## Vertical Milling Machines

### Specifications

(Subject to change without notice)

<table>
<thead>
<tr>
<th>Model</th>
<th>FT-1</th>
<th>FT-2</th>
<th>FTV-1</th>
<th>FTV-2</th>
<th>FTV-3L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>10-1001</td>
<td>12-1004</td>
<td>14-1008</td>
<td>16-10132</td>
<td>20-1015</td>
</tr>
</tbody>
</table>

### Table

<table>
<thead>
<tr>
<th>Specification</th>
<th>FT-1</th>
<th>FT-2</th>
<th>FTV-1</th>
<th>FTV-2</th>
<th>FTV-3L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table Size</td>
<td>44&quot; x 10&quot;</td>
<td>50&quot; x 10&quot;</td>
<td>44&quot; x 10&quot;</td>
<td>50&quot; x 10&quot;</td>
<td>50&quot; x 11&quot;</td>
</tr>
<tr>
<td>Square Ways (On Knee)</td>
<td>STD</td>
<td>STD</td>
<td>STD</td>
<td>STD</td>
<td>STD</td>
</tr>
<tr>
<td>Hardened &amp; Ground Ways</td>
<td>OPT</td>
<td>OPT</td>
<td>OPT</td>
<td>OPT</td>
<td>OPT</td>
</tr>
<tr>
<td>Chrome Ways</td>
<td>OPT</td>
<td>OPT</td>
<td>OPT</td>
<td>OPT</td>
<td>OPT</td>
</tr>
</tbody>
</table>

### Traverse

<table>
<thead>
<tr>
<th>Specification</th>
<th>FT-1</th>
<th>FT-2</th>
<th>FTV-1</th>
<th>FTV-2</th>
<th>FTV-3L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longitudinal Travel Manual</td>
<td>30°</td>
<td>33°</td>
<td>30°</td>
<td>33°</td>
<td>36°</td>
</tr>
<tr>
<td>With Power Feed</td>
<td>26°</td>
<td>30°</td>
<td>26°</td>
<td>30°</td>
<td>33°</td>
</tr>
<tr>
<td>Cross Travel</td>
<td>16°</td>
<td>16°</td>
<td>16°</td>
<td>16°</td>
<td>15-1/2°</td>
</tr>
<tr>
<td>Vertical Knee Travel</td>
<td>10°</td>
<td>10°</td>
<td>10°</td>
<td>10°</td>
<td>10°</td>
</tr>
<tr>
<td>Ram Travel</td>
<td>22-3/16&quot;</td>
<td>22-3/16&quot;</td>
<td>22-3/16&quot;</td>
<td>22-3/16&quot;</td>
<td>22-3/16&quot;</td>
</tr>
</tbody>
</table>

### Head

<table>
<thead>
<tr>
<th>Specification</th>
<th>FT-1</th>
<th>FT-2</th>
<th>FTV-1</th>
<th>FTV-2</th>
<th>FTV-3L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Motor (Other H.P. Available)</td>
<td>2 HP</td>
<td>2 HP</td>
<td>3 HP</td>
<td>3 HP</td>
<td>3 HP</td>
</tr>
<tr>
<td>Step Head 8 Speed (RPM)</td>
<td>65-3000</td>
<td>65-3000</td>
<td>3 HP</td>
<td>3 HP</td>
<td>3 HP</td>
</tr>
<tr>
<td>Step Head 16 Speed (RPM)</td>
<td>65-6000</td>
<td>65-6000</td>
<td>55-4250</td>
<td>55-4250</td>
<td>55-4250</td>
</tr>
<tr>
<td>Infinite Variable Speed Head (RPM)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Head Moves Right to Left</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Tilt Back and Front</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Electric Panel</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
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</table>

