FRYER®

MACHINE SYSTEMS

The Toolroom Company

www.fryermachine.com

Why Fryer

Welcome to Fryer, "The Toolroom Company." From our first toolroom bed mill in 1995 to our newest 5 axis universal mill, Fryer has created the ultimate in toolroom technology. Making machines easier to use is our hallmark and as a result you can make single part in half the time of a manual machine. Quality, precision and ease of use defines our machine tools. We don't just make toolroom machines, we make the best toolroom machines. More models, more features and more flexibility give our customers the edge they need.

OUR COMPANY

- **Over 30 years experience**
- **Family owned & operated**
- **Over 6,000 machines in use**

OUR FACTORY

- **Modern 50,000 sq. ft. manufacturing facility**
- **Hand built assembly system**
- **Sophisticated quality control**

CUSTOMER SUPPORT

- **Remote diagnostics and tele-service**
- **Fully stocked parts department with same day shipping**
- **No charge phone service**

OUR PEOPLE

- **Local New England craftsmen**
- **Made in the USA**
- **Excellent engineering & application support**
- **People who care**

Table of Contents

Machines may be shown with optional features

MB-Q Series - Toolroom Bed Mill with Manual Quill Head

High Quality Toolroom Mills for Small Batch Production

MB-10Q 32” x 17” x 19”
MB-14Q 40” x 20” x 20”
MB-16Q 60” x 25” x 24”

All models feature 6” manual quill

- **Manual, Semi-CNC or Full-CNC Modes**
- **Extremely Easy to Use**
- **Fast Set Up for One Off-Parts**
- **Perfect for Repair Tool & Die, Maintenance & Job Shop**

MB-14Q

	MB-10Q	MB-14Q	MB-16Q
X Travel	32”	40"	60"
Y Travel	17”	20"	25"
Z Travel	19”	20"	24"
Tool Type/Taper	CAT 40 (NST 40 or BT 40 optional)		
Spindle Speed	Low 10-500 High 100-4,500		
ATC Tool Cap	N/A		
Rapid Traverse	400 IPM		
Machine Weight	5,000 lbs.	6,000 lbs.	8,800 lbs.

OVERVIEW

The Fryer MB-Q Series is the ultimate mill for toolroom applications. Designed and built to be the finest toolroom mill available, these machines are easier to use, more accurate and last longer than any other toolroom mill. Equipped with a manual quill and manual handwheels, the “Q” Series gives you the flexibility to use in manual, semi-CNC or full-CNC modes. The conversational control makes programming easy so even one-off parts can be done quickly and efficiently.

EASE OF USE

- Manual handles for X and Y axis
- Manual quill with optional glass scale
- “Do One” cycles for pockets, drilling, bolt circles & more
- Simple menu programming – no codes of any kind
- Reads standard G & M codes from CAD-CAM systems
- Solid model part verification

FEATURES

- Versatile quill head with gear box
- One-touch set-up buttons
- Rigid tapping with peck feature
- Handwheel run makes testing programs safer
- 10 HP 4,500 RPM CAT-40 taper spindle
- Standard 2 year warranty

MB-Q Quill Head

The versatile Quill head features a 40 taper quill type spindle with 6" of manual movement. The head can be rotated right to left up to 90 degrees and includes a 2 speed gearbox with 4,500 RPM max speed.

MB-16Q

MANUAL OPERATION

- Manual handles for X and Y axis
- Digital readout for positioning
- Manual quill with optional glass scale

SEMI-CNC OPERATION

- Power-feed function
- Simple "Go To" function for axis positioning
- "Do One" function allows you to easily cut pockets, chamfers, radius, boring and more

FULL CNC OPERATION

- Simple menu system – no codes of any kind
- Reads standard G & M codes from CAD-CAM systems
- High speed machining function for mold makers
- Full 3 axis contouring control
- Solid model part verification

MB-R Series - Toolroom Bed Mill with Rigid Spindle Head

High Quality Toolroom Mills for Small Lot Production

MB-10R	32” x 17” x 19”
MB-14R	40” x 20” x 20”
MB-16R	60” x 25” x 24”

- **Rigid Spindle & Optional Tool Changer**
- **Compact size**
- **Fast Set-Up and Programming**
- **Perfect for Both Single or Multi Part Production**

MB-14R

FEATURES

- 12 HP 8,000 RPM CAT-40 taper spindle
- 12 or 20 tool automatic tool changer
- Rigid tapping with peck feature
- Rugged heavy duty Meehanite castings
- Absolute encoders - no homing required
- Standard 2 year warranty

OVERVIEW

The Fryer MB-R Series is the perfect mill for job shop and toolroom applications. Built to be the most accurate and reliable machine of its type, it is also extremely easy to use. Equipped with a rigid spindle and optional tool changer, this machine is capable of single or multi part production. The conversational control makes programming easy so even one off parts can be done quickly and efficiently.

EASE OF USE

- Fast set-up keys
- Electronic handles for manual movement
- “Do One” semi-automatic mode
- Simple menu programming – no codes of any kind
- Reads standard G & M codes from CAD-CAM systems

TECHNOLOGY

- All digital drives and motors
- Regenerative drives save 40% energy use
- All axes laser calibrated & ballbar verified
- 400 IPM rapid feedrate
- Automatic drawbar
- Automatic tool setter
- One touch set-up buttons
- 4th axis capability
- Automatic part probe
- Solid model part verification

MB-R Rigid Head

Features a high speed 8,000 RPM 40 taper spindle. Rigid style head allows the use of an automatic tool changer.

MB-10R

Table Mounted Splash Guard

Table mounted guard helps to contain coolant and chips. It features two siding doors with a door safety switch that meets safety requirements for many companies.

3 HANDWHEEL OPTION

- 3 handwheels for manual control
- Joystick feed control for X and Y
- Coarse / fine feed switch
- Electronic stops for controlling positioning
- Cut angles by turning one handwheel
- Do One cycles for pocketing and drilling

	MB-10 R	MB-14 R	MB-16 R
X Travel	32"	40"	60"
Y Travel	17"	20"	25"
Z Travel	19"	20"	24"
Tool Type/Taper	CAT - 40 (BT-40 optional)		
Spindle Speed	60 - 8,000 RPM		
ATC Tool Capacity	12 (20 optional)		
Rapid Traverse	400 IPM		
Machine Weight	5,000 lbs.	7,000 lbs.	10,000 lbs.

CM Series - Precision Compact Mill

Best Made Compact Toolroom Mills

CM-15	15” x 10” x 15”
CM-20	20” x 13” x 20”

- **Simple Conversational Programming**
- **Flexibility - Easy to Set Up & Move**
- **Ultra Accurate**
- **Perfect for Toolroom, Job Shop & Secondary Operations**

CM-15

OVERVIEW

The Fryer CM Series is the perfect tool for toolroom, job shop and secondary operations. Built on a solid cast iron platform and using high precision ballscrews, spindle and ATC, the CM can hold the demanding tolerances that industry requires. Programming is accomplished with industry standard G code or Siemens advanced ‘Shop Mill’ programming. Equipped with an impressive list of standard features the CM Series is by far the best compact milling machine available today.

