FCL series

PRECISION CNC SLANT BED LATHE

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FCL series

PRECISION CNC SLANT BED LATHE

The FCL model adopts a highly rigid 45 degree slant bed design and has excellent performance of high speed and high precision. The 45 degree slant bed design provides excellent chip evacuation and ergonomic operation.

FCL SERIES WITH POWER TURRET (OPT.)

FCL SERIES WITH GANTRY LOADING SYSTEM (OPT.)

FCL series

PRECISION CNC SLANT BED LATHE

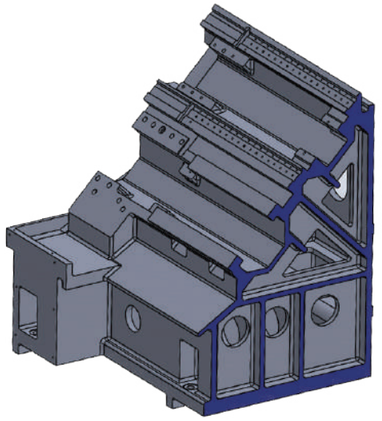
FCL series structural design and best technical experience can effectively suppress geometric deformation caused by thermal temperature rise without installing a linear scale or temperature compensation function. The FCL series has an excellent modular design for mechanism expansion, which can add functions such as twin turret,Y axis and sub-spindle to better meet processing needs.

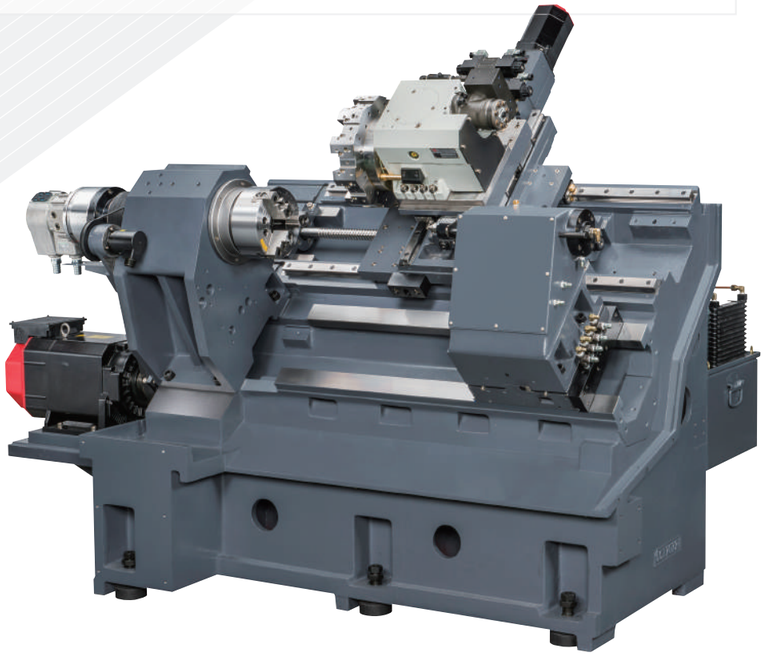
FCL SERIES WITH TT (TWIN TURRET / TWIN SPINDLE OPT.)

FCL SERIES WITH TTY
(TWIN TURRET / TWIN SPINDLE / Y AXIS OPT.)

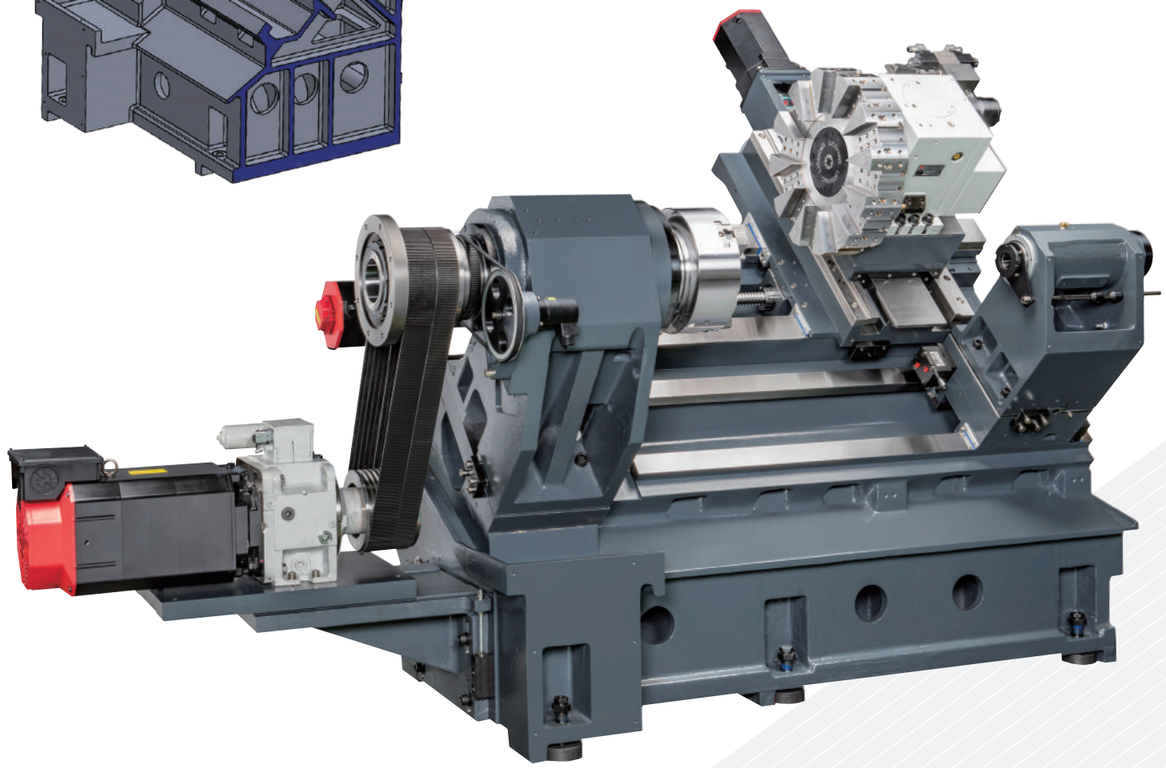
MACHINE FEATURES
OPTIMIZED STRUCTURE DESIGN
THE ULTIMATE IN RIGIDITY AND STABILITY

