



EXPAND™
MACHINERY

GEN TURN



2021 MACHINE CATALOG



GEN TURN

SL-20 Y2

GEN TURN

SL-20Y2

Hybrid 20mm 8-Axis CNC Swiss Machine

- + Double "Y" Axis and Double "C" Axis
- + Simultaneous Main & Sub-Spindle Machining
- + 30-Tools with 8-Driven Tools Standard
- + Removable Rotary Synchronous Guide-Bushing
- + Cutting Oil Chiller for Consistent Thermal Stability
- + High-Performance Mitsubishi M-830 Control



Main Spindle

| | |
|-------------------------------------|---|
| Maximum RPM/Spindle Bearing | 10,000 RPM / 5-Bearing Spindle, 3-Front, 2-Rear Ball Bearings |
| Main Spindle Servo Moto (2.2/3.7Kw) | 5-Horsepower 15-minute Duty-Rated (3-HP Constant Duty-Rated) |
| Collet Style for Main & Subspindle | Hardinge TF-25S / Southwick & Meister TS-25 / Star SR-20 |
| Collet Actuation System | Pneumatic Piston-Driven Toggle Clamp Feed-Finger Style |
| Synchronous Rotary Guide-Bushing | TD25S (20mm Round, 16mm Hex, 12mm Square) |
| Maximum Barstock Diameter | 20mm (Collet Range - 1/16" - 13/16" / 0.0200" - 0.813") |
| Maximum Distance Between Spindles | 23.6" (600mm) |
| Spindle Centerline Height | 42" (1060mm) |

Main Spindle Tooling

| | |
|---|---|
| O.D. Turning Tool Holders – S1 | 6 - 12mm Square Shank Turning Tool Holders |
| I.D. Internal Tool Holders – S1 | 4 - 22mm Shank Round Tool Sleeve Bores |
| I.D. Deep Hole Drill Positions – S1 | 2 - 22mm Shank Round Tool Sleeve Bores |
| Cross Slide Live Tools – S1 | 5 - ER-16 Cross Slide Live Tools, 8,000 rpm, 1.6 HP (1.2kw) |
| Axial Front Slide Live Tool Option – S1 | 3 - ER-16 Front Slide Live Tools - Optional in lieu of 1 Cross Tool |
| Maximum Drilling / Tapping Capacity | 10mm Drilling Capacity / M8 Tap - Main Spindle |
| Cross Drilling / Tapping Capacity | 8mm Drilling Capacity / M6 Tap - Driven Cross Tools |

Sub-Spindle

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|---|--|
| Sub-Spindle RPM / Spindle Bearing | 8,000 RPM / 4-Bearing - Quad-Duplex Pair Configuration |
| Sub-Spindle Servo Moto (2.2/3.7Kw) | 5-Horsepower 15-Minute Duty-Rated (3-HP Constant Duty-Rated) |
| Collet Style for Main & Sub-Spindle | Hardinge TF-25S / Southwick & Meister TS-25 / Star-SR20 |
| Collet Actuation System | Pneumatic Piston-Driven Toggle Clamp Feed-Finger Style |
| Maximum Barstock Diameter | 23mm (Collet Range - 1/16" - 13/16" / 0.0200" - 0.813") |
| Finished Parts Ejector & Air Blast | Included (Can Pass Long 20mm Parts Through the Subspindle) |
| Maximum Workpiece Length for Front Ejection | 110mm Maximum Part Length for Front Ejection from Subspindle |

Sub-Spindle Tooling

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|--|---|
| O.D. Turning Tool Holders – S2 | 3 - 10mm Square Shank Turning Tool Holders |
| I.D. Internal Tool Holders – S2 | 4 - 22mm Shank Round Tool Sleeve Bores |
| I.D. Internal Tool Holders – S2 (8 possible) | 3 - ER-16 Fixed Tools – Ø3/8" Max. |
| Sub-Spindle Axial Live Tools – S2 (8 possible) | 3 - ER-16 Axial Live Tools, 4,000 rpm, 1.0 HP (0.75kw) |
| Backworking Machining Length | 6.1" Maximum Turning Length / 3.14" Maximum Boring Length |
| Maximum Drilling / Tapping Capacity | 10mm Drilling Capacity / M8 Tap - Sub-Spindle |
| Maximum Cross Drilling / Tapping Capacity | 8mm Drilling Capacity / M6 Tap - Driven Cross Tools |

Axis

| | |
|--|--|
| Main Spindle Stroke | 9.840" Single Stroke (250mm) |
| Maximum Turning Length – Rotary Bushing | 7.48" (190mm) |
| Maximum Turning Length – Without Bushing | 2.36" (60mm) |
| X1, Y1, Z1, X2, Y2, Z2 Rapid Traverse Rate | 944 IPM (24m/minute) |
| X1, Y1, Z1 Axis Motor Power | 1-Horsepower (.75kw) |
| X2, Y2, Z2 Axis Motor Power | .67-Horsepower (.5kw) |
| Minimum Input Unit | 0.0001" (0.001mm = 40 millionths/inch) |