FEATURES

- Automatic Tool Changer
- 40 Taper Spindle – 8,000 RPM
- 7.5 HP spindle motor
- Move easily to where a spindle is needed
- Park next to larger machine as 2nd Op
- Fast set-up buttons

QUALITY

- Rugged Construction
- Precision ground ballscrews
- Super accurate
- Rigid tapping with peck feature
- Simple menu programming - No codes of any kind
- G code editor runs Fanuc G code

SPINDLE FEATURES

- 8,000 RPM 40 taper
- 10,000, 12,000 or 15,000 inline option
- 21,000, 30,000 electric option
- Built-in coolant nozzles
- 7.5 HP or 15 HP spindle motors

PORTABLE

- Move easily to where a spindle is needed
- Park next to larger machine as 2nd Op
- Easy to level and set-up

CM-20

	CM-15	CM-20
X Travel	15"	20"
Y Travel	10"	13"
Z Travel	15"	20"
Tool Type/Taper	CAT 40 (BT optional)	
Spindle Speed	60 - 8,000 RPM (10K, 12K, 15K, 21K, 30K optional)	
ATC Tool Cap	8 Station	10 Station (20 optional)
Rapid Traverse	500 IPM (1,200 optional)	
Machine Weight	2,350 lbs.	4,300 lbs.

MC Toolroom Series - Toolroom Machining Centers

Fully Enclosed Toolroom Machining Centers

MC-10	**32” x 17” x 19”**
MC-14	**40” x 20” x 20”**
MC-16	**60” x 25” x 24”**

MC-14

- **Full Steel Enclosure**
- **Extremely Easy To Use**
- **20 tool ATC**
- **Perfect for Toolroom, Job Shop and Secondary Operations**

OVERVIEW

The Fryer MC Toolroom Series is the perfect mill for job shop and toolroom applications. Built to be the most accurate and reliable machine of its type, it is also extremely easy to use. Equipped with full guarding, 20 tool ATC, 8,000 RPM spindle and optional chip auger, this machine is capable of single or multi part production. The conversational control makes programming easy so even one off parts can be done quickly and efficiently.

	MC-10	MC-14	MC-16
X Travel	32"	40"	60"
Y Travel	17"	20"	25"
Z Travel	19"	20"	24"
Tool Type/Taper		CAT - 40 (BT-40 optional)	
Spindle Speed		60 - 8,000 RPM	
ATC Tool Cap		20	
Rapid Feedrate		500 IPM	
Machine Weight	6,500 lbs.	8,500 lbs.	11,500 lbs.

EASE OF USE

- Fast set-up keys
- Electronic probe cycles
- “Do One” semi-automatic mode
- Simple menu programming – no codes of any kind
- Reads standard G & M codes from CAD-CAM systems
- Solid model part verification

FEATURES

- 12 HP 8,000 RPM CAT-40 taper spindle
- 20 tool automatic tool changer
- Rigid tapping with peck feature (option)
- Rugged heavy duty Meehanite castings
- Absolute encoders - no homing required
- Handwheel run feature (option)

MADE IN USA

HR Toolroom Series - Toolroom Horizontal Milling

Toolroom Horizontal Milling Machine

- **Small Footprint Horizontal**
- **Fully Manual With 3 Handwheels**
- **Simple Menu Programming**
- **Perfect for Toolroom, Job Shop & Repair Facilities**

HR-14 **40” x 20” x 20”**

OVERVIEW

The Fryer HR-14 Toolroom Horizontal is perfect for shops requiring a small footprint machine that won’t break the budget. Designed by toolmakers, for toolmakers, this machine features handwheels so you can make parts fast. Simple menu programming and Do One operations speed you through small lot machining. Available with a 16” platter rotary table so you can work multiple sides in one set-up. Also available is full guarding, 16 tool ATC, high speed spindles and other productivity features.

HR-14

FEATURES

- 20 HP 8,000 RPM CAT-40 taper spindle
- 16 tool automatic tool changer
- Rigid tapping with peck feature
- Rugged heavy duty Meehanite castings
- Absolute encoders - no homing required
- Handwheel run feature

EASE OF USE

- 3 handwheels for manual use
- “Do One” semi-automatic mode
- Simple menu programming – no codes of any kind
- Reads standard G & M codes from CAD-CAM systems
- Electronic probe cycles
- Solid model part verification

	HR-14
X Travel	40"
Y Travel	20"
Z Travel	20"
Tool Type/Taper	CAT 40 or BT-40
Spindle Speed	60 - 8,000 RPM
ATC Tool Cap	16 Station Arm Type
Rapid Feedrate	600 IPM X, Y, Z
Machine Weight	9,000 lbs.

ET - TR Series - Easy Turn - Toolroom Turning

Simplified Small Batch Turning

ET-16 16” Swing
ET-18 18” Swing
ET-21 21” Swing
ET-25 25” Swing

Center Distances 40”, 60”, 80”, 120”
Spindle Bore Sizes 2.0”, 3.4”, 4.1”

- **Manual, Semi-CNC or Full-CNC Modes**
- **Easer to Use Than Conventional Lathe**
- **Handle Driven “Do One” Cycles Eliminates Manual Set-Ups**
- **Perfect for Prototype, Repair, Job Shop & Toolroom**

OVERVIEW

Designed by toolmakers for toolmakers, the Fryer Easy Turn Series provides rugged construction and high accuracy in a compact toolroom lathe. The Easy Turn is easier to use than a conventional lathe yet offers the productivity of a CNC. Time consuming manual set-ups for threading, chamfers, and contours are eliminated by the Easy Turn’s handle driven “Do One” cycles and electronic stops. Multi-mode operations allows, manual use, semi-auto use and full CNC operation. This flexibility is perfect for repair shops, tool and die, prototype and job shops alike.

ET-18

QUALITY

- High quality thermally stable Meehanite castings
- Hardened and ground ways with Turcite B liners
- Two speed auto-shift gear box
- C3 grade double nut ball screws with class 7 bearings
- Hand built precision +/- .0002”
- 2 Year warranty

EASE OF USE

- Manual mode with dual handles
- “Do One” semi-automatic mode
- Simple menu programming mode
- 3D graphic verification
- Standard G code programming
- Handwheel run mode

ET-21

MANUAL OPERATION

- Manual handles for X and Z axis
- Electronic stops make manual positioning easy
- Create chamfers & taper cuts by turning one handle

SEMI-CNC OPERATION

- Programmable power-feed function
- Simple "Go To" function for axis positioning
- "Do One" function allows you to easily cut threads, thread repair, chamfers, boring, drilling, & more

FULL CNC OPERATION

- Simple menu system – no codes of any kind
- Reads standard G & M codes from CAD/CAM systems
- Geometry Creator calculates missing dimensions
- 3D part verification – solid model or wire frame
- Safe & fast Handwheel Run mode

	ET-16	ET-18	ET-21	ET-25
Swing Over Bed	16"	18"	21"	25"
Swing Over Cross Slide	8.125"	9.125"	12"	16"
Distance Between Centers	40"	40"	60"	60"
Optional Dist b/Centers	60"	60"	80", 120"	80", 120"
Spindle Nose	Camlock D1-6	Camlock D1-6 (D1-8)	Camlock D1-8 (A2-11)	Camlock D1-8 (A2-11)
Spindle Bore	2.05"	2.05" (3.4")	3.40" (4.01")	3.40" (4.01")
Spindle Motor HP (Peak)	10 HP	10 HP	15 HP	15 HP
Spindle Speed (RPM)	100 - 3,000	50 - 2,500	50 - 2,000	50 - 2,000

ET - LC Series - Easy Turn - Large Capacity Turning

Large Capacity Small Batch Turning

ET-30 **30” Swing**
ET-40 **40” Swing**

Center Distances **60”, 80”, 120”, 160”, 200”**
Spindle Bore Sizes **4.1”, 6.1”, 9”**

- **Easy-to-use Operator Interface**
- **High Performance Drives & Motors**
- **Simple Programming for One-Off Parts**
- **Perfect for Large Parts**

OVERVIEW

Heavy duty construction distinguishes the Fryer ET Large Capacity Series lathes. Designed for applications where high rigidity is required, these machines can be custom configured for your most demanding applications. Easy-to-use operator interface allows simple shop floor programming for one-off parts. High performance drives and motors combine with standard G-Code interface allowing production to run smoothly and efficiently.

