



Precision Built Solutions™

MC-B SERIES OPTIONS

OPT-2116	SPIDER COOL PROGRAMMABLE COOLANT NOZZLE Programmable nozzle moves automatically to adjust for differences in tool length. Can also be set to oscillate mode for flushing action.
OPT-2165	10-MICRON COOLANT FILTRATION SYSTEM 10-micron coolant filtration system features up to 10-GPM flow rate with a replaceable element.
OPT-2118	OIL SKIMMER Automatically removes tramp oil from your coolant system.
OPT-2112	SPRAY MIST COOLANT SYSTEM
OPT-2169	MIST COLLECTION SYSTEM
OPT-2114	AIR BLAST SYSTEM Programmable air nozzle for plastic, graphite and other dry materials.
OPT-9220	AUTOMATIC DOOR Electric operated automatic door opener.
OPT-9233	ELECTRICAL CABINET AIR CONDITIONER Replaces standard fan vented cabinet with a sealed cabinet. Air conditioning unit keeps inside temperature at the desired set temperature regardless of what the outside temperature is. Recommended for area where ambient temperature exceeds 100 degrees Fahrenheit.
OPT-2132	AUTOMATIC PALLET SHUTTLE SYSTEM
OPT-2120	ABRASIVE MATERIAL MACHINING PACKAGE Includes one piece sealed way covers that protect the ways from abrasive contaminants. Includes a sealed electrical cabinet with an high efficiency heat exchanger.

EXTENDED TRAVEL

OPT-4340	EXTENDED 38" Z TRAVEL (MC-60) Spindle nose to table increases to 2" - 40"
OPT-5313	EXTENDED 35" Y TRAVEL (MC-60) Spindle to column is increased to 36"
OPT-5313	EXTENDED 40" Y TRAVEL (MC/VB-80, 100) Spindle to column is increased to 41"
OPT-4341	EXTENDED 34" Z TRAVEL (MC/VB-80, 100) Spindle nose to table increases to 4" - 38"

CHIP REMOVAL

OPT-2102	CHIP AUGER SYSTEM UP TO 60" X TRAVEL
OPT-4113	DUAL CHIP AUGER SYSTEM 70" - 100" X TRAVEL
OPT-8039	CHIP CONVEYOR SYSTEM UP TO 60" TRAVEL
OPT-4149	DUAL CHIP CONVEYOR SYSTEM 70" - 100" X TRAVEL
OPT-2104	HIGH PRESSURE WASHDOWN SYSTEM & WASHDOWN HOSE Flushes chips into auger or conveyor system.

40 TAPER SPINDLE OPTIONS

OPT-2200	10,000 RPM 40 TAPER SPINDLE Includes refrigeration unit and air purge seal.
OPT-2202	12,000 RPM 40 TAPER IN-LINE SPINDLE Includes refrigeration unit and air purge seal.
OPT-2204	15,000 RPM 40 TAPER IN-LINE SPINDLE Includes refrigeration unit and air purge seal.
OPT-2205	21,000 RPM 30 TAPER ELECTRIC SPINDLE Includes refrigeration unit, air purge seal, conversion of ATC to 30 taper.

