spindle taper                                  | BT50                             |
|                                     | front bearing diameter                         | 90 mm                            |
|                                     | V to H position time                           | 12 seconds                       |
| Distance                            | vertical spindle nose to table top             | 0 ~ 952 mm                       |
|                                     | vertical spindle nose to table center          | 1149 mm                          |
|                                     | horizontal spindle center to table top         | 0 ~ 1002 mm                      |
|                                     | horizontal spindle nose to table center        | 1099 mm                          |
| Y / Z / C rapid feed / cutting rate |                                                | 10 / 10 m/min 4.16 rpm / 5 m/min |
| ATC - number of tools               | type / number                                  | BT50 / 24 tools                  |
|                                     | tool dia / length / weight                     | Ø120 / 300 mm / 15 kgs           |
|                                     | tools exchange method                          | swing arm at vertical position   |
| Net weight                          |                                                | 16000 kgs                        |

## FREJO TH HEAVY DUTY VERTICAL MACHINING CENTER



AVMC-3200



### SPECIFICATIONS

|                                       | AVMC-2150                 | AVMC-2600                                 | AVMC-3200                 |
|---------------------------------------|---------------------------|-------------------------------------------|---------------------------|
| X / Y / Z axis                        | 2150 / 1100 / 900 mm      | 2600 / 1100 / 900 mm                      | 3200 / 1100 / 900 mm      |
| Table size / loading Cap              | 2200 x 1220 mm / 2500 kgs | 2650 x 1220 mm / 3000 kgs                 | 3250 x 1220 mm / 3500 kgs |
| Y Box way numbers                     | 4                         | 6                                         | 6                         |
| Spindle nose to table top             |                           | 151~1051 mm (opt.186~1086 mm)             |                           |
| Spindle taper and speed               |                           | BT#50-6000 rpm (BT40-10,000 rpm)          |                           |
| Spindle motor                         |                           | 15 / 18.5 kw (opt. 30 / 37 kw)            |                           |
| Feed rate-rapid / cutting             |                           | 15 m / 15 m / 15 m per min. 8000 mm / min |                           |
| ATC                                   |                           | Arm Type 24 (Opt.32 / 40)                 |                           |
| X / Y / Z ball screw-grade/dia./pitch |                           | 63 / 63 / 63 mm dia. -C3 / 10 Pitch       |                           |
| Net weight                            | 21000 kgs                 | 22000 kgs                                 | 24000 kgs                 |

## FREJO TH VERTICAL MACHINING CENTER



AVMC-1600



### SPECIFICATIONS

|                                       | AVMC-1600                                 |
|---------------------------------------|-------------------------------------------|
| X / Y / Z axis                        | 1600 / 815 / 700 mm                       |
| Table size / loading Cap              | 1700 x 815 mm / 2000 kgs                  |
| Y Box way numbers                     | 4                                         |
| Spindle nose to table top             | 200 ~ 900 mm                              |
| Spindle taper and speed               | BT#50/6000 rpm (BT40/10,000 rpm)          |
| Spindle motor                         | 11 / 15 kw                                |
| Feed rate-rapid / cutting             | 10 m / 10 m / 10 m per min. 8000 mm / min |
| ATC                                   | ARM 20 (OPT. 32 or 40)                    |
| X / Y / Z ball screw-grade/dia./pitch | 50 / 50 / 50 mm.-C3/10 Pitch              |
| Net weight                            | 15000 kgs                                 |



AVMC-1200



AVMC-1400

## SPECIFICATIONS

|                                       | AVMC-1200                                   | AVMC-1400                |
|---------------------------------------|---------------------------------------------|--------------------------|
| X / Y / Z axis                        | 1200 / 700 / 760 mm                         | 1400 / 700 / 760 mm      |
| Table size / loading Cap              | 1400 x 710 mm / 1500 kgs                    | 1500 x 710 mm / 1500 kgs |
| Y Box way numbers                     | 4                                           |                          |
| Spindle nose to table top             | 125 ~ 885 mm                                |                          |
| Spindle taper and speed               | BT#50-6000 rpm (BT40-10000 rpm)             |                          |
| Spindle motor                         | 11 / 15 kw                                  |                          |
| Feed rate-rapid / cutting             | 15 m / 15 m / 12 m per min. / 8000 mm / min |                          |
| ATC                                   | Carrousel 20 or Arm type 32 or 40           |                          |
| X / Y / Z ball screw-grade/dia./pitch | 45 / 45 / 50 mm dia. - C3-10 Pitch          |                          |
| Net weight                            | 12000 kgs                                   | 13000 kgs                |

# FREJOTH HIGH SPEED VERTICAL MACHINING CENTER



AVMC-1100H



## SPECIFICATIONS

|                                       | AVMC-1100H                                                                               |
|---------------------------------------|------------------------------------------------------------------------------------------|
| X / Y / Z axis                        | 1100 / 610 / 610 mm                                                                      |
| Table size / loading Cap              | 1270 x 640 mm / 1200 kgs                                                                 |
| Spindle nose to table top             | BT40/100 ~ 710 mm BT50/110 ~ 720 mm                                                      |
| Spindle taper and speed               | BT40/8000 ~ 15000 rpm : BT50/6000 ~ 10000 rpm                                            |
| Spindle motor                         | 7.5 / 11 kw (opt.11/15 kw)                                                               |
| Feed rate-rapid / cutting             | 24 / 24 / 24 m / min.(opt. 36 / 36 / 30 m / min.) / 5000 mm / min.(opt. 10000 mm / min.) |
| ATC                                   | #40 carrousel 20 / #50 arm 24                                                            |
| X / Y / Z ball screw-grade/dia./pitch | 40 / 40 / 40 mm dia. X C3 x 12 pitch                                                     |
| Net weight                            | 7300 kgs / 8500 kgs                                                                      |



**HSM-600**



**HSM-800**



## SPECIFICATIONS

|                             | HSM-600                     | HSM-800                    | HSM-1000                   |
|-----------------------------|-----------------------------|----------------------------|----------------------------|
| X / Y / Z axis              | 600 / 430 / 460 mm          | 800 / 510 / 610 mm         | 1000 / 510 / 610 mm        |
| Table size / loading Cap.   | 850 x 400 mm / 350 kg       | 870 x 500 mm / 500 kg      | 1070 x 500 mm / 500 kg     |
| Spindle nose to table top   | 120 ~ 580 mm                | 110 ~ 720 mm               | 110 ~ 720 mm               |
| Spindle taper and speed     | BT40 / 8000 rpm             | BT40 / 8000 rpm            | BT40 / 8000 rpm            |
| Spindle motor               | 5.5 / 7.5 kw                | 7.5 / 11 kw                | 7.5 / 11 kw                |
| Feed rate - rapid / cutting | 30 M / 30 M / 24 M per min. | 1-8000 mm / min.           | 1-8000 mm / min.           |
| Arm Tpe ATC                 | 20 Tools                    | 24 Tools                   | 24 Tools                   |
| X / Y / Z Linear way width  | 30 / 30 / 35 mm             | 35 / 35 / 45 mm            | 35 / 35 / 45 mm            |
| Ballscrew-X / Y / Z         | 32 / 32 / 32 mm x 16 pitch  | 40 / 40 / 50 mm x 12 pitch | 40 / 40 / 50 mm x 12 pitch |
| Net weight                  | 3400 kgs                    | 5000 kgs                   | 5500 kgs                   |



**HSM-1000L**



**HSM-1500L**



**HSM-1350**



(Y axis 700 mm)

## SPECIFICATIONS

|                            | HSM-1000L                   | HSM-1350                   | HSM-1500L                   |
|----------------------------|-----------------------------|----------------------------|-----------------------------|
| X / Y / Z axis             | 1020 / 610 / 610 mm         | 1350 / 620 / 810 mm        | 1500 / 700 / 610 (800) mm   |
| Table size / loading Cap.  | 1200 x 610 mm / 850 kgs     | 1560 x 620 mm / 1200 kgs   | 1600 x 700 mm / 2000 kgs    |
| Spindle nose to table top  | 77 ~ 887 mm                 | 80 ~ 890 mm                | 140 ~ 750 (150 ~ 950 mm)    |
| Spindle taper and speed    | BT40 - 8000 rpm             | BT40 - 8000 rpm            | BT#40 - 8000 ~ 30000 rpm    |
| Spindle motor              | 7.5 / 11 kw                 | 7.5 / 11 kw                | 7.5 / 11 kw (~26 / 32)      |
| Feed rate-rapid / cutting  | 30 M / 30 M / 24 M per min. | 1-8000 mm / min.           | 48 / 48 / 36M, 1-12 M / min |
| Arm Tpe ATC                | 24 Tools                    | 24 Tools                   | 24 (32 / 40 / 60) Tools     |
| X / Y / Z Linear way width | 35 / 35 / 45 mm             | 35 / 35 / 45 mm            | 45 / 55 / 55 mm             |
| Ballscrew-X / Y / Z        | 40 / 40 / 50 mm x 12 pitch  | 40 / 40 / 50 mm x 12 pitch | 55 / 50 / 50 mm x 16 pitch  |
| Net weight                 | 7000 kgs                    | 9000 kgs                   | 10500 kgs                   |



# FREJOTH VERTICAL MACHINING CENTER - BELT DRIVE SPINDLE / LINEAR GUIDEWAYS



FCV-1600B



FCV-2000B



## SPECIFICATIONS

|                                 | FCV-1600B                               | FCV-2000B                               |
|---------------------------------|-----------------------------------------|-----------------------------------------|
| X / Y / Z axis travel           | 1600 / 900 / 800 mm                     | 2000 / 900 / 800 mm                     |
| Table size / loading Cap.       | 1700 x 850 mm / 2000 kgs                | 2100 x 850 mm / 3000 kgs                |
| T - slot                        | 18 mm x No.7 / 100 mm                   | 18 mm x No.7 x 100 mm                   |
| Spindle nose to table top       | 100 ~ 900 mm                            | 100 ~ 900 mm                            |
| Spindle taper and speed         | BT / CAT - 50 / 6000 rpm                | BT / CAT - 50 / 6000 rpm                |
| Spindle motor                   | 15 / 18.5 kw                            | 15 / 18.5 kw                            |
| Feed rate - rapid / cutting     | 20 / 20 / 15 M / min / 8000 mm per min. | 20 / 20 / 15 M / min / 8000 mm per min. |
| ATC                             | Arm type / 24 tools                     | Arm type / 24 tools                     |
| Tool - size / Dia. x L x weight | 240 / 305 mm / 15 kgs                   | 240 / 305 mm / 15 kgs                   |
| Net weight                      | 19000 kgs                               | 21000 kgs                               |

# FREJOTH VERTICAL MACHINING CENTER - BELT DRIVE SPINDLE / LINEAR GUIDEWAYS



FCV-1200B



FCV-1400

## SPECIFICATIONS

|                                 | FCV-1200B                                | FCV-1400(NB)                            |
|---------------------------------|------------------------------------------|-----------------------------------------|
| X / Y / Z axis travel           | 1200 / 600 / 675 mm                      | 1400 / 800 / 740 mm                     |
| Table size / loading Cap.       | 1200 x 620 mm / 1000 kgs                 | 1500 x 850 mm / 1600 kgs                |
| T - slot                        | 18 mm x No.5 x 100 mm                    | 18 mm x No.7 x 100 mm                   |
| Spindle nose to table top       | 100 ~ 775 mm                             | 100 ~ 840 mm                            |
| Spindle taper and speed         | BT / CAT - 50 / 6000 rpm                 | BT / CAT - 50 / 6000 rpm                |
| Spindle motor                   | 11 / 15 (opt.15 / 18.5) kw               | 15 / 18.5 kw                            |
| Feed rate - rapid / cutting     | 24 / 24 / 18 M / min / 10000 mm per min. | 20 / 20 / 18 M / min / 8000 mm per min. |
| ATC                             | Arm type / 24 tools                      | Arm type / 24 tools                     |
| Tool - size / Dia. x L x weight | 240 / 305 mm / 15 kgs                    | 240 / 305 mm / 15 kgs                   |
| Net weight                      | 8000 kgs                                 | 13000 kgs                               |





FCV-600



FCV-800



## SPECIFICATIONS

|                                 | FCV-600                                 | FCV-800                                 |
|---------------------------------|-----------------------------------------|-----------------------------------------|
| X / Y / Z axis travel           | 600 / 410 / 540 mm                      | 800 / 500 / 540 mm                      |
| Table size / loading Cap.       | 700 x 400 mm / 350 kgs                  | 910 x 500 mm / 500 kgs                  |
| T - slot                        | 14 mm x No.5 x 63 mm                    | 18 mm x No.5 x 100 mm                   |
| Spindle nose to table top       | 100 ~ 640 mm                            | 80 ~ 620 mm                             |
| Spindle taper and speed         | BT / CAT - 40 / 10000 rpm               | BT / CAT - 40 / 10000 rpm               |
| Spindle motor                   | 5.5 / 7.5 kw                            | 7.5 / 11 kw                             |
| Feed rate - rapid / cutting     | 36 / 36 / 24 M / min / 10000 mm per min | 36 / 36 / 24 M / min / 10000 mm per min |
| ATC                             | Armless type / 16 tools                 | Drum type / 24 tools                    |
| Tool - size / Dia. x L x weight | 80 / 200 mm / 6 kgs                     | (77 / 115) / 260 mm / 7 kgs             |
| Net weight                      | 4200 kgs                                | 5300 kgs                                |



FCV-1000



## SPECIFICATIONS

|                                 | FCV-1000                                | FCV-1200A                               |
|---------------------------------|-----------------------------------------|-----------------------------------------|
| X / Y / Z axis travel           | 1020 / 560 / 600 mm                     | 1200 / 600 / 675 mm                     |
| Table size / loading Cap.       | 1000 x 560 mm / 750 kgs                 | 1200 x 620 mm / 1000 kgs                |
| T - slot                        | 18 mm x No.5 x 100 mm                   | 18 mm x No.5 x 100 mm                   |
| Spindle nose to table top       | 80 ~ 620 mm                             | 100 ~ 775 mm                            |
| Spindle taper and speed         | BT / CAT - 40 / 10000 rpm               | BT / CAT - 40 / 10000 rpm               |
| Spindle motor                   | 7.5 / 11 kw                             | 11 / 15 kw                              |
| Feed rate - rapid / cutting     | 36 / 36 / 24 M / min / 10000 mm per min | 24 / 24 / 18 M / min / 10000 mm per min |
| ATC                             | Drum type / 24 tools                    | Drum type / 24 pcs                      |
| Tool - size / Dia. x L x weight | (77 / 115) / 305 mm / 7 kgs             | (77 / 115) / 305 mm / 7 kgs             |
| Net weight                      | 7000 kgs                                | 8000 kgs                                |

