

Release Date:8/9/02

STANDARD EQUIPMENT

MACHINE

- Automatic Two (2) Pallet Changer with Automatic Front Door Open/Close & Safety Cover
- NC Rotary Table (Full contouring, 0.001° increments)
- NC Tilting Spindle (Full contouring, 0.0001° increments)
- Full Coverage Chip & Coolant Enclosure
- Complete Coolant System with large reserve tank capacity
 - Through-the-Spindle Coolant* - Provides high-pressure coolant at the tool 105 PSI.
 - Flood Coolant System* - Provides High Pressure Coolant at Spindle Nose
 - Niagara Coolant System*
- Standard Work light Inside of Machine Chip & Coolant Enclosure
- Air Blast System on Spindle for Automatic Tool Change

MAZATROL FUSION 640M

NP110640MJO

Specifications & Standard Features:

Mazatrol and EIA/ISO Programming Language

10.4-inch color LCD (Liquid Crystal Display)

Data Input/Output: I C Memory Card Interface (Download/Save Only)
RS-232 C
3.5" Floppy Disc Drive
PCMCIA Type II.....(2) Slots

Adaptive Feed Rate Control (Mazatrol)

Tool Life Monitoring (Mazatrol)

Tool Breakage Recovery (Mazatrol)

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e-1060V/8
With Mazatrol Fusion
640M Control

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Tool Length Measurement (Mazatrol)

Mazak Tapping/Boring Tornado (Mazatrol and EIA/ISO)

Synchronized Tapping

Background Tool Path Check (Mazatrol)

48 Letter Program Name

Machining Navi-Monitor and Navigation (Mazatrol)

Mazacc 2-D High Speed Programming Software (G61.1)

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Programming Enhancements

G00 Slope Constant
User Macro
Additional Variables (600 Pairs)
G93 Inverse Time Feed
G37 Automatic Tool Length Measurement
Sequence Number Comp. Stop Function
G54.1~ Add. Workpiece Coordinate

Thread Cutting Function
Spiral Interpolation
3D Compensation
Shape Rotation (M98)
Geometric Command
Program Scaling (G50,G51)
Workpiece Coord. Shift

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STANDARD SPECIFICATIONS:

Pallet Size.....	SELECT OPTION
Maximum Swing With 2 Pallet Changer.....	49.2"
Maximum Machining Diameter With 2 PC.....	49.2"
Floor Space Required.....	209.4" x 324.5"
Machine Height from Bottom of Base.....	173.23"
Total Power Required (30 Min/Cont).....	108/99 KVA
NOTE: Actual Machine Main Transformer KVA Rating Will Be Greater.	
Machine Weight With 2 Pallet Changer.....	83,775 lbs.

TRAVELS

X-Axis Travels.....	73.82"
Y-Axis Travels.....	41.73"
Z-Axis Travels.....	52.95"
B-Axis Travels.....	150 Deg
	(0.0001 Deg Incr.) (-30 Deg to 120 Deg)
C-Axis Travels.....	360 Deg

WORKPIECE SIZE

Maximum Table Load.....	4,850 lbs.
Maximum Workpiece Height.....	49.21"
Maximum Workpiece Diameter.....	49.21"

TABLE

Maximum Speed.....	500 RPM
Minimum Indexing Increment.....	0.0001 Deg
Spindle Horsepower (30 Min/Cont).....	50/40 HP
Spindle Torque.....	2,220 ft-lbs
Obtains Full HP @(30min./Cont.).....	97/176 RPM
C-Axis Clamping Torque.....	9,065 ft-lbs
C-Axis Contouring Torque (30% ED).....	1,739 ft-lbs

MILLING SPINDLE

Spindle Nose.....	BIG PLUS
Spindle Horsepower (1 Min/30 Min/Cont)...	60/50/40 HP
Spindle Torque.....	339 ft-lbs
Obtains Full HP @.....	2,000 RPM
Spindle Speed.....	35-10,000 RPM
Spindle Speed Increment.....	1 RPM

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Number of Ranges..... 1 (2) Ranges

AUTOMATIC TOOL CHANGER

Magazine Capacity..... 40 (80/120) **160**
 (Tool Hive 180/240/330)

Tool-to-Tool Time..... 1.8 seconds

Tool Selection Method..... Random/Shortest Path

Maximum Tool Diameter..... 5.31"

Max.Tool Dia.W/Adjacent Pockets Empty.... 10.24"

Maximum Tool Length..... 19.69"

Maximum Tool Weight..... 66 lbs.