### Quill

<table>
<thead>
<tr>
<th>Specification</th>
<th>FT-1</th>
<th>FT-2</th>
<th>FTV-1</th>
<th>FTV-2</th>
<th>FTV-3L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Feed to Quill Per Revolution</td>
<td>003&quot;-0015&quot;-006&quot;</td>
<td>003&quot;-0015&quot;-006&quot;</td>
<td>003&quot;-0015&quot;-006&quot;</td>
<td>003&quot;-0015&quot;-006&quot;</td>
<td>003&quot;-0015&quot;-006&quot;</td>
</tr>
<tr>
<td>Infinite Quill Feed</td>
<td>OPT</td>
<td>OPT</td>
<td>OPT</td>
<td>OPT</td>
<td>OPT</td>
</tr>
<tr>
<td>Spindle Taper</td>
<td>R-8</td>
<td>R-8</td>
<td>R-8</td>
<td>R-8</td>
<td>R-8</td>
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<tr>
<td>Spindle Taper</td>
<td>#30-40</td>
<td>#30-40</td>
<td>#30-40</td>
<td>#30-40</td>
<td>#30-40</td>
</tr>
<tr>
<td>Quill Diameter (Chromed)</td>
<td>3-3/8&quot;</td>
<td>3-3/8&quot;</td>
<td>3-3/8&quot;</td>
<td>3-3/8&quot;</td>
<td>3-3/8&quot;</td>
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<tr>
<td>Quill Tavel</td>
<td>5&quot;</td>
<td>5&quot;</td>
<td>5&quot;</td>
<td>5&quot;</td>
<td>5&quot;</td>
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### Knee Feeds (3 Directions)

<table>
<thead>
<tr>
<th>Specification</th>
<th>FT-1</th>
<th>FT-2</th>
<th>FTV-1</th>
<th>FTV-2</th>
<th>FTV-3L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long &amp; Cross</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Vertical</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>RAPID TRAVERSE</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Long &amp; Cross</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Vertical</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
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</table>

### One Shot Milling

<table>
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<tr>
<th>Specification</th>
<th>FT-1</th>
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<th>FTV-1</th>
<th>FTV-2</th>
<th>FTV-3L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine Weight APPROX.</td>
<td>2,600 LBS.</td>
<td>2,700 LBS.</td>
<td>2,750 LBS.</td>
<td>2,850 LBS.</td>
<td>3,700 LBS.</td>
</tr>
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</table>

### Machine Construction Dimensions

<table>
<thead>
<tr>
<th>Specification</th>
<th>FT-1</th>
<th>FT-2</th>
<th>FTV-1</th>
<th>FTV-2</th>
<th>FTV-3L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column - Turret diameter, column graduated</td>
<td>15&quot; DIA. GRAD.</td>
<td>15&quot; DIA. GRAD.</td>
<td>15&quot; DIA. GRAD.</td>
<td>15&quot; DIA. GRAD.</td>
<td>16&quot; DIA. GRAD.</td>
</tr>
<tr>
<td>Knee - Knee width &amp; Knee to column bearing length</td>
<td>11-1/2 x 11&quot; LUNG</td>
<td>11-1/2 x 11&quot; LUNG</td>
<td>11-1/2 x 11&quot; LUNG</td>
<td>11-1/2 x 11&quot; LUNG</td>
<td>15/3 x 19&quot; LUNG</td>
</tr>
<tr>
<td>Saddle - Saddle &amp; Table bearing length</td>
<td>20&quot;</td>
<td>23&quot;</td>
<td>20&quot;</td>
<td>23&quot;</td>
<td>23&quot;</td>
</tr>
<tr>
<td>Ram - Ram and turret bearing length</td>
<td>19&quot;</td>
<td>19&quot;</td>
<td>19&quot;</td>
<td>19&quot;</td>
<td>19&quot;</td>
</tr>
<tr>
<td>- Ram total length</td>
<td>36&quot;</td>
<td>36&quot;</td>
<td>36&quot;</td>
<td>36&quot;</td>
<td>36&quot;</td>
</tr>
<tr>
<td>Workpiece capacity uniformly distributed</td>
<td>750 LBS.</td>
<td>750 LBS.</td>
<td>750 LBS.</td>
<td>750 LBS.</td>
<td>1,000 LBS.</td>
</tr>
</tbody>
</table>
WHEN YOU NEED
A **Good** Vertical Mill . . .

**Talk To The People Who Make A Great Vertical Mill**

- 8 Models Available
- 3 HP To 7.5 HP Variable
- Manual Or Full Power Knee With PRT
- R-8 Or No. 40 Taper
- 10x44, 10x50, 11x54, And 11x58 Tables
- Precision Ground Screws
- Available With Hardened & Ground Ways
- Flood Coolant Standard
- Only Top Grade USA Spindle Bearings Used

**FT/FTV-1, 2**
- 10x44 or 50" Tables,
- 2 HP Step or 3 HP Variable

**FTV-510**
- 11x58 Table, 5.5 or 7.5 HP, No. 40, 4-3/8" Quill Full Power Knee

**FTV-4L**
- 11x58 Table
- 4 HP, No. 40 Full Power Knee

**Deluxe Model**
- 11x54 or 11x58
- 18" Cross
- 4 HP, No. 40

**Or Any Of Our Almost 40,000 Satisfied Customers**

(OTHER MODELS AVAILABLE)

