- CC60 Tube Endfinishing Machine Specifications -

Cycle Time, including transfer	10-16 seconds (depending on bore depth)
Tube Diameter Range	1.75" to 6.75" (45mm to 172mm)
Tooling Configuration	Quick-change tooling receiver (Kennametal© KM80) OD chamfer (1 insert), ID chamfer (1 insert), face (1 insert), bore (2 inserts) Custom ground inserts for radius or dual-angle chamfers
Maximum Bore Depth	4" (100mm)
Boring Spindles	
Spindle Drive	(2) 40 HP (30KW) Eaton two-speed hydraulic motors Dual hydraulic pump/motor loops
Spindle speed	Variable 100 to 700 RPM Electric motor speed controls spindle speed
Boring Spindle	Boxway slides, grease lubricated Sealed, tapered roller-bearings with close-coupled hydraulic motor Continuous oil-feed through spindle bearings Closed-loop electro-hydraulic feed Up to 7000 lbs. (3180kg.) thrust
Tube Chucking	Hydraulic driven, roller bearing, chuck/spindle slides Six-jaw scroll chucks with full-range jaws Hydraulic motor chuck drive with adjustable grip pressure Electronic feeback of chuck jaw position Automatic chuck jaw adjustment to programmed tube diameter
Dial Transfer	
Dial Drive	Allen-Bradley© Ultra© electric servo, SERCOS interface to Logix processor Planetary speed reducer
Tube Ejector	Hydraulic powered arms unload finished tube from dial
Dial Transfer Grippers	Fixed end of dial has hydraulic grippers to prevent tube movement during transfer. Adjustable end of dial has fixed-diameter grippers.
Tube Diameter Changeover	Replaceable dial-transfer jaws (4 sets) Replaceable quick-change boring heads Adjustable gate on runout conveyor (synchronized gear racks) Length information can be received from the tube cutoff machine
Tube Length Changeover	Manual hydraulic release pump Closed-loop electro-hydraulic cylinder moves carriage to programmed tube length
Tube Lengths	9" minimum, 90" max.
Tube Loading	Manual load: Tubes are maunually placed into the transfer dial. Optional autoload: Tubes are conveyed from the cutoff system into the dial.
Electrical Controls	
Service requirements	480VAC 3Ø @ 150A
Control System	Allen-Bradley© ControlLogix®, CF Memory card, Ethernet/IP Rack-mounted, closed-loop servo motion control modules Allen-Bradley© PanelViewPlus® ColorTouch screen Allen-Bradley© PowerFlex® variable-frequency spindle drive Integrated cabinet (requires no added floor-space)
Control Options	Allen-Bradley© Dial-Up Modem for remote diagnostics PanelView® with imbedded Windows CE® for scheduling and reporting Cabinet cooling
Hydraulic System	
Spindle Hydraulic Pumps (2)	Dual Parker® 40 GPM GPM fixed-displacement vane type pumps, 3000 PSI rated
Spindle Pump Motor	Baldor® 75HP (56KW) Energy-Efficient, invertor-duty, ODP motor Allen-Bradley© PowerFlex® variable frequency inverter Motor speed controls spindle speed
Auxiliary Hydraulic Pump	Bosch® 26 GPM Whisper Pump®, pressure-comp. vane, 3000 PSI rated
Auxiliary Pump Motor	Baldor® 20HP Energy-Efficient, ODP
Hydraulic Valving	Bosch-Rexroth® servo and directional valves, Hydac® accumulator
Hydraulic Filtration	Hydac® 10µ pressure, 10µ return, electrically monitored
Hydraulic Reservoir	250 gallon
Hydraulic Cooling	Oil-Air® integrated pump/cooler/filter system with 12 GPM circulating pump. 1 HP Baldor® motor.

Rev. B