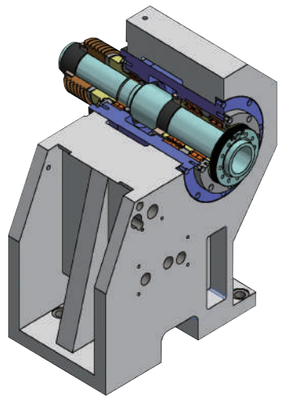
- The major machine parts,such as the base,saddle,headstock, slide and tailstock are made of meehanite cast iron and are tempered to relieve stress thereby ensuring lifetime accuracy.
- High performance servo motors are directly coupled to the pre-tensioned ball screws.





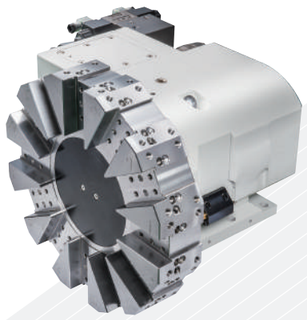
- Choice of linear guideways or box guideways on X and Z axis.
- 45 degree slant bed construction features efficient chip removal and firm support.





PRECISION SPINDLE

- The cartridge type is easily removed allowing and conveniently maintained servicing.
- The spindle runs on class P4 precision bearings providing high axial thrust capacity and superior radial stability. This ensures high precision during heavy duty turning.



HYDRAULIC TURRET
8-POSITION HYDRAULIC TURRET (FCL-15/20)

- The 8 position turret features bi-directional random tool selection. Fast tool positioning can be accomplished in only 1 second for upgrading efficiency.
- The turret can accommodate 25 x 25 mm O.D tools and Ø32 mm I.D tools.

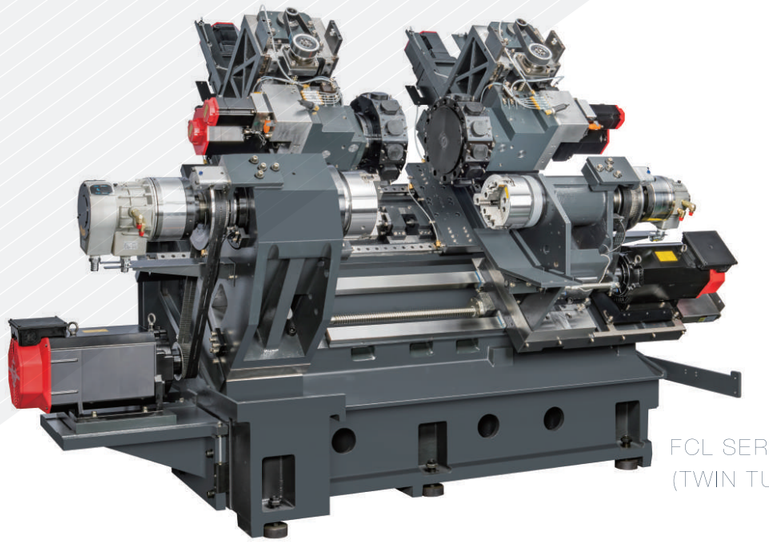
12-POSITION HYDRAULIC TURRET (FCL-25/30/36/38)

- The 12 position turret features bi-directional random tool selection. Fast tool positioning can be accomplished in only 1 second for upgrading efficiency.
- The turret can accommodate 25 x 25 mm and Ø40 mm I.D tools. (FCL-25/30)
- The turret can accommodate 32 x 32 mm and Ø50 mm I.D tools. (FCL-36/38)

