



KT2500

**YIN FU**

# **Technical Advantages Vertical Turning Centers of KHMT INCORPORATE LTD. (Yin Fu Inc., Ltd.)**





# Competitive Comparison

Manufacturer	YIN FU	YOU JI	Giddings & Lewis	DST-Technologies	Toshiba-TMD	Toshulin
<b>Model</b>	<b>YVT-1600</b>	<b>YV-1600ATC</b>	<b>VTC-1250</b>	<b>VC-1600</b>	<b>TMD-13</b>	<b>PT-1250</b>
<b>Table Dia. (opt.)</b>	1250 mm(1600)	1600mm	1250 mm	1250 mm	1250 mm	1250 mm
<b>Max. Swing Dia. (opt.)</b>	1700 mm	2000mm	1700 mm	1600 mm	1600 mm	1600 mm
<b>Max. Turning Height</b>	1000 mm(1600 mm)	1200mm	1000 mm	1250 mm	1100 mm	1300 mm
<b>Max. Table Speed</b>	650	250	400	N/A	N/A	630
<b>Max. Table Load</b>	12000 Kg	8000 kg	N/A	9000 Kg	8000 Kg	8000 Kg
<b>Ram Size</b>	254mmx254mm	220mmx220mm	250mm x 250mm	250mm x 250mm	220mm x 220mm	240mm x 240 mm
<b>Crossrail Positions</b>	4 (6)	N/A	Infinite	100	N/A	N/A
<b>Crossrail Travel</b>	600 mm(1000 mm)	750 mm	650 mm	600 mm	500 mm	750 mm
<b>X-Axis Travel</b>	-300~+1200 mm	-100~+1125 mm	2400 mm	N/A	N/A	1200 mm
<b>Z-Axis Travel</b>	800 mm(1250 mm)	900 mm	1000 mm	1100 mm	N/A	1100 mm
<b>Table Power-cont./30min. (opt.)</b>	37/45 Kw (60/75)	37/45 Kw	65 Kw	60/75 Kw	37/45 Kw	60/75 Kw
<b>Table Max Torque (opt.)</b>	15080 Nm (20000)	19677 Nm	24557 Nm	21400 Nm	13230 Nm	32200 Nm
<b>Max. Cutting Force</b>	40000 N	N/A	54000 N	50000 N	24500 N	N/A
<b>X/Z Rapids</b>	12000/12000 mm/min	12000/10000 mm/min	12000/12000 mm/min	18000 mm/min	12K/8K mm/min	12000 mm/nim
<b>X/Z Max. Feeds</b>	5000 mm/min	2000 mm/min	N/A	N/A	2000 mm/min	4000 mm/min
<b>Crossrail Rapids</b>	400 mm/min	N/A	N/A	N/A	300 mm/min	N/A
<b>ATC Positions</b>	12/24/32	12	26	20	N/A	45
<b>Chip Conveyor</b>	1	1	1	1	1	1
<b>Max. Table Run Out</b>	.01 mm	N/A	.01 mm	.05 mm	N/A	N/A
<b>Position Accuracy</b>	15 mkm/M	7mkm/500mm	15 mkm/M	N/A	14 mkm/M	N/A
<b>Repeatability</b>	10 mkm/M	5 mkm/500mm	10 mkm/M	N/A	3 mkm/M	N/A