## FREJOTH VERTICAL MACHINING CENTER - Built - in spindle



DM-600



### SPECIFICATIONS

|                           | DM-600                 | DM-800                 | DM-1000                 | DM-1200A                 |
|---------------------------|------------------------|------------------------|-------------------------|--------------------------|
| X / Y / Z travel          | 610 / 410 / 540 mm     | 800 / 500 / 540 mm     | 1020 / 560 / 600 mm     | 1200 / 600 / 675 mm      |
| Rapid speed               | 36 / 36 / 24 M / min.  | 36 / 36 / 24 M / min.  | 36 / 36 / 24 M / min.   | 30 / 30 / 24 M / min.    |
| Spindle speed             | 24000 rpm              |                        | 18000 rpm               |                          |
| Spindle motor             | 3.7 / 4.6 kw           |                        | 7.5 / 11 kw             |                          |
| Spindle taper             | BT / CAT - 30          |                        | BT / CAT - 40           |                          |
| Table size / loading Cap. | 700 x 400 mm / 350 kgs | 910 x 500 mm / 500 kgs | 1000 x 560 mm / 750 kgs | 1220 x 620 mm / 1000 kgs |
| ATC                       | Armless - 16 tools     | Armless - 16 tools     | Armless - 20 tools      |                          |
| Machine net weight        | 4200 kgs               | 5300 kgs               | 7000 kgs                | 8500 kgs                 |

## FREJOTH VERTICAL MACHINING CENTER - Direct Drive Spindle



DV-800



### SPECIFICATIONS

|                           | DV-600                 | DV-800                 | DV-1000                 | DV-1200A        | DV-1200B                 |
|---------------------------|------------------------|------------------------|-------------------------|-----------------|--------------------------|
| X / Y / Z travel          | 600 / 410 / 540 mm     | 800 / 500 / 540 mm     | 1020 / 560 / 600 mm     |                 | 1200 / 600 / 675 mm      |
| Rapid speed               |                        | 36 / 36 / 24 M / min.  |                         |                 | 24 / 24 / 20 M / min.    |
| Spindle speed             |                        |                        | 10000 rpm               |                 |                          |
| Spindle motor             | 5.5 / 7.5 kw           |                        | 7.5 / 11 kw             |                 |                          |
| Spindle taper             |                        | BT / CAT - 40          |                         |                 | BT / CAT - 50            |
| Table size / loading Cap. | 700 x 400 mm / 350 kgs | 910 x 500 mm / 500 kgs | 1120 x 560 mm / 750 kgs |                 | 1220 x 620 mm / 1000 kgs |
| ATC                       |                        | Drum - 16 tools        |                         | Drum - 20 tools |                          |
| Machine net weight        | 4200 kgs               | 5300 kgs               | 7000 kgs                |                 | 8500 kgs                 |

## FREJO TH VERTICAL MACHINING CENTERS - HEAVY CUTTING CAPACITY

X / Y / Z axes use heavy loading 55 mm - 6 x 8 x 6 slide blocks & cross roller linear guide



FMV-2000



### SPECIFICATIONS

|                               | FMV-1600                             | FMV-1800                  | FMV-2000                  |
|-------------------------------|--------------------------------------|---------------------------|---------------------------|
| X / Y / Z axis                | 1600 / 1000 / 800 mm                 | 1800 / 1000 / 800 mm      | 2000 / 1000 / 800 mm      |
| Table size / loading capacity | 1700 x 1000 mm / 2200 kgs            | 1900 x 1000 mm / 2500 kgs | 2100 x 1000 mm / 3000 kgs |
| Spindle nose to table surface | 200 ~ 1000 mm                        | 200 ~ 1000 mm             | 200 ~ 1000 mm             |
| Spindle taper / speeds        | ISO 50 - 6000 rpm (8000 / 10000 rpm) |                           |                           |
| Spindle motor                 | 15 / 18.5 kw (18.5 / 22 kw)          |                           |                           |
| Spindle transmission method   | Belt (Gear, direct, ZF gear box.)    |                           |                           |
| ATC                           | Random - 24 Tools (32, 40 tools)     |                           |                           |
| Rapid feed X / Y / Z          | 20 / 20 / 15 M / min.                |                           |                           |
| Cutting feed                  | 10000 mm / min                       |                           |                           |
| Net weight                    | 17000 kgs                            | 18000 kgs                 | 20000 kgs                 |

## FREJO TH VERTICAL MACHINING CENTERS - HEAVY DUTY CUTTING CAPACITY

Y axes - 4 Tracks & roller type linear guide



FMV



### SPECIFICATIONS

|                               | FMV-1160                                | FMV-1350                  | FMV-1500                 |
|-------------------------------|-----------------------------------------|---------------------------|--------------------------|
| X / Y / Z axis                | 1100 / 600 / 600 mm                     | 1350 / 700 / 640 mm       | 1500 / 700 / 640 mm      |
| Table size / loading capacity | 1160 x 600 mm / 1000 kgs                | 1350 x 600 mm / 1200 kgs  | 1500 x 600 mm / 1500 kgs |
| Spindle nose to table surface | 120 ~ 720 mm                            | 120 ~ 760 mm              | 120 ~ 760 mm             |
| Spindle taper / speeds        | BT40 - 8000 rpm                         | BT40 - 8000 rpm           | BT40 - 8000 rpm          |
| Spindle motor                 | 7.5 / 11 kw (11 / 15 Kw, or 15 / 18 Kw) |                           |                          |
| Spindle transmission method   | Belt drive (or direct or ZF gear box.)  |                           |                          |
| ATC                           | Random - 24 Tools (30 , 40 tools)       |                           |                          |
| Rapid feed X / Y / Z          | 30 / 30 / 24 M / min                    | 24 (30 / 30 / 24) M / min |                          |
| Cutting feed                  | 12000 mm / min                          |                           |                          |
| Net weight                    | 7300 kgs                                | 7400 kgs                  | 8100 kgs                 |

# FREJOTH VERTICAL MACHINING CENTERS - HEAVY DUTY CUTTING CAPACITY

X / Y / Z axes roller type linear guideways



FMV



## SPECIFICATIONS

|                               | FMV-600                 | FMV-860                                      | FMV-1100                |
|-------------------------------|-------------------------|----------------------------------------------|-------------------------|
| X / Y / Z axis                | 610 / 500 / 500 mm      | 860 / 600 / 600 mm                           | 1100 / 600 / 600 mm     |
| Table size / loading capacity | 650 x 500 mm / 300 kgs  | 910 x 560 mm / 800 kgs                       | 1100 x 560 mm / 900 kgs |
| Spindle nose to table surface | 90 ~ 590 mm             | 120 ~ 720 mm                                 |                         |
| Spindle taper / speeds        | BT40 - 10000 rpm        | BT40 - 8000 rpm                              |                         |
| Spindle motor                 | 5.5 / 7.5 kw            | 7.5 / 11 kw (11 / 15 Kw, or 15 / 18 Kw)      |                         |
| Spindle transmission method   | Belt drive              | Belt drive (or direct, or ZF gear box.)      |                         |
| ATC                           | Random - arm - 24 Tools | Random - 24 Tools (30, 36 tools)             |                         |
| Rapid feed X / Y / Z          | 36 / 36 / 36 M / min    | 30 / 30 / 24 M / min. (36 / 36 / 30 M / min) |                         |
| Cutting feed                  | 10000 mm / min          | 12000 mm / min                               |                         |
| Net weight                    | 4300 kgs                | 6000 kgs                                     | 6400 kgs                |

# FREJOTH VERTICAL MACHINING CENTER - TWIN APC



FMV-1100APC



## SPECIFICATIONS

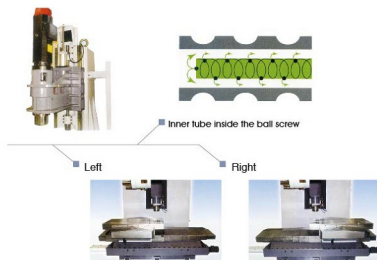
|                               | FMV-600APC                                                           | FMV-860APC                                                                                             | FMV-1100APC                  |
|-------------------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------|
| Table size / loading capacity | 600 x 400 mm / 200 kgs                                               | 850 x 500 mm / 250 kgs                                                                                 | 1000 x 500 mm / 300 kgs      |
| Working area / T - slot       | 600 x 500 mm / 14 x 3 x 100                                          | 860 x 560 mm / 18 x 5 x 100                                                                            | 1100 x 560 mm / 18 x 5 x 100 |
| X / Y / Z axis                | 610 / 500 / 500 mm                                                   | 860 / 560 / 600 mm                                                                                     | 1100 / 560 / 600 mm          |
| Spindle nose to table surface | 65 ~ 565 mm                                                          | 110 ~ 710 mm (70 ~ 670 mm)                                                                             | 110 ~ 710 mm (70 ~ 670 mm)   |
| optional                      | ISO - #40 - 8000 rpm (opt 10000 / 12000 / 15000 rpm)                 | ISO - #50 - 6000 rpm (opt 8000 / 10000 rpm)                                                            |                              |
| Spindle transmission method   | belt (opt direct / ZF gear box)                                      | belt (opt direct / ZF gear box)                                                                        |                              |
| Spindle motor                 | 5.5 / 7.5 kw (7.5 / 11 kw)                                           | 7.5 / 11 kw (opt 11 / 15 kw or 15 / 18.5 kw)                                                           |                              |
| ATC random method             | ISO#40 - 24 tools (opt 30) (opt ISO#50 - 20 - 30 tools)              | 2.3 / 4.5 (OPT 1.8 / 3.8 second)                                                                       |                              |
| T - T / C - C                 |                                                                      |                                                                                                        |                              |
| X / Y / Z cutting feedrate    | 10 m / min                                                           | 12 m / min                                                                                             |                              |
| X / Y / Z rapid traverse      | 36 / 36 / 36 m/min                                                   | 36 / 36 / 30 (48 / 48 / 36) m/min 30 / 30 / 24 (36 / 36 / 30) m/min                                    |                              |
| Auto pallet changer           | clamping force<br>clamping method<br>change cycle time<br>lift force | hydraulic 50 liter - 50 kgs / cm <sup>2</sup><br>4 taper cone / pull stud<br>7 (±1) second<br>3600 kgs |                              |
| Net weight                    | 6000 / 6500 kgs                                                      | 8100 / 8500 kgs                                                                                        | 8700 / 9100 kgs              |

## FREJO TH VERTICAL MACHINING CENTER LINEAR GUIDE WAYS

FULL SUPPORT TABLE AND SADDLE AND AIR CYLINDER FOR COUNTER BALANCE



FEV-1886L



### SPECIFICATIONS

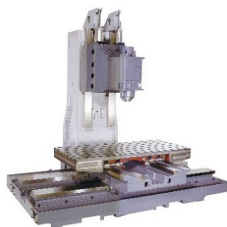
|                                            | FEV-2210L                 | FEV-1886L                                          | FEV-1680L                | FEV-1363L                |
|--------------------------------------------|---------------------------|----------------------------------------------------|--------------------------|--------------------------|
| X / Y / Z axis travel                      | 2200 / 1000 / 900 mm      | 1800 / 860 / 700 mm                                | 1600 / 800 / 700 mm      | 1300 / 630 / 600 mm      |
| Table size / loading cap                   | 2200 x 1000 mm / 3000 kgs | 1800 x 860 mm / 2000 kgs                           | 1600 x 800 mm / 2000 kgs | 1450 x 600 mm / 1200 kgs |
| Distance between spindle nose to table top | 125 ~ 1025 mm             | 170 ~ 870 mm                                       | 155 ~ 855 mm             | 140 ~ 740 mm             |
| Distance between spindle center to column  | 1045 mm                   | 950 mm                                             | 950 mm                   | 710 mm                   |
| Spindle taper / speed                      |                           | BT50 - belt driven - 8000 rpm. direct - 10000 rpm. |                          |                          |
| Spindle motor                              | 15 / 18.5 kw              | 15 / 18.5 kw                                       | 15 / 18.5 kw             | 11 / 15 kw               |
| ATC                                        |                           | random- arm type BT50 - 24 tools (opt 32 tools)    |                          |                          |
| Feed rate rapid                            | 16 / 16 / 12 m/min        | 20 / 20 / 20 m/min                                 | 20 / 20 / 20 m/min       | 30 / 30 / 30 m/min       |
| Net weight                                 | 16500 kgs                 | 13500 kgs                                          | 13200 kgs                | 9500 kgs                 |

## FREJO TH VERTICAL MACHINING CENTER BOX WAYS

FULL SUPPORT TABLE AND SADDLE AND AIR CYLINDER FOR COUNTER BALANCE



FEV-2210B



### SPECIFICATIONS

|                                            | FEV-2210B                 | FEV-1886B                                       | FEV-1680B                | FEV-1363AB               |
|--------------------------------------------|---------------------------|-------------------------------------------------|--------------------------|--------------------------|
| X / Y / Z axis travel                      | 2200 / 1000 / 900 mm      | 1800 / 860 / 700 mm                             | 1600 / 800 / 700 mm      | 1300 / 630 / 635 mm      |
| Table size / loading cap                   | 2200 x 1000 mm / 3000 kgs | 1800 x 860 mm / 2000 kgs                        | 1600 x 800 mm / 2000 kgs | 1450 x 600 mm / 1200 kgs |
| Distance between spindle nose to table top | 155 ~ 1055 mm             | 190 ~ 890 mm                                    | 150 ~ 850 mm             | 150 ~ 785 mm             |
| Distance between spindle center to column  | 1060 mm                   | 930 mm                                          | 930 mm                   | 690 mm                   |
| Spindle taper / speed                      |                           | BT50 - gear box - 4000 / 6000 rpm               |                          |                          |
| Spindle motor                              | 15 / 18.5 kw              | 15 / 18.5 kw                                    | 15 / 18.5 kw             | 11 / 15 kw               |
| ATC                                        |                           | random- arm type BT50 - 24 tools (opt 32 tools) |                          |                          |
| Feed rate rapid                            | 12 / 12 / 12 m/min        | 18 / 18 / 15 m/min                              | 18 / 18 / 15 m/min       | 24 / 24 / 20 m/min       |
| Net weight                                 | 16500 kgs                 | 14000 kgs                                       | 13500 kgs                | 9500 kgs                 |



ADT-A12040



ADT-R12030

## SPECIFICATIONS

\*Specifications are subject to change without prior notice.

|                           | ADT-A12030              | ADT-A12040          | ADT-R12030          | ADT-R12040          |
|---------------------------|-------------------------|---------------------|---------------------|---------------------|
| Table size / loading cap. | 1300 x 530 mm / 400 kgs |                     |                     |                     |
| X / Y / Z travel          | 1200 / 500 / 350 mm     | 1200 / 500 / 550 mm | 1200 / 500 / 300 mm | 1200 / 500 / 400 mm |
| Spindle taper / speed     | BT30 - 10000 rpm        | BT40 - 8000 rpm     | BT30 - 10000 rpm    | BT40 - 8000 rpm     |
| Spindle motor             | fanuc                   | 7.5 / 5.5 kw        | 3.7 / 2.2 kw        | 7.5 / 5.5 kw        |
|                           | mitsubishi              | 5.5 / 3.7 kw        | 5.5 / 3.7 kw        | 7.5 / 5.5 kw        |
| X / Y / Z rapid traverse  | 48 / 48 / 48 m/min      |                     |                     |                     |
| Atc No. / T - T second    | 20 / 2.2                | 24 / 2.4            | 14 / 3.0            | 14 / 3.5            |
| Net weight                | 4570 kgs                | 4700 kgs            | 4500 kgs            | 4620 kgs            |