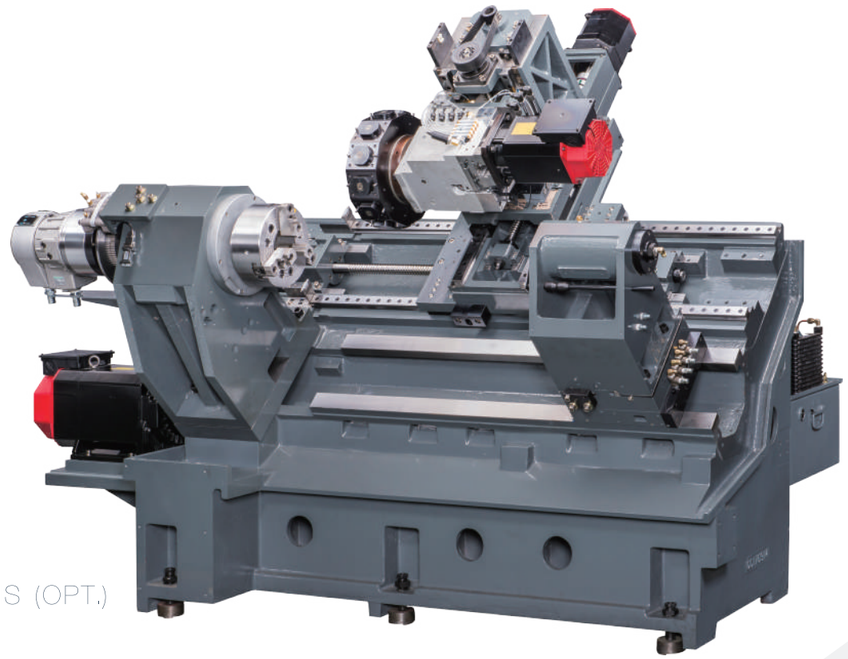
FORCE ONE
Y AXIS CNC OPTION

Maximize Machining Versatility,Productivity and Profits with Proven FORCE ONE Y axis Turning Center. The FORCE ONE Y axis Turning Centers are designed with a Y axis turret. The series of turning center has a 45 degree slant bed construction combined with heavy duty roller type linear guideways on X / Z,Y axis. A wide range of axis conligurations are available that meet flexible machining requirements.

Roller linear guideways on Y axis that ensures high stability during heavy cutting.



FCL SERIES WITH TTY
(TWIN TURRET / TWIN SPINDLE/Y AXIS OPT.)

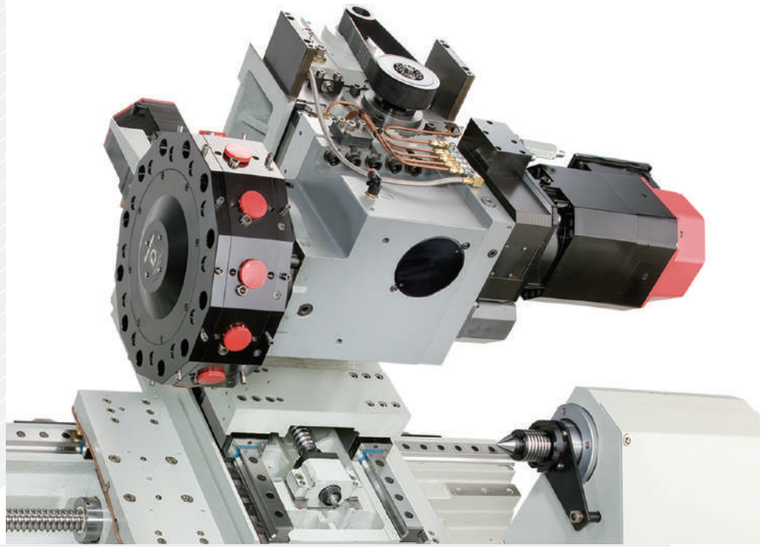


FCL SERIES WITH Y AXIS (OPT.)

The combination of the main spindle and sub spindle enables the entire workpiece to be machined at one time.

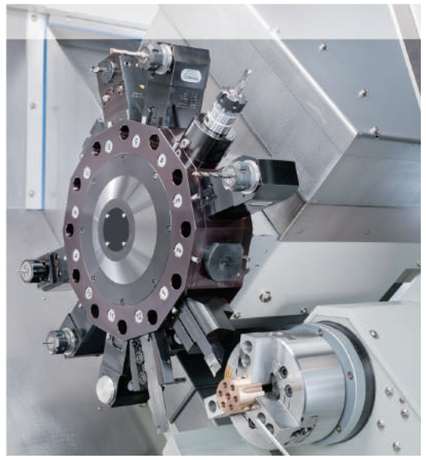
Y AXIS TURRET (OPT.)

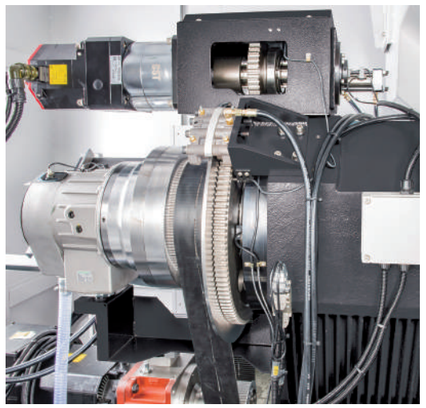
- One-piece design of the Y axis base and X saddle for high accuracy structure configuration.
- Fast indexing turret features with high repeat accuracy.
- High rigidity turret better for front and back machining.



POWER TURRET (OPT.)