	ET-30	ET-40
Swing Over Bed	30"	40"
Swing Over Cross Slide	18"	28"
Distance b/Centers	60"	60"
Optional Dist b/Centers	80", 120", 160", 200"	
Spindle Nose	Camlock D1-11 (A2-11, A2-15)	
Spindle Bore	4.10" (6.1", 9.0")	
Spindle Motor HP (Peak)	30 HP (50 HP)	
Spindle Speed (RPM)	10 - 1,500 (1,000, 750)	

QUALITY

- Precision built four-speed geared headstock
- Digital servo motors & drives
- Manual tailstock with large #6 center
- Heavy duty double V-way construction
- Best in class construction
- 30 HP high torque spindle motor

FEATURES

- Full manual mode with 2 handwheels
- One button fast setup simplifies process
- Fast menu programming system
- Standard G and M code programming
- Thread repair cycle
- 3D graphics for part verification

ET-30

MADE IN USA

ET - XL Series - Easy Turn - Extra Large Capacity Turning

Extra Large Capacity Small Batch Turning

- **Easy-to-use Operator Interface**
- **Fast Set-Up Buttons**
- **Heavy Duty Construction**
- **Perfect for Extra Large Part Machining**

ET-50	**50” Swing**
ET-65	**65” Swing**
ET-80	**80” Swing**

Center Distances

60”, 80”, 120”, 160”, 200”, 240”

Spindle Bore Sizes

6”, 9”, 10”, 12”, 16”, 20”

ET-50

OVERVIEW

Fryer Machine’s ET-XL Series Lathes provide the ultimate in performance for your large part machining needs. These wide bed (30”) heavy duty engine lathes provide incredible capacity to handle the toughest jobs you have. Designed as the heaviest machines in its class, these machines feature centers distances up to 240” and spindle bores up to 16”. Innovative features like live tooling, C axis, Y axis, automatic chucks and auto steady rests allow you to customize the machine to best suit your application.

QUALITY

- Heavy duty 50 HP high torque spindle
- Hydraulic tailstock with built-in live center
- Digital servo motors and drives with absolute encoders

FEATURES

- 30” wide bed with center mounted ballscrew
- Standard 6” spindle bore
- Three speed autoshift geared headstock
- Full manual mode with 2 handwheels
- Shop floor programming system
- One button fast setup - simplifies setup process

	ET-50	ET-65	ET-80
Swing Over Bed	50"	65"	80"
Swing Over Cross Slide	35"	50"	65"
Distance b/Centers	60"	60"	60"
Optional Dist b/Centers	80", 120", 160", 200", 240", 280"		
Spindle Nose	A2-11 (A2-15, A2-20, A2-28)		
Spindle Bore	6”, 9”, 10”, 12”, 16”, 20”		
Spindle Motor HP (Peak)	50 HP		
Spindle Speed (RPM)	3 - 750 (600, 375, 300)		

XP Series - High Speed Machining Centers

Ultra-Performance Vertical Machining

XP-24 24” x 18” x 18”
XP-32 32” x 22” x 22”
XP-45 45” x 24” x 25”

OVERVIEW

The Fryer XP series feature extra performance for high speed machining. Standard features include a 1.5 second high speed 24 tool ATC, an 15,000 RPM inline spindle, a high torque 30 HP motor and a super-fast 1,900 IPM rapid feedrate. The high tech enclosure combines form and function. Combined with roller type linear ways and heavy duty FEA designed castings, the XP series is the ultimate high speed VMC.

XP-32

- **High Spindle Speeds**
- **Super-Fast Rapids**
- **Roller Type Linear Ways**
- **Heavy Duty FEA Designed Castings**

PRODUCTIVITY

- Super fast block processing
- 500 block look ahead
- 6 GB storage memory
- Adaptive feed control
- Coolant thru spindle
- Integrated chip management

FEATURES

- 15,000 RPM spindle
- 1,900 IPM rapids
- Roller type linear ways
- Big Plus 40 taper spindle
- 24 tool high speed ATC
- Siemens or Fanuc CNC

	XP-24	XP-32	XP-45
X Travel	24"	32"	45"
Y Travel	18"	22"	24"
Z Travel	18"	22"	25"
Tool Type/Taper	Big Plus CAT 40 (BT option)		
Spindle Speed	60 - 15,000 RPM (21K, 30K option)		
ATC Tool Capacity	24 Station High Speed Arm Type (40 option)		
Rapid Traverse	1,900 X, Y, Z		
Machine Weight	8,500 lbs.	10,500 lbs.	12,500 lbs.

MC Series - High Performance Machining Centers

Heavyweight Machining Centers

MC-40

MC-30	**30” x 18” x 22”**
MC-40	**40” x 20” x 28”**
MC-45	**45” x 25” x 25”**
MC-60	**60” x 30” x 28” (38”)**
MC-80	**80” x 35” (40”) x 30” (34”)**
MC-100	**100” x 35” (40”) x 30” (34”)**

- **Box way rigidity**
- **40 or 50 taper**
- **Fast 1,200 rapids**
- **One touch set-up**

OVERVIEW

Fryer’s MC Series offers exceptional performance by featuring heavyweight castings with box way construction. The standard 24 tool arm type ATC and 1,200 IPM rapids produce more parts per hour. Fully digital control and drives combined with fast set-up and programming maximize performance and reliability.

	MC-30	MC-40	MC-45	MC-60	MC-80	MC-100
X Travel	30"	40"	45"	60"	80"	100"
Y Travel	18"	20"	25"	30"	35" (40")	35" (40")
Z Travel	22"	28"	25"	28" (38")	30" (34")	30" (34")
Tool Type/Taper	CAT 40 (CAT 50 option; BT option)					
Spindle Speed	60 - 8,500 RPM (10K, 12K, 15K, 21K, 30K Optional)					
ATC Tool Cap	24 Station Arm Type (40 Tool)					
Rapid Traverse	1,200 X,Y - 900 Z				600 X,Y,Z	400 X,Y,Z
Machine Weight	9,900 lbs.	12,100 lbs.	14,500 lbs.	20,000 lbs.	23,000 lbs.	26,000 lbs.