<u>Manufacturer</u>	<u>YIN FU</u>	<u>Giddings &amp; Lewis</u>	<u>DST-Technologies</u>	<u>Toshiba-TMD</u>	<u>PietroCarnaghi</u>	<u>Toshulin</u>
<u>Model</u>	<u>YVT-2000</u>	<u>VTC-1600</u>	<u>VC-2000</u>	<u>TMD-16</u>	<u>AC-20T</u>	<u>PT-1600</u>
<b>Table Dia.</b>	1600 mm(2000mm)	1600 mm	1600 mm	1600 mm	1600 mm	1600 mm
<b>Max. Swing Dia.</b>	2200 mm	2000 mm	2000 mm	2000 mm	2000 mm	2000 mm
<b>Max. Turning Height</b>	1000 mm(1600 mm)	850 mm	1100 mm	1350 mm	1500 mm	1400 mm
<b>Max. Table Speed</b>	450	400	N/A	N/A	N/A	400
<b>Max. Table Load</b>	20000 Kg	N/A	26800 Kg	10000 Kg	15000 Kg	12000 Kg
<b>Ram Size</b>	254 x 254 mm	250 x 250 mm	250 x 250 mm	220 x 220 mm	250 x 250 mm	240 x 240 mm
<b>Crossrail Positions</b>	4	Infinite	100	N/A	N/A	N/A
<b>Crossrail Travel</b>	600 mm(1000 mm)	650 mm	600 mm	500 mm	N/A	1020 mm
<b>X-Axis Travel</b>	-300~+1700 mm	2800 mm	N/A	1925 mm	N/A	2200 mm
<b>Z-Axis Travel</b>	800 mm(1250 mm)	1250 mm	1100 mm	1000 mm	1250 mm	1280 mm
<b>Main Trans. Power</b>	50 Kw	75 Kw	60 Kw	45 Kw	60 Kw	60 Kw
<b>Main Trans. Max Torque</b>	44712 Nm	24557 Nm	26800 Nm	21560 Nm	N/A	40600 nm
<b>Max. Cutting Force</b>	50000 N	34000 N	50000 N	24000 N	N/A	N/A
<b>X/Z Rapid movement</b>	12000 mm/min	12000 mm/min	18000 mm/min	12K/8K mm/min	15000 mm/min	12000 mm/min
<b>X/Z Max. Feed rate</b>	5000 mm/min	N/A	N/A	2000 mm/min	N/A	4000 mm/min
<b>Crossrail rapid movement</b>	400 mm/min	N/A	N/A	300 mm/min	N/A	N/A
<b>ATC Positions</b>	12/24/32	26	20	N/A	N/A	45
<b>Chip Conveyor</b>	1	1	1	1	1	1
<b>Max. Table Run Out</b>	.016 mm	.020 mm	.060 mm	N/A	N/A	N/A
<b>Position Accuracy</b>	10 mkm/m	15 mkm/m	N/A	14 mkm/m	N/A	N/A
<b>Repeatability</b>	5 mkm/m	10 mkm/m	N/A	6 mkm/m	N/A	N/A



# YIN FU

<u>Manufacturer</u>	<u>YIN FU</u>	<u>Giddings &amp; Lewis</u>	<u>DST-Technologies</u>	<u>Toshiba-TMD</u>	<u>PietroCarnaghi</u>	<u>Toshulin</u>
<u>Model</u>	<u>YVT-2500</u>	<u>VTC-2500</u>	<u>VC-2800</u>	<u>TSS-20/40</u>	<u>AC-28T</u>	<u>PT-2000</u>
<b>Table Dia.</b>	2000 mm(2500 mm)	2500 mm	2500 mm	2000 mm	2200 mm	2000 mm
<b>Max. Swing Dia.</b>	2800 mm	2700 mm	2800 mm	4000 mm	2800 mm	2300 mm
<b>Max. Turning Height</b>	1600 mm(2000 mm)	1500 mm	1100 mm	1800 mm	1200 mm	1400 mm
<b>Max. Table Speed</b>	260	200	N/A	200	N/A	N/A
<b>Max. Table Load</b>	30000 Kg	N/A	25000 Kg	20000 Kg	30000 Kg	20000 Kg
<b>Ram Size</b>	254 x 254 mm	250 x 250 mm	250 mm x 250 mm	250 x 250 mm	250x 250 mm	240 mm x 240 mm
<b>Crossrail Positions</b>	6	Infinite	100	N/A	N/A	N/A
<b>Crossrail Travel</b>	1000 mm	850 mm	1000 mm	N/A	N/A	1020 mm
<b>X-Axis Travel</b>	-300~+1850 mm	1410 mm	N/A	1750 mm	N/A	1450 mm
<b>Z-Axis Travel</b>	1250 mm	1250 mm	1100 mm	1000 mm	1250 mm	1280 mm
<b>Main Trans. Power</b>	60 Kw	75 Kw	60 Kw	45 Kw	60 Kw	60 Kw
<b>Main Trans. Max Torque</b>	45000 Nm	41400 Nm	42800 Nm	41100 Nm	N/A	50200 Nm
<b>Max. Cutting Force</b>	50000 N	34000 N	50000 N	35000 N	N/A	N/A
<b>X/Z Rapid movement</b>	16000 mm/min	20000 mm/min	18000 mm/min	10K/8K mm/min	15000 mm/min	12000 mm/min
<b>X/Z Max. Feed rate</b>	5000 mm/min	N/A	N/A	2000 mm/min	N/A	4000 mm/min
<b>Crossrail Rapid movement</b>	400 mm/min	N/A	N/A	N/A	N/A	N/A
<b>ATC Positions</b>	12/24/32	26	20	N/A	N/A	45
<b>Chip Conveyor</b>	1	1	1	1	1	1
<b>Max. Table Run Out</b>	.020 mm	.020 mm	.070 mm	N/A	N/A	N/A
<b>Position Accuracy</b>	15 mkm/ m	15 mkm/m	N/A	N/A	N/A	N/A
<b>Repeatability</b>	8 mkm/m	10 mkm/m	N/A	N/A	N/A	N/A