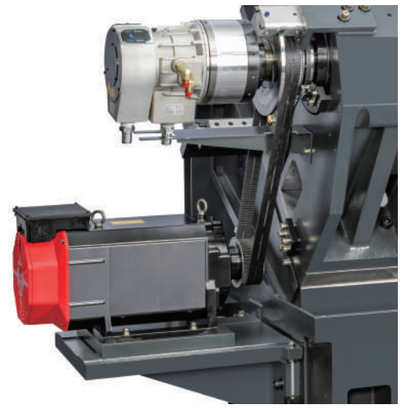
- Employs Radial type disc,the Radial VDI,a 12 position power turret with Fanuc motor. (Rotating tool holder and tools not included.)
- High indexing resolution of 0.001 for precision contour / index control.
- Hydraulic disk brake locking provides maximum stability during milling and contouring. The unit allows front and back machining with fast tool change.
- The turret disk and TD axis are driven by a motor.





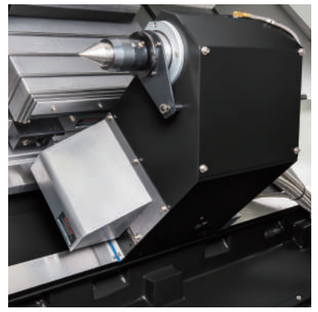
CF AXIS (OPT.)

CF axis with addictional sevro motor and gear box. it has better rigidity for simnulation milling.



CS AXIS (OPT.)

CS axis is driven by a servo spindle motor,it is suitable for spindle indexing and milling at position.

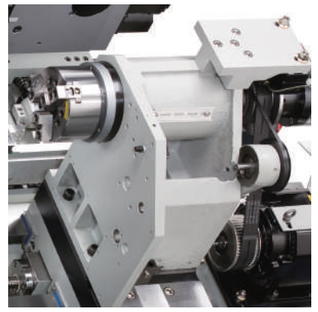


PROGRAMMABLE TAILSTOCK

The programmable tailstock base is driven by the Z-axis slide and can be programmed to control the position. It has a fixed hydraulic quill design and can be upgraded to a rotary quill to upgrade the rigidity of the bearing and provide better thrust.

SERVO DRIVEN TAILSTOCK (OPT.).

The servo tailstock is driven by an independent servo,which can control the servo thrust to adjust the support for parts,and eliminates the hydraulic quill design,which provides greater flexibility in movement and can greatly shorten the tailstock movement and support operation time..



SUB SPINDLE (OPT.)

Synchronization for main and sub spindle. The workpiece can be machining at one time.

BUILD IN TYPE PRECISION SPINDLE (OPT.)

- Quill type design is easier to remove and maintain.
- The spindle runs on class P4 precision bearings providing high axial thrust capability and superior radial stability. This ensures high precision during heavy duty turning.

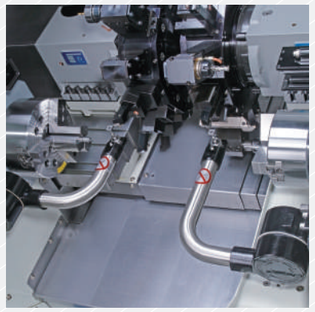
MIDDLE DOOR (OPT.)

Can load a new part to the main spindle when the sub spindle side is turning.

PARTS CATCHER (OPT.)

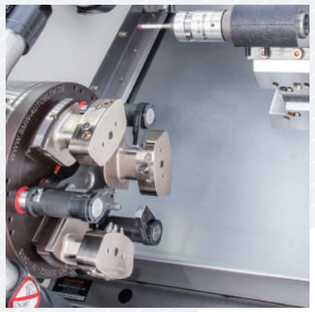
The sub-spindle material pusher can eject the workpiece internally and transfer it downward to the material receiver outside the machine. Could loading new part when sub spindle turning.

WORKPIECE PROBE (OPT.)



TOOL MEASURE SYSTEM

Manual / Automatic swing arm.



WORKPIECE MEASURE SYSTEM

Automatic measurement and correction of dimensions.

ESG (OPT.)

AUTOMATIC GREASE LUBRICATION SYSTEM

It significantly reduces lubricant usage,effectively reduces coolant tank pollution,and improves coolant quality.

VARIABLE FREQUENCY HYDRAULIC SYSTEM

Excellent energy saving effect, smaller fuel tank volume and temperature control.

SMART

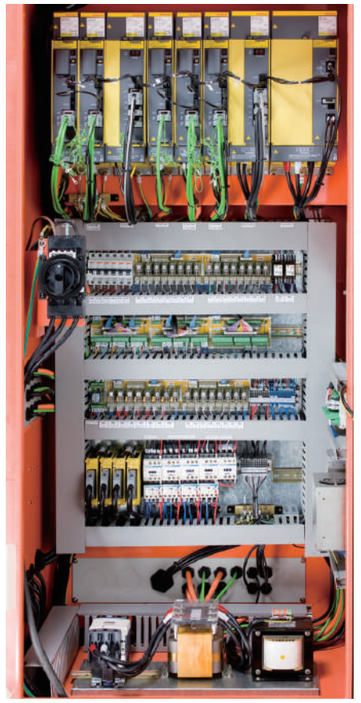
SMART POWER-OFF SYSTEM

Smart power off system temporarily limits the use of pow-er-hungry devices during standby. After processing is completed,the system can automatically power off the equip ment.