QUALITY

- Heavy duty box ways
- Optional linear ways
- Fast 1,200 IPM rapids
- 24 tool arm type ATC
- High torque 30 HP motor
- 40 or 50 taper spindles
- Compact size

PRODUCTIVITY

- Fast conversational programming
- Fast set-up keys
- Absolute encoders
- Regenerative drive technology
- Chip management system
- Coolant thru spindle

VB Series - Extra Large Machining Centers

Large Frame Machining Centers

VB-60 60” x 30” x 28”
VB-80 80” x 35” (40”) x 26” (34”)
VB-100 100” x 35” (40”) x 26” (34”)
VB-120 120” x 40” (50”) x 40”
VB-160 160” x 40” (50”) x 40”

- **X travel to 160”**
- **Simple Set-Up & Programming**
- **Easy Loading of Large Parts**
- **Excellent value**

OVERVIEW

Designed as a high performance machining center without an enclosure, the Fryer VB Series offers versatility and value. Ideal for production and job shop applications, the VB open design and rugged construction allows for easy loading of large parts. Extremely simple set-up and programming make this machine highly efficient for even short run parts. The VB series is also equipped with an impressive set of standard features unmatched by any machine in its class.

FEATURES

- Box way construction with Turcite B liners
- Extra large travel to 160” x 50”
- Rugged 40 and 50 taper spindle
- Automatic tool changer
- Rigid tapping with peck feature
- High volume flood coolant system

PRODUCTIVITY

- Fast conversational programming
- Fast set-up keys
- Absolute encoders
- Regenerative drive technology
- Available full guarding
- Coolant thru spindle

VB-100

	VB-60	VB-80	VB-100	VB-120	VB-160
X Travel	60"	80"	100"	120"	160"
Y Travel	30"	30" (40")	35" (40")	40" (50")	40" (50")
Z Travel	28"	26" (34")	26" (34")	40"	40"
Tool Type/Taper	CAT 40 or BT-40 (Optional 50 Taper)				
Spindle Speed	60 - 8,000 RPM (10K,12K,15K Refrigerated Optional)				
ATC Tool Cap	20 (24 Arm Type Optional)				
Rapid Traverse	1,000 X, Y 700 Z	600	400	400	400
Machine Weight	15,000 lbs.	18,500 lbs.	20,500 lbs.	32,000 lbs.	37,000 lbs.

MADE IN USA

TC-V Series - Vertical Traveling Column

Traveling Column Machining Center

- X axis travel to 320”
- Fixed table features high load capacity
- Table divider for work zones
- Y axis travel of 24” or 32”

TC-40V	40” x 26” x 28”
TC-80V	80” x 24” (32”) x 24”
TC-120V	120” x 24” (32”) x 24”
TC-160V	160” x 24” (32”) x 24”
TC-240V	240” x 24” (32”) x 24”
TC-320V	320” x 24” (32”) x 24”

TC-240V

OVERVIEW

The Fryer TC-V Series features a fixed table and traveling column for flexibility with large parts and fixturing. You can use the machine as a multi-pallet design by using the table dividers to create work zones. The fixed table allows table loads of more than 10,000 lbs. and is available with a built in rotary table. The high torque 40 and 50 taper spindles feature available CTS and gearbox. Available Y axis travel of 24” or 32” and in sizes ranging from 40” X travel all the way to a huge 320” travel machine.

	TC-40V	TC-80V	TC-120V	TC-160V	TC-240V	TC-320V
X Travel	40"	80"	120"	160"	240"	320"
Y Travel	26"	24" (32")	24" (32")	24" (32")	24" (32")	24" (32")
Z Travel	28"	24"	24"	24"	24"	24"
Tool Type/Taper	CAT 40 (CAT 50 Optional) (BT Option)					
Spindle Speed	60 - 8,500 RPM (6K, 10K, 12K, 15K Optional)					
ATC Tool Cap	24 Station Arm Type (30 and 40 tool optional)					
Rapid Traverse	1,000 X, Y, Z					
Machine Weight	30,000 lbs.	32,000 lbs.	34,000 lbs.	40,000 lbs.	46,000 lbs.	50,000 lbs.

FEATURES

- Traveling column design
- Fixed table with 10,000 lbs. plus capacity
- 24 or 40 tool ATC
- 1,000 IPM rapid
- Y travel of 24” or 32”
- Siemens or Fanuc CNC

PRODUCTIVITY

- Standard or tilting head spindle
- Built-in 24” or 32” flush rotary table
- Table mounted 4th axis and tailstock
- Fast conversational programming
- Fast set-up keys
- Dual zone with table divider

HR Series - High Performance Horizontal Mills

Fixed Spindle Horizontal Machining Centers

HR-40 40” x 29” x 25”
HR-70 70” x 55” (72”) x 36” (46”)
HR-120 120” x 55” (72”) x 50”
HR-160 160” x 55” (72”) x 50”

HR-40

- **Rugged fixed spindle design**
- **Fast set-up and operation**
- **Excellent small lot machining**
- **Extra large capacity**

OVERVIEW

The Fryer HR Series are high performance box way horizontal machining centers designed for your most demanding applications. The high-torque 40 HP spindle motor and 6,000 RPM 50 taper spindle provide rigidity and torque. Extra large castings, ballscrews and bearings provide accuracy and vibration dampening. The user friendly Fryer - Siemens CNC allows shop floor programming for single piece runs or G code programming for high production.

	HR-40	HR-70	HR-120	HR-160
X Travel	40"	70"	120"	160"
Y Travel	29"	55" (72")	55" (72")	55" (72")
Z Travel	25"	36" (46")	50"	50"
Tool Type/Taper	CAT 50 or BT-50			
Spindle Speed	60 - 6,000 RPM (8K, 10K optional)			
ATC Tool Cap	24 Station Arm Type (30 - 40 - 60 tool optional)			
Rapid Traverse	1,000 IPM	750 IPM	600 IPM	600 IPM
Machine Weight	18,000 lbs.	36,000 lbs.	42,000 lbs.	46,000 lbs.

FEATURES

- 24, 40, or 60 tool arm-type ATC
- 50 taper 6,000, 8,000 or 10,000 RPM spindle
- High torque 40 HP spindle motor
- Built-in contouring rotary table option
- Semi or full guarding for easy loading
- High pressure coolant thru spindle

PRODUCTIVITY

- Built-in rotary table allows multi-side machining
- Simple menu programming
- Fast set-up keys and manual operation
- Excellent for small lots
- Easy access for large part loading
- Compact footprint

MADE IN USA

HB Series - High Performance Boring Mills

Moving Quill Horizontal Boring Mills

HB-70

HB-70	**70” x 55” (72”) x 36” (46”)**
HB-120	**120” x 55” (72”) x 50”**
HB-160	**160” x 55” (72”) x 50”**

- **20” bar type spindle**
- **High performance cutting**
- **Fast set-up and operation**
- **Rugged box way construction**

OVERVIEW

Fryer’s HB Series Boring Mills are heavy duty machines designed for high precision machining. Equipped with a 20” travel bar type spindle and a powerful 40 HP spindle motor. Rugged box way construction and high precision ballscrews ensure high performance cutting and high accuracy tolerances. The user friendly Fryer - Siemens CNC allows shop floor programming for single piece runs or G code programming for high production.

	HB-70	HB-120	HB-160
X Travel	70"	120"	160"
Y Travel	55" (72")	55" (72")	55" (72")
Z Travel	36" (46")	50"	50"
W Travel	20"	20"	20"
Tool Type/Taper	CAT 50 or BT-50		
Spindle Speed	30 - 3,000 RPM		
ATC Tool Cap	24 Station Arm Type (30 - 40 - 60 tool optional)		
Machine Weight	38,000 lbs.	44,000 lbs.	48,000 lbs.