Specifications

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|---|---|
| Machine Dimensions (L x W x H) | 118" x 55" x 78" (2846x1284x2024) +31" for Conveyor) |
| Machine Weight (Heaviest in Class) | 5,954 lbs. (2700kgs) |
| Coolant Pump Power | 1.5-Horsepower (1.2kw) |
| Coolant Tank Capacity | 58-gallon Coolant Tank (220 L) (Cutting Oil Only, No Coolant) |
| Lubrication Distribution (2-liter Capacity) | Way Lube Distributed at 3-6 cc / 15-Minute Cycle |
| Machine Power Requirements | 220vac ±5%, 53-amps, 20kva, 3-phase, 60Hz |
| Air Requirements | 85-PSI at 6-CFM for Parts Catcher, Parts Ejector, & Air bBast |



Hybrid 42mm 8-Axis CNC Swiss Machine

- + Bar Capacity to \varnothing 1-5/8"
- + Double "Y" Axis and Double "C" Axis
- + Simultaneous Main & Sub-Spindle Machining
- + 30-Tools with 8-Driven Tools Standard
- + Optional Rotary Synchronous Guide-Bushing
- + High-Performance Mitsubishi M-830 Control



Main Spindle

| | |
|--|---|
| Maximum RPM/Spindle Bearing | 6,000 RPM / 5-Bearing Spindle, 3-Front, 2-Rear Ball Bearings |
| Main Spindle Servo Moto (5.5/7.5Kw) | 10-Horsepower 15-minute Duty-Rated (7.5-HP Constant Duty-Rated) |
| Collet Style for Main & Subspindle | Traub-42 / 173E |
| Collet Closer Style | Lever Action Collet Closer – Driven by Hydraulic Accusation |
| Guide-Bushing Type | Optional Rotary Guide-Bushing uses Hardinge STM38 Bushings |
| Bar Diameter (with or without Guide-Bushing) | Ø1/4" - 1-5/8" (Ø5-42mm) without Guide-Bushing |
| Maximum Turning Length (Rotary Bushing) | 12.20" Single Stroke (310mm) (Rotary Guide-Bushing Optional) |
| Maximum Turning Length (without Bushing) | 4.13" (105mm) |
| Spindle Bore | Ø1.732" (Ø44mm) |

Main Spindle Tooling

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|--|---|
| O.D. Turning Tool Holders – S1 | 6 - 16mm (5/8") Square Shank Tool Holders |
| I.D. Internal Tool Holders – S1 | 5 - 25mm Shank Round Tool Sleeve Bores |
| I.D. Deep Hole Drill Positions – S1 | 2 - 25mm Shank Round Tool Sleeve Bores |
| Cross Slide Live Tools – S1 | 6 - ER-20 Collet Chuck Spindles, 4,000 rpm, 2-HP (1.6kw) |
| Axial Front Slide Live Tool Option – S1 | 3 - ER-20 Front Axial Live Tools - Optional in lieu of 1 Cross Tool |
| Maximum Drilling / Tapping Capacity | 13mm Drilling / M10 Tapping |
| Cross Drilling / Tapping Capacity Option | 10mm Drilling Capacity / M6 Tapping |

Sub-Spindle

| | |
|---|--|
| Sub-Spindle RPM/Spindle Bearing | 6,000 RPM / 4-Bearing - Quad-Duplex Pair Configuration |
| Main Spindle Servo Moto (2.2/3.7Kw) | 10-Horsepower 15-minute Duty-Rated (7.5-HP Constant Duty-Rated) |
| Collet Style for Main & Subspindle | Traub-42 / 173E |
| Maximum Barstock Diameter | 1-5/8" (42mm) (42mm Parts can Through the Subspindle) |
| Spindle Bore | Ø1.732" (Ø44mm) (uses Hydraulic Piston Lever Action Collet Closer) |
| Finished Parts Ejector & Air Blast | Included |
| Maximum Workpiece Length for Front Ejection | 110mm Maximum Part Length for Front Ejection from Subspindle |

Sub-Spindle Tooling

| | |
|--|--|
| O.D. Turning Tool Holders – S2 | 3 - 16mm Square Shank Turning Tool Holders |
| I.D. Internal Tool Holders – S2 | 5 - 25mm Shank Round Tool Sleeve Bores |
| I.D. Internal Tool Holders – S2 (8 possible) | 3 - ER-16 Fixed Tools – Ø3/8" Max. |
| Subspindle Axial Live Tools – S2 (8 possible) | 3 - ER-16 Axial Live Tools, 4,000 rpm, 1.0 HP (0.75kw) |
| (8-subspindle tool block can mix live & fixed tools, or 2 radial live tools can be substituted for 2 axial tools on subspindle tool block) | |
| Maximum Drilling / Tapping Capacity | 13mm Drilling Capacity / M10 Taping on Sub-Spindle |
| Maximum Cross Drilling / Tapping Capacity | 8mm Drilling Capacity / M6 Tapping |

Axis

| | |
|--|--|
| Main Spindle Stroke | 12.20" (310mm) |
| X1, Y1, Z1, X2, Y2, Z2 Rapid Traverse Rate | 944 IPM (24m/minute) |
| X1, Z1 Axis Motor Power | 2-Horsepower (1.4kw) |
| X2, Y1, Y2, Z2 Axis Motor Power | 1-Horsepower (.75kw) |
| X1, Y2 Linear Ways | Ball-Bearing Linear Ways (Point Contact) |
| Z2, Y1, Z1, Z2 Linear Ways | Roller-Bearing Linear Ways (Line Contact - Twice as Rigid) |
| Minimum Input Unit | 0.0001" (0.001mm = 40 millionths/inch) |