**Republic-Lagun Machine Tool Co.**
1000 E. Carson Street
Carson, CA 90745
310 518-1100 800-421-2105
Fax: 310-830-0923

www.OzarkToolManuals.com
# Dial Type Vertical Milling Machines

<table>
<thead>
<tr>
<th>Model</th>
<th>Base Price Includes All of These Extra Features as Standard</th>
</tr>
</thead>
</table>

**Special Applications**

<table>
<thead>
<tr>
<th>Model</th>
<th>W/Powered Knee</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-Ram</td>
<td>T-Ram</td>
</tr>
<tr>
<td>FTV-4L</td>
<td>FTV-4L</td>
</tr>
<tr>
<td>FTV-4E</td>
<td>FTV-4E</td>
</tr>
<tr>
<td>FTV-510</td>
<td>FTV-510</td>
</tr>
<tr>
<td>FT-5</td>
<td>FT-5</td>
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</table>

<table>
<thead>
<tr>
<th>Size</th>
<th>58&quot; x 11&quot;</th>
<th>63&quot; x 13-3/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>STD Opt</td>
<td>NO</td>
<td>STD</td>
</tr>
<tr>
<td>STD</td>
<td>NO</td>
<td>OPT</td>
</tr>
<tr>
<td>OPT</td>
<td>NO</td>
<td>OPT</td>
</tr>
</tbody>
</table>

**Base Price Includes All of These Extra Features as Standard:***

1. Electric Motor
2. Flood Coolant System
3. Ground Lead Screws
4. One-Shot Lubrication
5. Extra Long Cross Traverse
6. Chrome Hardened Quill

---

**The end result of designing and building Milling Machines for over 35 years is included in this catalog. All models have those features which have proven their value over the years under all conditions.**

**Sales and Service**

Laugn's extensive network of Distributors maintains a stock of spare parts for the convenience of Laugn users and they also have factory trained service personnel to be of service to you and your company.

---

**Check for Accessories in this Catalog!**

**Assembled in Carson, CA.**

---

**www.OzarkToolManuals.com**
MILLING MACHINE ATTACHMENTS AND ACCESSORIES THAT WILL MULTIPLY THE VERSATILITY OF ALL VERTICAL MILLS

A. ATTACHMENT WITH AUXILIARY SUPPORT

B. SLOTTING ATTACHMENT

C. MACHINE TOOL LIGHT

D. PHASE CONVERTER

E. DIGITAL READ-OUT

F. DUAL READING DIALS

G. BALL LEAD SCREWS

H. QUICK CHANGE SPINDLE

I. COLETT CHUCK W/15 COLLETS

J. BORING HEADS

K. SPECIAL BACK PLATE

SHOWN is the assembled combination of right angle attachment, arbor support and mill arbor.

RIGHT ANGLE ATTACHMENT
Designed to simplify right angle work by reducing the need of special tooling and difficult fixtures. Ideal for cavities & pocket jobs. It has adjustable pads for quick positioning available for R-8, NMT #3 and #4.

Order for R-8: 127 - 1112A
Order for #30: 127 - 1112E

ARBOR SUPPORT
For use with right angle attachment and mill arbor, with bearings support.
Order 129 - 1113

FOR DIMENSIONS, SEE PAGE 9

MULTI ANGLE ATTACHMENT
All Angle Head
Supplements the right angle attachment described on this page. Any corner with a small radius can be turned without milling. The end is supplied with 3 collars of 1/8" - 3/16" and 1/4", and also available for vertical heads with R-8 #30 or #40 spindle nose.

Order for R-8: 132 - 1115

FOR DIMENSIONS, SEE PAGE 9

SLOTTING ATTACHMENT
Order 149 - 1140

The 3/4 HP vertical shaping head performs intricate shapes, extended dies and complex patterns can be fashioned at any vertical or compound angle to the table. This enables you to create shapes which normally require special broach. It is a must in cases of blind holes. The model can be mounted permanently on the ram rear support and by merely swinging it 180° to position it over the table for usage. A shaping 5/8" tool set is also available.

SHAPE HEAD

3/4 HP

4" Stroke

sharpen edges 1/16" increments

58" Tool Cap

6"; 90 - 100 - 145
265 - 255 - 420 strokes per min.