FEATURES

- 50 taper bar type spindle 4.33” diameter
- 20” travel bar fully programmable - W axis
- 3,000 RPM spindle speed
- 40 HP spindle with 360 ft/lbs of torque
- 24, 40, or 60 tool arm-type ATC
- Standard coolant thru spindle

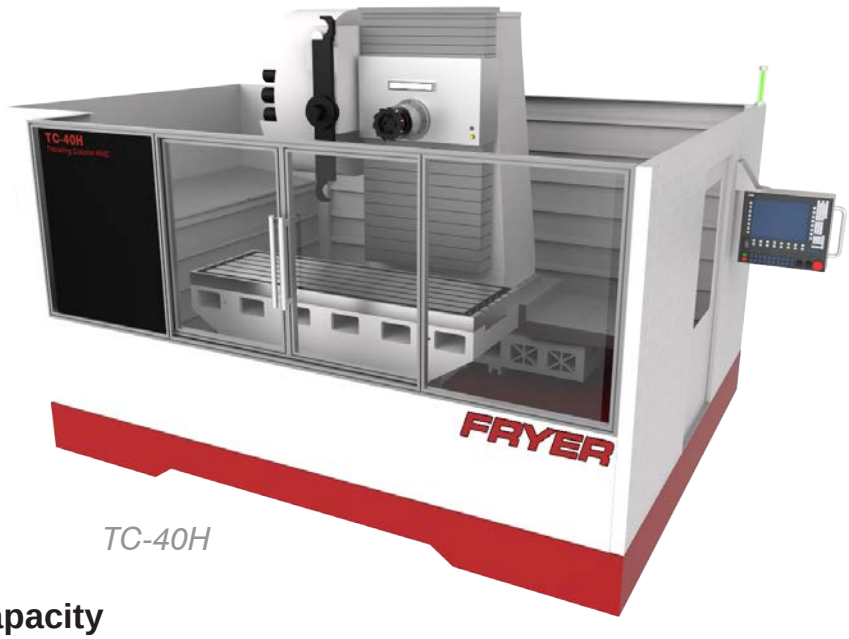
PRODUCTIVITY

- Built-in rotary table allows multi-side machining
- Simple menu programming
- Fast set-up keys and manual operation
- Excellent for small lots
- Easy access for large part loading
- Rugged 4-box way construction

TC-H Series - Horizontal Traveling Column Design

Traveling Column Horizontal Machining Center

TC-40H	40” x 29” x 26”
TC-80H	80” x 24” x 24” (32”)
TC-120H	120” x 24” x 24” (32”)
TC-160H	160” x 24” x 24” (32”)
TC-240H	240” x 24” x 24” (32”)
TC-320H	320” x 24” x 24” (32”)



TC-40H

- **Fixed table features high load capacity**
- **Large X axis travel to 320”**
- **Z axis travel of 24” or 32”**
- **Fast set-up and operation**

	TC-40H	TC-80H	TC-120H	TC-160H	TC-240H	TC-320H
X Travel	40"	80"	120"	160"	240"	320"
Y Travel	29"	24"	24"	24"	24"	24"
Z Travel	26"	24" (32")	24" (32")	24" (32")	24" (32")	24" (32")
Tool Type/Taper	CAT 50 (CAT 40 Optional) (BT Option)					
Spindle Speed	60 - 6,000 RPM (8K, 10K optional)					
ATC Tool Cap	24 Station Arm Type (30 and 40 tool optional)					
Rapid Traverse	1,000 X, Y, Z					
Machine Weight	30,000 lbs.	32,000 lbs.	34,000 lbs.	40,000 lbs.	46,000 lbs.	50,000 lbs.

OVERVIEW

The Fryer TC-H Series features a fixed table and traveling column design. It is equipped with a rugged 50 taper horizontal spindle featuring a high torque 40 HP spindle motor with 350 ft/lbs of torque. The fixed table allows table loads of more than 10,000 lbs. while offering versatility in part fixturing. Available in sizes ranging from 40” X travel all the way to huge 320” travel machine.

FEATURES

- Innovative traveling column design
- 40” to 320” X travel
- Z travel of 24” or 32”
- 40 HP 50 taper spindle
- 1,000 IPM rapid feedrate
- 24 or 40 tool ATC

PRODUCTIVITY

- Fixed table with over 10,000 lbs. capacity
- Available built-in rotary table
- Simple menu or G code programming
- Fast set-up keys
- Dual zone with table divider
- Siemens or Fanuc CNC

TR Series - 5 Axis Simultaneous with Trunion Table

5-Axis with Trunion Table

- **2 Axis built-in trunnion**
- **Large part capacity**
- **High torque, high speed spindle**
- **Full 5 axis or 3+2 operation**

TR-170	**20” x 13” x 20”**	**6” Platter**
TR-320	**30” x 16” x 20”**	**12” Platter**
TR-600	**45” x 25” x 25”**	**24” Platter**

OVERVIEW

The Fryer TR Series 5 axis machining centers feature an integrated trunnion rotary table for full 5 axis contouring. The robust machine frame incorporates high speed linear guideways. The trunnion rotary tables are equipped with extra large bearings and a piston type disk brake for exceptional rigidity. Accuracy is maintained with a high performance dual worm gear design.

TR-600

	TR-170	TR-320	TR-600
X Travel	20"	30"	45"
Y Travel	13"	16"	25"
Z Travel	20"	20"	25"
Platter	6"	12"	24"
Spindle		40 Taper 12,000 RPM	
ATC Tool Cap		24 Tool Arm Type	
Rapid Traverse		1,200 IPM	
Machine Weight	5,600 lbs.	9,200 lbs.	17,500 lbs.

FEATURES

- 2 axis contouring trunnion rotary table
- 40 taper 30HP 12,000 RPM spindle
- 24 tool arm type ATC (16 tool TR-170)
- 1,200 IPM rapid feedrate
- High speed linear guideways

PRODUCTIVITY

- High accuracy and reliability
- Dual worm gear design
- Zero backlash and repeatability of 5 arc seconds
- Standard CNC provides simultaneous 5 axis interpolation as well as 3+2 for simple programming of multi-sided parts

5X Series - 5 Axis Simultaneous with Articulating Spindle

5-Axis with Rotating Spindle

5X-60 **60” x 30” x 35”**
5X-100 **100” x 35” x 34”**
5X-120 **120” x 50” x 40”**
5X-160 **160” x 50” x 40”**

OVERVIEW

The Fryer 5X Series features the Kessler tilting/rotary head which provides 360° of rotation and 200° of spindle tilt. This flexible spindle solution is perfect for the aerospace, automotive and oil field industries where rotating the part is not practical. Available in travel sizes of 60” to 160” and featuring full 5 axis Siemens 840D or Fanuc 31i B5 CNC controls.