Specifications

| | |
|---|---|
| Machine Dimensions (L x W x H) | 121" x 67" x 83" (2925x1690x2100) +29" for conveyor) |
| Machine Weight | 11,024 lbs. (5000kgs) |
| Coolant Pump Power | 1-3/4-Horsepower (1.3kw) with Flow Confirmation Monitor) |
| Coolant Tank Capacity | 65-gallon Coolant Tank (250 L) (Cutting Oil Only, No Coolant) |
| Lubrication Distribution (2-liter Capacity) | Way Lube Distributed at 3-6 cc / 15-Minute Cycle |
| Machine Power Requirements | 220vac ±5%, 80-amps, 30kva, 3-phase, 60Hz |
| Air Requirements | 85-PSI at 6-CFM for Parts Catcher, Parts Ejector, & Air Blast |

GEN TURN



32-GT

2 or 3-Axis CNC Gang-Tooled Lathe

- + 32mm 1-1/4" Bar Capacity
- + 6,000 RPM A2-5 Spindle
- + 7.5 Horsepower
- + Parts Catcher Standard
- + Live Tooling Options
- + 8-Station Turret Optional



Axis Travel

| | |
|---------------------------------|------------------------------|
| X-Travel | 8.46" (215mm) |
| Z-Travel | 5.98" (152mm) |
| Maximum Turning Diameter/Length | 7.87" / 5.5" (200mm / 140mm) |
| Swing Over Bedways | 12.59" (320mm) |

Axis Feeds

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|---------------------------------|---|
| Rapid Traverse – X, Z | 787 ipm 20/20m/minute |
| Rated Cutting Feedrate | 236 ipm 6/6m/minute |
| Mechanical Way System – X/Z | Box Ways / Turcite® Coated & Pressure Lubricated |
| Slant Bed Angle | 20° Slant Bed Angle for Tooling |
| Axis Drive Motor Power – X-Axis | 1.0-HP .75 kw |
| Axis Drive Motor Power – Z-Axis | 1-1/3-HP 1.0 kw |
| Ballscrew Diameter – X, Z | 32mm |
| Positioning Accuracy – X/Z- X/Z | ±0.00015" / ±0.004mm |
| Positioning Repeatability – X/Z | ±0.00008" / ±0.002mm |
| Least Input Command Increment | 0.0001" / 0.000040" / 0.001mm / (40-millionths in metric) |

Spindle

| | |
|-----------------------------------|---|
| Spindle Nose Mount | A2-5 |
| Spindle Speed | 6,000 |
| Maximum Tapping Spindle Speed | 2,000 rpm |
| Maximum Bar Capacity | 1-1/4", 32mm |
| Spindle Bore | 34mm |
| Spindle Bearing – Inside Diameter | 70mm (80mm Optional) |
| Spindle Motor Power – 3.7/5.5kw | 7.5-HP / 5.5kw (10-HP 7.5kw Spindle Motor Optional) |
| Spindle Motor Torque | 26 ft. lbs. 35Nm |
| Spindle Motor Drive Coupling | Belt Drive |
| Spindle Runout | ≤ 0.000040" T.I.R. |

Tool Plate / Tool System

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|---|---|
| Tool Plate Overall Dimensions | 8.66" x 36.45" / 220mm x 706mm |
| Tool Plate T-Slot Dimensions | 21mm Base & 12mm Neck Width, (8mm Base Height /17mm total) |
| T-Slots | 3 T-Slots on 63mm Centers (See Power Point for Drawings) |
| Turning Tool Shank Size | 20mm 3/4" Square Shank |
| Internal Tool Shank Size | 32mm 1-1/4" (25mm for Optional Tool Turret Bores) |
| Optional Driven Tool Horsepower (.75kw) | 1-Horsepower with 2:1 Speed Reduction for Increased Torque |
| Optional Driven Tool Collet Size (1/2") | 2-ER20 Collets in a Hydraulic Positioned Upper/Lower Format |

Specifications

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|--|---|
| Air Service Requirements | 85 psi @ 5-scfm / 5.5 Kg/cm ² |
| Electrical Requirements - Connected Load | 10kva, 28-Amps 220vac ±5%, 60-Hz |
| Coolant Tank Capacity / Motor Power | 21-gallons / 1/2-HP / 80-liters / 2-amps |
| Lubrication Pump | 150 watts |
| Hydraulic Pump Motor / Pressure | 1-HP / 500 PSI / .75 kw / 32-bar |
| Floor space requirements (W x D x H) | 81" x 64" x 64" / 282x135x183cm (+ Chip Conveyor) |
| Machine Weight | 4,850 pounds (2,200 kg) |
| Warranty – 1-year machine warranty | 3-year Mitsubishi Control, Motors, & Drive Warranty |



GEN TURN

32-NCY

4-Axis CNC Mill/Turn CNC Lathe

- + 36mm 1-3/8" Bar Capacity
- + 18-Tools with 7-Driven Tools Standard
- + "C" Axis and "Y" Axis with 19" Travel
- + 1,181 Inch per Minute Rapid Rates
- + Parts Catcher and Chip Auger Included