INFINITE VARIABLE POWER FEED UNIT

Lentilucial #140 Order #194 - 1152
Cross #140 Order #195 - 1143
Vertical Knee #140 Order #195 - 1150

SLOTTING TOOL KIT

#149 - 1140A Slotted Tool Kit w/7 shaped tools

VISES

6 1/2" Flame Hardened Vise w/swivel base
Order #122 - 1107

MACHINE TOOL LIGHT

Straight movable plug for direct plant lighting circuits. Flexible tube and plastic heavy duty lamp.
Order #201 - 1176

DUAL READING DIALS

Which leads to millimeters and inches are quickly mounted in place of existing dials. Installation provides immediate conversion to the metric system. Dials available for long and short and vertical. Available set of 3 dials for long and cross and vertical.

Order 526 - 1162

PHASE CONVERTER (Operated 220 volts, 3 phase motor or 220 single phase line)

3 to 5 HP motors Order #222 - 7023
4 to 6 HP motors Order #223 - 7023

ROTOR TURNS

These heads are mounted in a horizontal position, either vertically or horizontally. A wide range of different motions can be achieved using indexing plate having several holes of equal size and holes of the workpiece to within 20 seconds of a rotation.

Order #179 - 1200 10" Diameter
Order #161 - 125 12" Diameter

UNIVERSAL DIVIDING HEAD

Universal model with gears to drive from left side of table, tailstock, indexing plate for manual operation ratio 00000000 (1) to ratio

#1 UNIVERSAL order #77 - 1118
#2 UNIVERSAL order #78 - 1119
#3 UNIVERSAL order #79 - 1120
#4 UNIVERSAL order #80 - 1121
#5 UNIVERSAL order #81 - 1122

SPECIAL BACK PLATE

Flange to hold Vertical Head

Order No. 62 - 1170
MODEL FTV-1 Table 44" x 10" 3 HP
(Order 14-1000)
MODEL FTV-2 Table 50" x 10" 3 HP
Extra Long Saddle 23" (Order 16-1012)

IMPORTANT FEATURES
- AMERICAN MADE MAIN BEARINGS
- 30% MORE CAPACITY THAN COMPARABLE MACHINES
- One shot lubrication for long and cross ways, nuts and lead screws
- Back-lash compensation
- Hand scraped ways and gibbs
- 16" cross traverse
- Flood Coolant System
- 3 HP main motor
- Infinite variable speed from 55 up to 4250 rpm
- Automatic & manual feed with up & down stop

CAPACITY MILLING & DRILLING
Drilling Steel
  mild (manual) ........... 3/4"
  (power) ............... 1/2"
Boring range
  mild steel .......... to 6"
Milling
  mild steel .......... 3 cu. in./min.

HARDENED WAYS (Opt.) See page 7
Knee always w/Square Ways

CHROMED WAYS (Opt.) See page 7
Knee always w/Dovetail ways

FTV-1 shown with Longitudinal Servo Feed, Read-out, Machine Light, Slotted Attachment, JIC Electric Controls and Way Covers.
(See page 3 for additional accessories)

VERTICAL VARIABLE HEAD ONLY
Order 56-1069
(Check page 10 for additional information)
Now
With Ground
Lead-Screws

MODEL FTV-3L Table 58" x 11" 3 HP
(Order 20-1015)
With Square Heavy Duty Ways

Provides the heavier workhandling capability of a heavy mill, workpieces up to 1000 lbs. with the versatility of the FT-1 Mill for toolrooms and shops requiring intermediate workpiece capacity. Extra wide saddle and knee for support of the large table with maximum stability and accuracy.

This FTV-3 model weighs 850 lbs. (more than Model FTV-2) Will use all the standard accessories and attachments of Models FT-1/FTV-2.

AVAILABLE (OPT.)
a) X-Y-7 Axis power feeds units
b) Niser blocks
c) Wide choice of accessories (see page 3)
d) Hard chromed ways
e) Hardened & ground ways
f) Powered draw bar

MODEL FTV-3L

POWER DRAW BAR

PRECISION AIR GUN FEATURES:
• High quality precision pneumatic gun
• Uses standard draw bar
• Will hit R-8 #30 or #40 national tapers
• Rotation of air gun is delayed until socket has captured the draw bar
• 1 year full warranty

PRECISION AIR VALVE FEATURES
• Convenient operation station
• Self-lubrication
• Precision air valve
• Water trap
• Uses standard 90 to 120 PSI shop air
• Install in minutes

FTV-3L shown with Cross Long Heavy Duty Feed Motors, Vertical Knee Feed Motor and Special Electric Installation.
CONSTRUCTION DETAILS

(All machines performance-tested before shipment)

Quality materials used throughout. Castings are close-grained, semi-steel. Aluminum castings are made of a special, high ductile, shock resistant alloy. Steel components are machined from stress relieved alloy.