AI (OPT.)

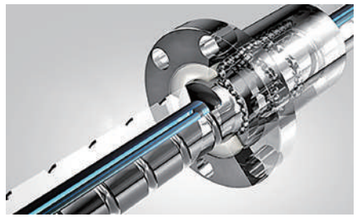
SMART MACHINE MONITORING AND PREVENTION SYSTEM

Real-time spindle load monitoring is combined with artificial intelligence software technology to automatically construct a safe processing load zone, and includes intelligent tool performance management to monitor and prevent abnormalities during processing,eliminating the need for human supervision.



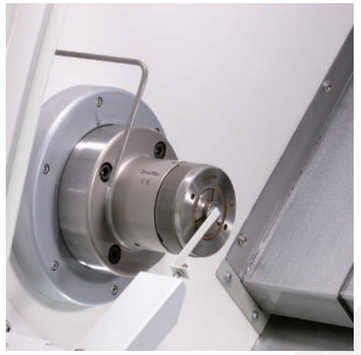
ELECTRICAL CABINET

The entire control circuit in the electrical cabinet is well planned for easy maintenance. Top quality electronic components assure extra stable control performance and long service life.



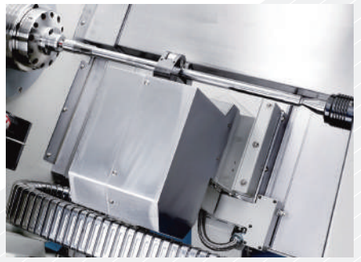
HOLLOW BALL SCREWS WITH COOLANT SYSTEM (OPT.)

The hollow ball screw cooling system can significantly reduce the thermal temperature rise position accuracy error caused by screw friction during machine movement,thereby improving the positioning accuracy of the machine.



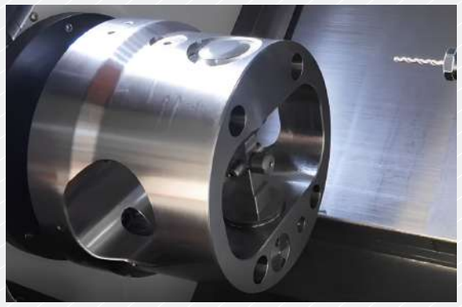
PARTS CUT-OFF DETECTOR (OPT.)

The detector is used for detecting if the part is completely cut off. It prevents cutting problems on twin spindles caused by cut-off failure.



HYDRAULIC STEADY REST (OPT.)

The standard hydraulic steady rest is manual base moving,there are programmable,and servo driven bases for options.

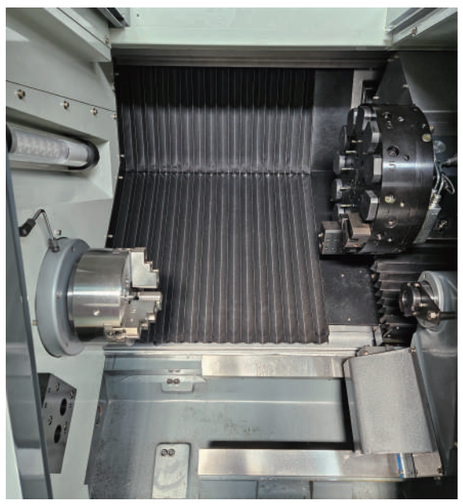


INDEX CHUCK(OPT.)

The Indexing Chuck is a high-precision workholding device featuring micron-level positioning accuracy and stability. Its gear mechanism enables quick multi-angle adjustments, significantly reducing workpiece changeover time. Made from high-strength materials,it offers durability and secure clamping force,making it ideal for various machining applications and an excellent choice for enhancing machining precision and efficiency.

ROTATE QUILL TAILSTOCK(OPT.)

The higher rigidity rotate quill type tailstock has bigger bearings than live center.



THE BOX-TYPE COVER(OPT.)

The box-type cover,with its fully sealed design,provides comprehensive protection for machine tools. It effectively prevents chips and coolant intrusion while safeguarding against external contamination,making it particularly suitable for harsh processing environments. Compared to traditional telescopic covers,the box-type cover excels in durability and stability when handling abrasive materials like stone grinding or composite media. Its robust construction extends equipment lifespan and ensures consistent,high-quality machining performance,making it the optimal choice for demanding applications.

DUST COLLECTOR(OPT.)

The dust collector is designed for efficient dust management, swiftly capturing fine particles and debris during machining to maintain a clean workspace,enhance machining accuracy,and improve operational safety. Its advanced filtration system ensures discharged air meets environmental standards,while also extending equipment lifespan,making it an ideal solution for maintaining a productive environment.

OIL MIST COLLECTOR(OPT.)

The oil mist collector uses advanced separation technology to efficiently capture oil mist generated during machining, reducing air pollution and improving workshop environment quality. Recovered cutting fluids can be recycled,saving costs and extending equipment lifespan,making it the perfect blend of environmental and economic benefits.