OPT-2206	30,000 RPM 30 TAPER ELECTRIC SPINDLE Includes refrigeration unit, air purge seal, oil/air lube system, conversion of ATC to 30 taper.
OPT-4206	HIGH TORQUE 40 HP SPINDLE MOTOR UPGRADE (Siemens control only) Powerful 40 HP spindle motor develops 204 ft./lbs. of torque at only 350 RPM. Requires 80 Amp service.
OPT-4208	2 SPEED AUTO-SHIFT GEARED HEAD (40 TAPER) High torque ZF gearbox provides 500 ft/lbs. torque at 350 RPM with standard 25 HP motor or an incredible 800 ft/lbs. at 350 RPM with the optional 40 HP motor. Includes refrigeration unit, max speed 6,000 RPM.
OPT-2213	350 PSI COOLANT THRU SPINDLE SYSTEM High pressure, adjustable 100-350 PSI thru spindle coolant system. Includes high volume 8-gallon / minute pump and 10-micron replaceable filter. Features full pressure even with tool coolant holes up to .200" diameter. Includes top cover. 40 or 50 taper spindles.
OPT-2212	1,000 PSI COOLANT THRU SPINDLE SYSTEM High pressure, adjustable 300-1,000 PSI thru spindle coolant system. Includes high volume 8-gallon / minute pump. This allows full pressure even with tool coolant holes up to .100" diameter. System includes 10-micron replaceable filter cartridge. Includes top cover. 40 or 50 taper spindles.
OPT-2216	BIG PLUS TAPER SPINDLE FOR CAT OR BT Dual contact Big Plus spindle improves cutting performance with use of special Big plus holders. Also accepts standard 40 taper holders for normal performance.
OPT-9209	BT-40 SPINDLE For Japanese style BT-40 tooling.

AUTOMATIC TOOL CHANGERS - 40 TAPER

OPT-4103	UPGRADE TO 40 STATION ARM TYPE AUTOMATIC TOOL CHANGER Column mounted, twin arm, 40 + 1 Station tool changer holds up to 3.55" (adjacent) and 6.00" (empty pocket) diameter tools, 11" long, 17.50 lbs. Tool change time 3 seconds.
OPT-4109	UPGRADE TO 60 STATION ARM TYPE AUTOMATIC TOOL CHANGER FOR 40 TAPER Column mounted, twin arm, 60 + 1 Station tool changer holds up to 3.55" (adjacent) and 6.00" (empty pocket) diameter tools, 11" long, 17.50 lbs. Tool change time 3 seconds.

50 TAPER SPINDLE OPTIONS

OPT-4212	50 TAPER SPINDLE - 6,000 RPM
OPT-4213	50 TAPER SPINDLE - 8,000 RPM
OPT-4217	50 TAPER SPINDLE - 10,000 RPM - In-Line type
OPT-4206	HIGH TORQUE 40 HP SPINDLE MOTOR UPGRADE (Siemens control only) Powerful 40 HP spindle motor develops 204 ft./lbs. of torque at only 350 RPM. Requires 80 Amp service.
OPT-4247	2 SPEED AUTO-SHIFT GEARED HEAD (50 TAPER) High torque ZF gearbox provides 500 ft/lbs. torque at 350 RPM with 30 HP motor or an incredible 800 ft/lbs. at 350 RPM with the 40 HP motor. Includes refrigeration unit, max speed 6,000 RPM.
OPT-9237	BT-50 SPINDLE For Japanese style BT-50 tooling.

AUTOMATIC TOOL CHANGERS - 50 TAPER

OPT-4142	UPGRADE TO 24 STATION ARM TYPE ATC FOR 50 TAPER VERTICAL Column mounted, twin arm, 24 station tool changer holds up to 4.9"(adjacent) and 9.85" (empty pocket) diameter tools, 16" long, 33 lbs. Tool change time 4 seconds.
OPT-4107	UPGRADE TO 40 STATION ARM TYPE ATC FOR 50 TAPER VERTICAL Chain drive large capacity ATC is column mounted, twin arm, 40 station tool changer holds up to 4.9"(adjacent) and 9.85" (empty pocket) diameter tools, 16" long, 33 lbs. Tool change time 4 seconds.