Engineered for added rigidity. Column has multiple internal ribbing; ram designed with continuous internal T-vig supports.

Built with many exclusive features. Anti-friction bearing draw bar, supplied on self-holding taper spindle machines, facilitates collet ejection.

Designed for operator convenience. Dials are large, satin chrome finished. Elevating crank fits draw bar and knee locks. Adjustable gib is provided with convenient locks on knee, saddle and table.

Complete accuracy is assured through use of precision lead screws for each machine movement. At each point, an adjustable nut is provided for wear and back-lash take-up.

FRAME

Expanding dovetail locks ram and turret into one unit to prevent vibration.

Column, knee and table are constructed with extra wide ways and taper gib for maximum rigidity.

Heavier more rigid base, with 500 lbs. more structural reinforcement.

IMPORTANT FEATURE

Knee locking mechanism. Most knee-type vertical milling machines have a single lock to the column permitting rotation about the single point.

Lagun's new knee is equipped with a dual lock system which gives excellent contact on both sides of the column dovetail. The knee cannot lock laterally.

- HARDENED WAYS (Opt.)
  See pages 5 and 6.
  KNEE ALWAY W/DISLAN DOVETAIL WAYS
  Hardened and ground ways, heat treated
  (X-Y) (Knee & Knee Hardened Ways)
  HARDENED Surfaces marked with "X"

- CHROMED WAYS (Opt.)
  See pages 5 and 6.
  KNEE ALWAYS W/DISLAN DOVETAIL WAYS
  CHROMED Surfaces marked with "C"

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
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<td>Max</td>
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<td>Min</td>
<td>Max</td>
<td>Min</td>
<td>Max</td>
<td>Min</td>
<td>Max</td>
<td>Max</td>
</tr>
<tr>
<td>FT-1</td>
<td>15½</td>
<td>15⅝</td>
<td>15⅝</td>
<td>15⅞</td>
<td>20</td>
<td>20⅛</td>
<td>20⅛</td>
<td>20⅞</td>
<td>32</td>
<td>32⅛</td>
<td>36¼</td>
</tr>
<tr>
<td>FT-V1</td>
<td>15⅜</td>
<td>15⅞</td>
<td>15⅛</td>
<td>15⅝</td>
<td>20</td>
<td>20⅛</td>
<td>20⅛</td>
<td>20⅞</td>
<td>32</td>
<td>32⅛</td>
<td>36¼</td>
</tr>
<tr>
<td>FT-2</td>
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<td>15⅞</td>
<td>15⅝</td>
<td>15⅞</td>
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<td>20⅛</td>
<td>20⅞</td>
<td>32</td>
<td>32⅛</td>
<td>36¼</td>
</tr>
<tr>
<td>FT-V2</td>
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<td>15⅞</td>
<td>15⅝</td>
<td>15⅞</td>
<td>20</td>
<td>20⅛</td>
<td>20⅛</td>
<td>20⅞</td>
<td>32</td>
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<td>36¼</td>
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<tr>
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<td>15⅝</td>
<td>15⅞</td>
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<td>20⅛</td>
<td>20⅛</td>
<td>20⅞</td>
<td>32</td>
<td>32⅛</td>
<td>36¼</td>
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<td>15⅞</td>
<td>15⅝</td>
<td>15⅞</td>
<td>20</td>
<td>20⅛</td>
<td>20⅛</td>
<td>20⅞</td>
<td>32</td>
<td>32⅛</td>
<td>36¼</td>
</tr>
</tbody>
</table>

(ABOVE SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE)
MODEL T-RAM
EXTRA LONG SADDLE 26"
FOR TRACER MILLS
FOR SPECIAL APPLICATIONS
C.N.C.

CHECK WITH PLANT

MODEL T-RAM Table 56" x 11" W/(2) 8 speed heads
Order 24-1020

MODEL T-RAM Table 58" x 11" W/(2) Variable
speed heads
Order 28-1022

- Hardened & ground ways
- Hard chromed ways

3 HEAD T-RAM (Basic Machine)
Available for special applications. Shown the heavy
duty 54" long T-RAM and the rear end lead screw
of 6" RAM Traverse.

LAGUNMATIC — 3 HEAD CNC MACHINE
(Built in California)

For information about
CNC Machines
call the plant:
(213) 518-1100, Ext. 302
(1-800) 421-2105

CNC MACHINE shown with air powered
draw-bar and CNC Control
(Built in California)

Call plant — (213) 518-1100

www.OzarkToolManuals.com
LAGUN MILLING HEADS ARE ENGINEERED AND BUILT TO TAKE IT . . .
and hold original accuracies over long, hard days-in, days-out service.