SPINDLE COOLER(OPT.)

The spindle cooler is designed for high-precision machining, ensuring stable temperature control to prevent overheating, which can compromise accuracy and cause equipment wear. Its efficient cooling system enhances machining stability, extends spindle lifespan,and improves productivity and product quality,making it an essential component for reliable machine operation.

COOLANT CONTROL SYSTEM (OPT.)

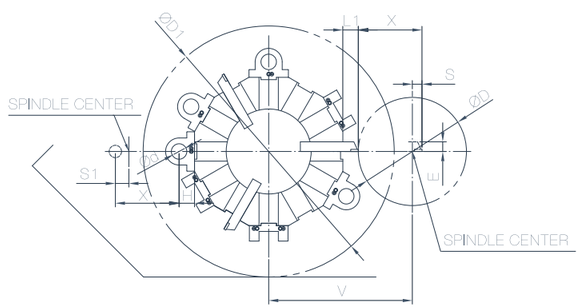
- Hight pressure coolant system 5/10/20/50/70 bar
- Oil skinner
- Paper filter system
- Magnetic filter sytem

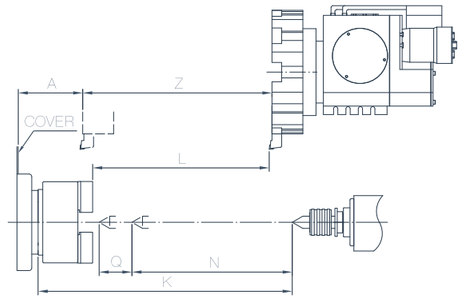
CONTROLLER

The standard controller is FANUC,there are other controllers such as SIEMENS,MITSUMISHI, FAGOR,SYNTEC,and others you could select as optional.

GANTRY / ROBOT LOADING AND UNLOADING SYSTEM

WORKING RANGE





DIRECT TYPE TURRET HYSRAULIC/SERVO STD.

Unit:mm

MODEL	A	Turning Dia D	D1	VDI d	E	H	K	Turning L	L1	N	Q	S	S1	V	Travel X	Z
FCL-15L03	134	280	460	32	25	50	485	300	40	240	85	20	30	320	160	340
FCL-20L04	167	280	460	32	25	50	655	455	40	415	85	25	35	320	165	490
FCL-20L07	167	280	460	32	25	50	905	705	40	665	85	25	35	320	165	740
FCL-20L12	167	280	430	32	25	50	1400	1200	40	1160	85	25	35	320	165	1235
FCL-20L15	167	280	430	32	25	50	1700	1500	40	1460	85	25	35	320	165	1535
FCL-20L22	167	280	400	32	25	50	2400	2200	40	2160	85	25	35	320	165	2235
FCL-25L04	165	316	640	40	25	40	660	435	40	380	85	27	27	390	185	490
FCL-25L07	178	316	640	40	25	40	910	685	40	630	85	27	27	390	185	740
FCL-25L12	178	316	610	40	25	40	1510	1285	40	1230	85	27	27	390	185	1340
FCL-25L15	165	316	610	40	25	40	1705	1480	40	1425	85	27	27	390	185	1535
FCL-25L22	165	316	580	40	25	40	2405	2180	40	2125	85	27	27	390	185	2235
FCL-30L07	173	450	630	40	25	40	955	700	40	650	100	25	25	470	250	740
FCL-30L12	173	450	600	40	25	40	1555	1300	40	1250	100	25	25	470	250	1340
FCL-30L15	163	450	600	40	25	40	1705	1450	40	1400	100	25	25	470	250	1500
FCL-30L22	163	450	570	40	25	40	2405	2150	40	2100	100	25	25	470	250	2200
FCL-36L07	238	570	770	50	32	50	889.7	600	40	595	100	30	40	565	315	660
FCL-36L12	238	570	740	50	32	50	1489.7	1200	40	1195	100	30	40	565	315	1260
FCL-36L15	238	570	740	50	32	50	1789.7	1500	40	1495	100	30	40	565	315	1560
FCL-36L22	238	570	710	50	32	50	2389.7	2100	40	2095	100	30	40	565	315	2160
FCL-38L07	238	670	840	50	32	50	889.7	600	40	595	100	30	40	615	365	660
FCL-38L12	238	670	810	50	32	50	1489.7	1200	40	1195	100	30	40	615	365	1260
FCL-38L15	238	670	810	50	32	50	1789.7	1500	40	1495	100	30	40	615	365	1560
FCL-38L22	238	670	780	50	32	50	2389.7	2100	40	2095	100	30	40	615	365	2160