PRODUCTIVITY

- 2 axis spindle flexibility
- Perfect for large parts
- Fast set-up cycles
- Compact size
- Siemens 840D SL CNC
- Fanuc 31i B5 CNC

- **360° of rotation and 200° of spindle tilt**
- **Designed for cutting steel & tough alloys**
- **High power torque motors & Heidenhain glass scales**
- **Perfect for aerospace, automotive & energy industries**

FEATURES

- German-made Kessler 2-axis head
- 360° rotation, 200° tilt
- 40 tool high speed, twin arm ATC
- Excellent accessibility for crane loading
- 5 arc second rotary accuracy
- High torque 55 HP, 15,000 HP spindle

5X-60

	5X-60	5X-100	5X-120	5X-160
X Travel	60"	100"	120"	160"
Y Travel	30"	35"	50"	50"
Z Travel	35"	34"	40"	40"
Tool Type/Taper	HSK-63A			
Spindle Speed	200 - 18,000 RPM		200 - 15,000 RPM	
ATC Tool Cap	40 Station Arm Type (60 tool optional)			
Rapid Traverse	1,200 IPM	800 IPM	400 IPM	400 IPM
Machine Weight	20,000 lbs.	25,500 lbs.	34,000 lbs.	37,000 lbs.

SX Series - 5 Axis Simultaneous with Tilting Spindle

5-Axis with Tilting Spindle

SX-60	**60” x 30” x 35”**
SX-80	**80” x 35” x 34”**

OVERVIEW

The Fryer SX Series 5 Axis Machining Centers feature a swivel head that moves +/- 110°. The machine has a 40 tool ATC, 16,000 RPM spindle, 40 HP and 1,200 IPM rapids. It is available with a flush mounted 24” rotary table or a table mounted 12” rotary table. Full 5 axis contouring with either the Siemens 840D CNC or the Fanuc 31i B5 CNC.

- **+/- 110° swivel head**
- **Flush or table mounted rotary table**
- **High torque, high speed spindle**
- **High rigidity for heavy cutting**

PRODUCTIVITY

- Use as 3 or 5 axis
- Fast set-up cycles
- Conversational or G code programming
- Perfect for multi-sided work
- Siemens 840D SL 5 axis CNC
- Fanuc 31i B5 5 axis CNC

SX-60

FEATURES

- 16,000 RPM high torque 40 HP motorized spindle
- +/- 110° spindle rotation
- Roller Cam zero backlash rotary head
- CAT-40 Big Plus dual contact taper
- 40 tool high speed twin arm ATC
- Fast 1,200 IPM rapids

	SX-60	SX-80
X Travel	60"	80"
Y Travel	30"	35"
Z Travel	35"	34"
Tool Type/Taper	BIG PLUS CAT-40 (BT-40, HSK-63)	
Spindle Speed	100 - 16,000 RPM (18,000 optional)	
ATC Tool Cap	40 Station Arm Type	
Axis Rapid Traverse	1,200 IPM X, Y 1,000 IPM Z	
Machine Weight	21,500 lbs.	25,000 lbs.

VT Series - Vertical Turret Lathe

Compact Large Swing VTL

VT-30	30” Swing
VT-40	40” Swing
VT-60	60” Swing
VT-80	80” Swing

- **Innovative traveling column design**
- **Large swing in a small foot print machine**
- **Unique horizontal turret**
- **Excellent clearance for long & short tools alike**

PRODUCTIVITY

- Fast set-up and programming system
- Shop floor programming
- Excellent for small lot production
- Small foot print
- Traveling column provides improved clearance
- Siemens or Fanuc CNC

FEATURES

- Compact design uses half the floor space
- 30”, 40”, 60” or 80” swing models
- 8 or 12 tool automatic turret
- BMT-65 tooling for high rigidity
- High torque geared headstock
- C axis and live tooling

VT-40

OVERVIEW

The Fryer VT Series is a compact, large swing vertical turret lathe. This series features an innovative traveling column design that allows a large swing in a small foot print machine. The unique horizontal turret features excellent clearance for long and short tools alike. The VT is available with full C axis contouring and positioning as well as a powerful live tool turret. Equipped with Fryer-Siemens Touch 2200 CNC control that features shop floor conversational programming, G code programming, 3D graphics and fast set-up cycles.

HORIZONTAL TURRET

- Unique horizontal mount
- Added clearance for long tools
- Excellent clearance for short tools
- 8 or 12 tool capacity

LIVE TOOL TURRET

- Powerful 10 HP spindle motor
- Rigid BMT-65 tool holders
- "C" axis spindle features full contouring
- Optional Y axis with +/- 3 inches of travel

VT-60

INNOVATIVE DESIGN

- Traveling column uses much less floor space
- Turret design offers better clearance
- Turning and grinding on one machine
- Automatic loading system
- Excellent ergonomics

UNIQUE TRAVELING COLUMN

- Provides greater rigidity than ram style VTL's
- Column moves away from chuck for part loading
- Super accurate roller type linear ways
- Extremely compact footprint

	VT-30	VT-40	VT-60	VT-80
Max Swing Diameter	30"	40"	60"	80"
Cutting Diameter Range	0" - 30"	0" - 40"	0" - 60"	4" - 80"
Max Cutting Length	32" (48")			
Column Travel (X)	19"	24"	34"	38"
Longitudinal Travel (Z)	32" (48")			
No. of Turret Positions	8 (12)			
Turret Tooling Size	BMT-65			
Spindle Motor HP (Peak)	40 HP		75 HP	

SL Series - High Precision Production Turning

Ultra Accurate Slant Lathe

SL-6	6” Chuck, 1.75” Bar Capacity
SL-8	8” Chuck, 2” Bar Capacity
SL-10	10” Chuck, 3” Bar Capacity
SL-12	12” Chuck, 3.4” Bar Capacity

- **Ultra precision spindle cartridge**
- **C1 class double nut ballscrews**
- **45° slant bed and box ways for greater rigidity**
- **Perfect for shops requiring high rigidity, accuracy & ease of use**

SL-12

OVERVIEW

The Fryer SL Series Slant Bed Lathes feature a true 45° slant bed and box ways for greater rigidity. An ultra precision spindle cartridge, C1 class double nut ballscrews and other premium components provide accuracy unmatched by any other lathe in this class. The Touch 2200 digital CNC is incredibly easy to use and features fast set-up and conversational programming. The SL series is the perfect choice for shops requiring high rigidity, accuracy and ease of use.

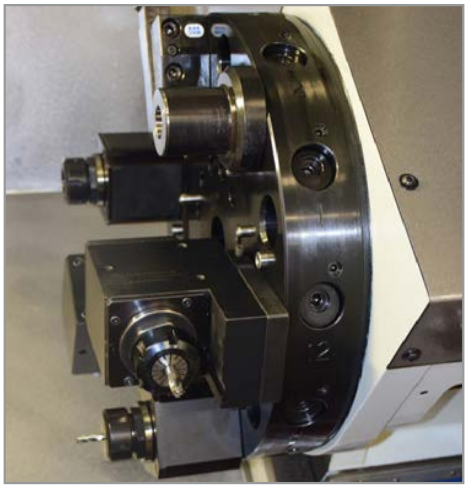
FEATURES

- 45 degree one piece slant bed
- Ultra precision world class construction
- P4 NN roller spindle bearings
- High precision hydraulic chuck
- Box way construction
- C axis and live tooling

PRODUCTIVITY

- Fast set-up and programming system
- Shop floor and G code programming
- Unmatched accuracy
- Tool and part probe system
- Chip management system
- Siemens or Fanuc CNC

SL-10



LIVE TOOL TURRET

The optional live tool turret features VDI-style tooling for ease of use in set-up. Fryer's live tool turrets are available in 30 and 40 VDI sizes. The 10 HP live tool spindle motor has low end power and rigid tapping. The CNC provides simple shop floor programing of complicated milling cycles like hex milling, engraving, pocketing and drilling. Fryer also offers Y axis turrets in several different sizes up to 5.1" of travel.