# YIN FU

<u>Manufacturer</u>	<u>YIN FU</u>	<u>Giddings &amp; Lewis</u>	<u>DST-Technologies</u>	<u>Toshiba-TMD</u>	<u>PietroCarnaghi</u>	<u>Toshulin</u>
<u>Model</u>	<u>YVT-3000</u>	<u>VTC-3000</u>	<u>VC-3500</u>	<u>TSS-30/55</u>	<u>AC-32T</u>	<u>PT-3000</u>
<b>Table Dia.</b>	2500 mm(3000 mm)	3000 mm	3200 mm	3000 mm	2800 mm	3000 mm
<b>Max. Swing</b>	3200 mm	3400 mm	3500 mm	5000 mm	3200 mm	3600 mm
<b>Max. Turning Height</b>	1600 mm	1500 mm	1520 mm	1800 mm	1200 mm	1540 mm
<b>Max. Table Speed</b>	160	150	N/A	N/A	N/A	200
<b>Max. Table Load</b>	35000 Kg	N/A	50000 Kg	30000 Kg	20000 Kg	20000 Kg
<b>Ram Size</b>	254 x 254 mm	250 x 250 mm	250 x 250 mm	250 x 250 mm	250 x 250 mm	240 x 240 mm
<b>Crossrail Positions</b>	6	Infinite	100	N/A	N/A	N/A
<b>Crossrail Travel</b>	1000 mm	1250 mm	1000 mm	N/A	N/A	1000 mm
<b>X-Axis Travel</b>	-300~+2400 mm	1910 mm	N/A	2150 mm	N/A	2250 mm
<b>Z-Axis Travel</b>	1600 mm	1250 mm	1100 mm	1000 mm	1250 mm	1500 mm
<b>Main Trans. Power</b>	60 Kw	75 Kw	60 Kw	45 Kw	60 Kw	80 Kw
<b>Main Trans. Max Torque</b>	55000 Nm	111116 Nm	815000 Nm	411000 Nm	N/A	71400 Nm
<b>Max. Cutting Force</b>	50000 N	34000 N	50000 N	35000 N	N/A	N/A
<b>X/Z Rapid movement</b>	10000 mm/min	20000 mm/min	18000 mm/min	12K/8K mm/min	15000 mm/min	10000 mm/min
<b>X/Z Max. Feed rate</b>	5000 mm/min	N/A	N/A	2000 mm/min	N/A	4000 mm/min
<b>Crossrail Rapid movement</b>	400 mm/min	N/A	N/A	N/A	N/A	N/A
<b>ATC Positions</b>	12/24/32	26	20	N/A	N/A	45
<b>Chip Conveyor</b>	1	1	1	1	1	1
<b>Max. Table Run Out</b>	.025 mm	.020 mm	.070 mm	N/A	N/A	N/A
<b>Position Accuracy</b>	15 mkm/m	15 mkm/m	N/A	N/A	N/A	N/A
<b>Repeatability</b>	10 mkm/m	10 mkm/m	N/A	N/A	N/A	N/A