RISER BLOCKS

OPT-4122	4" COLUMN RISER BLOCK
OPT-4124	8" COLUMN RISER BLOCK
OPT-4125	12" COLUMN RISER BLOCK

ROTARY TABLE CONTROLLERS

OPT-4306	4TH AXIS DRIVE AND WIRING for 6" to 10" Rotary Tables Add this option to any Fryer machine in order to control the 4th axis rotary tables as a full contouring 4th axis. Includes drive, wiring and 4th axis software.
OPT-4305	4TH AXIS DRIVE AND WIRING for 12" to 32" Rotary Tables Add this option to any Fryer machine in order to control the 4th axis rotary tables as a full contouring 4th axis. Includes drive, wiring and 4th axis software.
OPT-4349	5TH AXIS DRIVE AND WIRING for 6" to 12" Trunnion Tables Add this option to any Fryer machine in order to control the two axis rotary tables as a full contouring 4th and 5th axis. Includes drives, wiring and special 5 axis software. Requires 4th axis Drive and Wiring.
OPT-4350	5th AXIS DRIVE AND WIRING for 16" to 32" Trunnion Tables Add this option to any Fryer machine in order to control the two axis rotary tables as a full contouring 4th and 5th axis. Includes drives, wiring and special 5 axis software. Requires 4th axis Drive and Wiring.

4th AXIS ROTARY TABLES

***Fryer made rotary tables feature exceptional quality and accuracy. Dual worm gear drive, high torque disc brake, AC brushless motor, coolant tight motor housing, quick disconnect cable set, table clamp set and ground locating keys.
Requires 4th axis drive wiring.***

OPT-1002	RT-170 6" 4TH AXIS ROTARY TABLE
OPT-1003	6" TAILSTOCK
OPT-1004	6" ROTARY TABLE CHUCK
OPT-4310	RT-200 8" 4TH AXIS ROTARY TABLE
OPT-4311	8" TAILSTOCK
OPT-4360	8" HEAVY DUTY TAILSTOCK Tailstock includes a cast iron body, keyed table and features a faceplate to hold a 3-jaw chuck or a center. Also includes high torque pneumatic disc brake.
OPT-4351	8" ROTARY TABLE CHUCK
OPT-4312	RT-250 10" 4TH AXIS ROTARY TABLE
OPT-4313	10" TAILSTOCK
OPT-4361	10" HEAVY DUTY TAILSTOCK Tailstock includes a cast iron body, keyed table and features a faceplate to hold a 3-jaw chuck or a center. Also includes high torque pneumatic disc brake.
OPT-4353	10" ROTARY TABLE CHUCK
OPT-4314	RT-320 12" 4TH AXIS ROTARY TABLE
OPT-4315	12" TAILSTOCK
OPT-4362	12" HEAVY DUTY TAILSTOCK Tailstock includes a cast iron body, keyed table and features a faceplate to hold a 3-jaw chuck or a center. Also includes high torque pneumatic disc brake.
OPT-4355	12" ROTARY TABLE CHUCK
OPT-4318	RT-400 16" 4 TH AXIS ROTARY TABLE
OPT-4319	16" TAILSTOCK
OPT-4359	16" ROTARY TABLE CHUCK

5th AXIS TRUNNION ROTARY TABLES

Fryer made 5th axis rotary tables are perfect for multisided machining as well as full 5 axis contouring. Ultra precise ring and worm gear set ensure dead-on accuracy. All tables feature trunnion style full support for heavy duty cutting, hydraulic disc brake, table clamp set, quick disconnect cable set and ground locating keys.

Requires 4th & 5th axis rotary table controllers above.

OPT-8503	TRT-120 6" 5 TH AXIS TRUNNION ROTARY TABLE
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OPT-8505	TRT-200 8" 5 TH AXIS TRUNNION ROTARY TABLE
OPT-8507	TRT-250 10" 5 TH AXIS TRUNNION ROTARY TABLE
OPT-8509	TRT-320 12" 5 TH AXIS TRUNNION ROTARY TABLE
OPT-8510	TRT-450 18" 5 TH AXIS TRUNNION ROTARY TABLE
OPT-8517	TRT-500 20" 5 TH AXIS TRUNNION ROTARY TABLE