## FREJOTH CNC TAPPING CENTER - A SERIES



ADT-A7030

ADT-A7040



## SPECIFICATIONS

\*Specifications are subject to change without prior notice.

|                           | ADT-A7030              | ADT-A7040              |
|---------------------------|------------------------|------------------------|
| Table size / loading cap. | 800 x 430 mm / 250 kgs | 800 x 430 mm / 250 kgs |
| X / Y / Z travel          | 700 / 400 / 350 mm     | 700 / 400 / 550 mm     |
| Spindle taper / speed     | BT30 - 10000 rpm       | BT40 - 8000 rpm        |
| Spindle motor             | fanuc                  | 7.5 kw                 |
|                           | mitsubishi             | 5.5 kw                 |
| X / Y / Z rapid traverse  | 48 / 48 / 60 m/min     | 48 / 48 / 48 m/min     |
| Atc No. / T - T second    | 20+1 / 2.2             | 24+1 / 2.2             |
| Net weight                | 3810 kgs               | 3980 kgs               |



## FREJO TH CNC TAPPING CENTER - A / R SERIES



ADT-A6040



ADT-R6040



### SPECIFICATIONS

\*Specifications are subject to change without prior notice.

|                           | ADT-A6030              | ADT-R6030              | ADT-A6040              | ADT-R6040              |
|---------------------------|------------------------|------------------------|------------------------|------------------------|
| Table size / loading cap. | 700 x 410 mm / 200 kgs | 700 x 410 mm / 250 kgs | 700 x 410 mm / 250 kgs | 700 x 410 mm / 250 kgs |
| X / Y / Z travel          | 600 / 400 / 350 mm     | 600 / 400 / 300 mm     | 600 / 400 / 600 mm     | 600 / 400 / 400 mm     |
| Spindle taper / speed     | BT30 - 10000 rpm       |                        | BT40 - 8000 rpm        |                        |
| Spindle motor             | fanuc                  |                        | 7.5 / 5.5 kw           |                        |
|                           | mitsubishi             |                        | 7.5 / 5.5 kw           |                        |
| X / Y / Z rapid traverse  | 48 / 48 / 60 m/min     |                        | 48 / 48 / 48 m/min     |                        |
| Atc No. / T - t second    | 20 + 1 / 2.2           | 14 / 2.6               | 24 + 1 / 2.2           | 14 / 3.2               |
| Net weight                | 3200 kgs               | 3100 kgs               | 3700 kgs               | 3550 kgs               |

## FREJO TH CNC TAPPING CENTER - R SERIES



ADT-R5030



ADT-R5630



### SPECIFICATIONS

( ): As Option  
\*Specifications are subject to change without prior notice.

|                           | ADT-R4530              | ADT-R5030              | ADT-R5630              | ADT-R6030              |
|---------------------------|------------------------|------------------------|------------------------|------------------------|
| Table size / loading cap. | 500 x 320 mm / 200 kgs | 550 x 320 mm / 200 kgs | 650 x 410 mm / 200 kgs | 700 x 410 mm / 200 kgs |
| X / Y / Z travel          | 450 / 300 / 300 mm     | 500 x 300 x 300 mm     | 560 x 400 x 300 mm     | 600 / 400 / 300 mm     |
| Spindle taper / speed     | BT30 / 10000 rpm       |                        | BT30 / 60 - 10000 rpm  |                        |
| Spindle motor             | fanuc                  |                        | 3.7 / 2.2 kw           |                        |
|                           | mitsubishi             |                        | 5.5 / 3.7 kw           |                        |
| X / Y / Z rapid traverse  | 48 / 48 / 60 m/min     |                        | 48 / 48 / 60 m/min     |                        |
| Atc No. / T - t second    | 12 / 2.5               | 14 / 2.5               | 14 / 2.6               | 14 / 2.6               |
| Net weight                | 2100 kgs               | 2200 kgs               | 2600 kgs               | 3100 kgs               |



## FREJOTH HORIZONTAL TAPPING CENTER



H4030

H4040P

HM4040

### SPECIFICATIONS

|                                  | H4030                  | H4040P                         | HM4040                 |
|----------------------------------|------------------------|--------------------------------|------------------------|
| Table size / loading cap         | 400 x 400 mm / 200 kgs | 400 x 400 mm x 2 pcs / 300 kgs | 400 x 400 mm / 400 kgs |
| Min. indexing precision of table |                        | 0.001 sec                      |                        |
| Table repeatability accuracy     |                        | 4 sec                          |                        |
| X / Y / Z axis travel            | 400 / 450 / 380 mm     | 500 / 450 / 450 mm             | 560 / 500 / 560 mm     |
| X / Y / Z rapid feed             | 48 / 60 / 48 M / min   | 48 / 48 / 48 M / min           | 48 / 48 / 48 M / min   |
| Spindle taper / speed            | BT30 / 10000 rpm       | BT40 / 8000 rpm                | BT40 / 10000 rpm       |
| Spindle center to table surface  | 90 ~ 540 mm            | 100 ~ 550 mm                   | 105 ~ 605 mm           |
| Spindle nose to table center     | 190 ~ 570 mm           | 160 ~ 610 mm                   | 100 ~ 660 mm           |
| Spindle motor                    | 5.5 / 3.7 kw           | 7.5 / 5.5 kw                   | 15 / 11 kw             |
| ATC                              | 24 + 1 tools           | 30 + 1 tools                   | 40 + 1 tools           |
| Net weight                       | 3700 kgs               | 5700 kgs                       | 8150 kgs               |

## FREJOTH SUPER HIGH SPEED DRILLING & TAPPING CENTER

RAPID FEED X/Y/Z -60 m/min CUTTING FEED- 20000 mm/min



ATV-500

### SPECIFICATIONS

|                          | ATV-500                | ATV-700                  |
|--------------------------|------------------------|--------------------------|
| Travel-X / Y / Z axis    | 500 x 400 x 330 mm     | 700 x 400 x 330 mm       |
| Spindle nose to table    | 150 ~ 480 mm           | 150 ~ 480 mm             |
| Spindle speed            |                        | 12000 rpm                |
| Spindle motor            |                        | 3.7 / 5.5 kw             |
| X / Y / Z motor          |                        | 1.5 / 1.5 / 2.2 kw       |
| ATC - taper / No / type  |                        | BT - 30 / 16 / disc type |
| Table size / loading cap | 650 x 400 mm / 250 kgs | 850 x 400 mm / 250 kgs   |
| Net weight               | 2500 kgs               | 3000 kgs                 |



ADT-S3030



ADT-S500



ADT-S6040



## SPECIFICATIONS

\*Specifications are subject to change without prior notice.

|                          | ADT-S3030            | ADT-S500             | ADT-S6040            |
|--------------------------|----------------------|----------------------|----------------------|
| Table size               | 400 x 250 mm / 2 pcs | 600 x 400 mm / 2 pcs | 700 x 400 mm / 2 pcs |
| Table loading cap.       | 100 kgs              | 250 kgs              | 250 kgs              |
| X / Y / Z travel         | 300 / 250 / 250 mm   | 500 x 400 x 350 mm   | 600 x 400 x 500 mm   |
| Spindle taper / speed    | BT30 - 10000 rpm     | BT30 - 10000 rpm     | BT40 - 8000 rpm      |
| Spindle motor            | fanuc                | 3.7 / 2.2 kw         | 7.5 / 5.5 kw         |
|                          | mitsubishi           | 5.5 / 3.7 kw         | 7.5 / 5.5 kw         |
| X / Y / Z rapid traverse | 48 / 48 / 48 m/min   | 36 / 36 / 48 m/min   | 36 / 36 / 48 m/min   |
| Atc No. / T - t second   | 14 - 2.6             | 20+1 - 2.2           | 24+1 - 3.1           |
| Net weight               | 3300 kgs             | 5250 kgs             | 6600 kgs             |

## SPEEDER CNC SAW BLADE SHARPENING MACHINE



A  
For grinding  
Copper pipe  
and Aluminum  
pipe.



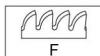
BW  
For grinding  
Curved teeth.  
Grinding and  
Chamfering.



C  
For the C type  
teeth with  
high-low  
difference.



ECO  
For grinding  
ECO teeth  
type of Friction  
Saw Blade.



F  
For grinding F  
teeth type of  
Friction  
Saw Blade.



O  
For whole  
cutting off teeth  
could be ground  
off in one circle.

## SPECIFICATIONS

|                              | CSG-500 3A       | CSG-500 4A       | CSG-650 3A       | CSG-650 4A       |
|------------------------------|------------------|------------------|------------------|------------------|
| Grinding range               | Ø 95 ~ 500 mm    | Ø 95 ~ 500 mm    | Ø 100 ~ 630 mm   | Ø 100 ~ 630 mm   |
| Teeth number                 | 10 ~ 998 teeth   | 10 ~ 998 teeth   | 10 ~ 998 teeth   | 10 ~ 998 teeth   |
| Saw blade thickness ( Max. ) | 8 mm             | 8 mm             | 8 mm             | 8 mm             |
| Cutting angle                | 0 ~ 30°          | 0 ~ 30°          | 0 ~ 30°          | 0 ~ 30°          |
| Grinding speed               | 1 ~ 60 teeth/min | 1 ~ 60 teeth/min | 1 ~ 60 teeth/min | 1 ~ 60 teeth/min |
| Wheel diameter               | Ø200             | Ø200             | Ø200             | Ø200             |
| Wheel bore                   | Ø32              | Ø32              | Ø32              | Ø32              |
| Wheel thickness ( Max. )     | 8 mm             | 8 mm             | 8 mm             | 8 mm             |
| Wheel motor                  | 4.0 kw           | 4.0 kw           | 4.0 kw           | 4.0 kw           |
| Wheel speed                  | 2500 ~ 6000 rpm  | 2500 ~ 6000 rpm  | 2500 ~ 6000 rpm  | 2500 ~ 6000 rpm  |
| X / Z / B axis motor         | -                | AC servo motor   | -                | AC servo motor   |
| Y axis motor for 4A          | -                | AC servo motor   | -                | AC servo motor   |
| Net weight                   | 1264 kgs         | 1342 kgs         | 1362 kgs         | 1425 kgs         |

## MORTON FLAT BED CNC LATHE - Bed width 725 mm



FCH-4600CNC

### SPECIFICATIONS

|                             | FCH-4600CNC                                                                                                                |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Swing over bed              | 1150 mm                                                                                                                    |
| Swing over cross - slide    | 700 mm                                                                                                                     |
| Between centers             | 2200 / 3200 / 4200 / 5200 / 6200 / 7200 mm                                                                                 |
| Spindle motor               | Alpha 40i (60 / 50 HP)                                                                                                     |
| Spindle bore / nose / speed | 181 mm / A2 - 15, 6 ~ 650 rpm, 255 mm / A2 - 15, 6 ~ 650 rpm, 375 mm / A2 - 20, 4 ~ 500 rpm, 530 mm / A2 - 28, 2 ~ 300 rpm |
| Turret                      | Standard V8, OD tool - 32 x 32 mm, ID tool - 60 mm dia.                                                                    |
| X axis travel               | 560 mm                                                                                                                     |
| Z axis travel               | 2100 / 3100 / 4100 / 5100 / 6100 / 7100 mm                                                                                 |
| Rapid traverse - X / Z      | 6 M / min.                                                                                                                 |
| X / Z servo motor           | X - Alpha 22i (5.3HP) Z - Alpha 40i (8HP)                                                                                  |
| Tailstock Quill dia.        | 240 mm                                                                                                                     |
| Tailstock / travel x Taper  | 180 mm x MT#6                                                                                                              |
| Machine net weight          | 13260 / 15110 / 16980 / 18850 / 20730 / 24000 kgs                                                                          |
| Cf axis (option)            | 181 mm : Fanuc α22is, 11 rpm, 1530 Nm ; 258 mm : Fanuc α22is, 11 rpm, 1530 Nm ; 375 mm : Fanuc α22is, 8 rpm, 1910 Nm       |

## MORTON FLAT BED CNC LATHE - Bed width 1000 mm



FCH-6000CNC

### SPECIFICATIONS

|                             | FCH-6000CNC                                                                                                                | FCH-8000CNC | FCH-10000CNC |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------|--------------|
| Swing over bed              | 1500 mm                                                                                                                    | 2000 mm     | 2500 mm      |
| Swing over cross - slide    | 900 mm                                                                                                                     | 1400 mm     | 1900 mm      |
| Between centers             | 2210 / 3210 / 4210 / 5210 / 6210 mm                                                                                        |             |              |
| Spindle motor               | Alpha 40i (60 / 50 HP)                                                                                                     |             |              |
| Spindle bore / nose / speed | 181 mm / A2 - 15, 6 ~ 650 rpm, 255 mm / A2 - 15, 6 ~ 650 rpm, 375 mm / A2 - 20, 4 ~ 500 rpm, 530 mm / A2 - 28, 2 ~ 300 rpm |             |              |
| Turret                      | Standard V8 OD tools - 32 x 32 mm, ID tools - 60 mm dia.                                                                   |             |              |
| X axis travel               | 735 mm                                                                                                                     |             |              |
| Z axis travel               | 2095 / 3095 / 4095 / 5095 / 6095 mm                                                                                        |             |              |
| Rapid traverse - X / Z      | 6 M / min.                                                                                                                 |             |              |
| X / Z servo motor           | X - Alpha 22i (5.3HP) Z - Alpha 40i (8HP)                                                                                  |             |              |
| Tailstock Quill dia.        | 240 mm                                                                                                                     |             |              |
| Tailstock / travel x Taper  | 180 mm x MT#6                                                                                                              |             |              |
| Machine net weight          | FCH - 6000 CNC - 14260 / 16110 / 17980 / 19850 / 21730 kgs                                                                 |             |              |
| Cf axis (option)            | 181 & 258 mm : Fanuc α22is, 11 rpm, 1530 Nm ; 375 mm : Fanuc α22is, 8 rpm, 1910 Nm                                         |             |              |