Axis Travel

| | |
|-----------------------------------|--|
| CNC Controlled Axis | 4-Axis (X, Y, Z, C) with High-Performance C-axis |
| X-Axis Travel (Vertical Tool) | 7.5" (190mm) Linear Ways |
| Y-Axis Travel (Cross Tool) | 19.3" (490mm) Linear Ways – True Y-axis |
| Z-Axis Travel (Sliding Headstock) | 6.5" (165mm) Linear Ways |
| C-Axis Travel (Rotational Axis) | 360 degrees (360,000 Radial Positions) |

Spindle

| | |
|--------------------------------------|--|
| Spindle Bore | 1.456" (37mm) |
| B&S#22 or Traub A-32 Collet Capacity | 1.25" (32mm), 1-3/8" (36mm) Collet Adapter Available |
| Spindle Speed Range | 100-6,000 RPM |
| Spindle Horsepower | 10-HP 3,000 RPM Spindle Motor (2:1 Pulley Ratio) |
| Spindle Center Height | 38" (965mm) |
| Rigid Tapping on Main Spindle | Yes |
| Spindle bearing (Ø110mm) | 5-Ball Bearing Spindle, 3-Front & 2-Rear Bearings |

Tooling System

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|-------------------------------------|---|
| Number and Size of Turning Stations | 6 Tools of 1/2" or 12mm (5 stations of 5/8" Optional) |
| Number of Internal Static Tools | 5 ID Tool Stations (25mm Bores) for Tool Bushings/Collets |
| I.D. Tool Bores (Round Shank) | 25mm Bore for ER-20 Collet, Split or Solid Tool Bushings |

Driven Tool System

| | |
|--------------------------------------|--|
| Number of Cross Working Driven Tools | 4-Cross Driven Tool Stations with ER20 Collet Holders |
| Number of End Working Live Tools | 3-Axial Driven Tool Stations with ER20 Collet Holders |
| Size of Driven Tools (Round Shank) | ER-20 Collet Capacity (1/16" – 1/2") (1-13mm) Diameter |
| Rigid Tapping with Driven Tools | Included for Main Spindle and Driven Tools |
| Driven Tool Programmable Range | 0-4,000 RPM – Step-Less Speed Range |
| Driven Tool HP | Radial 2.0-HP(1.5kw), Axial 1.0-HP (0.75kw) |

Axis Drives

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|-------------------------------------|--|
| Rapid Travers Rate – X, Y, & Z axis | 1,181 ipm (30m/minute) |
| Maximum Federate for Thread Cutting | 236 ipm (6m/minute) |
| Minimum Programmable Input | 0.0001" (0.001mm = 40 millionths of an inch) |
| C-Axis Resolution | 0.001 degree (360,000 Radial Positions) |
| Brushless AC Servo Motor Drive | X = 2-HP (1.5kw), Y&Z = 1.5-HP (1.0kw) |
| Ballscrew Diameter | 25mm Diameter - 10mm Pitch Double-Nut Ballscrews |

System Requirements

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|--------------------------------------|--|
| Electrical Requirements | 6 KVA – 42 amps @ 220 vac ±5% 3-Phase |
| Pneumatic Requirements | 85 psi @ 10-cfm for Parts Catcher and Spindle Brake |
| Hydraulic System Capacity | 10-gallon (40 liter) Hydraulic Tank, 500 psi Pressure |
| Coolant Pump Motor / Tank Capacity | 3/4 HP w/Flow Sensor / 50-gallon Tank with Dual Filtration |
| Automatic Metered Lubrication system | 3-6cc/15-minute (Adjustable Lubrication Flow Rate) |

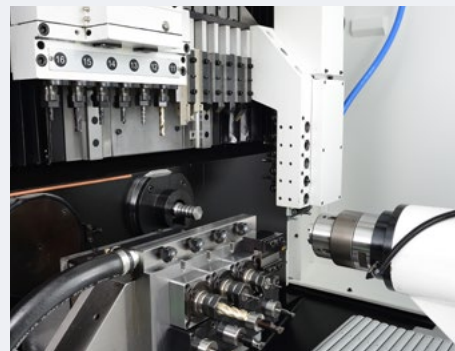
Machine Dimentions

| | |
|-------------------------------|--|
| Floor Space – L x W x H | 86" x 74" x 76" (2,176 x 1,858 x 1919mm) |
| Machine Spindle Center Height | 38" (965 mm) |
| Machine Net Weight | 6,172 lbs. (2,800 kgs) |



8-Axis CNC Swiss Machine with 2" Bar Capacity

- + 2" Bar Capacity with 6,000 RPM Spindle
- + Full "C" Axis on Main Spindle and Sub Spindle
- + Full "Y" Axis on Main Spindle and Sub Spindle
- + 33 Total Tool Positions with 13 Live Tools
- + Simultaneous Main and Sub-Spindle Machining
- + Parts Catcher and Chip Conveyor Standard



Main Spindle

| | |
|---|---|
| Maximum RPM / spindle bearing | 6,000 RPM |
| Spindle Motor | 10-HP (7.5kw) |
| Collet Nose / Spindle Bore | Traub A-52 / 52mm (uses TRB-52 collet) |
| Maximum Barstock Diameter | 2" (51mm) |
| Maximum Cut Length | 4.33" (110mm) |
| Remnant Length – with guide bushing / without | 2.13" / 7.64" (54mm / 194mm) Spindle Center |
| Center Height | 43.3" (1100mm) |