GLASS SCALES

OPT-1102	HEIDENHAIN GLASS SCALE FEEDBACK 0.000050" RESOLUTION - X & Y AXIS (<i>MODELS UP TO 40" X TRAVEL</i>) This is a super accurate system using dual feedback. The standard encoders provide a stable servo loop while the ultra precision scales provide final position accuracy.
OPT-2122	HEIDENHAIN GLASS SCALE FEEDBACK 0.000050" RESOLUTION - X & Y AXIS (<i>MODELS UP TO 60" X TRAVEL</i>)
OPT-4127	HEIDENHAIN GLASS SCALE FEEDBACK 0.000050" RESOLUTION – X & Y AXIS (<i>MODELS WITH 70" - 100" X TRAVEL</i>)
OPT-2124	HEIDENHAIN GLASS SCALE FEEDBACK 0.000050" RESOLUTION – Z AXIS (<i>MODELS WITH UP TO 30" Z TRAVEL</i>)
OPT-2125	HEIDENHAIN GLASS SCALE FEEDBACK 0.000050" RESOLUTION – Z AXIS (<i>MODELS WITH 30" - 40" Z TRAVEL</i>)

CONTROL OPTIONS - FRYER / SIEMENS 828 HS

OPT-0602	REMOTE ELECTRONIC HANDWHEEL Handy jog handwheel is located in a portable box with coiled cord. Features axis selector switch and a resolution selector for coarse or fine movement. Remote stop start is also included.
OPT-2146	HANDWHEEL RUN FUNCTION This feature allows you to control your program execution with the electronic handwheel. Turning the handwheel causes the program to run, with you controlling the feedrate. You can move forwards and even backwards with this handy feature. Designed to make proving-out programs easier with safety and confidence.
OPT-2158	SWIVEL FUNCTION This innovative function allows the operator to enter the angle of an adjustable right angle toolholder into the control. X and Z axes are then automatically slaved to allow milling and drilling. Addition of the remote handwheel option provides for manual movement.
OPT-2147	DXF FILE IMPORT FEATURE Allows you to import DXF files and quickly convert to a conversational program. Automatically create points for drilling operations or contours for milling.
OPT-4133	IN-PROCESS PART PROBE MEASUREMENT CYCLES This feature allows you to measure part features during program execution. Can also be used in MDI mode after cutting the part to then measure certain features and display the measurement
OPT-9104	HIGH SPEED NETWORK INTERFACE High speed Ethernet port is the ideal way to connect your machine to your LAN (local area network). Features 10/100 MB/s bandwidth for fast uploads and downloads of part programs. Also features a drip feed option that allows you to run part programs larger than the memory of the machine.
OPT-2140	REMOTE MONITORING Allows monitoring of the CNC from any remote location where internet access is available. Check cycle times, spindle load, feedrate override position, program being run and more. Requires network interface option.
OPT-2100	SIEMENS OFFLINE PROGRAMMING SOFTWARE Easy-to-use software package that installs on a standard desktop PC and duplicates the control functions. Allows full programming and part program verification. Single package for lathe and mill. Windows 7-10 compatible.
OPT-2151	EXPANDED MEMORY 100 MB Standard memory of 6 MB is increased to 100 MB for handling larger CAM programs.
OPT-2142	3D HIGH SPEED MACHINING Features high speed 1.5ms block processing and 500 block look-ahead. Advance Surface features jerk control and nano smoothing with a compressor mode which determines optimal velocity for programs containing circular and linear blocks. High speed roughing parameters and lower speed finishing parameters provide incredible surface finish at lowest possible cutting time.
OPT-2163	RESIDUAL MATERIAL DETECTION This software option allows re-machining of pocket milling contours with a tool smaller than the original tool. The control will remember where material has already been machined and will cut only the residual material.