## MORTON CNC FLAT BED LATHE - Bed Width 460 mm



FCH-2680CNC

### SPECIFICATIONS

|                             | FCH-2640CNC                                                     | FCH-2660CNC | FCH-2680CNC | FCH-26120CNC | FCH-26160CNC |
|-----------------------------|-----------------------------------------------------------------|-------------|-------------|--------------|--------------|
| Swing over bed              |                                                                 |             | 660 mm      |              |              |
| Swing over cross - slide    |                                                                 |             | 370 mm      |              |              |
| Between centers             | 1155 mm                                                         | 1655 mm     | 2155 mm     | 3435 mm      | 4385 mm      |
| Spindle motor               | Alpha P40i (30 / 25 HP)                                         |             |             |              |              |
| Spindle bore / nose / speed | 120 mm / A2 - 11, 6 ~ 1600 rpm ; 186 mm / A2 - 15, 3 ~ 1000 rpm |             |             |              |              |
| Turret                      | Standard V8 OD tool - 25 mm x 25 mm, ID - 40 mm dia.            |             |             |              |              |
| X axis travel               |                                                                 |             | 540 mm      |              |              |
| Z axis travel               | 950 mm                                                          | 1450 mm     | 1950 mm     | 3220 mm      | 4170 mm      |
| Rapid traverse - X / Z      | 10 M / min.                                                     |             |             |              |              |
| X / Z servo motor           | X - Alpha 12is (3.6HP) Z - Alpha 22iF (5.4HP)                   |             |             |              |              |
| Tailstock Quill dia.        | 150 mm dia.                                                     |             |             |              |              |
| Tailstock / travel x Taper  | 220 mm x MT#5                                                   |             |             |              |              |
| Machine net weight          | 6400 kgs                                                        | 6800 kgs    | 7400 kgs    | 8400 kgs     | 10100 kgs    |

## MORTON CNC FLAT BED LATHE - Bed Width 560 mm



FCH-3600CNC

### SPECIFICATIONS

|                             | FCH-3600CNC                                                                                                                     | FCH-4800CNC |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------|-------------|
| Swing over bed              | 900 mm                                                                                                                          | 1200 mm     |
| Swing over cross - slide    | 520 mm                                                                                                                          | 820 mm      |
| Between centers             | 1115, 2115, 3395, 4345, 5625, 6430 mm                                                                                           |             |
| Spindle motor               | Alpha P40i (30 / 25 HP)                                                                                                         |             |
| Spindle bore / nose / speed | 120 mm / A2 - 11, 6 ~ 1600 rpm ; 186 mm / A2 - 15, 3 ~ 1000 rpm ; 258 mm / A2 - 15, 3 ~ 650 rpm ; 375 mm / A2 - 20, 4 ~ 500 rpm |             |
| Turret                      | Standard V8 OD tool - 32 mm x 32 mm, ID - 50 mm dia.                                                                            |             |
| X axis travel               | 520 mm                                                                                                                          |             |
| Z axis travel               | 950 / 1950 / 3220 / 4170 / 5360 / 6165 mm                                                                                       |             |
| Rapid traverse - X / Z      | 10 M / min.                                                                                                                     |             |
| X / Z servo motor           | X - Alpha 12is (3.6HP) Z - Alpha 22is (5.4HP)                                                                                   |             |
| Tailstock Quill dia.        | 150 mm dia.                                                                                                                     |             |
| Tailstock / travel x Taper  | 220 mm x MT#5                                                                                                                   |             |
| Machine net weight          | 8150 / 9200 / 10800 / 11800 / 13200 / 14500 kg                                                                                  |             |
| Cf axis (option)            | 186 mm : Fanuc α12is, 11 rpm, 940 Nm ; 258 mm : Fanuc α22is, 11 rpm, 1530 Nm ; 375 mm : Fanuc α22is, 8 rpm, 1910 Nm             |             |

## MORTON CNC FLAT BED LATHE - Bed Width 346 mm



FCH-1740ENC

### SPECIFICATIONS

|                             | FCH-1740ENC | FCH-1760ENC  | FCH-2140ENC | FCH-2160ENC |
|-----------------------------|-------------|--------------|-------------|-------------|
| Swing over bed              | 430 mm      |              | 530 mm      |             |
| Swing over cross slide      | 185 mm      |              | 285 mm      |             |
| Between centers             | 1067 mm     | 1667 mm      | 1067 mm     | 1667 mm     |
| Width of bed                |             | 346 mm       |             |             |
| Spindle bore                |             | 78 mm        |             |             |
| Spindle nose                |             | A2 - 6       |             |             |
| Spindle speed               |             | 3 ~ 1650 rpm |             |             |
| Spindle motor               |             | 10 HP        |             |             |
| Travel of X axis            |             | 240 mm       |             |             |
| Travel of Z axis            | 910 mm      | 1510 mm      | 910 mm      | 1510 mm     |
| Rapid traverse (X / Z axis) |             | 8 m / min    |             |             |
| Travel of tailstock quill   |             | 185 mm       |             |             |
| Diameter of tailstock quill |             | 60 mm        |             |             |
| Taper of tailstock quill    |             | MT 4         |             |             |
| Weight of machine           | 2700 kgs    | 3100 kgs     | 2800 kgs    | 3200 kgs    |

## MORTON CNC FLAT BED LATHE - Bed width 400 mm



FCH-2600CNC / B

### SPECIFICATIONS

|                             | FCH-2600CNC / B                       |
|-----------------------------|---------------------------------------|
| Swing over bed              | 660 mm                                |
| Swing over cross slide      | 370 mm                                |
| Between centers             | 1350 / 2100 mm                        |
| Spindle motor               | 15 HP (11 Kw)                         |
| Spindle bore / nose / speed | 90 or 104 mm / A2 - 8 / 3 ~ 1600 rpm  |
| Turret                      | V8 - OD - 25 x 25 mm, ID - 40 mm dia. |
| X axis travel               | 280 mm                                |
| Z axis travel               | 1260 / 2060 mm                        |
| Tailstock - Quill dia.      | 112 mm                                |
| Tailstock - travel x Taper  | 150 mm x MT#5                         |
| Machine net weight          | 4200 / 5200 kgs                       |



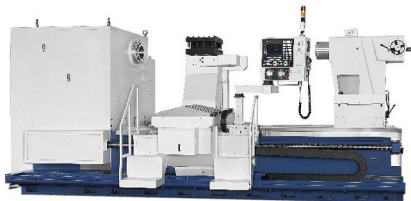
FEL-6300ENC / B

## SPECIFICATIONS

|                                  | FEL-4700ENC / B                                                                | FEL-5500ENC / B                                         | FEL-6300ENC / B |
|----------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------|-----------------|
| Swing over bed                   | 1190 mm                                                                        | 1385 mm                                                 | 1584 mm         |
| Swing over cross - slide         | 740 mm                                                                         | 940 mm                                                  | 1140 mm         |
| Bed width                        |                                                                                | 800 mm (32")                                            |                 |
| Between centers                  |                                                                                | 2000 ~ 10000 mm                                         |                 |
| Spindle bore / nose              | 230 mm / A2 - 15 (260 mm - A2 - 15, 310 / 360 mm - A2 - 20, 535 mm - A2 - 28)  |                                                         |                 |
| Spindle speeds (4 steps)         | 230 / 260 mm - 4 - 600 rpm / 310 / 360 mm - 3 - 400 rpm / 535 mm - 2 - 300 rpm |                                                         |                 |
| Max. X / Z travel                |                                                                                | X - 800 mm / Z - 1750 - 9750 mm                         |                 |
| Rapid feed                       |                                                                                | X / Z - 5 m / min                                       |                 |
| Tailstock - dia / travel / taper |                                                                                | Ø200 / 300 mm / MT#7, (opt. rotary quill - Ø290 mm dia) |                 |
| Spindle motor                    |                                                                                | 30 kw (opt. 37 kw)                                      |                 |

## MORTON CNC FLAT BED LATHE-Bed width 1345 mm/1575 mm with auxiliary guideway

Giant Heavy Duty



FEL-7900ENC

## SPECIFICATIONS

|                                            | FEL-7100ENC | FEL-7900ENC                                             | FEL-8800ENC | FEL-9800ENC |
|--------------------------------------------|-------------|---------------------------------------------------------|-------------|-------------|
| Swing over bed                             | 1800 mm     | 2000 mm                                                 | 2250 mm     | 2500 mm     |
| Swing over cross slide - half length       | 1325 mm     | 1510 mm                                                 | 1745 mm     | 1985 mm     |
| Swing over cross slide - full length (OPT) | 1240 mm     | 1440 mm                                                 | 1690 mm     | 1940 mm     |
| Between centers                            |             | 3000 ~ 12000 mm (Per 1000 mm increment)                 |             |             |
| Spindle motor                              |             | 45 Kw (75Kw) + inverter                                 |             |             |
| Spindle bore / nose                        |             | 210 mm / A2 - 15 or A2 - 20                             |             |             |
| Spindle speeds                             |             | 5 ~ 460 rpm                                             |             |             |
| Turret                                     |             | H4 - OD / 50 x 50 mm, V8 - OD / 32 x 32 mm / ID - 50 mm |             |             |
| X axis - Half / full cross slide travel    |             | 720 / 1250 mm                                           |             |             |
| Z axis - Half / full travel                |             | 3000 ~ 12000 / 2600 ~ 11600 mm                          |             |             |
| Rapid traverse - X / Z                     |             | 5 / 5 M / min.                                          |             |             |
| Tailstock Quill dia.                       |             | 290 mm Rotary quill                                     |             |             |
| Tailstock travel x Taper                   |             | 300 mm x MT#7                                           |             |             |

## FREJOTH CNC FLAT BED LATHE 2 AXES DRIVEN BY AC MOTOR INVERTER



FEL-3300ENC / B

### SPECIFICATIONS

|                                  | FEL-2300ENC                                             | FEL-2600ENC | FEL-3000ENC | FEL-2600ENC / B                                                                 | FEL-3000ENC / B | FEL-3300ENC / B |
|----------------------------------|---------------------------------------------------------|-------------|-------------|---------------------------------------------------------------------------------|-----------------|-----------------|
| Swing over bed                   | 600 mm                                                  | 670 mm      | 770 mm      | 670 mm                                                                          | 770 mm          | 840 mm          |
| Swing over cross slide           | 310 mm                                                  | 380 mm      | 480 mm      | 380 mm                                                                          | 480 mm          | 550 mm          |
| Bed Width                        |                                                         | 400 mm      |             |                                                                                 | 460 mm          |                 |
| Between centers                  | 1500 / 2000 / 3000 mm                                   |             |             | 1500 / 2000 / 3000 / 4000 / 5000 mm                                             |                 |                 |
| Spindle bore / nose              | 80 mm / A1 - 8 or D1 - 8 (opt. 104 mm / A2 - 11)        |             |             | 104 mm / A2 - 11 (156 mm / A2 - 11, 230 mm / A2 - 15)                           |                 |                 |
| Spindle speeds (4 steps)         | 80 mm bore - 16 - 1500 rpm, 104 mm bore - 13 - 1200 rpm |             |             | At 104 mm bore-13-1200 rpm, at 156 mm bore-11-800 rpm, at 230 mm bore-4-800 rpm |                 |                 |
| Max. X / Z travels               | X - 350 mm, Z - 1300 / 1800 / 2800 mm                   |             |             | X - 410 mm Z - 1300 / 1800 / 2800 / 3800 / 4800 mm                              |                 |                 |
| Rapid feed                       | X - 5 m / min. Z - 5 m / min                            |             |             | X - axis - 5 m / min. Z - axis - 5 m / min                                      |                 |                 |
| Tailstock - dia / travel / taper | 95 mm / 230 mm / MT#5                                   |             |             | 105 mm / 230 mm / MT#5                                                          |                 |                 |
| Spindle motor                    | 15 HP (opt. 20 HP)                                      |             |             | 15 HP (opt. 20 HP)                                                              |                 |                 |

## FREJOTH CNC OIL COUNTRY LATHE



FEL-3800ENC / B

### SPECIFICATIONS

|                                  | FEL-3800ENC / B                                                                          | FEL-4200ENC / B |
|----------------------------------|------------------------------------------------------------------------------------------|-----------------|
| Swing over bed                   | 960 mm                                                                                   | 1060 mm         |
| Swing over cross slide           | 530 mm                                                                                   | 630 mm          |
| Bed width                        | 560 mm (22")                                                                             |                 |
| Between centers                  | 1500 ~ 6000 mm (60" ~ 240")                                                              |                 |
| Spindle bore / nose              | 156 mm / A2 - 11, (230 / 260 mm - A2 - 15, 310 / 360 mm - A2 - 20)                       |                 |
| Spindle speeds (4 steps)         | at bore - 156 mm - 6 - 800 rpm / 230 / 260 mm - 4 - 600 rpm / 310 / 360 mm - 3 - 400 rpm |                 |
| Max. X / Z travels               | X - 600 mm / Z - 1250 - 5750 mm                                                          |                 |
| Rapid feed                       | X / Z - 5 m / min                                                                        |                 |
| Tailstock - dia / travel / taper | 125 / 300 mm MT#6                                                                        |                 |
| Spindle motor                    | 22 kw (opt. 30 kw)                                                                       |                 |



## FREJO TH FLAT BED CNC LATHES - WITH GEAR BOX SPINDLE



FEL-1840ENC



FEL-2160ENC

### SPECIFICATIONS

|                                         | FEL-1840ENC                                   | FEL-1860ENC      | FEL-2140ENC                        | FEL-2160ENC                          | FEL-2180ENC      | FEL-21120ENC     |
|-----------------------------------------|-----------------------------------------------|------------------|------------------------------------|--------------------------------------|------------------|------------------|
| No. of control axis                     | 2 AXIS                                        |                  |                                    |                                      |                  |                  |
| Swing over bed                          | Ø460 mm                                       |                  | Ø533 mm                            |                                      |                  |                  |
| Width of bed                            | Ø305 mm                                       |                  | Ø345 mm                            |                                      |                  |                  |
| Max. turning dia.                       | Ø260 mm                                       |                  | Ø305 mm                            |                                      |                  |                  |
| Max. turning length (4 way tool post)   | 750 mm                                        | 1250 mm          | 620 mm                             | 1120 mm                              | 1620 mm          | 2620 mm          |
| Max. turning length ( Hyd. P8 turret )  | 600 mm                                        | 1100 mm          | 530 mm                             | 1030 mm                              | 1530 mm          | 2530 mm          |
| Spindle speed                           | 2 step - L / 27 ~ 830 rpm, H / 831 ~ 2500 rpm |                  |                                    | 4 step - inf. Variable 20 ~ 2000 rpm |                  |                  |
| Spindle motor                           | 7.5 / 11kw                                    |                  |                                    | AC servo 9 / 11 kw                   |                  |                  |
| Spindle bore / nose / taper             | 69 mm A2 - 6 / 1 / 20                         |                  | Ø80 mm / D1 - 8 (A2 - 8) 1 / 19.18 |                                      |                  |                  |
| Bar capacity                            | 65 mm (60 mm)                                 |                  | Ø68 mm                             |                                      |                  |                  |
| Travel - X / Z axis                     | 230 mm / 850 mm                               | 230 mm / 1350 mm | 300 mm / 720 mm                    | 300 mm / 1220 mm                     | 300 mm / 1720 mm | 300 mm / 2720 mm |
| Servo motor - X / Z axis                | 1.2 kw / 1.2 kw                               |                  | 1.8 kw / 2.5 kw                    |                                      |                  |                  |
| Rapid feed - X / Z axis                 | 7.5 / 10 m / min                              |                  |                                    |                                      |                  |                  |
| Type of turret                          | 4 way tool post (Hydraulic P8)                |                  |                                    |                                      |                  |                  |
| Tool size                               | OD - 25 x 25 mm I.D - 20 mm                   |                  | Ø25 mm (Ø25 mm / Ø32 mm)           |                                      |                  |                  |
| Tailstock - Quill dia. / travel / taper | Ø68 mm x 153 mm / MT#4                        |                  | Ø85 mm / 178 mm / MT#5             |                                      |                  |                  |
| Net weight                              | 2350 kgs                                      | 2600 kgs         | 4050 kgs                           | 4400 kgs                             | 4800 kgs         | 5300 kgs         |