Sub-Spindle

| | |
|------------------------------------|--|
| Sub spindle RPM / spindle bearing | 6,000 RPM / 4-bearing Quad-Duplex pair configuration |
| Spindle Motor | 6-HP (4.4kw) |
| Collet Nose / Spindle Bore | Traub A-42 / 43mm (uses TRB-42 collet) |
| External Air Blast nozzle | Included for both main & subspindle |
| Finished Parts Ejector & air blast | Included for subspindle |

Axis Specifications

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|--|--|
| X ¹ -axis Travel | 8.66" (220mm) |
| Y ¹ -axis Travel (true Y-axis, not compound Y) | 24.41" (620mm) |
| Z ¹ -axis Travel | 18.1" (460mm) X ² -axis |
| Travel | 14.9" (380mm) |
| Y ² -axis Travel (true Y-axis, not compound Y) | 5.11" (130mm) |
| Z ² -axis Travel | 18.1" (460mm) Rapid |
| Traverse Rate – X ¹ , X ² , Y ¹ , Z ¹ , Z ² | 1,181 IPM (30 m/min) Rapid |
| Travers Rate – Y ² | 196 IPM (5 m/min) |
| Axis Drive Servo Horsepower: X ¹ /Y ¹ /Z ¹ | 1-3/4 / 1-3/4 / 1-1/8HP (1.3kw / 1.3kw / .85kw) Axis |
| Drive Servo Horsepower: X ² /Y ² /Z ² | 1-1/8 / 1.0 / 1-1/8HP (.85kw / .75kw / .85kw) |
| Minimum input unit | 0.0001" (0.001mm = 40 millionths inch) |

Tooling

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|--|--|
| Main 33-Tool Positions Standard | 5-ER-20 cross slide live tools, 6,000 rpm, 2.0 HP (1.5kw) |
| Main Spindle Cross slide radial live tools | 3-ER-20 front slide live tools, 6,000 rpm, 1.0 HP (0.75kw) |
| Main Spindle Front slide axial live tools | 6 (5x 5/8" + 1x 3/4") (5x16mm) + (1x20mm) |
| Spindle OD Turning Tool Positions | 5 ID Tool Bores (25mm) |
| Main Spindle ID Turning Tool Positions | 5 ID Tool Bores (25mm) (back of main tool bores) |
| Subspindle ID Turning Tool Positions | 4 ID Tool Bores (static holders in subspindle tool block) |
| Turning Tool Positions | 8-ER-20 (can add 4 more) 6,000 rpm, 4.0 HP (3kw) |
| Subspindle Back slide axial live tools | (1 radial live tool can be substituted on subspindle tool block) |

Machine Dimensions

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|----------------------------|--|
| Machine Length | 113" add 31" for chip conveyor |
| Machine Depth | 71" (1803mm) |
| Machine Height | 78" (1977mm) |
| Machine Weight | 13,880lbs (6,300kgs) |
| Coolant Pump | Dual 50psi 1-HP Coolant Pumps for main and subspindle |
| Coolant Tank Capacity | 63-gallon coolant tank, with coolant flow confirmation sensor |
| Lubrication distribution | Way lube distributed at 3-6 cc / 15 minute cycle |
| Hydraulic System | power / capacity 1-HP / 12-gallons (0.75kw / 46L) |
| Machine Power Requirements | 220vac ±5%, 35kva, 3-phase, 92 amps, 60Hz |
| Air Requirements | 85-PSI at 10-CFM for parts catcher, parts ejector, & air blast |



6-Axis CNC Dual Gang-Tooled Lathe

- + 52mm 2" Bar Capacity
- + Twin 15-HP 6,000 RPM Opposed Spindles
- + Dual Parallel Gang-Tooled Cross-Slides
- + Simultaneous Main & Sub-Spindle Machining
- + "C"-Axis on both spindles for Live Tooling Options
- + Faster than a Twin-Spindle Twin-Turret Lathe



Main & Sub Spindle

| | |
|--------------------------------------|---|
| Spindle Motors: 11kw 30-minute rated | 15 HP (Spindle Motor Chiller Included) |
| Maximum RPM | 6,000 RPM with Spindle Orient |
| Spindle Bearing | 5-Bearing Spindle, 3-Front Ball Bearings, 2-Rear |
| Spindle Nose | A2-5 |
| Collet Nose | Traub A-52 (3J, 22J, 16C, S20 adapters available) |
| Drawtube ID | 2.086" (53mm) |
| Collet Capacity | 2.047" (52mm) |
| Spindle Center Height to Cross-Slide | 3.464" (88mm) |
| Spindle Center Height to Floor | 42.2" (1070mm) |

Machine Axis

| | |
|--------------------------------------|--|
| Axis Drives & Motors (1.0kw) | 1.35-HP Mitsubishi Mel-Pro Motors and Drives |
| X-Axis Travel: Twin Cross-Slides | 13" (330mm) on Both Gang Slides |
| Z-Axis Travel: Twin Opposed Spindles | 10.63" (270mm) (on Both Main and Subspindle) |
| Axis Servo Motor Power | X-Axis 2.0 HP (1.5 kW), Z-Axis 1.5 HP (1.0 kW) |
| Rapid Travel Speed – X & Z | 1,181 IPM (30m/minute) |
| Z-Axis Thrust | 714 lbs. Thrust (8574 in/lbs.) |
| Minimum Input Unit | 0.0001" (0.001mm = 40 millionths of a inch) |

