



Precision Built Solutions™

HB SERIES OPTIONS

- 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-2114 AIR BLAST SYSTEM Programmable air nozzle for plastic, graphite and other dry materials
- 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-2120 GRAPHITE MACHINING PACKAGE This package includes one piece sealed way covers and a sealed electrical cabinet with an high efficiency heat exchanger. Available for all models. Contact factory.

EXTENDED TRAVEL

- OPT-4344 EXTENDED 72" Y TRAVEL (HB-70, HR-70)
- OPT-4343 EXTENDED 46" Z TRAVEL (HB-70, HR-70) Spindle nose to table center increases to 53"

CHIP REMOVAL

- OPT-4156 CHIP AUGER SYSTEM UP TO 70" X TRAVEL
- OPT-4148 DUAL CHIP AUGER SYSTEM 120" - 160" X TRAVEL
- OPT-4157 CHIP CONVEYOR SYSTEM UP TO 70" TRAVEL
- OPT-4150 DUAL CHIP CONVEYOR SYSTEM 120" - 160" X TRAVEL
- OPT-2104 HIGH PRESSURE WASHDOWN SYSTEM & WASHDOWN HOSE (flushes chips into auger or conveyor system)

CHIP GUARDING

- OPT-4008 FULL MACHINE GUARD (HR/HB-70)
- OPT-4009 FULL MACHINE GUARD (HR/HB-120)

50 TAPER SPINDLE OPTIONS

- OPT-4247 **2 SPEED AUTO-SHIFT GEARED HEAD (50 TAPER)** High torque ZF gearbox provides 1,444 ft/lbs torque (HB series only) at 350 RPM with the 40 HP motor. Includes refrigeration unit, max speed 3,000 RPM.
- OPT-9237 **BT-50 SPINDLE** (for Japanese style BT-50 tooling)
- OPT-4207 **HIGH TORQUE 55 HP SPINDLE MOTOR UPGRADE (2200 control only)** Powerful 55 HP spindle motor develops 440 ft/lbs of torque (HB Series only) at only 350 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.
- 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.

AUTOMATIC TOOL CHANGERS - 50 TAPER

- OPT-2013 **24 STATION ARM TYPE ATC FOR 50 TAPER HORIZONTAL** 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-2015 **40 STATION ARM TYPE ATC FOR 50 TAPER HORIZONTAL**
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.
- OPT-4144 **60 STATION ARM TYPE ATC FOR 50 TAPER HORIZONTAL** Chain drive large capacity ATC is column mounted, twin arm, 60 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**

BUILT-IN ROTARY TABLES

- OPT-4379 **36" BUILT-IN 4TH AXIS ROTARY TABLE (HR and HB-70 ONLY)** Includes 36" x 80" machine table with center, flush mounted 36" 4th axis rotary table. Full interpolated contouring and positioning. 15 arc/sec accuracy. 10,000 lbs capacity. Includes rotary table controller.
- OPT-4381 **40" BUILT-IN 4TH AXIS ROTARY TABLE (HR and HB-120/160 ONLY)** Includes full size machine table with center, flush mounted 40" 4th axis rotary table. Full interpolated contouring and positioning. 12 arc/sec accuracy. 10,000 lbs capacity. Includes rotary table controller.

GLASS SCALES

- OPT-4127 HEIDENHAIN GLASS SCALE FEEDBACK 0.000050" RESOLUTION – X & Y AXIS
(MODELS WITH 70" - 100" X TRAVEL)
- OPT-4128 HEIDENHAIN GLASS SCALE FEEDBACK 0.000050" RESOLUTION – X & Y AXIS
(MODELS WITH 120" - 160" X TRAVEL)
- OPT-2125 HEIDENHAIN GLASS SCALE FEEDBACK 0.000050" RESOLUTION – Z AXIS (MODELS
WITH 30" - 40" Z TRAVEL)
- OPT-4129 HEIDENHAIN GLASS SCALE FEEDBACK 0.000050" RESOLUTION – Z AXIS (MODELS
WITH 40" - 55" Z TRAVEL)

CONTROL OPTIONS - SIEMENS 2200 (840D)

- OPT-0602 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).
- 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 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.
- 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-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-9200 SPARE "M" FUNCTION (use to connect remote devices like indexers, shuttles, clamps, etc.)
- OPT-9203 SPARE "M" FUNCTION -- PACKAGE OF 10
- 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 compatible.
- OPT-2155 MEMORY LOCK KEY
- 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 residual material.
- OPT-2152 EXPANDED MEMORY 6 GB - Standard memory of 3 MB is increased to 6 GB 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-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.

CONTROL OPTIONS - FANUC

- OPT-0217 FANUC 0i MF FOR VB,HR,HB,TC
- OPT-0216 HIGH TORQUE 30 HP SPINDLE MOTOR AND DRIVE HR/HB
- OPT-0214 HIGH SPEED ETHERNET NETWORK PORT (100 MB/SEC)
- STD USB PORT FOR MEMORY STICK DEVICES
- OPT-0212 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-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.
- 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 Special 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) $\pm 1.0 \mu\text{m}$ at 1 m separation; Minimum tool diameter for measurement $\text{\O}0.03 \text{ mm}$ (0.001 in). Maximum tool diameter is 80mm

TOOLING & WORKHOLDING

- 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)

FACTORY SERVICES

- OPT-9098 **ASSEMBLY and START-UP AT YOUR FACILITY (SPECIALTY AND LARGE MACHINES - MILL)**
- 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-9213 **CHANGE TO 208-245 VAC 3 PHASE POWER 45KVA** (use with 40HP motor)