## FREJO TH FLAT BED CNC LATHES WITH BELT DRIVEN SPINDLE



FEL-22120ENC

### SPECIFICATIONS

|                                         | FEL-2240ENC                                 | FEL-2260ENC | FEL-2280ENC | FEL-22120ENC |
|-----------------------------------------|---------------------------------------------|-------------|-------------|--------------|
| No. of control axis                     | 2 AXIS                                      |             |             |              |
| Swing over bed                          | Ø550 mm                                     |             |             |              |
| Width of bed                            | Ø345 mm                                     |             |             |              |
| Max. turning dia.                       | Ø325 mm                                     |             |             |              |
| Max. turning length (4 way tool post)   | 680 mm                                      | 1180 mm     | 1680 mm     | 2680 mm      |
| Max. turning length (Hyd. P8 turret)    | 590 mm                                      | 1090 mm     | 1590 mm     | 2590 mm      |
| Distance between centers                | 870 mm                                      | 1370 mm     | 1870 mm     | 2870 mm      |
| Spindle speed                           | Inf. Variable 35 ~ 3500 rpm                 |             |             |              |
| Spindle motor                           | AC servo - 9 / 11 kw                        |             |             |              |
| Spindle bore                            | Ø91 mm                                      |             |             |              |
| Spindle nose / taper                    | A2 - 8 / 1 / 20                             |             |             |              |
| Bar capacity                            | Ø78 mm                                      |             |             |              |
| Travel - X axis                         | 300 mm                                      |             |             |              |
| Travel - Z axis                         | 780 mm                                      | 1280 mm     | 1780 mm     | 2780 mm      |
| Servo motor - X / Z axis                | 1.8 kw / 2.5 kw                             |             |             |              |
| Rapid feed - X / Z axis                 | 7.5 / 10 m / min                            |             |             |              |
| Type of turret                          | 4 way tool post (Hyd. VDI V8, Hydraulic P8) |             |             |              |
| Tool size                               | Ø25 mm / Ø40 mm / Ø32 mm                    |             |             |              |
| Tailstock - Quill dia. / travel / taper | Ø85 mm / 178 mm / MT#5                      |             |             |              |
| Net weight                              | 4050 kgs                                    | 4400 kgs    | 4800 kgs    | 5300 kgs     |

## FREJOTH FLAT BED CNC LATHES - WITH GEAR BOX SPINDLE



FEL-1440ENC



FEL-1660ENC

### SPECIFICATIONS

|                                         | FEL-1440ENC     | FEL-1640ENC                                 | FEL-1660ENC      |
|-----------------------------------------|-----------------|---------------------------------------------|------------------|
| No. of control axis                     |                 | 2 AXIS                                      |                  |
| Swing over bed                          | Ø360 mm         |                                             | Ø410 mm          |
| Width of bed                            |                 | 260 mm                                      |                  |
| Max. turning dia. (4 way tool post)     | Ø170 mm         |                                             | Ø220 mm          |
| Max. turning dia. (hyd. P8 turret)      | Ø160 mm         |                                             | Ø210 mm          |
| Max. turning length (4 way tool post)   |                 | 750 mm                                      | 1260 mm          |
| Max. turning length (hyd. P8 turret)    |                 | 630 mm                                      | 1140 mm          |
| Spindle speed (2 steps)                 |                 | L : 25 ~ 480 rpm H : 481 ~ 3000 rpm         |                  |
| Spindle motor                           |                 | AC servo 5.5 / 7.5 kw                       |                  |
| Spindle bore / nose / taper             |                 | Ø52.5 mm / D1 - 6 (A1 - 6) / MT#6           |                  |
| Bar capacity                            |                 | Ø40 mm                                      |                  |
| Travel - X / Z axis                     | 205 mm / 815 mm |                                             | 205 mm / 1325 mm |
| Servo motor - X / Z axis                |                 | 0.75 kw / 1.2 kw                            |                  |
| Rapid feed - X / Z axis                 |                 | 7.5 / 10 m / min                            |                  |
| Type of turret                          |                 | 4 way tool post (Electric H4, Hydraulic P8) |                  |
| Tool size                               |                 | Ø20 mm / Ø20 mm                             |                  |
| Tailstock - quill dia. / travel / taper |                 | Ø58 mm / 140 mm / MT#4                      |                  |
| Net weight                              | 2100 kgs        | 2150 kgs                                    | 2250 kgs         |

## FREJOTH FLAT BED CNC LATHES - WITH BELT DRIVEN SPINDLE



FEL-1640ENC / B



FEL-1660ENC / B

### SPECIFICATIONS

|                                         | FEL-1440ENC / B | FEL-1640ENC / B                             | FEL-1660ENC / B  |
|-----------------------------------------|-----------------|---------------------------------------------|------------------|
| No. of control axis                     |                 | 2 AXIS                                      |                  |
| Swing over bed                          | Ø360 mm         |                                             | Ø410 mm          |
| Width of bed                            |                 | Ø260 mm                                     |                  |
| Max. turning dia. (4 way tool post)     | Ø170 mm         |                                             | Ø220 mm          |
| Max. turning dia. (hyd. P8 turret)      | Ø160 mm         |                                             | Ø210 mm          |
| Max. turning length (4 way tool post)   |                 | 700 mm                                      | 1210 mm          |
| Max. turning length (hyd. P8 turret)    |                 | 680 mm                                      | 1190 mm          |
| Spindle speed                           |                 | 40 ~ 5000 rpm                               |                  |
| Spindle motor                           |                 | A.C. servo - 5.5 / 7.5 (7.5 / 11) kw        |                  |
| Spindle bore / nose / taper             |                 | Ø46 mm / A2 - 5 / 1 / 19.18                 |                  |
| Bar capacity                            |                 | Ø36 mm                                      |                  |
| Travel - X / Z axis (4 way tool post)   |                 | 205 mm / 865 mm                             |                  |
| Travel - X / Z axis (hyd. P8 turret)    | 167 mm / 710 mm | 178 mm / 710 mm                             | 178 mm / 1220 mm |
| Servo motor - X / Z axis                |                 | 0.75 kw / 1.2 kw                            |                  |
| Rapid feed - X / Z axis                 |                 | 7.5 / 10 m / min                            |                  |
| Type of turret                          |                 | 4 way tool post (Electric H4, Hydraulic P8) |                  |
| Tool size                               |                 | Ø20 mm / Ø20 mm                             |                  |
| Tailstock - quill dia. / travel / taper |                 | Ø58 mm / 140 mm / MT#4                      |                  |
| Net weight                              | 2100 kgs        | 2150 kgs                                    | 2250 kgs         |



ALT-400M



## SPECIFICATIONS

|                                         | ALT-400M                          | ALT-520M        |
|-----------------------------------------|-----------------------------------|-----------------|
| Bar capacity                            | 52 mm                             | 78 mm           |
| Swing over bed / cross slide            | 400 / 320 mm                      | 520 / 400 mm    |
| Center distance                         | 645 mm                            | 845 mm          |
| Max. turning dia / length               | 215 / 530 mm                      | 275 / 710 mm    |
| Spindle nose and chuck size             | A2 - 6 - 8"                       | A2 - 8 - 10"    |
| Front bearing diameter                  | 100 mm                            | 130 mm          |
| Live turret spec                        | 2 - 20 mm                         |                 |
| Max. cutting length                     | 570 / 1200 mm                     | 539 / 1169 mm   |
| Tool holder size OD SQ / ID dia         | OD-SQ 25 mm / ID-dia-40 mm        |                 |
| Turret station/no. of live tools        | 12 / 12                           | 12 / 12         |
| Milling motor power / torque/speed      | 3.7 / 5.5 kw-35 N/m 10 - 5000 rpm |                 |
| Exchange time - second                  | 0.6 (next tools) / 0.8 oppsite    |                 |
| X / Z axis travel                       | 190 / 530 mm                      | 220 / 710 mm    |
| X / Z rapid feed rate                   | 20 / 24 m/min                     | 20 / 20 m/min   |
| Spindle motor                           | 7.5 / 11 kw                       | 15 / 18.5 kw    |
| X / Z - axis motor                      | 1.5 / 3.0 kw                      | 1.5 / 3.0 kw    |
| Tailstock travel                        | 435 mm                            | 580 mm          |
| Tailstock - quill dia. / travel / taper | 90 / 100 / MT5                    | 110 / 150 / MT5 |
| Net weight                              | 4300 kgs                          | 5000 kgs        |

# FREJO TH CNC SLANT BED LATHE - LINEAR GUIDEWAY



ALT-350



## SPECIFICATIONS

|                                         | ALT-350          | ALT-400         | ALT-520         |
|-----------------------------------------|------------------|-----------------|-----------------|
| Bar capacity                            | 45 mm            | 52 mm           | 78 mm           |
| Swing over bed / cross slide            | 350 / 280 mm     | 400 / 320 mm    | 520 / 400 mm    |
| Center distance                         | 455 mm           | 645 mm          | 845 mm          |
| Max. turning dia / length               | 240 / 350 mm     | 320 / 530 mm    | 400 / 710 mm    |
| Spindle nose and chuck size             | A2 - 5 - 6"      | A2 - 6 - 8"     | A2 - 8 - 10"    |
| Front bearing diameter                  | 80 mm            | 100 mm          | 130 mm          |
| Turret type / servo motor               | V - 12 / 0.75 kw | V - 12 / 1.2 kw | V - 10 / 1.2 kw |
| Tool holder size OD (SQ) / ID dia       | 20 / 32 mm       | 25 / 40 mm      | 25 / 50 mm      |
| X / Z axis travel                       | 140 / 350 mm     | 180 / 530 mm    | 220 / 710 mm    |
| X / Z rapid feed rate                   | 24 / 30 m/min    | 20 / 24 m/min   | 20 / 20 m/min   |
| Spindle motor                           | 5.5 / 7.5 kw     | 7.5 / 11 kw     | 15 / 18.5 kw    |
| X / Z - axis motor                      | 1.2 / 1.8 kw     | 1.2 / 2.5 kw    | 1.2 / 2.5 kw    |
| Tailstock travel                        | 290 mm           | 435 mm          | 580 mm          |
| Tailstock - quill dia. / travel / taper | 75 / 100 / MT4   | 90 / 100 / MT5  | 110 / 150 / MT5 |
| Net weight                              | 3500 kgs         | 4300 kgs        | 5000 kgs        |



ASL-52

ASL-80 / 1100

## SPECIFICATIONS

|                                   | ASL-52                                                                             | ASL-80 / 580      | ASL-80 / 1100                |
|-----------------------------------|------------------------------------------------------------------------------------|-------------------|------------------------------|
| Swing over bed                    |                                                                                    | 590 mm            |                              |
| Max. turning diameter             |                                                                                    | 450 mm            |                              |
| Swing over carriage               |                                                                                    | 380 mm            |                              |
| Between centers                   | 580 mm                                                                             |                   | 1180 mm                      |
| Spindle bore / nose               | 62 mm / A2 - 6                                                                     |                   | 91 mm / A2 - 8               |
| Bar capacity                      | 52 mm                                                                              |                   | 80 mm                        |
| Spindle speed                     | 3200 rpm                                                                           |                   | 2200 rpm                     |
| Hydraulic chuck size              | 8"                                                                                 | 10"               | 10" / 12"                    |
| Tool station (Random)             | Vertical V - 10 station Servo turret - OD tool / 25 x 25 mm, ID tools - 40 mm dia. |                   |                              |
| X axis travel                     |                                                                                    | 245 mm (235 + 10) |                              |
| Z axis travel                     | 520 mm                                                                             |                   | 1100 mm                      |
| Rapid feed X / Z                  | X - 16 M / min. Z - 20 M / min.                                                    |                   |                              |
| Main spindle power                | 25 HP                                                                              |                   | 25 HP                        |
| X / Z axis motor                  | 2.4 / 3.4 HP                                                                       |                   | 2.4 / 3.4 HP                 |
| Tailstock - stroke                | 480 mm                                                                             |                   | 1000 mm                      |
| Tailstock - Dia. x Taper x Travel | 75 mm dia. x MT# 4 x 100 mm                                                        |                   | 112 mm dia. x MT# 4 x 100 mm |
| Net weight                        | 3450 kgs                                                                           | 3500 kgs          | 5500 kgs                     |



ASL-90 / 1100

ASL-115 / 2000

## SPECIFICATIONS

|                                   | ASL-90 / 600                                                                  | ASL-90 / 1100                         | ASL-115 / 2000    |
|-----------------------------------|-------------------------------------------------------------------------------|---------------------------------------|-------------------|
| Swing over bed                    |                                                                               | 550 mm                                |                   |
| Max. turning diameter             |                                                                               | 470 mm (Driven tool system - 300 mm)  |                   |
| Swing over carriage               |                                                                               | 380 mm                                |                   |
| Max. cutting length               | 580 mm                                                                        | 1080 mm                               | 2060 mm (1990 mm) |
| Spindle bore / nose               | 101 mm / A2 - 8                                                               |                                       | 130 mm / A2 - 11  |
| Bar capacity                      |                                                                               | 90 mm                                 | 90 mm / 115 mm    |
| Spindle speed                     |                                                                               | 25 ~ 2000 rpm                         | 20 ~ 2000 rpm     |
| Hydraulic chuck size              |                                                                               | 12"                                   | 12" / 15"         |
| Tool station (Random)             | V10 or V12 Driven tool system - OD tool - 25 mm x 25 mm, ID tool - 40 mm dia. |                                       |                   |
| X axis                            |                                                                               | 240 mm (Driven tool system - 265 mm)  |                   |
| Z axis                            | 590 mm                                                                        | 1090 mm                               | 2070 / 2000 mm    |
| Rapid feed X / Z                  |                                                                               | 20 M / min. 20 M / min.               |                   |
| Main spindle power                |                                                                               | Fanuc - aP40i, 30 HP (22 Kw)          |                   |
| X / Z axis motor                  |                                                                               | X - 3.6 HP (2.7 Kw) Z - 5.4 HP (4 Kw) |                   |
| Tailstock - stroke                | 460 mm                                                                        | 960 mm                                | 1960 mm           |
| Tailstock - Dia. x Taper x Travel |                                                                               | 112 mm dia. x MT# 4 x 100 mm          |                   |
| Net weight                        | 5500 kgs                                                                      | 6500 kgs                              | 8950 kgs          |