	SL-6	SL-8	SL-10	SL-12
Swing Over Bed	14"	20"	24"	28"
Max Turning Dia	12"	12"	14"	18"
Working Length	9.0"	16" (24", 46")	24" (46", 80")	
Dist. b/ Centers	N/A	19" (27", 51")	27" (51", 83")	
# of Turret Positions	8	12	12	12
Turret Tooling Size	3/4" BOT (VDI-30)	1" BOT (VDI-30, BMT-45)	1" BOT (VDI-40, BMT-55)	
Bar Capacity	1.75"	2.0" (3.0")	3.0" (3.6")	3.6"
Spindle HP (Peak)	20	30	40	40

Fryer – Siemens Touch 2200 - CNC Control

OVERVIEW

The Fryer – Siemens Touch 2200 CNC provides world class technology and ultra-advanced features in an intuitive user interface. This state of the art platform provides the ultimate for 5 axis, high speed machining, horizontal machine and turning applications alike. Fast set-up cycles, one button hot keys and built in probe cycles speed the set-up process. Shop floor programming, G code programming, large program storage and Ethernet connectivity speed the programming process. 3D solid model graphic verification, handwheel run and easy interrupt speed the first article process.

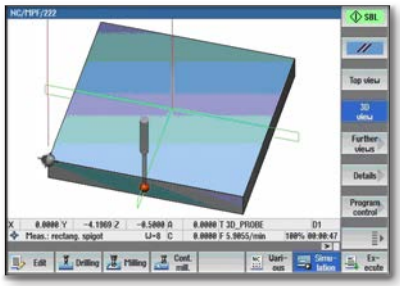
FEATURES

- One touch set-up cycles
- Shop floor programming system
- G code programming editor
- Advanced graphic simulation

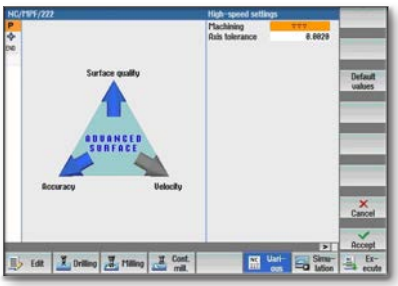
TECHNOLOGY

- Advanced Digital Control System
- Regenerative drive technology (saves 40% electric)
- Absolute encoders – no homing needed
- High accuracy contouring and surfacing

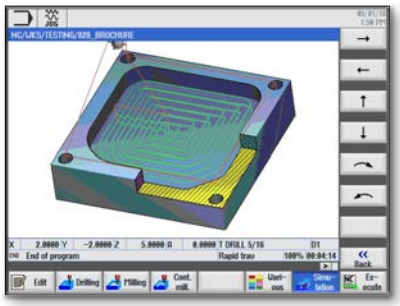
The tool management page stores your tool information in a graphical format. In addition, tools can be given tool numbers or actual names like .500 drill or .375 CBD end mill. Each tool can be managed for wear and switched automatically when the tool run time is reached.



The standard part probe cycles use a simple GUI to make part set-up simple. The cycles include edge find, part skew, pocket, boss and many more. The cycles can also be used to measure the part and display dimensions on the screen, much like a CMM.



The High-Speed Machining option lets you select 3 settings for the velocity, accuracy or surface quality to produce the workpiece at extremely high speed. Includes 500 block look ahead and 1 millisecond block processing.



After the part is programmed it can be simulated to show the operations and tool paths. Simulation will also work with programs brought in from a CAM system that were output in G code. Cycle time is displayed also.

1. Touch Screen
15” touch screen features a high-resolution, digital color monitor.

2. Mode Select Keys
Provides easy navigation for set up, programming and operation.

3. USB Port
High-speed USB port for file transfer via standard flash drive.

4. Set-up Hot Keys
These buttons simplify set-up and operation of the machine.

5. Soft Keys
Each screen has individualized touch-activated function keys.

6. Alphanumeric Keypad
Allows full text entry of part names, tool names, program names, etc. Fast data entry of dimensional information.

7. Directional Keypad
Allows simple navigation between fields, and features a Select-key for multi-option fields.

8. Function Keys
Feed rate override, spindle speed override, jog direction keys and keys for miscellaneous functions.

Fryer – Siemens 828 - CNC Control

OVERVIEW

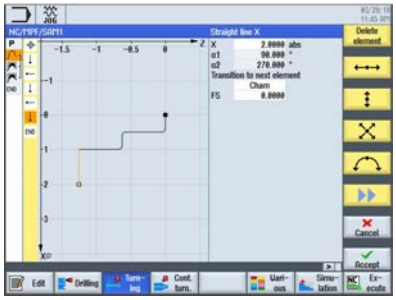
The Fryer – Siemens 828 control is designed for ease of use in low volume toolroom and job shop facilities. Simple menu programming and fast set-up keys allow you make one-off parts in half the time of a manual machine. Multi mode operation allows you to use the machine manually, semi-automatic and full CNC mode. Canned cycles and graphic verify make set-up faster and easier.

FEATURES

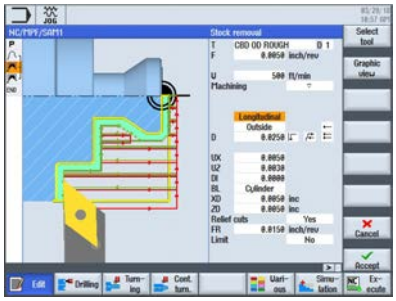
- Manual or CNC
- Do-one mode
- Teach mode
- Conversational mode

TECHNOLOGY

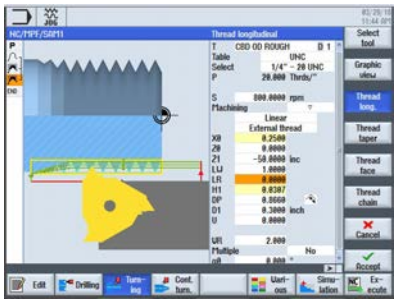
- Ultra reliable Siemens High Speed all digital control system
- Regenerative drives save 40% electrical use
- Digital drives provide better accuracy and surface finish
- Absolute encoders never require you to 'home' machine



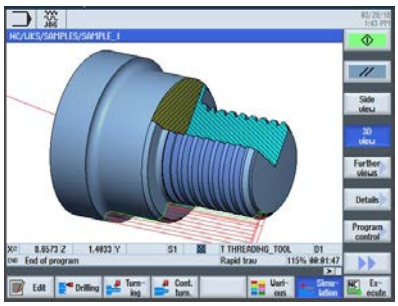
Lathe Contour
Geometry. Enter part dimensions using the Simple Geometry Creator. The dimensions are drawn on the screen while you enter them and missing information is automatically calculated.



Lathe Rough Cycle
Roughing cycle. Answer basic questions about the depth of cut, tool type and finish stock allowance.