OPT-2156	EXTENDED OPERATOR FUNCTIONS Includes additional part probing cycles, teach function, the ability to save tool data and tool offset data, save MDI programs and other features.
OPT-2154	4TH AXIS SURFACE CYCLES Allows programming of XYZ coordinates and cycles like pockets and engraving. These are then automatically projected onto a cylindrical surface. For use with 4th axis rotary tables.
OPT-2156	ADAPTIVE FEED CONTROL This cycle monitors the spindle load and varies the feed rate accordingly. By entering the maximum spindle load and then entering a range of minimum and maximum feedrate override values, the control monitors these settings and adjusts the feeds automatically. When approaching corners and radii the feed rate will slow down, during straight line moves the feedrate increases to shorten the cutting time and help produce more parts per hour.
OPT-2144	FRYER - SIEMENS TOUCH 2400 CNC CONTROL UPGRADE The 2400 CNC is based on the powerful Siemens Sinumerik One platform. This control features a 19" touch screen display, 5 axis simultaneously expandable and advanced operator functions. Includes Handwheel Run and Run Verify features as well as Probe Cycles. Software options for this control are slightly different than the 828-HS control, contact the factory for additional information on these options.
OPT-9200	SPARE "M" FUNCTION Use to connect remote devices like indexers, shuttles, clamps, etc.
OPT-9203	SPARE "M" FUNCTION -- PACKAGE OF 10

CONTROL OPTIONS - FANUC

OPT-0217	FANUC 0i MF PLUS CNC UPGRADE
OPT-9950	FANUC 31i B5 - 5 axis CNC UPGRADE
OPT-4244	HIGH TORQUE 40 HP SPINDLE MOTOR AND DRIVE
STD	USB PORT FOR MEMORY STICK DEVICES
OPT-0218	2 MB PROGRAM STORAGE MEMORY
OPT-0222	WORK OFFSETS – 48 PAIR STANDARD
OPT-0217	HANDWHEEL RUN FUNCTION This feature allows you to control your program execution with the electronic handwheel. Turning the handwheel causes the program to run, with you controlling the feedrate. You can move forwards and even backwards with this handy feature. Designed to make proving-out programs easier with safety and confidence.
OPT-0212	REMOTE ELECTRONIC HANDWHEEL Handy jog handwheel is located in a portable box with coiled cord. Features axis selector switch and a resolution selector for coarse or fine movement. Remote stop start is also included.
OPT-0213	MANUAL GUIDE I CONVERSATIONAL PROGRAMMING - Powerful Manual Guide i guides you through complex programming at the machine without having to remember G codes. Includes 3D solid model verification feature.
OPT-0215	FAST DATA SERVER - 2 GB part storage, unlimited file size using drip feed buffer, FTP server capable.
OPT-0214	HIGH SPEED NETWORK INTERFACE High speed Ethernet port is the ideal way to connect your machine to your LAN (local area network). Features 10/100 MB/s bandwidth for fast uploads and downloads of part programs. Also features a drip feed option that allows you to run part programs larger than the memory of the machine.
OPT-0219	3D HIGH SPEED MACHINING Features 200 block look ahead, AICC2, smooth tolerance, jerk control, and fine surface machining.
OPT-9200	SPARE "M" FUNCTION Use to connect remote devices like indexers, shuttles, clamps, etc.
OPT-9203	SPARE "M" FUNCTION -- PACKAGE OF 10
OPT-0221	TEACH MODE Allows you to record manual positions using the handwheels to create a program

PROBES

OPT-4230	FRYER AUTOMATIC TOOL AND PART PROBE PACKAGE This package includes table mounted tool probe to auto set the tool length offset and a wired part probe to auto set pocket centers, bosses, and find edges. The simple graphical interface included gives the operator the fastest set-up possible.
OPT-9222	MARPOSS WIRELESS TOOL AND PART PROBE PACKAGE Includes a wireless (IR) table mounted tool probe that automatically measures and sets your tool length and diameter offsets. Included is an easy to use wireless part probe that works with the ATC and allows you to quickly find edges, hole centers, bosses and many more shapes. Simple graphical menus make operations fast and can also be used to measure part geometry.