## FREJO TH CNC SLANT BED LATHE - 2 AXES BOX WAY



ASC-52



### SPECIFICATIONS

|                                         | ASC-52                                                           | ASC-65                         |
|-----------------------------------------|------------------------------------------------------------------|--------------------------------|
| Bar capacity                            | 52 mm (2.04")                                                    | 65 mm (2.56")                  |
| Max. turning diameter                   | 300 mm for H10, 340 mm for H12, 250 mm for V12                   |                                |
| Swing over bed                          | 630 mm                                                           |                                |
| Max. working length                     | 580 mm for H10, 600 mm for H12, 590 mm for V12                   |                                |
| Spindle motor                           | 9 / 11 kw (opt. 11 / 15 kw)                                      | 11 / 15 kw (opt. 15 / 18.5 kw) |
| Spindle speeds                          | 45 ~ 4500 rpm                                                    | 35 ~ 3500 rpm                  |
| Spindle bore / power chuck size         | A2 - 6 / 210 mm                                                  | A2 - 6 / 254 mm                |
| Travel - X / Z axis                     | 190 / 590 mm for H10, 207 / 610 mm for H12, 220 / 600 mm for V12 |                                |
| X / Z - servo motor                     | 1.6 / 3 kw                                                       |                                |
| X / Z - rapid feed                      | 15 / 20 m / min                                                  |                                |
| Turret type                             | H10, H12 or V12 (VDI 30)                                         |                                |
| Tool shank size                         | H10, 25 mm / H12, 20 mm / V12, 20 mm                             |                                |
| Tailstock - quill dia. / travel / taper | programmable 85 / 120 / MT4                                      |                                |
| Net weight                              | 5200 kgs                                                         | 5500 kgs                       |

## FREJO TH GANG TYPE CNC LATHE



ACL-10



ACL-12

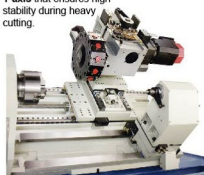
### SPECIFICATIONS

|                          | ACL-10                        | ACL-12          |
|--------------------------|-------------------------------|-----------------|
| No. of control axis      | 2 AXIS                        |                 |
| Machine type             | Box way                       |                 |
| Swing over bed           | Ø320 mm                       |                 |
| Standard turning dia.    | Ø150 mm                       |                 |
| Standard turning length  | 100 mm                        |                 |
| Spindle speed            | 80 ~ 4000 rpm                 | 60 ~ 3000 rpm   |
| Spindle motor            | 15 HP                         |                 |
| Spindle bore / nose      | Ø55 mm / A2 - 5               | Ø75 mm / A2 - 6 |
| Bar capacity             | Ø45 mm                        | Ø65 mm          |
| Travel - X / Z axis      | 480 mm / 250 mm               |                 |
| Servo motor - X / Z axis | 1.2 kw / 1.2 kw               |                 |
| Rapid feed - X / Z axis  | 10 / 8 m/min                  |                 |
| Type of turret           | Gang bed fixed on cross slide |                 |
| Tool size                | Ø20 mm / Ø32 mm               |                 |
| Net weight               | 2100 kgs                      | 2200 kgs        |

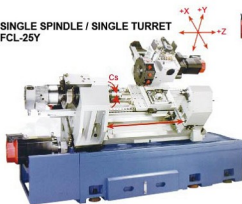


FCL-20TTT

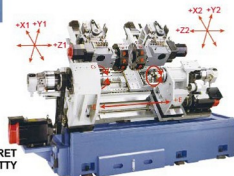
Roller linear guideways on Y axis that ensures high stability during heavy cutting.



SINGLE SPINDLE / SINGLE TURRET  
FCL-25Y



TWIN SPINDLE / SINGLE TURRET  
FCL-20TSY



TWIN SPINDLE / TWIN TURRET  
FCL-20TTT

## SPECIFICATIONS

|                             | FCL-20Y/25Y/30Y<br>single spindle/single turret | FCL-15TSY/20TSY/30TSY<br>twin spindle/single turret | FCL-15TTY/20TTY/25TTY<br>twin spindle/twin turret     |
|-----------------------------|-------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------|
| No. of control axis         | 4 axis (X, Z, C, Y)                             | 7 axis (X, Z, B, C1, C2, Y, TD)                     | 11 axis (X1, X2, C1, B, Y1, TD1, X2, Z2, C2, Y2, TD2) |
| Machine type                | Linear guide (X / Z axis)                       | Linear guide (X / Z axis), Boxway (B axis)          | Linear guide (X / Z axis), Boxway (B axis)            |
| Swing over bed              | 780 mm                                          | 780 mm                                              | 780 mm                                                |
| Max. turning dia.           | 300 / 300 / 250 mm                              | 300 / 300 / 250 mm                                  | 300 mm                                                |
| Max. turning length         | 332 / 587 / 520 mm                              | 231 / 500 / 470 mm                                  | 290 mm                                                |
| Spindle nose                | A2-6 / A2-6 / A2-8                              |                                                     |                                                       |
| Spindle bore                | 61 / 77 / 90 mm                                 |                                                     |                                                       |
| Bar capacity                | 52 / 65 / 77 mm                                 |                                                     |                                                       |
| Spindle nose - main         |                                                 | A2-5 / A2-6 / A2-8                                  | A2-5 / A2-6 / A2-6                                    |
| Spindle bore - main         |                                                 | 56 / 61 / 90 mm                                     | 56 / 61 / 77 mm                                       |
| Bar capacity - main         |                                                 | 45 / 51 / 77 mm                                     | 45 / 51 / 65 mm                                       |
| Spindle nose - sub          |                                                 | A2-5 / A2-5 / A2-6                                  | A2-5 / A2-5 / A2-6                                    |
| Spindle bore - sub          |                                                 | 56 / 56 / 61 mm                                     | 56 / 56 / 61 mm                                       |
| Bar capacity - sub          |                                                 | 45 / 45 / 51 mm                                     | 45 / 45 / 52 mm                                       |
| Spindle motor               | 9/11, 11/15, 15/18 kw                           |                                                     |                                                       |
| Spindle motor - main        |                                                 | 5.5/7.5, 9/11, 11/15 kw                             | 5.5/7.5, 9/11, 11/15 kw                               |
| Spindle motor - sub         |                                                 | 5.5/7.5, 5.5/7.5, 7.5/11 kw                         | 5.5/7.5, 5.5/7.5, 7.5/11 kw                           |
| Travel : X axis             | 180 / 180 150 mm                                | 180 / 180 / 150 mm                                  |                                                       |
| Travel : Z axis             | 410 / 685 / 610 mm                              | 339 / 560 / 540 mm                                  |                                                       |
| Travel : B axis             |                                                 | 231 / 500 / 490 mm                                  | 520 / 500 / 465 mm                                    |
| Travel : Y axis             | 40 / 40 / 60 (± mm)                             | 40 / 40 / 60 (±mm)                                  |                                                       |
| Travel : X1, X2 axis        |                                                 |                                                     | 150 ~ 180 mm                                          |
| Travel : Z1, Z2 axis        |                                                 |                                                     | 334 mm                                                |
| Travel : Y1, Y2 axis        |                                                 |                                                     | 40 (±mm)                                              |
| Rapid (X, Z axis)           | 30 m/min                                        | 30 m/min                                            |                                                       |
| Rapid (B axis)              |                                                 | 20 m/min                                            | 20 m/min                                              |
| Rapid (Y axis)              | 7 m/min                                         | 7 m/min                                             |                                                       |
| Rapid (X1, X2, Z1, Z2 axis) |                                                 |                                                     | 20 m/min                                              |
| Rapid (Y1, Y2 axis)         |                                                 |                                                     | 7 m/min                                               |
| Turret                      | VDI 30 / 30 / 40                                | VDI 30 / 30 / 40                                    | VDI 30*2 sets                                         |
| Turret station              | 12 tools                                        | 12 tools                                            | 12 tools                                              |
| Net weight                  | 5500 / 6320 / 7000 kgs                          | 5480 / 6640 / 6830 kgs                              | 7670 / 7800 / 8000 kgs                                |



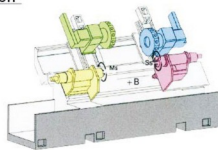
FCL-15TT/20TT/25TT (twin spindle, twin turret)  
FCL-15TS/20TS/25TS (twin spindle, single turret)



FCL-20TS



FCL-20TT



## SPECIFICATIONS

|                                    | FCL-15TT                  | FCL-20TT                  | FCL-25TT                  | FCL-15TS                  | FCL-20TS                        | FCL-25TS                  |
|------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------------|---------------------------|
| No. of control axis (axis)         | 5,opt.7(c axis)           | 5,opt.7(c axis)           | 5,opt.7(c axis)           | 3,opt.5(c axis)           | 3,opt.5(c axis)                 | 3,opt.5(c axis)           |
| Machine type                       | Linear way                |                           |                           | Linear way                |                                 |                           |
| Swing over bed                     | mm 620                    | 620                       | 620                       | 600                       | 630                             | 650                       |
| Max. turning diameter              | mm 440                    | 440                       | 440                       | 250                       | 490                             | 470                       |
| Max. working length                | mm 310                    | 290                       | 270                       | 260                       | 500                             | 470                       |
| Spindle speed (main, sub)          | rpm 10-6000, 10-6000      | 10-4200, 10-6000          | 10-3500, 10-4200          | 10-6000, 10-6000          | 10-4200, 10-6000                | 10-3500, 10-4200          |
| Spindle motor (main, sub)          | kw 5.5/7.5, 5.5/7.5       | 9/11.5, 5.5/7.5           | 11/15, 7.5/11             | 5.5/7.5, 5.5/7.5          | 9/11.5, 5.5/7.5                 | 11/15, 7.5/11             |
| Spindle bore / nose (main, sub) mm | dia.56(A2-5)<br>/56(A2-5) | dia.61(A2-6)<br>/56(A2-5) | dia.77(A2-6)<br>/61(A2-6) | dia.56(A2-5)<br>/56(A2-5) | dia.61(A2-6)<br>/56(A2-5)       | dia.90(A2-8)<br>/61(A2-6) |
| Bar capacity (main, sub)           | mm dia.45/45              | dia.52/45                 | dia.65/52                 | dia.45/45                 | dia.52/45                       | dia.77/52                 |
| Travel X1 / X2 axes                | mm 245                    | 245                       | 245                       | -                         | -                               | -                         |
| Travel Z1 / Z2 axes                | mm 342                    | 342                       | 342                       | -                         | -                               | -                         |
| Travel X / Z / B axes              | mm -                      | -                         | -                         | 165/310/260               | 280/560/500                     | 280/540/470               |
| X1.X2 / Z1.Z2 / B axes motor       | kw 1.6x2/1.6x2/1.6        | 1.6x2/1.6x2/1.6           | 3x2/1.6x2/1.6             | -                         | -                               | -                         |
| X / Z / B axes motor               | kw -                      | -                         | -                         | 1.6/1.6/1.6               | 1.6/1.6/1.6                     | 3/3/1.6                   |
| X / Z / B axis rapid feed          | m/min -                   | -                         | -                         | 30/30/20                  | 30/30/20                        | 30/30/20                  |
| X1.X2 / Z1.Z2 / B axis rapid feed  | m/min 20                  | 20                        | 20                        | -                         | -                               | -                         |
| Turret type                        | Servo-VDI30-12T           |                           |                           | Hyd.LS-200-12T            | Hyd.LS-240-12T (opt.Servo type) |                           |
| Tool size                          | mm 20x20                  | 20x20                     | 20x20                     | 20x20                     | 20x20                           | 25x25                     |
| Net weight                         | kgs 7160                  | 7300                      | 7400                      | 5280                      | 6440                            | 6630                      |



## FREJOTH CNC SLANT BED LATHE - 2 AXIS BOX WAY



ATC-135

### SPECIFICATIONS

|                                 | ATC-35                                       | ATC-40                           | ATC-45                              | ATC-50                           |
|---------------------------------|----------------------------------------------|----------------------------------|-------------------------------------|----------------------------------|
| Bar capacity                    | 89.opt.110.116 mm                            | 89.opt.110.116.160 mm            | opt.115.135.205 mm                  | 115.opt.135.205 mm               |
| Max. turning diameter           | 500 mm                                       | 710 mm                           | 850 mm                              | 1020 mm                          |
| Swing over bed                  | 660 mm                                       | 850 mm                           | 970 mm                              | 1100 mm                          |
| Max. working length             | 820 / 1580 / 2315 / 3100 mm                  | 820 / 1580 / 2315 / 3100 mm      | 1118 / 1700 / 2200 / 3200 mm        | 2280 / 3280 / 4280 / 5280 mm     |
| Spindle motor                   | 22 / 26 kw                                   | 22 / 26 kw                       | 30 / 37 kw                          | 37 / 45 kw                       |
| Spindle speed                   | 2500 / 625 rpm                               | 2500 / 550 rpm                   | 2 ~ 1500 rpm (3 stages)             | 2 ~ 1200 rpm (4 stages)          |
| Spindle bore / power chuck size | 105 mm / 12 inch                             | 105 mm / 12 inch                 | 160 mm / opt.18.24.32 inch          | 160 mm / opt.18.24.32 inch       |
| Travel X axes                   | 250 + 25 mm                                  | 355 + 25 mm                      | 425 + 25 mm                         | 510 + 25 mm                      |
| Travel Z axes                   | 885 / 1645 / 2250 / 3165 mm                  | 885 / 1645 / 2250 / 3165 mm      | 1250 / 1750 / 2250 / 3250 mm        | 2200 / 3200 / 4200 / 5200 mm     |
| X / Z servo motor               | 5.4 / 5.4 kw                                 | 5.4 / 5.4 kw                     | 5.4 / 9.4 kw                        | 5.4 / 9.4 kw                     |
| X / Z - Rapid feed              | 12 / 15 m / min                              | 12 / 15 m / min                  | 12 / 16 m / min                     | 12 / 15 m / min                  |
| Turret type                     | Vertical 10 (opt.12) hydraulic driven system |                                  | Vertical 12 hydraulic driven system |                                  |
| Tool size                       | 32 mm                                        | 32 mm                            | 32 mm                               | 32 mm                            |
| Tailstock travel                | 780 / 1540 / 2250 / 3060 mm                  | 780 / 1540 / 2250 / 3060 mm      | 850 / 1450 / 1950 / 2950 mm         | 2000 / 3000 / 4000 / 5000 mm     |
| Tailstock - quill dia. / travel | 110 / 100 mm                                 | 110(opt.160 mm) / 100 mm         | 200 mm / 200 mm                     | 200 mm / 200 mm                  |
| Tailstock taper                 | MT5                                          | MT5                              | MT6                                 | MT6                              |
| Net weight                      | 10030 / 11300 / 13700 / 16300 kg             | 12500 / 14100 / 15600 / 17900 kg | 14200 / 14950 / 15700 / 18400 kg    | 18000 / 23000 / 27000 / 32000 kg |