AXIS RAPID RATES

X, Y and Z-Axis..... 1,575 IPM

B-Axis..... 30 RPM

C-Axis..... 18 RPM

STATIC MACHINE ACCURACIES (ISO 10791-1)

(X, Y & Z Axis Bi-Directional Positioning Accuracy
 (Full Travel)..... .0008"

(X, Y & Z Axis Bi-Directional Repeatability
 (Full Travel)..... .0004"

C-Axis Positioning Accuracy..... 15 Arc Seconds

C-Axis Bi-Directional Repeatability..... 8 Arc Seconds

B-Axis Positioning Accuracy..... 15 Arc Seconds

B-Axis Bi-Directional Repeatability..... 8 Arc Seconds

* Accuracies are based on utilizing Mazak recommended installation & testing procedures.

Air Requirements..... 26.48 CFM

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NC2507360J0 C MAZATROL PC-FUSION-CNC 640M 5X 1 *STD
PRO CONTROL

NC6007360J0 C E-TOWER 1 *STD

NP1107360J0 C PERFORMANCE CNC OPTIONAL 1 *STD
PACKAGE

THIS PACKAGE INCLUDES THE FOLLOWING:
Mazak Tapping/Boring Tornado (EIA/ISO)
EIA/ISO Code Input
Mill-Spindle Synchronized Tapping (W/O Tool)
Additional EIA/ISO Functions
-Spiral Interpolation (EIA)
-Pattern Rotation (EIA)
-3D Cutter Compensation (EIA)
-Geometric Command (EIA)
-Scaling (EIA)
-External Data Input/Output (EIA)
Mazacc 2D High Speed Software
Additional Variables (Total 600 Pairs)
Inverse Time Feed
G37. Automatic Tool Length Measurement
x (Software for EIA use of Tool Measurement
does not include tool length measurer)
Sequence Number Comparison Stop Function
Thread Cutting Function (G33)
Additional Workpiece Coordinate System (G54.1)
G00 Slope Constant

NP1327360J0 S "e" DIE-MOLD PACKAGE W/IC MEMORY
& ETHERNET

THIS PACKAGE INCLUDES THE FOLLOWING:
Mazak Tapping/Boring Tornado (EIA/ISO)
EIA/ISO Code Input
Mill-Spindle Synchronized Tapping (W/O Tool)
Additional EIA/ISO Functions
-Spiral Interpolation (EIA)

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- Pattern Rotation (EIA)
- 3D Cutter Compensation (EIA)
- Geometric Command (EIA)
- Scaling (EIA)
- External Data Input/Output (EIA)
- Mazacc 2D High Speed Software
- Mazacc 3D High Speed Software
- Protocal B RS-232C
- Fine Spline Interpolation
- Ethernet Operation
 - High Speed PC Card (K6 233 Mhz)
- IC Memory Card Operation
- Additional Variables (Total 600 Pairs)
- Inverse Time Feed

- G37. Automatic Tool Length Measurement
(Software for EIA use of Tool Measurement
does not include tool length measurer)
- Sequence Number Comparison Stop Function
- Thread Cutting Function (G33)
- Additional Workpiece Coordinate System (G54.1)
- G00 Slope Constant