OPT-3508	MARPOSS IR WIRELESS PART PROBE ONLY Infrared (IR) probe is ideal for 3-axis applications. The part probe works with the ATC and allows you to quickly find edges, hole centers, bosses and many more shapes. Simple graphical menus make operations fast and can also be used to measure part geometry.
OPT-2128	RENISHAW WIRELESS TOOL AND PART PROBE PACKAGE Includes a wireless (IR) table mounted tool probe that automatically measures and sets your tool length and diameter offsets. Included is an easy to use wireless (IR) part probe that works with the ATC and allows you to quickly find edges, hole centers, bosses and many more shapes. Simple graphical menus make operations fast and can also be used to measure part geometry.
OPT-9217	RENISHAW IR WIRELESS PART PROBE ONLY Infrared (IR) probe is ideal for 3-axis applications. The part probe works with the ATC and allows you to quickly find edges, hole centers, bosses and many more shapes. Simple graphical menus make operations fast and can also be used to measure part geometry.
OPT-4132	RENISHAW NC4 LASER TOOL PROBE The Renishaw NC4 is the latest generation of non-contact tool setter and their most compact design. Repeatability of trigger points (2 sigma) $\pm 1.0 \mu\text{m}$ at 1 m separation; minimum tool diameter for measurement $\varnothing 0.03 \text{ mm}$ (0.001 in). Maximum tool diameter is 80mm

TOOLING & WORKHOLDING

OPT-4214	SANDVIK #40 V-FLANGE TOOLING PACKAGE Standard tooling package includes: (6) collet chucks with the following collet sizes: (1) 1/4"; (2) 3/8 "; (2) 1/2 "; (1) 5/8"; (1) 3/4"; (1) 1". Solid end mill holders as follows: (2) 3/8 "; (2) 1/2 "; (1) 5/8 "; (1) 3/4"; (1) 1", (1) 1/2" keyless drill chuck with holder, collet chuck wrench & set-up fixture, (14) retention knobs.
OPT-9097	PACKAGE OF 12 CAT-40 OR BT-40 RETENTION KNOBS (specify at time of order)
OPT-9101	PACKAGE OF 12 CAT-40 OR BT-40 RETENTION KNOBS FOR THRU SPINDLE COOLANT (specify at time of order)
OPT-4215	SANDVIK #50 V-FLANGE TOOLING PACKAGE Standard tooling package includes: (6) collet chucks with the following collet sizes: (1) 1/4"; (2) 3/8 "; (2) 1/2 "; (1) 5/8"; (1) 3/4"; (1) 1". Solid end mill holders as follows: (2) 3/8 "; (2) 1/2 "; (1) 5/8 "; (1) 3/4"; (1) 1", (1) 1/2" keyless drill chuck with holder, collet chuck wrench & set-up fixture, (14) retention knobs.
OPT-9096	PACKAGE OF 12 CAT-50 OR BT-50 RETENTION KNOBS Specify at time of order.
OPT-9109	PACKAGE OF 12 CAT-50 OR BT-50 RETENTION KNOBS FOR THRU SPINDLE COOLANT Specify at time of order.
OPT-8002	6" HIGH PRECISION VISE - KURT BRAND - MADE IN USA
OPT-8003	8" HIGH PRECISION VISE- KURT BRAND - MADE IN USA

FACTORY SERVICES

OPT-9000	FACTORY SET-UP & TRAINING AT YOUR FACILITY for MC-30/40/45/60 (3 Days Contiguous US. Includes travel expenses) Training for Siemens Control only.
OPT-9002	FACTORY SET-UP & TRAINING AT YOUR FACILITY for MC-80/100 (3 Days Contiguous US. Includes travel expenses) Training for Siemens Control only.
OPT-9996	TRAINING ONLY -- 1 DAY Expenses and travel time additional.
OPT-8999	RUN-OFF AT FACTORY

ELECTRICAL

V440	380-500 VAC 3 PHASE STANDARD
OPT-9210	CHANGE TO 208-250 VAC 3 PHASE POWER 30KVA (use with 30HP motor)
OPT-9213	CHANGE TO 208-250 VAC 3 PHASE POWER 45KVA (use with 40HP motor)