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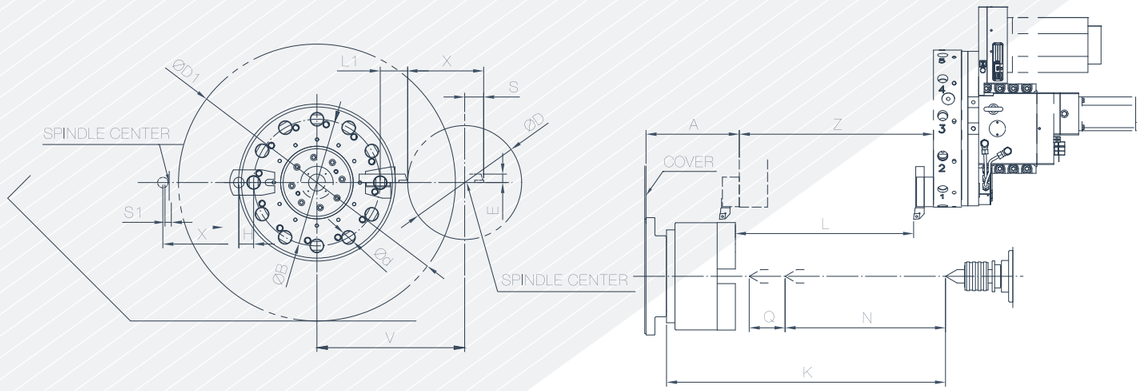
WORKING RANGE



POWER TURRET VDI AXIAL MOUNTING OPT.

Unit:mm

MODEL	A	B	Turning Dia D	D1	VDI d	E	H	K	Turning L	L1	N	Q	S	S1	V	Travel X	Z
FCL-20L04	201	300	220	460	30	20	35	660	440	65	400	85	50	20	325	160	480
FCL-20L07	201	300	220	460	30	20	35	910	690	65	650	85	50	20	325	160	730
FCL-20L12	201	300	220	430	30	20	35	1405	1185	65	1145	85	50	20	325	160	1225
FCL-20L15	191	300	220	430	30	20	35	1705	1485	65	1460	85	50	20	325	160	1535
FCL-20L22	191	300	220	400	30	20	35	2405	2185	65	2160	85	50	20	325	160	2235
FCL-25L04	221	300	270	640	30	20	35	660	420	65	380	85	45	15	350	180	460
FCL-25L07	221	300	270	640	30	20	35	910	670	65	630	85	45	15	350	180	710
FCL-25L12	221	300	270	610	30	20	35	1510	1270	65	1230	85	45	15	350	180	1310
FCL-25L15	191	300	270	610	30	20	35	1705	1465	65	1425	85	45	15	350	180	1535
FCL-25L22	191	300	270	580	30	20	35	2405	2165	65	2125	85	45	15	350	180	2235
FCL-30L07	187	340	450	630	40	25	65	955	670	82.5	650	100	40	22.5	477.5	265	740
FCL-30L12	187	340	450	600	40	25	65	1515	1230	82.5	1210	100	40	22.5	477.5	265	1300
FCL-30L15	187	340	450	600	40	25	65	1715	1430	82.5	1410	100	40	22.5	477.5	265	1500
FCL-30L22	187	340	450	570	40	25	65	2415	2130	82.5	2110	100	40	22.5	477.5	265	2200
FCL-36L07	243	420	536	770	50	32	80	889.7	550	90	595	100	47	37	568	315	660
FCL-36L12	243	420	536	740	50	32	80	1489.7	1150	90	1195	100	47	37	568	315	1260
FCL-36L15	243	420	536	740	50	32	80	1789.7	1450	90	1495	100	47	37	568	315	1560
FCL-36L22	243	420	536	710	50	32	80	2389.7	2050	90	2095	100	47	37	568	315	2160
FCL-38L07	243	420	636	840	50	32	80	889.7	550	90	595	100	47	37	618	365	660
FCL-38L12	243	420	636	810	50	32	80	1489.7	1150	90	1195	100	47	37	618	365	1260
FCL-38L15	243	420	636	810	50	32	80	1789.7	1450	90	1495	100	47	37	618	365	1560
FCL-38L22	243	420	636	780	50	32	80	2389.7	2050	90	2095	100	47	37	618	365	2160

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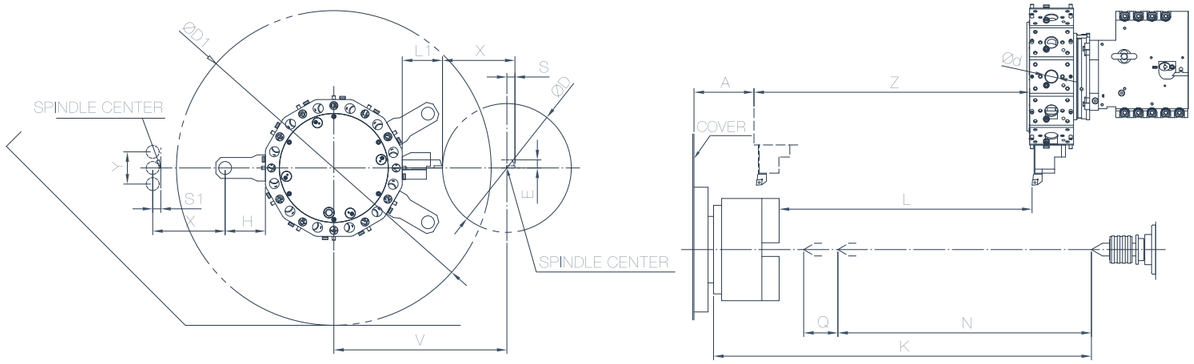

POWER TURRET / Y AXIS VDI RADIAL MOUNTING OPT.