Tooling

| | |
|-------------------------------|--|
| OD Turning Tool Size | 3/4" Standard |
| ID Turning Tool Size | 20mm (3/4" Available) |
| Cross-Slide T-Slot dimensions | 5-T-Slots on 32mm Centers (10mm Slot, 18mm Base) |

Fluid Systems

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|---|---|
| Coolant Tank Capacity | 52 Gallons (210L) with Coolant Flow Monitor |
| Coolant Pump | Dual 3/4-HP, 45-PSI Pumps (for Main and Subspindle) |
| Hydraulic System: (550psi) | 10 gallons (45 liters) ISO VG32 (Mobil DTE-24) |
| Spindle Oil Cooler System | 5.5 gallons (25 liters) ISO 10 (Mobil Velocite No. 6) |
| Way Lubrication Distribution (ISO-VG68) | .5 gallons (2-liters) Distributed at 3-6 cc / 15-Minute Cycle |

Machine Dimensions

| | |
|------------|-----------------------------------|
| Length | 118" (2,980 mm) + Chip Conveyor |
| Width | 54" (1,356 mm) + 21" Coolant Tank |
| Height | 78" (1,760 mm) |
| Net Weight | 9,922 lbs. (4,500 kg) |

Machine Requirements

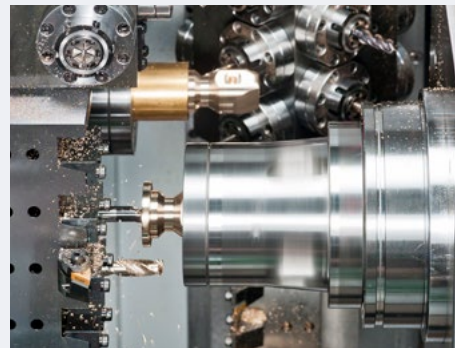
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|--------------------|--|
| Power Requirements | 220vac ±5%, 3-Phase, 60-Hz, 63 Amps, 24Kva |
| Air Requirements | 85-psi, 10-cfm (Parts Catcher, Parts Ejector, Air Blast) |

GEN TURN



9-Axis Mill/Turn Lathe with 12-Angle Tools

- + 52mm 2" Bar Capacity
- + Twin 15-HP 6,000 RPM Opposed Spindles
- + 36-Tool Positions - 18-Driven Tools
- + Machine at Any Angle with 12-Tool "B"-Axis
- + "B" Axis and Dual "Y" Axis for Front & Back Work
- + Simultaneous Main & Sub-Spindle Machining



Main Spindle

| | |
|--------------------------------|--|
| Maximum Bar Diameter | A2-5 Spindle with 2.008" (51 mm) Bar Capacity |
| Collet Size / Spindle Bearings | Traub TRB-52 / 5x90mm Ball Bearings, 3-Front, 2-Rear |
| Maximum Spindle Speed | 6,000 RPM (Integral Motor Spindle) |
| Servo Spindle Motor Horsepower | 15-HP (11kw) Peak, 10-HP (7.5kw) 30-min. Rated |

X1, Y1, Z1 Axis

| | |
|------------------------------|--|
| X1, Y1, Z1 Axis Servo Motor | X1= 1.3 HP. (1.0kw) Y1/Z1= 2.0 HP. (1.5kw) |
| X1 Axis Travel | 10.63" (270mm) |
| Y1 Axis Travel | 18.11" (460mm) |
| Z1 Axis Travel | 9.84" (250mm) |
| Minimum Programmable Input | 0.00004" resolution (0.001mm) |
| X1, Y1, Z1 Rapid Travel Rate | 1181 IPM (30m/min) / 0.0001 mm resolution |

Main Spindle Tooling

| | |
|---------------------------|---|
| Number of Driven Tools | 6 axial & 6 radial driven and "Any-Angle" tools |
| Driven Tool Motor Power | 5-HP (3.5kw) |
| Driven Tool Spindle Speed | 2,500 RPM Maximum Driven Tool Spindle Speed |
| Driven Tool Collet Size | ER-20 Collet Spindles (up to 1/2" Tool Shank) |
| O.D. Turning Tools | 5 - 20mm O.D. Turning Tool Holders Available |
| I.D. Boring Tools | 5 - 25mm I.D. Bores Available for Tool Bushings |

Sub-Spindle

| | |
|--------------------------------|--|
| Maximum Bar Diameter | 2.008" (51 mm) |
| Collet Size | Traub TRB-52 |
| Maximum Spindle Speed | 6,000 RPM (Integral Motor Spindle) |
| Servo Spindle Motor Horsepower | 15-HP (11kw) Peak, 10-HP (7.5kw) 30-min. rated |

X2, Y2, Z2 Axis

| | |
|------------------------------|--|
| X2, Y2, Z2 Axis Servo Motor | X2/Z2 = 1.3 HP. (1.0kw) Y2 = 2.0 HP. (1.5kw) |
| X2 Axis Travel | 18.89" (480mm) |
| Y2 Axis Travel | 18.11" (460mm) |
| Z2 Axis Travel | 10.63" (270mm) |
| X2, Y2, Z2 Rapid Travel Rate | 1181 IPM (30m/min) |
| Minimum Programmable Input | 0.0001" (0.001mm = 40 millionths of an inch) |
| Ballscrew Diameter | 25mm Diameter with 10mm Pitch for All Axes |