## FREJOTH CNC SLANT BED LATHE - LINEAR GUIDEWAY



FCL-30

### SPECIFICATIONS

|                                         | FCL-20                               | FCL-25                               | FCL-30                         |
|-----------------------------------------|--------------------------------------|--------------------------------------|--------------------------------|
| Bar capacity                            | 52 mm                                | 65 mm                                | 77 mm                          |
| Swing over bed                          | 480 mm                               | 600 mm                               | 630 mm                         |
| Working length                          | 462 / 700 / 1000 mm                  | 430 / 690 / 1000 mm                  | 700 / 1000 mm                  |
| Max. turning dia                        | 280 mm                               | 300 mm                               | 442 mm                         |
| Spindle bore and chuck size             | A2-6 8 inch                          | A2-6 10 inch                         | A2-8 10 inch.opt.12inch        |
| Turret type                             | hydraulic 8 direct                   | hydraulic 12 direct                  |                                |
| Tool holder size OD (SQ) / ID dia       | 25 x 25 mm / 32 mm                   | 25 x 25 mm / 40 mm                   | 25 x 25 mm / 40 mm             |
| X / Z axis travel                       | X : 142 mm / Z : 475 / 700 / 1000 mm | X : 180 mm / Z : 460 / 700 / 1000 mm | X : 250 mm / Z : 700 / 1000 mm |
| X / Z rapid feed rate                   | 30 m / min                           | 30 m / min                           | 30 m / min                     |
| Spindle motor                           | 9 / 11 kw                            | 11 / 15 kw                           | 15 / 18.5 kw                   |
| X / Z axis motor                        | 1.8 kw / 1.6 kw                      | 1.6 kw / 1.6 kw                      | 3 kw / 3 kw                    |
| Tailstock travel                        | 395 / 650 / 1000 mm                  | 390 / 650 / 1000 mm                  | 650 / 1000 mm                  |
| Tailstock - quill dia. / travel / taper | 75 mm / 80 mm / MT4                  | 75 mm / 80 mm / MT4                  | 90 mm / 100 mm / MT5           |
| Net weight                              | 4550 / 6120 / 7000 kgs               | 5050 / 6120 / 7000 kgs               | 6230 / 7000 kgs                |



**ATL-1118CNC**

## SPECIFICATIONS

|                                | ATL-1118CNC                                        |
|--------------------------------|----------------------------------------------------|
| Maximum swing                  | Ø380 mm                                            |
| Maximum turning diameter       | Ø150 mm (Ø6")                                      |
| Distance between centers       | 457 mm                                             |
| Bar stock diameter (5C collet) | Ø27 mm (Ø1 - 1/16")                                |
| Hole through spindle           | Ø31.75 mm (Ø1 - 1/4")                              |
| CNC controller                 | FANUC (standard)                                   |
| Spindle speeds (variable)      | 50 ~ 4000 rpm (3 HP) / 50 ~ 6000 rpm (5 HP) - OPT. |
| Spindle nose I.D / O.D.        | 5C (10") / 4" taper                                |
| Chuck Diameter                 | Ø150 mm (Ø6")                                      |
| Maximum X axis travel          | 220 mm                                             |
| Maximum Z axis travel          | 340 mm                                             |
| Rapid traverse                 | 20 m / min                                         |
| Inverter spindle motor         | 3 HP / 5 HP - OPT.                                 |
| X, Z axis servo motor          | X : β2 Z : β2                                      |
| Coolant pump                   | 1/4 HP                                             |
| Tallstock spindle taper        | MT No.2                                            |
| Tallstock spindle travel       | 95 mm                                              |
| Machine dimensions (L x W x H) | 2050 x 1000 x 1650 mm (81' x 40' x 65')            |
| Machine weight                 | 1200 kgs (2640 lbs)                                |

## FREJO TH HIGH - SPEED AND HIGH PRECISION CNC LATHE



**AT-A70CNC**



**AJ-27CNC**

## SPECIFICATIONS

|              |                               | AT-A70CNC                     |  |                    |                          | AJ-27CNC             |          |  |
|--------------|-------------------------------|-------------------------------|--|--------------------|--------------------------|----------------------|----------|--|
| Capacity     | Swing over bed dia            | 270 mm                        |  | Capacity           | Swing over bed           | 230 mm               |          |  |
|              | Swing over cross slide dia    | 130 mm                        |  |                    | Max diameter (5C Collet) | 27 mm                |          |  |
|              | Collet                        | 5C / YB 32                    |  |                    | Collet type              | 5C                   |          |  |
|              | Max bar diameter              | 27 / 32 mm                    |  | Collet             | I.D.                     | 27 mm                |          |  |
| Headstock    | Spindle hole                  | 31.75 mm (5C) / 39 mm (YB 32) |  |                    |                          | Bore                 | 19 mm    |  |
|              | Max speed                     | 4000 / 6000 r.p.m             |  |                    |                          |                      | Square   |  |
|              | Max rating                    | 2.2 kw (3HP) / 3.7 kw (5HP)   |  |                    | Hexagon                  |                      |          |  |
|              | Coolant pump                  | 0.18 kw (1/4HP)               |  | Spindle            | Spindle speed            | 50 - 4000 r.p.m      |          |  |
|              | X - Axis travel               | 400 mm                        |  |                    | Travel of tool slide     | Hole through spindle | 31.75 mm |  |
| Axis         | Z - Axis travel               | 200 mm                        |  | X - Axis travel    |                          | 100 mm               |          |  |
|              | Z - Axis travel               | 200 mm                        |  | Z - Axis travel    | 100 mm                   |                      |          |  |
|              | X Axis ball screw dia x pitch | 20 x 5 mm                     |  | Motor              | Main motor               | 1.5 kw (2HP)         |          |  |
|              | Z Axis ball screw dia x pitch | 20 x 5 mm                     |  |                    | Feed motor (X / Z)       | 0.4 KW               |          |  |
| Machine size | Machine size (L x W x H)      | 227 x 88 x 176 cm             |  | Machine dimensions |                          | 1120 x 620 x 1580    |          |  |
|              | Machine weight                | 920 kg                        |  | Machine weight     |                          | 500 kg               |          |  |
|              |                               |                               |  | Height of machine  |                          | 1580 mm              |          |  |
|              |                               |                               |  | Tool               |                          | 12 mm                |          |  |



ATT40

## SPECIFICATIONS

|                                      | ATT40                             | ATT60                                     | ATT85                         | ATT100                                     | ATT120              |
|--------------------------------------|-----------------------------------|-------------------------------------------|-------------------------------|--------------------------------------------|---------------------|
| Max. weight of work with steadies    | 360 / 1200 kgs                    | 2000 / 4000 kgs                           | 4000 / 6000 kgs               | 7000 / 8000 kgs                            | 12000 kgs           |
| Max. weight of work center to center | 360 kgs / 600 kgs                 | 1200 / 3000 kgs                           | 1500 / 4000 kgs               | 1800 / 6000 kgs                            | 2400 / 6000 kgs     |
| Min / Max. grinding diameter         | 400 mm                            | 600 mm                                    | 850 mm                        | 1000 mm                                    | 200 ~ 1200 mm       |
| Max. diameter of crown grinding      | 5 mm diameter                     |                                           |                               | 10 mm diameter                             |                     |
| Distance between centers             | 1 ~ 3 meters                      | 2 ~ 6 meters                              | 2 ~ 6 meters                  | 2 ~ 6 meters                               | 2 ~ 6 meters        |
| Headstock                            | power of workdrive<br>work speeds | 2.25 or 3.75 kw<br>15 ~ 150 rpm           | 7.5 or 11.25 kw<br>8 ~ 80 rpm | 11.25 or 15 kw<br>6 ~ 60 rpm               | 15 kw<br>5 ~ 50 rpm |
| Wheel head                           | power of wheel drive              | 7.5 kw                                    | 22.5 kw                       | 30 kw                                      | 30 kw               |
|                                      | spindle speed                     | 600 ~ 1500 rpm                            | 500 ~ 1400 rpm                | 400 ~ 1200 rpm                             | 400 ~ 1200 rpm      |
|                                      | traverse X axis                   | 290 mm                                    | 315 mm                        | 510 mm                                     | 620 mm              |
|                                      | Max. rapid feed rate              | 1000 mm/min                               | 1500 mm/min                   | 1500 mm/min                                |                     |
|                                      | grinding wheel dimension          | 510 x 50 x 152.4 mm                       | 760 x 75 x 304.8 mm           | 915 x 100 x 304.8 mm or 915 x 100 x 508 mm |                     |
|                                      | micro feed                        |                                           | 0.001 mm / p                  |                                            |                     |
|                                      | spindle lubrication system        | combination of hydrodynamic & hydrostatic |                               |                                            |                     |
| Machine table                        | slide traverse Z axis             | 1200 ~ 3200 mm                            | 2200 ~ 6200 mm                | 2200 ~ 6200 mm                             |                     |
|                                      | feed rate of Z axis               | 10 ~ 3000 mm/min                          | 10 ~ 4500 mm/min              | 10 ~ 4500 mm/min                           | 10 ~ 4500 mm/min    |
| Tailstock                            | quill travel                      | 50 mm                                     | 100 mm                        | 150 mm                                     | 180 mm              |
|                                      | moving method                     | manual                                    | air floating                  | air floating                               | air floating        |
| Net weight                           | 5.6 ~ 10.6 ton                    | 10.3 ~ 19 ton                             | 12 ~ 26 ton                   | 12 ~ 26 ton                                | 21 ~ 38 ton         |

Remark weight of work piece standard roller / heavy duty roller weight

# FREJOTH NC (PLC) EXTERNAL GRINDING MACHINES



APT100

## SPECIFICATIONS

|                                      | APT40                                                          | APT60                                  | APT85                                | APT100                              | APT120                          |
|--------------------------------------|----------------------------------------------------------------|----------------------------------------|--------------------------------------|-------------------------------------|---------------------------------|
| Max. weight of work with steadies    | 600 / 1200 kgs                                                 | 2000 / 4000 kgs                        | 4000 / 6000 kgs                      | 6000 kgs                            | 10000 kgs                       |
| Max. weight of work center to center | 360 / 600 kgs                                                  | 1200 / 3000 kgs                        | 1500 / 4000 kgs                      | 3600 kgs                            | 6000 kgs                        |
| Max. grinding diameter               | 400 mm dia                                                     | 600 mm dia                             | 850 mm dia                           | 1000 mm dia                         | 1200 mm dia                     |
| Distance between centers             | 1 ~ 3 meters                                                   | 1 ~ 5 meters                           | 2 ~ 6 meters                         | 2 ~ 8 meters                        | 2 ~ 8 meters                    |
| Headstock                            | power of work drive<br>work speeds var. speed<br>spindle taper | 2.25 or 3.75 kw<br>15 ~ 150 rpm<br>MT5 | 7.5 or 11.25 kw<br>8 ~ 80 rpm<br>MT6 | 11.25 or 15 kw<br>6 ~ 60 rpm<br>MT6 | 10 ~ 15 kw<br>6 ~ 60 rpm<br>MT6 |
| Wheel head                           | slide loading kg / length                                      | 50 kgs / 150 mm                        | 100 kgs / 150 mm                     | 200 kgs / 150 mm                    | 200 kgs / 150 mm                |
|                                      | power of work drive                                            | 7.5 kw                                 | 22.5 kw                              | 30 kw                               | 20 ~ 40 kw                      |
|                                      | work speeds var speed                                          | 600 ~ 1500 rpm                         | 500 ~ 1400 rpm                       | 400 ~ 1200 rpm                      | 500 ~ 1000 rpm                  |
|                                      | travel                                                         | 290 mm                                 | 315 mm                               | 510 mm                              | 630 mm                          |
|                                      | hand feed per graduation                                       | 0.2 mm (0.005)                         | 0.2 mm (0.005)                       | 0.2 mm (0.005)                      | 2 mm (0.005)                    |
| Machine table                        | gliding wheel dimension                                        | 510 x 50 x 152.4 mm                    | APT60: 760 x 75 x 304.8 mm           | APT85: 915 x 100 x 304.8 mm         | 2 mm (0.005)                    |
|                                      | long travel                                                    | 1200 ~ 3200 mm                         | 2200 ~ 6200 mm                       | 1200 ~ 5200 mm                      | 1200 ~ 5200 mm                  |
|                                      | table feed rate                                                | 10 ~ 3000 mm/min                       | APT60: 85 : 10 ~ 4500 mm/min         |                                     | 10 ~ 6000 mm/min                |
| Tailstock                            | min auto traverse                                              | 30 mm                                  | 30 mm                                | 30 mm                               | 30 mm                           |
|                                      | quill travel / taper                                           | 50 mm / MT5                            | 100 mm / MT6                         | 150 mm / MT6                        | 180 mm / MT6                    |
| Net weight                           | 5.6 ~ 10.6 ton                                                 | 8 ~ 17 ton                             | 12 ~ 26 ton                          | 12.5 ~ 26 ton                       | 25 ton                          |

## FREJO TH EXTERNAL GRINDING MACHINE - CNC SERIES



AEG-1424CNC

### SPECIFICATIONS

|                                  | AEG-1124CNC                                   | AEG-1424CNC |
|----------------------------------|-----------------------------------------------|-------------|
| Swing over table                 | 270 mm                                        | 350 mm      |
| Between centers                  | 600 mm                                        | 600 mm      |
| Max. workpiece weight            | Center work : 60 kgs / workhead only - 20 kgs |             |
| <b>Wheel head &amp; Feed</b>     |                                               |             |
| Grinding wheel dimension         | 405 x 32.50 x 152.4 mm                        |             |
| Wheel speed                      | 1650 / 1850 rpm                               |             |
| Max. wheel circumferential speed | 2000 mm / min.                                |             |
| Traverse length                  | 250 mm                                        |             |
| Swing angle                      | ±15 deg.                                      |             |
| Manual infeed                    | 0.001 / 0.01 / 0.1 mm                         |             |
| <b>Table</b>                     |                                               |             |
| Table longitudinal               | 700 mm                                        |             |
| Table swivel angle               | toward / away operator : 6 deg. / 9 deg.      |             |
| Table manual infeed              | 0.001 / 0.01 / 0.1 mm                         |             |
| <b>Workhead</b>                  |                                               |             |
| Work spindle speed               | 30 ~ 360 rpm                                  |             |
| Spindle taper                    | MT #4                                         |             |
| Spindle bore                     | 25 mm diameter                                |             |
| Tailstock                        | MT NO.4 -travel : 32 mm                       |             |
| Wheel head infeed servo motor    | 1.5 kw                                        |             |
| Table infeed servo motor         | 1.5 kw                                        |             |
| Wheelhead spindle motor          | 3.75 kw (5.6 / 7.5 kw)                        |             |
| Net weight                       | 2200 kgs                                      | 2200 kgs    |