NO4917360J0	C	INCH/METRIC CONVERSION	1	*STD
NO8297360J0	C	PCMCIA I/F (2-SLOT,CARD BUS)	1	*STD
NO8357360J0	C	3.5" FDD UNIT	1	*STD
NO8487360J0	C	NETWORK INTERFACE (FOR LAN & MODEM)	1	*STD
NC3177360J0	C	12.1" COLOR LCD	1	*STD
NO0747360J0	C	MAZAK TAPPING/BORING TORNADO (MAZATROL)	1	*STD
NO0787360J0	x S	HIGH PRECISION BORING TORNADO CYCLE		
NO3527360J0	C	RS-232C INTERFACE	1	*STD

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NO3757360J0	C	BACKGROUND TOOL PATH CHECK	1	*STD
NO7927360J0	C	MACHINING NAVIGATION - PREDICTION	1	*STD
NO7937360J0	C	MACHINING NAVIGATION - MONITOR	1	*STD
NO7947360J0	C	MACHINING NAVIGATION - RESULTS	1	*STD
NO8317360J0	C	IC MEMORY CARD INTERFACE	1	*STD

NOTE: Interface only for data in/out. Cannot run directly from I.C. memory card or drip feed program.

~~SD7805760J0 C STANDARD TOOLING PACKAGE 1 *STD
(ESTIMATE REQUIRED)~~

~~PRELIMINARY LIST CONTACT THE FACTORY FOR LATEST INFORMATION
2 pcs Straight Holder (Reverse)
2 pcs Boring Bar Holder 2.0" I.D.
2 pcs 45 Degree Turning Holder
1 pc Turning Holder (Forward)
1 pc Turning Holder (Reverse)~~

NOTE: NO CREDIT ALLOWED FOR DELETION OF INDIVIDUAL TOOL HOLDERS IN THE STANDARD TOOLING PACKAGE

AT1705760J0	S	160 TOOL CHAIN MAGAZINE		
CC0115760J0	C	ENCLOSED COOLANT & SPLASH COVER	1	*STD
CV5105760J0	C	PREPARATION FOR CHIP CONVEYOR (SIDE)	1	*STD
CV1335760J0	x S	CHIP-CONVEYOR SIDE DISPOSAL (CONSEP)		
MO0605760J0	C	MANUAL PULSE GENERATOR 1 (DETACHABLE)	1	*STD
MO5515760J0	C	COOLERS FOR BALL SCREW (X, Y, Z-AXIS)	1	*STD

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CS2125760J0	C	AIR THROUGH MILL SPINDLE SYSTEM (AT SPINDLE STOP)	1	*STD
CS2165760J0	C	THRU MILL SPINDLE COOLANT 8KG (115 PSI) W/HI-PRESS PREP	1	*STD
CS3015760J0	C	NIAGARA COOLANT SYSTEM	1	*STD
SD0115760J0	C	FLOOD COOLANT SYSTEM	1	*STD
SD0305760J0	C	WORK LIGHT	1	*STD
SD0605760J0	C	ONE SET OF MANUALS	1	*STD
AS0285760J0	C	OPERATOR DOOR INTERLOCK WITH LOCK-SWITCH	1	*STD
MO1105760J0	C	HYDRAULIC PRESSURE INTERLOCK	1	*STD
AS0505760J0	C	AUTO POWER OFF (BREAKER TRIP)	1	*STD
SD0705760J0	C	VELOCITY AND FEEDRATE CONTROL	1	*STD
SD0805760J0	C	TOOL PATH STORAGE	1	*STD
SD0905760J0	C	ADAPTIVE FEEDRATE CONTROL	1	*STD
SD1005760J0	C	TOOL LIFE MONITORING	1	*STD
SD1205760J0	C	ONE SET OF ADJUSTING TOOLS	1	*STD
SD1415760J0	C	FOUNDATION KIT (LEVELING BLOCK)	1	*STD
SO0105760J0	C	SPINDLE CHILLER UNIT	1	*STD
SP8105760J0	C	LATHE SPINDLE (TABLE) MOTOR AC 37KW (50HP)	1	*STD
SR5905760J0	C	LATHE SPINDLE (TABLE) SPEED 500 RPM	1	*STD