8 SPEED HEAD MECHANISM
Shown step pulleys and back gear mechanism.

VARIABLE SPEED MECHANISM
Shown the chrome hardened quill and the ground rack and the counter balanced spindle.

Shown Feed Mechanism (the same for both heads) with the adjustable safety overload clutch.

Shown the extra large variable speed pulleys and back gears.

DIMENSIONS (in metric)
SELF MOTORIZED HEADS — FOR MULTIPLE APPLICATIONS

VERTICAL HEAD - Order 54-1068 2 HP model milling, drilling and boring head. It is provided with power down-feed and up-feed with automatic stop. A separate lever allows rapid manual movement of the quill. Controlled manual feed is obtained through a separate hand wheel.

IMPORTANT FEATURES are: a) the micrometer depth control, b) the hardened and ground quill, c) the dynamic balanced gears, pulleys and the quill locking device.

VERTICAL VARIABLE HEAD - Order 56-1069

This 3 HP milling, drilling and boring head has variable speeds from 55 up to 4250 rpm. All parts are balanced to supply a power downfeed and up-feed, counter balanced quill and spindle, micrometer depth control graduated. A special air cooling system recognizes distortion of the spindle.

VERTICAL VARIABLE HEAD EXTRA HEAVY - Order 60-1070

This 4 HP vertical head has special electric control and an extra heavy motor. A special round tooth timing belt provides the torque needed in the low range of speeds.

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Order and Model No.</th>
<th>54-1068</th>
<th>56-1069</th>
<th>60-1070</th>
<th>70-1071</th>
<th>72-1095</th>
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</thead>
<tbody>
<tr>
<td>TYPE OF MILLING HEAD</td>
<td>Step Speed Head</td>
<td>Variable Speed Head</td>
<td>Heavy Duty Variable Speed Head</td>
<td>NC Head</td>
<td>Extra Heavy Duty</td>
<td></td>
</tr>
<tr>
<td>MAIN MOTOR (3 Phase Motors) (Phase Converters available)</td>
<td>2 HP</td>
<td>3 HP</td>
<td>4 HP</td>
<td>4 HP</td>
<td>5.5 HP</td>
<td></td>
</tr>
<tr>
<td>SPEEDS — (9 Speed Head) RPM (Variable Speed Head RPM)</td>
<td>65-3000</td>
<td>55-4250</td>
<td>55-4250</td>
<td>55-4250</td>
<td>70-4200 RPM</td>
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<tr>
<td>QUILL DIAMETER (Hard Chromed)</td>
<td>3-3/8</td>
<td>3-3/8</td>
<td>3-3/8</td>
<td>4-3/8</td>
<td>4-3/8</td>
<td></td>
</tr>
<tr>
<td>QUILL TRAVELSE (Automatic)</td>
<td>5'</td>
<td>5'</td>
<td>5'</td>
<td>6-1/2'</td>
<td>6'</td>
<td></td>
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<tr>
<td>SPINDLE TAPER &amp; NOSE — STD (OPT)</td>
<td>R-8</td>
<td>R-8 #40</td>
<td>R-8 #40</td>
<td>#40 Erickson</td>
<td>#40 Erickson</td>
<td></td>
</tr>
<tr>
<td>QUILL FEED</td>
<td>(3) RANGE 003' - 0015' - 006'</td>
<td>W. Ball Screw (3) 003' - 0015' - 006'</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>HEADSTOCK WEIGHT</td>
<td>LBS</td>
<td>205</td>
<td>220</td>
<td>245</td>
<td>350</td>
<td>500</td>
</tr>
<tr>
<td>HFADS ARE SUPP IF NWT WITH</td>
<td>370/220/440 Volts ±3 phase 60 HZ electric motor with the electric switch to reverse spindle rotation. (Model 60-1070 is supplied with push buttons)</td>
<td></td>
<td></td>
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<tr>
<td>ACCESSORIES (Available)</td>
<td>Yes page 3</td>
<td>Yes page 3</td>
<td>Yes page 3</td>
<td>Yes page 3</td>
<td>Yes page 3</td>
<td></td>
</tr>
</tbody>
</table>

CNC HEAD (Order 70-1071)

w/built in Z axis

4 HP Variable speed heavy duty head with 4-3/8" hardened and ground quill dia. spindle mounted on 3 super precision bearings 6-1/2" stroke with 7" still supported in quill housing-speeds from 55 to 4250 rpm. (Z Axis) vertical ball lead screw installed (to be powered by customer unit) NMT #40 spindle threaded for Erickson tooling.