System Requirements

| | |
|-------------------------------|---|
| Number of Axial Driven Tools | 3 Axial Driven Tools, Uses ER-20 Collets |
| Number of Radial Driven Tools | 3 Radial Driven Tools, Uses ER-20 Collets |
| Driven Tool Motor Power | 2.7-HP (2.0kw) |
| Driven Tool Spindle Speed | 3,000 RPM Maximum Driven Tool Spindle Speed |
| Driven Tool Collet Size | ER-20 Collet Spindles (up to 1/2" Tool Shank) |
| O.D. Turning Tools | 4 - 20mm O.D. Turning Tool Holders Available |
| I.D. Boring Tools | 4 - 25mm I.D. Bores Available for Tool Bushings |

Specifications

| | |
|------------------------|---|
| Coolant System | 80 Gallon Tank, 4-Coolant Pumps with Flow Control |
| Electrical Requirement | 110-Amps, 42kva, 220 vac ±5%, 3-Phase, |
| Air Requirements | 85 psi, 20-cfm, for Parts Catcher, Ejector, Oil Mist Unit |
| Machine Weight | 12,345 pounds (5,600 kgs) |
| Machine Dimensions | 110"* x 85" x 82" (WxDxH) (* = 38" for Chip Conveyor) |
| Shipping Dimensions | 150" x 90" x 87" (WxDxH) |



6-Axis Mill/Turn Lathe with 16-Tool Turret

- + 78mm 3" Bar Capacity
- + Twin 4,000 RPM Opposed Spindles
- + 16-Driven Tool Positions each station can mount multiple tools
- + "Y" Axis with ± 1.968 " Travel
- + Full "C" Axis on Main and Sub-Spindle
- + Complete Front & Back Work



Capacity

| | |
|-------------------------------------|--|
| Turning Diameter Maximum / Standard | Ø12.2" (310 mm) / Ø8.2" (210 mm) |
| Center Distance | 41.7" (1061mm) Between Spindle Centers |
| Turning Length | 24.8" (630mm) Maximum |

Main Spindle

| | |
|----------------------------------|--|
| Spindle Nose / Bearing Diameter | A2-6 (Bearing Diameter 4.72" / Ø120mm) |
| Spindle Bar Capacity | Ø3.070" (78 mm Drawtube I.D. / 88mm Spindle Bore= 3.465") |
| Chuck Size Included | Ø10" (with 78mm Bore) |
| Spindle Center Height | 40" (1,000mm) |
| Maximum Spindle Speed | 60 - 4,000 RPM (Integral Refrigerated Spindle) |
| Main Spindle Motor Power 15/22Kw | 30-HP (30-minute duty rating) / 20-HP (constant duty rating) |

Sub-Spindle

| | |
|----------------------------------|--|
| Spindle Nose | A2-6 |
| Spindle Bar Capacity | Ø2.559" (65 mm drawtube I.D. / 86mm 3.386" spindle bore) |
| Chuck Size Included | Ø8" (with 65mm bore) (Ø10" optional) |
| Maximum Spindle Speed | 60 - 4,000 RPM (Integral Spindle) |
| Main Spindle Motor Power 11/15Kw | 15-HP (30-minute duty rating) / 10-HP (constant duty rating) |

Live Tool Turret

| | |
|---|--|
| Number of Turret Stations | 16 (Any combination of 16 ID, OD or Live tool stations) |
| Index Time (Adjacent Tool / 180° index) | 0.2 seconds / 1.2 seconds High-Speed Servo Indexing |
| Live Power Tool/RPM 3.7/5.5 Kw | 7.5-HP / 6,000 rpm, 14.75 ft. lbs. torque (20Nm) |
| Tool Size/Collet Size | 1" (25mm) (for square tool & 32mm round tools) / ER-32 collets |
| Tool Holder Type & Size | BMT-65 Base Mount Tooling |

B & C-Axis

| | |
|----------------------------|--|
| B-Axis Rapid Traverse Rate | 1,573 Inch Per Minute (40m per minute) |
| B-Axis Travel | 29.31" (744mm) |

| | |
|--|--|
| C-Axis Spindle Radial Resolution / Speed | 360,000 Radial Positions with Full Contouring Capability / 600 RPM |
|--|--|

Axis Specifications

| | |
|-------------------------------------|---|
| Axis Travel – X / Y / Z Axis | X= 9.05 / Y= ±1.968" / Z= 23.7" (230mm) / (±50mm) / (700mm) |
| Rapid Travers Rate – X / Y / Z Axis | 630 / 236 / 1,574 ipm (16 / 6 / 40 m/minute) |
| Axis Motor Power | 3-HP in X, Y, Z axis |
| Axis Continuous Thrust Rating | X = 2142, Y = 2924, Z = 1425 pounds of Thrust Force |
| Minimum Programmable Input | 0.0001" (0.001mm = 40 millionths of an inch) |

Fluid Capacity

| | |
|--------------------|---|
| Hydraulic System | 8-gallons (30 Liters) with 5-HP (3.5kw) Pump Motor |
| Dual Coolant Pumps | 2x 1.7 HP Pumps for Tooling / 2 Pumps for Chip Flushing |
| Coolant Tank | 74-gallon (280 Liters) coolant tank |

