XP 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-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 GRAPHITE MACHINING PACKAGE (Up TO 60" Travel) This package includes one piece sealed way covers and a sealed electrical cabinet with a high efficiency heat exchanger.

CHIP REMOVAL

OPT-2102 CHIP AUGER SYSTEM UP TO 60" X TRAVEL

OPT-8039 CHIP CONVEYOR SYSTEM UP TO 60" TRAVEL

OPT-2104 HIGH PRESSURE WASHDOWN SYSTEM & WASHDOWN HOSE (flushes chips into auger or conveyor system)

SPINDLE OPTIONS

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-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.

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.
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**  
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.

### 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)

### 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)*

*Requires rotary table controller above*

**OPT-1002**  
6” 4TH AXIS ROTARY TABLE

**OPT-1003**  
6” TAILSTOCK

**OPT-1004**  
6” ROTARY TABLE CHUCK

**OPT-4310**  
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
<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPT-4312</td>
<td>10” 4TH AXIS ROTARY TABLE</td>
</tr>
<tr>
<td>OPT-4313</td>
<td>10” TAILSTOCK</td>
</tr>
<tr>
<td>OPT-4361</td>
<td>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.</td>
</tr>
<tr>
<td>OPT-4353</td>
<td>10” ROTARY TABLE CHUCK</td>
</tr>
<tr>
<td>OPT-4314</td>
<td>12” 4TH AXIS ROTARY TABLE</td>
</tr>
<tr>
<td>OPT-4315</td>
<td>12” TAILSTOCK</td>
</tr>
<tr>
<td>OPT-4362</td>
<td>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.</td>
</tr>
<tr>
<td>OPT-4355</td>
<td>12” ROTARY TABLE CHUCK</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPT-8503</td>
<td>6” 5TH AXIS TRUNNION ROTARY TABLE</td>
</tr>
<tr>
<td>OPT-8505</td>
<td>8” 5TH AXIS TRUNNION ROTARY TABLE</td>
</tr>
<tr>
<td>OPT-8507</td>
<td>10” 5TH AXIS TRUNNION ROTARY TABLE</td>
</tr>
<tr>
<td>OPT-8509</td>
<td>12” 5TH AXIS TRUNNION ROTARY TABLE</td>
</tr>
</tbody>
</table>

**GLASS SCALES**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPT-1102</td>
<td>HEIDENHAIN GLASS SCALE FEEDBACK 0.000050” RESOLUTION - X &amp; Y AXIS (MODELS UP TO 40” X TRAVEL) 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.</td>
</tr>
<tr>
<td>OPT-2124</td>
<td>HEIDENHAIN GLASS SCALE FEEDBACK 0.000050” RESOLUTION – Z AXIS (MODELS WITH UP TO 30” Z TRAVEL)</td>
</tr>
</tbody>
</table>

**CONTROL OPTIONS - SIEMENS 2200 (840D)**
REMOTE ELECTRONIC HANDWHEEL  Handy jog handwheel is located in a portable box. Features axis selector switch and a resolution selector for coarse or fine movement. Remote stop start is also included. Also features an innovative function which allows you to control the movement (forwards or backwards) and feedrate of running a part program (Handwheel Run).

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 spooling option that allows you to run part programs larger than the memory of the machine. Available in a wireless package for $200.00 extra.

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.

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.

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)

SPARE “M” FUNCTION (use to connect remote devices like indexers, shuttles, clamps, etc.)

SPARE “M” FUNCTION -- PACKAGE OF 10

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 compatible.

MEMORY LOCK KEY

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 residual material.

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.

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.

5 AXIS SPECIAL FUNCTION PACKAGE  Package includes Rotary Tool Center Point Compensation (TRAORI command) and 3D tool nose compensation both of which make it easier to program minor changes to size of the part without having to repost a new program. Also included is the 3D high speed machining package described above.

CONTROL OPTIONS - FANUC

FANUC 0i MF  (220 VAC, 20 HP Standard)

FANUC 31i A5 - 5 axis CNC

HIGH TORQUE 30 HP SPINDLE MOTOR AND DRIVE

HIGH SPEED ETHERNET NETWORK PORT (100 MB/SEC)

USB PORT FOR MEMORY STICK DEVICES

REMOTE ELECTRONIC HANDWHEEL WITH AXIS AND RESOLUTION SELECT
OPT-0218  2 MB PROGRAM STORAGE MEMORY UPGRADE (512K STANDARD)

OPT-0213  HIGH SPEED MACHINING PACKAGE for 0i (Fanuc AiCC nano)  This package is designed for die mold applications where the ultimate in performance is desired. Features 2 millisecond block processing speed with 200 block look ahead. Bell shaped ACC/DEC interpolation. Nano smoothing and jerk control included

OPT-0219  HIGH SPEED MACHINING PACKAGE for 31i (Fanuc Ai Nano) This package is designed for die mold applications where the ultimate in performance is desired. Features 1 millisecond block processing speed with 600 block look ahead. Bell shaped ACC/DEC interpolation. Nano smoothing and jerk control included

OPT-0222  WORK OFFSETS – 48 PAIR STANDARD

OPT-0226  I ADAPT Lowers cycle times by up to 40% by automatically optimizing the cutting feedrate based on the actual load on the spindle.

OPT-9211  430 - 500 VAC 3 PHASE POWER

FANUC SPECIAL OPTIONS - Fryer offers all Fanuc available options. Many of these options offer special features and performance and should be discussed with the factory.

### PROBES

OPT-9222  MARPOSS WIRELESS TOOL AND WIRELESS PART PROBE PACKAGE Package includes a wireless (IR) table mounted tool probe that automatically measures and sets your tool length and diameter offsets. Also 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.

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.

OPT-2128  RENISHAW WIRELESS TOOL AND PART PROBE PACKAGE Package includes a wireless table mounted tool probe that automatically measures and sets your tool length and diameter offsets. Also 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. System 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.

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) ±1.0 µm at 1 m separation; Minimum tool diameter for measurement Ø0.03 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-8002  6" HIGH PRECISION VISE - KURT BRAND - MADE IN USA

OPT-8003  8" HIGH PRECISION VISE - KURT BRAND - MADE IN USA
### FACTORY SERVICES

<table>
<thead>
<tr>
<th>Code</th>
<th>Service Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPT-9000</td>
<td>FACTORY SET-UP &amp; TRAINING AT YOUR FACILITY (3 Days Contiguous US. Includes travel expenses)</td>
</tr>
<tr>
<td>OPT-9996</td>
<td>TRAINING ONLY – 1 DAY (Expenses and travel time additional)</td>
</tr>
<tr>
<td>OPT-8999</td>
<td>RUN-OFF AT FACTORY</td>
</tr>
</tbody>
</table>

### ELECTRICAL

<table>
<thead>
<tr>
<th>Code</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>V440</td>
<td>380-500 VAC 3 PHASE STANDARD</td>
</tr>
<tr>
<td>OPT-9210</td>
<td>CHANGE TO 208-245 VAC 3 PHASE POWER 30KVA</td>
</tr>
</tbody>
</table>