Manufacturer	YIN FU	Giddings & Lewis	DST-Technologies	Toshiba-TMD	PietroCarnaghi	Toshulin
Model	YVT-4000	VTC-3500	VC-4000	See 20/40	AC-36T	PT-4000
Table Dia.	3500 mm	3500 mm	3200 mm	2000 mm	3200 mm	4000 mm
Max. Swing Dia.	4000 mm	3700 mm	4000 mm	4000 mm	3600 mm	4500 mm
Max. Turning Height	2500 mm	2000 mm	1500 mm	1800 mm	2000 mm	1460 mm
Max. Table Speed	100	130	N/A	N/A	N/A	150
Max. Table Load	50000 Kg	N/A	50000 Kg	20000 Kg	40000 Kg	30000 Kg
Ram Size	305 x 305 mm	250 x 250 mm	300 x 300 mm	250 x 250 mm	250 x 250 mm	240 x 240 mm
Crossrail Positions	5	Infinite	250	N/A	N/A	N/A
Crossrail Travel	1250 mm	1250 mm	1000 mm	N/A	N/A	720 mm
X-Axis Travel	2000 mm	2060 mm	N/A	1750 mm	N/A	2650 mm
Z-Axis Travel	1600/2100 mm	1250 mm	1500 mm	1000 mm	1250 mm	1500 mm
Main Trans. Power	120Kw	75 Kw	100 Kw	45 Kw	60 Kw	80 Kw
Pitch of Crossrail movement	400 mm	-	-	-	-	-
Main Trans. Max Torque	160000 Nm	111116 Nm	120500 Nm	41100 Nm	N/A	78400 Nm
Max. Cutting Force	60000 N	34000 N	50000 N	35000 N	N/A	N/A
X/Z Rapids movement	10000 mm/min	20000 mm/min	18000 mm/min	10K/8K mm/min	15000 mm/min	10000 mm/min
X/Z Max. Feed rate	5000 mm/min	N/A	N/A	2000 mm/min	N/A	4000 mm/min
Crossrail Rapid movement	400 mm/min	N/A	N/A	N/A	N/A	N/A
ATC Positions	12/24/32	26	20	N/A	N/A	45
Chip Conveyor	1	1	1	1	1	1
Max. Table Run Out	.030 mm	.020 mm	.100 mm	N/A	N/A	N/A
Position Accuracy	10 mkm/m	15 mkm/m	N/A	N/A	N/A	N/A
Repeatability	5 mkm/m	10 mkm/m	N/A	N/A	N/A	N/A



# YIN FU

## Main components & Structure Features

Item	YIN FU	YOU JI	Expertise/Advantages
Table Gear box Max. speed	3 stages/450 rpm	2 stages/250 rpm	Higher speeds without heat generation and harmonics . Yin Fu built more faster and various speed. (for 1600 model)
Max. table torque /Max. load	20000 Nm/12000Kg	19677 Nm/8000 Kg	Yin Fu machine could bear heavy work piece and steadfast.
Ram size	254mmx254mm	220mmx220mm	Yin Fu machine is stronger and solider.
Ball screw Diameter (X/Z)	Ø80 mm	Ø63 mm	Yin Fu machine gets greater life and rigidity .
X/Z axes structure and box ways	X axis box ways are steel guide ways with heat treatment.	X axis box ways are casting Iron ways with heat treatment.	Yin Fu machine is stronger, higher rigid and durable for heavy duty. (Refer to the pictures next pages)
Main Movement Structure Profile	<p>a. All movement face use scrapped bronze gibs.</p> <p>b. Ram head are combined with bronze gibs and roller/thrust bearing packs.</p> <p>c. Ram head moves along with fixed pillar.</p>	<p>Guide ways and movement face use Turcite-B and stick on the casting gibs.</p> <p>Ram head moves by two rods.</p>	The structures of Yin Fu machine lead the technology and go beyond the competitors. (Refer to the pictures next pages)