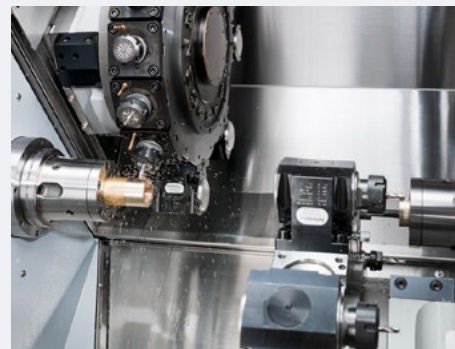
Specifications

| | |
|------------------------|---|
| Machine Weight | 17,650lbs (8,000 kgs) - Shipping Weight 18,680 lbs. (8472kgs) |
| Electrical Requirement | 56 KVA, 220vac ±5%, 3-phase, 60 Hz, 130 amps |
| Air Requirement | 85-psi @ 8-cfm for Parts Catcher, Ejector, Oil Mist Lubricator |
| Machine Dimensions | Length 145"* / Depth 82" / Height 82" (*+44" for Chip Conveyor) |
| Shipping Dimensions | Length 200" / Depth 90" / Height 93" |



8-Axis Mill/Turn Lathe with Twin 16-Tool Turrets

- + 78mm 3" Bar Capacity
- + Twin 4,000 RPM Opposed Spindles
- + Glass Scale Feedback on X1 & X2 Axes
- + 32-Driven Tool Positions each station can mount multiple tools
- + "Y" Axis with 3.936" Travel
- + Simultaneous Main & Sub-Spindle Machining
- + Full "C" Axis on Main and Sub-Spindle



Capacity

| | |
|--------------------------------|---|
| Turning Diameter | 7.48" (190 mm) maximum, 6.7" (170mm) standard |
| Turning Length/Center Distance | 15.75" (400mm) / 36.22" (920mm) between centers |

Main Spindle / Sub-Spindle

| | |
|---------------------------------|---|
| Spindle nose / Bearing Diameter | A2-6 |
| Spindle Bar Capacity | 3.08 |
| Chuck Size (Optional) | 8" with 68mm bore |
| Spindle Center Height | 46.45" (1,180mm) |
| Maximum Spindle Speed | 60-4,000 RPM (Integral Spindle) |
| Spindle Motor Horsepower | 30-HP peak, 20-HP (30-minute duty rating) |
| Sub Spindle motor horsepower | 20-HP peak, 15-HP (30-minute duty rating) |

Live Tool Turrets

| | |
|---|---|
| Number of Turret Stations | 32 (Any combination of 32 ID, OD or Live tool stations) |
| Index Time (Adjacent Tool / 180° index) | 0.2 seconds / 1.2 seconds High-Speed Servo Indexing |
| Live Power Tool/RPM | 7-HP / 6,000 rpm, 14.75 ft. lbs. torque (20Nm) |
| Tool Size/Collet Size | 25mm (for square tool and round tool) / ER-32 |
| Tool Holder Type & Size | BMT-65 Base Mount Tooling |

Y, C, & B-Axis

| | |
|------------------------|---|
| Y-Axis Travel | 3.93" of Travel - ±1.968" off of Centerline (±50mm) |
| Y-Axis Rapid Feed Rate | 236 Inch Per Minute (6m per minute) |

| | |
|----------------------------------|--|
| C-Axis Spindle Radial Resolution | 360,000 Radial Positions with Full Contouring Capability |
|----------------------------------|--|

| | |
|----------------------------------|--|
| B-Axis Distance Between Spindles | 36" (914mm) |
| B-Axis Rapid Traverse Rate | 1,573 Inch Per Minute (40m per Minute) |
| B-Axis Travel | 25.59" (650mm) |

Axis Specifications

| | |
|------------------------------------|--|
| Axis Travel – X1, X2 - Axis | X1 5.9" (150mm), X2 9.05" (230 mm) with Glass Scale Feedback |
| Axis Travel – Z1, Z2 - Axis | Z1 17.32" (440mm), Z2 17.32" (440mm) |
| Rapid Travers Rate – X1, X2 -Axis | 630 ipm (16 m/minute) |
| Rapid Travers Rate – Z1, Z2 - Axis | 1,573 ipm (40 m/minute) |
| Minimum Programmable Input | 0.0001" (0.001mm = 40 millionths of an inch) |

Fluid Capacity

| | |
|--------------------|---|
| Hydraulic System | 10.5 gallons (40 Liters) with 3-HP (2.2kw) Pump Motor |
| Dual Coolant Pumps | 2x 1.7 HP Pumps for Tooling & 2 Pumps for Chip Flushing |
| Coolant Tank | 70-gallon (280 Liters) Coolant Tank |

Specifications

| | |
|------------------------|--|
| Machine Weight | 22,751lbs. (10,320 kgs) |
| Electrical Requirement | 49.5KVA (220vac ±5%, 3-phase, 60 Hz, 130 amps) |
| Air Requirement | 85-psi @ 8-cfm for Parts Catcher, Ejector, Oil Mist Lubricator |
| Machine Dimensions | Width 165" / Depth 88" / Height 84" (Includes Chip Conveyor) |
| Shipping Dimensions | Width 181" / Depth 90" / Height 89" |