## FREJO TH EXTERNAL GRINDING MACHINE - NC SERIES



AEG-1424NC

### SPECIFICATIONS

|                                     | AEG-1122NC                                             | AEG-1130NC                   | AEG-1422NC                   | AEG-1430NC                   |
|-------------------------------------|--------------------------------------------------------|------------------------------|------------------------------|------------------------------|
| Swing over table                    |                                                        | 270 mm                       |                              | 350 mm                       |
| Between centers                     | 600 mm                                                 | 750 mm                       | 600 mm                       | 750 mm                       |
| Max. workpiece weight - center work |                                                        | 60 kgs                       |                              | 80 kgs                       |
| <b>Wheel head &amp; Feed</b>        |                                                        |                              |                              |                              |
| Grinding wheel dimension            | 405 x 32.50 x 152.4 mm                                 |                              |                              |                              |
| Wheel speed                         | 1650 / 1850 rpm                                        |                              |                              |                              |
| Traverse length                     | 250 mm                                                 |                              |                              |                              |
| Manual infeed                       | By - MPG 0.001 / 0.01 / 0.1 mm                         |                              |                              |                              |
| <b>Table</b>                        |                                                        |                              |                              |                              |
| Table swivel angle                  | toward/away-operator-6/9deg.                           | toward/away-operator-4/9deg. | toward/away-operator-6/9deg. | toward/away-operator-4/9deg. |
| Table auto feed - variable speed    | 50 ~ 4000 mm / min.                                    |                              |                              |                              |
| Table handle feed                   | one revolution - 12.5 mm                               |                              |                              |                              |
| <b>Workhead</b>                     |                                                        |                              |                              |                              |
| Swivel angle                        | Toward operator - 30 deg. Away from Operator - 90 deg. |                              |                              |                              |
| Work spindle speed                  | 30 ~ 450 rpm                                           |                              |                              |                              |
| Spindle taper                       | MT #4                                                  |                              |                              |                              |
| Spindle bore                        | 25 mm diameter                                         |                              |                              |                              |
| Tailstock                           | MT #4 - quill travel - 32 mm                           |                              |                              |                              |
| Wheelhead spindle motor             | 3.7 kw                                                 |                              |                              |                              |
| Workhead spindle motor              | 0.4 kw                                                 |                              |                              |                              |
| Hydraulic system pump               | 0.75 kw                                                |                              |                              |                              |
| Net weight                          | 2100 kgs                                               | 2400 kgs                     | 2100 kgs                     | 2400 kgs                     |

## FREJO TH BED TYPE HEAVY DUTY CNC MILLING MACHINES



S-1000D



S-1500D

### SPECIFICATIONS

|                                | S-1000D             | S-1300D                      | S-1500D                   | S-1700D                   |
|--------------------------------|---------------------|------------------------------|---------------------------|---------------------------|
| Travels - X / Y / Z            | 1000 x 500 x 570 mm | 1300 x 700 x 670 mm          | 1500 x 700 x 670 (900) mm | 1700 x 700 x 670 (900) mm |
| Table size                     | 1200 x 500 mm       | 1500 x 600 mm                | 1700 x 600 mm             | 1950 x 600 mm             |
| Spindle nose to table top      | 100 ~ 670 mm        | 100 ~ 770 mm                 | 100 ~ 770 (1000) mm       | 100 ~ 770 (1000) mm       |
| Spindle center to column front | 600 mm              | 700 mm                       | 700 mm                    | 700 mm                    |
| T - slot (width x no. x pitch) | 16 x 5 x 86 mm      | 18 x 5 x 110 mm              | 18 x 5 x 110 mm           | 18 x 5 x 110 mm           |
| Spindle speed                  |                     | 8000 rpm, (10000, 12000 rpm) |                           |                           |
| Spindle taper                  | BT#40               | BT#40                        | BT#40 (50)                | BT#40 (50)                |
| Spindle motor                  | 7.5 / 11 kw         | 11 / 15 kw                   | 11 / 15 kw                | 11 / 15 kw                |
| ATC                            |                     | Armless 20T (ARM type 24 T)  |                           |                           |
| Ball screw                     |                     | 40 x 10 mm, C5               |                           |                           |
| Net weight                     | 4200 kgs            | 6000 kgs                     | 6500 kgs                  | 6800 kgs                  |

## FREJO TH BED TYPE HEAVY DUTY CNC MILLING MACHINES



S-2473



S-3092

### SPECIFICATIONS

|                                | S-1654                   | S-2063              | S-2473                            | S-3092                    | S-30112                   |
|--------------------------------|--------------------------|---------------------|-----------------------------------|---------------------------|---------------------------|
| Travels - X / Y / Z            | 1000 x 508 x 500 mm      | 1270 x 635 x 600 mm | 1500 x 700 x 700 mm               | 2000 x 840 x 610 (840) mm | 2500 x 840 x 610 (840) mm |
| Table size                     | 1370 x 400 mm            | 1600 x 500 mm       | 1854 x 610 mm                     | 2330 x 760 mm             | 2840 x 760 mm             |
| Table maximum loading          | 1000 kgs                 | 1200 kgs            | 1500 kgs                          | 1600 kgs                  | 1700 kgs                  |
| Spindle nose to table top      | 100 ~ 700 mm             | 100 ~ 700 mm        | 100 ~ 800 mm                      | 100 ~ 710 (940) mm        | 100 ~ 710 (940) mm        |
| Spindle center to column front | 530 mm                   | 760 mm              | 760 mm                            | 900 mm                    | 900 mm                    |
| Spindle speeds                 |                          |                     | 8000 rpm (10000 rpm)              |                           |                           |
| Spindle taper                  | BT#40                    | BT#40               | BT#40, opt. BT#50                 | BT#40, opt. BT#50         | BT#40, opt. BT#50         |
| Spindle motor                  | 10 HP                    | 10 HP               | 15 HP                             | 15 HP, opt. 20 HP         | 15 HP, opt. 20 HP         |
| ATC                            |                          |                     | Armless No. 20T, Arm type No. 24T |                           |                           |
| Ball screws (dia. x pitch)     | Ø32 x Ø40 x Ø40 mm x 10P | Ø40 mm x 10P        | Ø40 mm x 10P                      | Ø50 mm x 10P              | Ø50 mm x 10P              |
|                                | C5 Grade                 | C5 Grade            | C5 Grade                          | C5 Grade                  | C5 Grade                  |
| Net weight                     | 2400 kgs                 | 3700 kgs            | 4100 kgs                          | 8500 kgs                  | 9000 kgs                  |



FUH-1250CNC



FUH-1000CNC

## SPECIFICATIONS

|                                                        | FUH-1250CNC             | FUH-1000CNC             | FU-1000CNC              |
|--------------------------------------------------------|-------------------------|-------------------------|-------------------------|
| Travels - X / Y / Z                                    | 1250 x 500 x 470 mm     | 1000 x 500 x 430 mm     | 1000 x 350 x 430 mm     |
| Table size                                             | 1800 x 400 mm           | 1500 x 360 mm           | 1500 x 360 mm           |
| Table maximum loading                                  | 1000 kgs                | 800 kgs                 | 800 kgs                 |
| Spindle center to table (H) with arbor / without arbor | 50 ~ 480 / 360 ~ 790 mm | 50 ~ 480 / 360 ~ 790 mm | 50 ~ 480 / 360 ~ 790 mm |
| Spindle nose to table (V)                              | 50 ~ 520 mm             | 50 ~ 480 mm             | 50 ~ 480 mm             |
| T-slot (width x No. x L)                               | 18 x 4 x 80 mm          | 18 x 4 x 80 mm          | 18 x 4 x 80 mm          |
| Spindle speeds                                         | L: 320 H: 2000 rpm      | L: 320 H: 2000 rpm      | L: 320 H: 2000 rpm      |
| Spindle taper                                          | NT#50 (BT#50)           | NT#50 (BT#50)           | NT#50 (BT#50)           |
| Spindle motor                                          | 5.5 kw (7.5 kw)         | 5.5 kw (7.5 kw)         | 5.5 kw (7.5 kw)         |
| Vertical rapid feed rate                               | 2000 mm/min             | 2000 mm/min             | 2000 mm/min             |
| Longitudinal & cross rapid rate                        | 4000 mm/min             | 4000 mm/min             | 4000 mm/min             |
| Vertical cutting feed rate                             | 0-2000 mm/min           | 0-2000 mm/min           | 0-2000 mm/min           |
| Longitudinal & cross feed rate                         | 0-4000 mm/min           | 0-4000 mm/min           | 0-4000 mm/min           |
| Net weight (approx)                                    | 3200 kgs                | 2900 kgs                | 2600 kgs                |

## FREJO TH VERTICAL TURRET CNC MILLING MACHINE WITH 2/3 AXIS BALLSCREW



33HP-CNC



33VS-CNC

## SPECIFICATIONS

|                                 | 32/33VS-CNC         | 32/33VK-CNC         | 32/33HP-CNC         | 42/43SH-CNC   | 42/43VH-CNC   | 42/43FH-CNC         |
|---------------------------------|---------------------|---------------------|---------------------|---------------|---------------|---------------------|
| Table                           | 229 x 1067 mm       | 254 x 1270 mm       | 254 x 1270 mm       | 254 x 1270 mm | 254 x 1270 mm | 254 x 1270 mm       |
| Long. travel                    | 575 mm              | 575 mm              | 575 mm              | 575 mm        | 5750 mm       | 575 mm              |
| Cross travel                    | 290 mm              | 360 mm              | 360 mm              | 360 mm        | 360 mm        | 360 mm              |
| Vertical travel                 | 405 mm              | 360 mm              | 360 mm              | 450 mm        | 450 mm        | 450 mm              |
| Spindle motor                   | 3 HP                | 3 HP                | 3 HP                | 5 HP          | 5 HP          | 5 HP                |
| Spindle taper                   | R8 / NT30           | R8 / NT30           | R8 / NT30           | NT40          | NT40          | NT40                |
| Table T slots ( number x size ) | 3 x 16 mm           | 3 x 16 mm           | 3 x 16 mm           | 3 x 16 mm     | 3 x 16 mm     | 3 x 16 mm           |
| Spindle speed 60Hz              | 50 ~ 575 ~ 5000 rpm | 50 ~ 575 ~ 5000 rpm | 50 ~ 575 ~ 5000 rpm | 75 ~ 3450 rpm | 60 ~ 4200 rpm | 50 ~ 575 ~ 5000 rpm |
| Spindle nose to table           | 60 ~ 445 mm         | 70 ~ 440 mm         | 60 ~ 420 mm         | 60 ~ 530 mm   | 60 ~ 530 mm   | 60 ~ 530 mm         |
| Spindle centerline to column    | 150 ~ 480 mm        | 102 ~ 652 mm        | 127 ~ 660 mm        | 150 ~ 700 mm  | 150 ~ 700 mm  | 150 ~ 700 mm        |
| Quill travel                    | 120 mm              | 120 mm              | 120 mm              | 127 mm        | 127 mm        | 127 mm              |
| Overarm travel                  | 305 mm              | 550 mm              | 550 mm              | 550 mm        | 550 mm        | 550 mm              |
| Way type                        | Dovetail way        | Dovetail way        | Square way          | Square way    | Square way    | Square way          |



## MORGON RADIAL DRILLING MACHINES - NC TYPE



FRD-1300NCH



Auto Drilling



Auto Chips Cut Off



Auto Peak Drilling (full pulling distance)



Random Tapping



Auto Opposite Drilling



Auto Peak Drilling (changeable pulling distance)



Semi-Auto Tapping

### SPECIFICATIONS

|                                     | FRD-1300NCH              | FRD-1600NCH              |
|-------------------------------------|--------------------------|--------------------------|
| Drilling cap. - steel / cast iron   | 55 / 66 mm               | 55 / 70 mm               |
| Tapping cap. - steel / cast iron    | M50 / M60                | M50 / M60                |
| Boring cap. - steel / cast iron     | 100 / 160 mm             | 126 / 186 mm             |
| Spindle stroke                      | 250 mm                   | 300 mm                   |
| Horizontal travel of headstock      | 915 mm                   | 1310 mm                  |
| Column diameter                     | Ø300 mm                  | Ø336 mm                  |
| Base size                           | 1800 x 800 x 170 mm      | 2350 x 920 x 220 mm      |
| Table size                          | 650 x 500 x 410 mm       | 800 x 540 x 400 mm       |
| Spindle center to column surface    | min. 330 mm/max. 1250 mm | min. 400 mm/max. 1600 mm |
| Spindle nose to base                | min. 290 mm/max. 1210 mm | min. 260 mm/max. 1410 mm |
| Spindle speed (2 steps by inverter) | 20 ~ 1500 rpm            | 20 ~ 1500 rpm            |
| spindle taper                       | MT#5                     | MT#5                     |
| Spindle motor                       | 5 HP (6P)                | 5 HP (6P)                |
| Net weight                          | 2150 kgs                 | 3150 kgs                 |

## MORGON RADIAL DRILLING MACHINES - NC TYPE



FRD-2000NCH



Auto Drilling



Auto Chips Cut Off



Auto Peak Drilling (full pulling distance)



Random Tapping



Auto Opposite Drilling



Auto Peak Drilling (changeable pulling distance)



Semi-Auto Tapping

### SPECIFICATIONS

|                                   | FRD-2000NCH                         | FRD-2500NCH                |
|-----------------------------------|-------------------------------------|----------------------------|
| Drilling cap. - steel / cast iron | 85 / 105 mm                         | 85 / 105 mm                |
| Tapping cap. - steel / cast iron  | M65 / M75                           | M65 / M75                  |
| Boring cap. - steel / cast iron   | 150 / 200 mm                        | 150 / 200 mm               |
| Spindle stroke                    | 400 mm                              | 400 mm                     |
| Horizontal travel of headstock    | 1530 mm                             | 2030 mm                    |
| Column diameter                   | 480 mm                              | 480 mm                     |
| Base size                         | 2900 x 1200 x 250 mm                | 3400 x 1200 x 250 mm       |
| Table size                        | 800 x 540 x 400 equal*2pcs          | 800 x 540 x 400 equal*2pcs |
| Spindle center to column surface  | min.420 mm/max. 2000 mm             | min.420 mm/max. 2500 mm    |
| Spindle nose to base              | min.560 mm/max. 1800 mm             | min.560 mm/max. 1800 mm    |
| Spindle speed                     | 2 steps by inverter 20 ~ 1300 rpm   |                            |
| Spindle feed                      | DC motor 0.05 - 200 mm/min distance |                            |
| Spindle taper                     | MT#6                                | MT#6                       |
| Spindle motor                     | 10HP (OPT-15)                       | 10HP (OPT-15)              |
| Net weight                        | 7200 kgs                            | 7800 kgs                   |



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