# X axis Steel Ways & Cross rail Connection

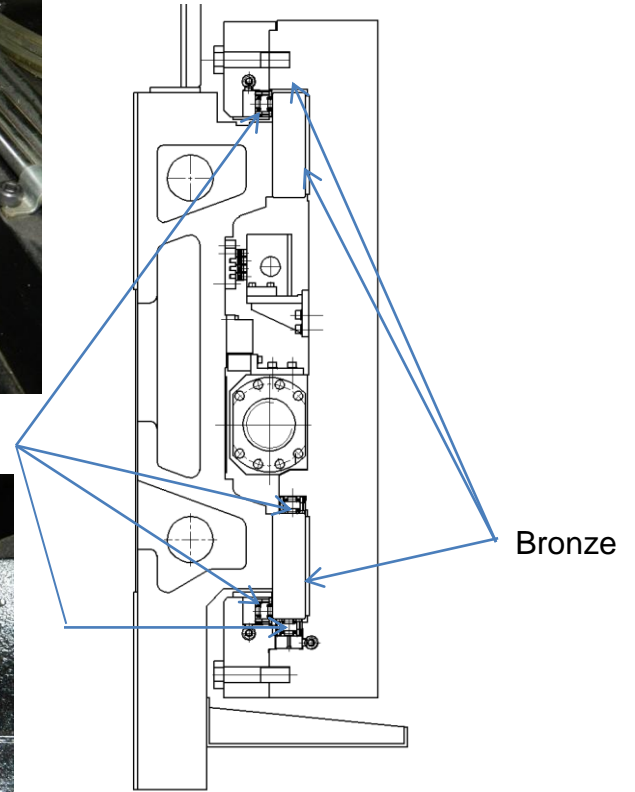
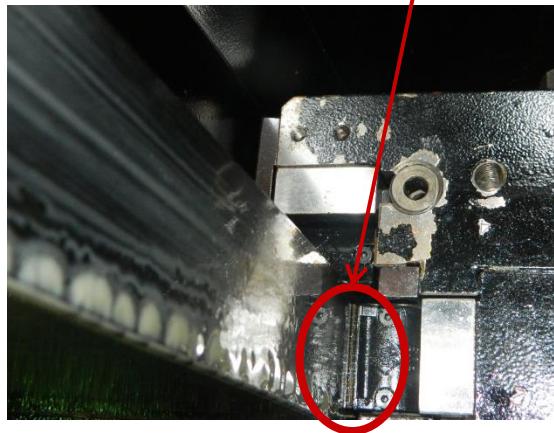
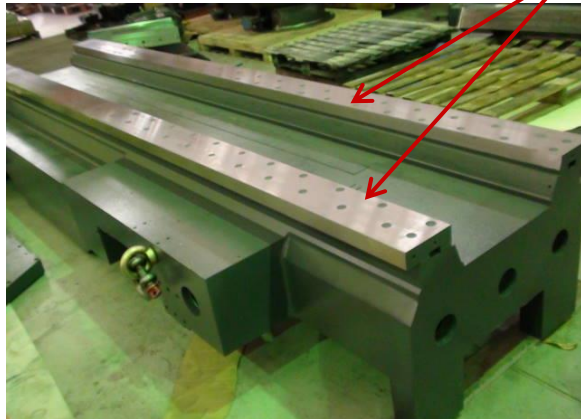