Lathe Thread
Threading cycle. Answer basic questions about the thread size pitch and tool type



Lathe Simulate
The Touch 2200 uses sophisticated solid model graphic verification to accurately show what your part will look like BEFORE you cut it. Also choose from wireframe or multi-view screen.

FEATURES

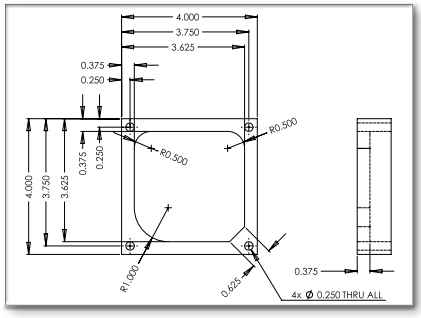
- Manual handles
- Coarse – Fine switch
- Jog joystick
- One-touch set-up buttons
- Do-one cycles
- Solid model part verification
- Handwheel run feature makes proving out programs safer
- Tool management page

TECHNOLOGY

- Siemens High Speed all digital control system - Ultra reliable
- Regenerative drives save 40% electrical use
- Digital drives provide better accuracy and surface finish
- Absolute encoders - no homing required
- 4th and 5th axis interface available
- Web server technology allows remote monitoring of CNC

From Drawing to Finished Part

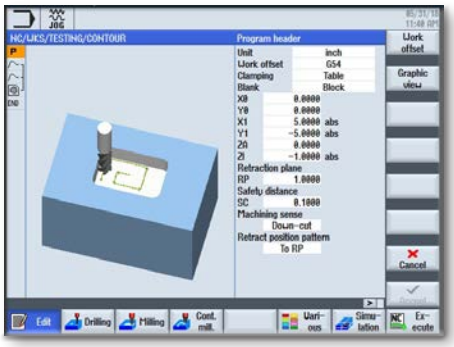
The Fryer – Siemens 828 makes shopfloor programming simple even for the most complex parts. One touch hot keys for quick and easy set-up; simultaneous verify helps spot program errors quickly; Handwheel Run lets you make the first part faster and safer than other controls.



Part Drawing to Programming

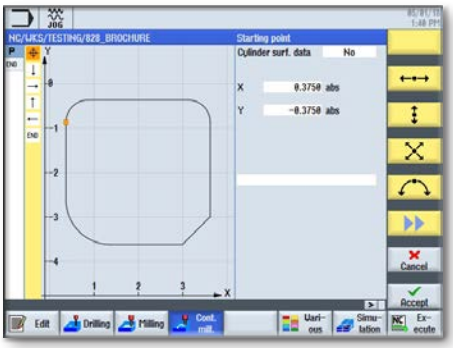
By using the dimensions shown on any part drawing the Fryer – Siemens 828 is easily programmed. The control is so advanced that even if you are missing dimensions the 828 will automatically calculate them making programming faster and easier.

Step 1: Setup



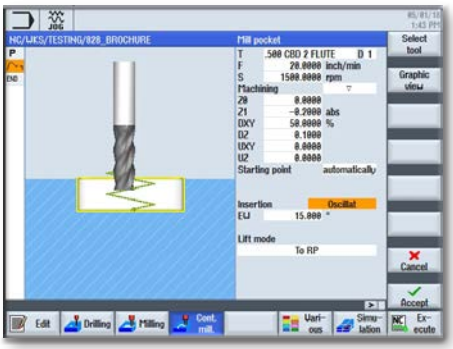
Answer basic questions about the stack size and tool change position

Step 2: Geometry



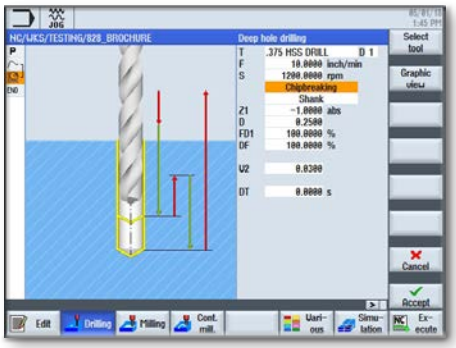
Enter part dimensions using the Simple Geometry Creator. The dimensions are drawn on the screen while you enter them and missing information is automatically calculated.

Step 3: Roughing Cycle

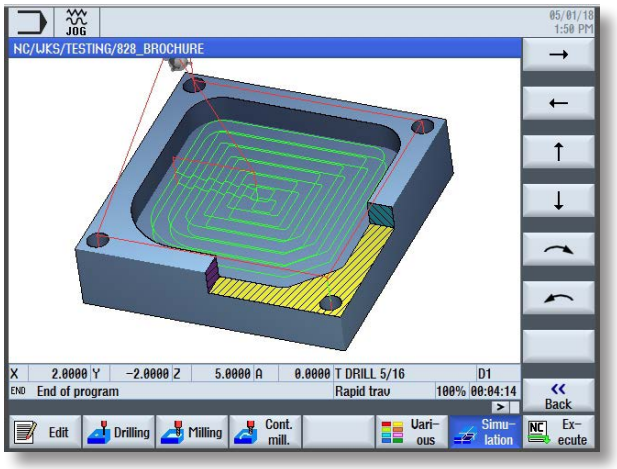


Answer basic questions about the depth of cut, tool type and finish stock allowance.

Step 4: Peck Drilling Cycle



Answer basic questions about the depth of hole, peck increment and tool clearance.

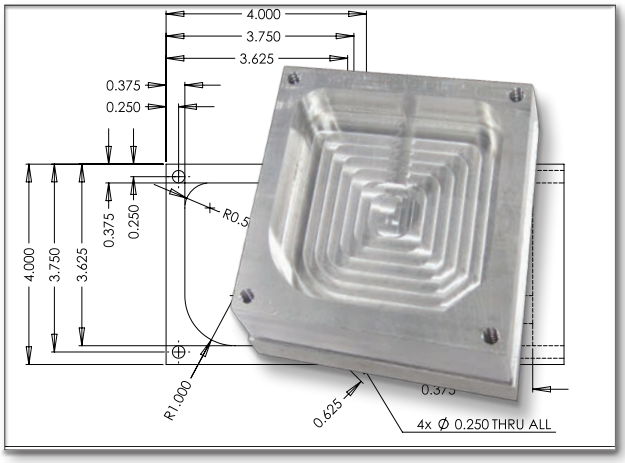


VERIFY the Part

The Fryer – Siemens 828 uses sophisticated solid model graphic verification to accurately show what your part will look like BEFORE you cut it. Also choose from wireframe or multi-view screen, which allow you to view your part from three different angles simultaneously.

RUN the Part

For many people pressing “Cycle Start” is an act of faith, as new operators are not sure where the machine will go. The Fryer – Siemens 828 builds confidence with its unique Handwheel Run function. By turning the handwheel, the program execution is controlled by you. This unique function allows you to move forward and backwards through a program easily and safely.



FINISHED Part

The Fryer – Siemens 828’s unique simple set up, easy conversational menus, automatic geometry calculator, solid model verification and Handwheel Run function allow you to produce your parts faster and easier than any other control on the market today.

FRYER®
MACHINE SYSTEMS

The Toolroom Company

Phone: 845-878-2500
Fax: 845-878-2525
Email: info@fryermachine.com
sales@fryermachine.com
Website: www.fryermachine.com

70 Jon Barrett Road
Patterson, New York 12563 USA

MADE IN USA