EXTRA HEAVY HEAD

5.5 HP Variable speed heavy duty head with 4-3/8" hardened and ground quill dia. spindle mounted on 3 super precision bearings 6-1/2" stroke. Speeds from 70 up to 4200 rpm. #40 NMT with Erickson spindle threaded nose.
Combines outstanding versatility with heavy metal removal rates.

- 30% more capacity than comparable machine. All operation controls are at the operators fingertips, graduated dials are extra large for easy reading.
- Table, knee and saddle locks located in front of machine for convenience.
- Anti-friction bearings are used throughout the machine.
- Worm and gear controls are used for angular settings of head.
- One shot lubrication for long, and cross ways, nuts and lead-screw.
- Extra long, saddle 15° cross traverse.
- Ground lead-screws.
- Heavy duty knee with long vertical slideways for extra rigidity.
- Hardened & ground knee ways.

CAPACITY MILLING & DRILLING

Drilling mild steel

- Manual .................. 1"
- Power .................... 5/8"

Milling mild steel

- 3.750 cu. in/min.

<table>
<thead>
<tr>
<th>TABLE</th>
<th>INCH</th>
<th>68&quot; x 11&quot;</th>
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</thead>
<tbody>
<tr>
<td>SQUARE WAYS (On Knee)</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>HARDENED &amp; GROUND WAYS</td>
<td>OPT</td>
<td></td>
</tr>
<tr>
<td>CHROME WAYS</td>
<td></td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>TRAVERSE</th>
<th>INCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>LONGITUDINAL TRAVEL MANUAL</td>
<td>39&quot;</td>
</tr>
<tr>
<td>WITH POWER FEED</td>
<td>38&quot;</td>
</tr>
<tr>
<td>CROSS TRAVEL</td>
<td>12&quot;</td>
</tr>
<tr>
<td>VERTICAL KNEE TRAVEL</td>
<td>16-1/8&quot;</td>
</tr>
<tr>
<td>RAM TRAVEL</td>
<td>22-3/16&quot;</td>
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</table>

<table>
<thead>
<tr>
<th>HEAD</th>
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</thead>
<tbody>
<tr>
<td>MAIN MOTOR</td>
<td>4 HP</td>
</tr>
<tr>
<td>INFINITE VARIABLE SPEED HEAD (RPM)</td>
<td>55-4250</td>
</tr>
<tr>
<td>HEAD MOVES RIGHT TO LEFT</td>
<td>YES</td>
</tr>
<tr>
<td>TILT BACK AND FRONT</td>
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<thead>
<tr>
<th>QUILL</th>
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<tbody>
<tr>
<td>POWER FEED TO QUILL PER REVOLUTION</td>
<td>.003 - .0015 - .006</td>
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<tr>
<td>INFINITE QUILL FEED</td>
<td>OPT</td>
</tr>
<tr>
<td>SPINDLE TAPER STD</td>
<td>#40 Erickson</td>
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<tr>
<td>QUILL DIAMETER (CHROMED)</td>
<td>3-3/8&quot;</td>
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<tr>
<td>QUILL TRAVEL</td>
<td>5&quot;</td>
</tr>
<tr>
<td>KNEE FEEDS - 3 DIRECTIONS</td>
<td>12</td>
</tr>
</tbody>
</table>

For more specifications see page 2
W/POWERED KNEE - 3 DIRECTIONS

• IDEAL FOR DIE MAKERS
• IDEAL FOR PRODUCTION

SADDLE / Universal saddle and swivel base. The large ways give longitudinal support to the table - hand screwed for extreme accuracy, uniform lubrication and low friction table movements. One shot lubrication for table and saddle. Double locking device. Automatic feed for rapid and longitudinal, cross and vertical travel.

FEED BOX / Compact, monoblock type gear box — all gears — spline shafts hardened and ground, all in bath of oil. A 2 HP direct current electric motor supplies the infinitely variable speed range and a 1 HP alternate current electric motor is only used for the rapid traverse.

KNEE / The knee has been designed to enable the console and feed gear box assembly unit to be easily removed for quick service. The feed gear box incorporates both standard and rapid traverse feed movements in all three directions.

This complete unit can be removed from the knee of the machine in a matter of a few minutes. The lever assemblies on either side of the knee are dismantled by removing the front screws.