Bronze

Steel Guide way



Roller Packs



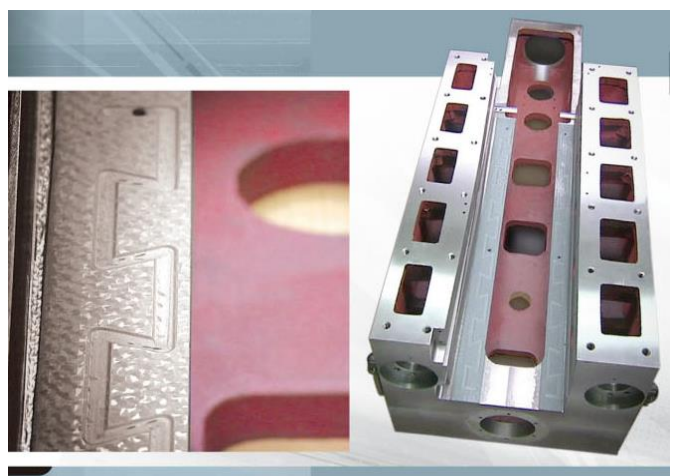
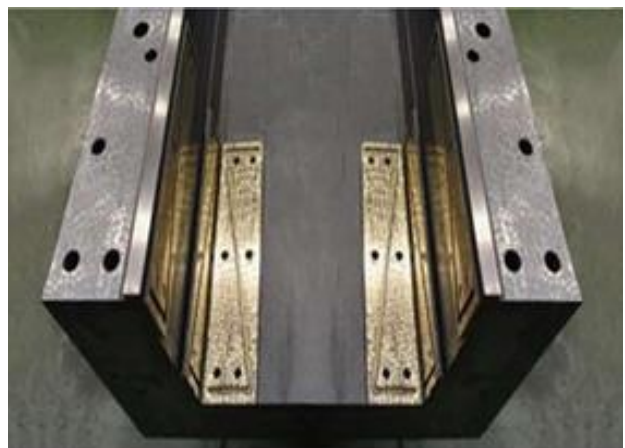
Bronze



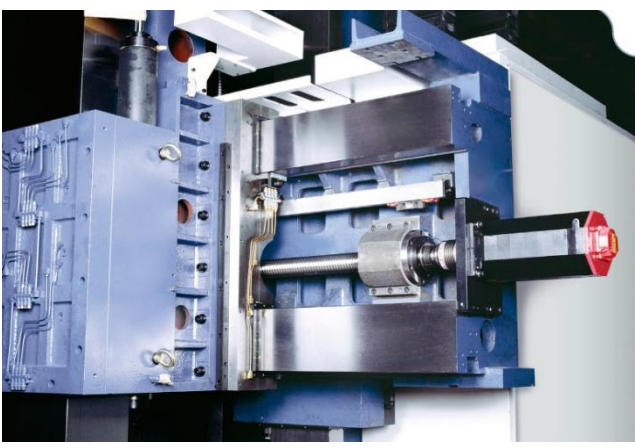


# Ram Head & Cross rail

Yin Fu



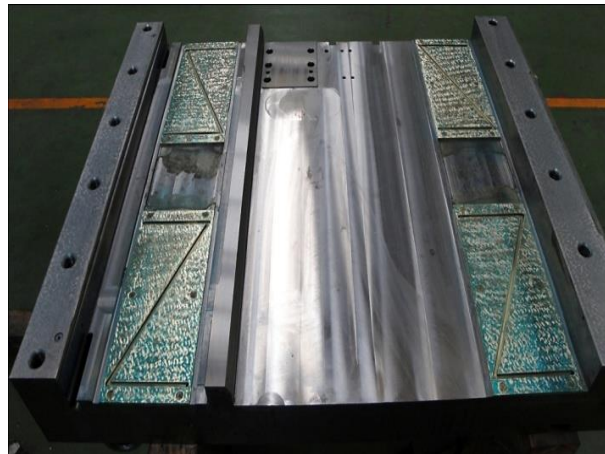
You Ji





# Movement face

	YIN FU Expertise/Advantages
Gibs surfaces	<ul style="list-style-type: none"><li>-Hand scraped bronze gibs for increased contact surface, Yin Fu use C62400 bronze gibs instead of Turcite and steel rail with cylindrical roller bearing pack to create 0.002mm (2 micron) of min. movement.</li><li>-Size and placement of bearing material provides 80% contact vs. 30-40% typical with competitors</li><li>-Fully enclosed ram for better dampening and crash resistance</li></ul>





# Ram Head Movement

The ram head of YinFu elevated along with strong back plate driven by synchronous belt transmission without any swing. But most of competitors use hydraulic balance weight. The movement is not smooth and a lot of swing.

You Ji



Yin Fu



back plate