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SI5055760J0	C	C-AXIS 0.0001 DEGREE INCR. (TABLE)	1	*STD
MD2505760J0	C	MILLING SPINDLE MOTOR AC 37KW (50HP)	1	*STD
MR3505760J0	C	MILLING SPINDLE SPEED 10000 RPM	1	*STD
YI3005760J0	C	B-AXIS 0.0001 DEG/CONTOURING (REQUIRES EIA/ISO INPUT)	1	*STD
YL1065760J0	C	Y AXIS TRAVEL 41.73" (1060MM)	1	*STD
MO0805760J0	C	SAFETY COVER FOR 2 PALLET CHANGER	1	*STD
PC0105760J0	C	2 PALLET CHANGER (DOES NOT INCLUDE PALLETS)	1	*STD
OC0105760J0	S	SPECIAL MACHINE COLOR		
MB0545760J0	C	PREPARATION FOR MMS-B OPTICAL TYPE MP10	1	*STD
MB0465760J0	x S	MAZAK MONITORING SYS. "B" OPTICAL TYPE MP10 PROBE		
MT4005760J0	x S	LAZER MEASUREMENT ROTARY TOOL	1	
MACHWRTY001	C	ONE YEAR WARRANTY FROM START UP DATE. CONSULT STANDARD TERMS	1	*STD
TC1CREDOT00	C	STANDARD TRAINING CREDIT BLOCK 18 UNITS DPT# 9	1	*STD
EL1505760J0	C	MULTITAP TRANSFORMER	1	*STD
MO0485760J0	x A	800MM T-SLOTTED PALLET NOTE:PRICE IS FOR ONE PALLET (NOT AVAILABLE FOR TURNING OPERATIONS)		

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~~JR3105760J0~~ A 1000MM DIAMETER ROUND PALLET
~~INCL. FACE PLATE AND JAWS*NOTE*~~
~~NOTE:PRICE IS FOR ONE PALLET~~

~~JR3205760J0~~ A 1000MM DIAMETER ROUND PALLET
~~W/THREE JAW SCROLL CHUCK*NOTE*~~
~~NOTE:PRICE IS FOR ONE PALLET~~

MT0325760J0 x A TOOL EYE (AUTOMATIC

CS0325760J0 x A OIL SKIMMER RB-200

~~CS0605760J0~~ x A OIL MIST COOLANT

CS0655760J0 x A MIST COLLECTOR

CS1205760J0 x A COOLANT TEMPERATURE CONTROL
SYSTEM

CS7035760J0 A PRESSURE SWITCH FOR THRU
COOLANT

CS7065760J0 x A SECONDARY COOLANT FILTER FOR
ALUMINUM

MO1155760J0 x A HYDRAULIC UNIT TEMPERATURE
CONTROL

CS0115760J0 A WORKPIECE AIR BLAST

FS0105760J0 x A FMS/PMC PREPARATION

FS0205760J0 A FMS/PMC APPLICATION

PL0825760J0 x A SIGNAL TOWER (3 COLOR LIGHTS)

SF0605760J0 x A SCALE FEEDBACK SYSTEM FOR X, Y
AND Z-AXIS

AS0905760J0 x A AUTO POWER ON/OFF AND WARM UP

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~~MB0715760J0~~ ~~x~~ ~~A~~ ~~WORK MEASURING PRINT OUT W/
PRINTER~~

NO0725760J0 x A AUTO PECKING CYCLE WITH LOAD
DETECTION

AS0805760J0 x A OVERLOAD DETECTION SYSTEM

NO4955760J0 x A NURBS INTERPOLATION

NO8405760J0 x A INTERFACE SET (KEYBOARD, MOUSE,
PARALLEL PORT)

NO6015760J0 x A CYLINDER INTERPOLATION
COMMAND (G07)

~~NO0305760J0~~ ~~x~~ ~~A~~ ~~3D PROGRAM SOFTWARE~~

NO1145760J0 x A EIA/ISO CONV. (REQ.EIA/ISO
INPUT) G1D/G2D)

NO4715760J0 x A EXTENDED DIAGNOSTIC FUNCTION

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