Full length ways and drop center construction fulfill modern, functional design requirements and provide excellent lateral stabilization of the knee.

<table>
<thead>
<tr>
<th>TABLE</th>
<th>INCH</th>
<th>UNIV.</th>
<th>NO</th>
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<tr>
<td>SQUARE WAYS (On Knee)</td>
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<tr>
<td>CROSS TRAVEL</td>
<td>16&quot;</td>
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<tr>
<td>VERTICAL KNEE TRAVEL</td>
<td>10 1/4&quot;</td>
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<td></td>
<td></td>
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<tr>
<td>RAM TRAVEL</td>
<td>22 3/10&quot;</td>
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<thead>
<tr>
<th>HEAD</th>
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<th>4 HP</th>
<th>55-4250</th>
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<td>MAIN MOTOR</td>
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<tr>
<td>POWER FEED TO QUILL PER REVOLUTION</td>
<td>OPT</td>
<td>003 - 0015 - 006</td>
<td>440 Friction</td>
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<td>5</td>
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<tr>
<td>INFINITE QUILL FEED SPINDLE TAPER</td>
<td>STD</td>
<td>5 3/8</td>
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<tr>
<td>QUILL DIAMETER (CHROMED)</td>
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For more specifications see page 2
CAPACITY MILLING & DRILLING

Drilling mild steel
- manual .......... 2"
- power ......... 1 1/4"
Milling mild steel ...... 5 cu. in/min.

- 5-1/2 HP MAIN MOTOR
- INFINITE VARIABLE SPEED
  In direct drive from 600 up to 4200 rpm
  In back gear from 70 up to 480 rpm
- 4-3/8" dia. quill
- 6" automatic quill travel
- Heavy duty design

For more information see pages 2 and 10.
HEAVY-DUTY MILLING OPERATIONS
WORKPIECES UP TO 2500 LBS. FEATURES:
+ Large work capacity
+ NS 40 quick-change spindle (Erickson Type)
+ Spindle brake
+ 6" Quill feed with automatic stop
+ 4-3/8" Quill diameter
+ Cutter stability under severe climb milling conditions
+ Coolant system
+ Pendant electric control
+ Increased metal removal capability to take advantage of carbide tooling
+ Automatic lubrication for table, saddle and knee
+ Swivel table 47° both sides
+ 16 table feeds (dial type)
+ Knee vertical feedscrew in oil bath
Universal Milling Machine with automatic and rapid feeds in all directions. Self motorized vertical head with automatic and manual quill traverse.


RAM CLAMPS / Equalized pressure front and rear for positive clamping of ram to column — as rigid as one piece construction.

I WOULD LIKE MORE INFORMATION ON...

Please Mark

LAGUN VERTICAL MILL FT-1/FT-2
LAGUN VERTICAL MILL FTV-1/FTV-2
LAGUN VERTICAL MILL FTV-3L
LAGUN VERTICAL MILL FTV-4L
LAGUN VERTICAL MILL FTV-4E
LAGUN VERTICAL MILL FTV-510
LAGUN VERTICAL MILL FTV-5
LAGUN ACCESSORIES

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COMPANY: ____________________________
STREET: ____________________________
CITY: _____________________________ STATE _______ ZIP ________

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For more specifications see page 2
For the past 3 decades THE REPUBLIC LAGUN MACHINE TOOL CO. has been producing excellent Quality Machines Tools at competitive prices. Due to our commitment with "PROGRESS THRU PRODUCTIVITY" we now have a joint effort with major CNC Control Builders to offer an excellent line of CNC Machine Tools.

The LAGUN-MATIC 250-310 and 320 are completely manufactured by REPUBLIC LAGUN CNC CORP., a division of Republic Lagun Machine Tool Co. Our machines have been in operation through the years in thousands of Plants, Government, Navy, Army, Shipyards, Oil Industry, Etc. Etc. As you can see we have a commitment to INDUSTRY and we are here to STAY.

OTHER PRODUCTS
CNC MILLS & LATHEES

BUILT WITH PRIDE IN THE USA
(California Plant)

CNC MILLS
TABLE 10 x 44  5 HP
10 x 50  5 HP
11 x 58  5 HP

CNC LATHEES 13 x 40
15 x 50
17 x 60
21 x 80

CNC SLOTTERS Catalog mail on request.

• Accessories available for all the machines
• Parts and Service (1-800) 421-2105

For the name of your nearest REPUBLIC-LAGUN Distributor, look in the "Yellow Pages" under Machine Tools.