Unit:mm

MODEL	A	Turning Dia D	D1	VDI d	E	H	K	Turning L	L1	N	Q	S	S1	V	Travel X	Y	Z
FCL-20YL04	141.5	320	680	30	20	100	653.5	365	100	360	85	20	20	430	180	±40	410
FCL-20YL07	149	320	680	30	20	100	938.9	625	100	630	85	20	20	430	180	±40	685
FCL-20YL12	149	320	650	30	20	100	1538.9	1225	100	1230	85	20	20	430	180	±40	1285
FCL-20YL15	149	320	650	30	20	100	1763.9	1450	100	1455	85	20	20	430	180	±40	1510
FCL-20YL22	149	320	620	30	20	100	2363.9	2050	100	2055	85	20	20	430	180	±40	2110
FCL-25YL07	149	320	680	30	20	100	938.9	625	100	630	85	20	20	430	180	±40	685
FCL-25YL12	149	320	650	30	20	100	1538.9	1225	100	1230	85	20	20	430	180	±40	1285
FCL-25YL15	149	320	650	30	20	100	1738.9	1425	100	1430	85	20	20	430	180	±40	1485
FCL-25YL22	149	320	620	30	20	100	2438.9	2125	100	2130	85	20	20	430	180	±40	2185
FCL-30YL07	169.5	430	660	40	25	140	845	605	120	550	100	5	25	495	220	±60	650
FCL-30YL12	169.5	430	630	40	25	140	1445	1205	120	1150	100	5	25	495	220	±60	1250
FCL-30YL15	169.5	430	630	40	25	140	1645	1405	120	1350	100	5	25	495	220	±60	1450
FCL-30YL22	169.5	430	600	40	25	140	2345	2105	120	2050	100	5	25	495	220	±60	2150
FCL-38YL07	257.5	500	630	40	25	120	890	500	120	550	100	20	20	530	270	±80	550
FCL-38YL12	257.5	500	600	40	25	120	1490	1100	120	1150	100	20	20	530	270	±80	1150
FCL-38YL15	257.5	500	600	40	25	120	1790	1400	120	1450	100	20	20	530	270	±80	1450
FCL-38YL22	257.5	500	570	40	25	120	2390	2000	120	2050	100	20	20	530	270	±80	2050

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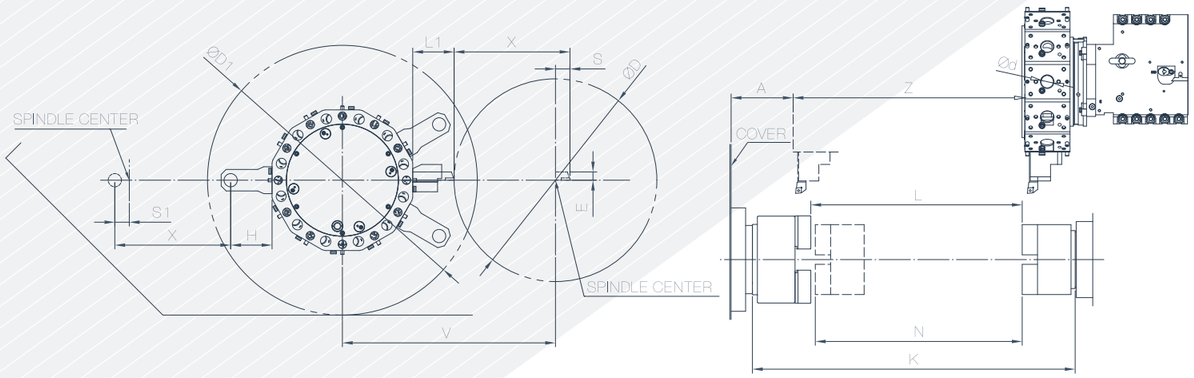
WORKING RANGE



POWER TURRET / TWIN SPINDLE
VDI RADIAL MOUNTING OPT.

Unit:mm

MODEL	A	Turning Dia D	D1	VDI d	E	H	K	Turning L	L1	N	S	S1	V	Travel X	Z
FCL-15TSL04	132	250	640	30	20	100	536	260	100	260	40	40	395	165	310
FCL-15TSL07	132	250	640	30	20	100	836	560	100	560	40	40	395	165	610
FCL-15TSL12	132	250	610	30	20	100	1436	1160	100	1160	40	40	395	165	1210
FCL-15TSL15	132	250	610	30	20	100	1736	1460	100	1460	40	40	395	165	1510
FCL-15TSL22	132	250	580	30	20	100	2336	2060	100	2060	40	40	395	165	2110
FCL-20TSL07	150	490	640	30	20	100	780	510	100	500	35	35	515	280	560
FCL-20TSL12	150	490	610	30	20	100	1380	1110	100	1100	35	35	515	280	1160
FCL-20TSL15	150	490	610	30	20	100	1680	1410	100	1400	35	35	515	280	1460
FCL-20TSL22	150	490	580	30	20	100	2280	2010	100	2000	35	35	515	280	2060
FCL-30TSL07	155	470	630	40	25	120	771	470	120	470	25	25	515	260	540
FCL-30TSL12	155	470	600	40	25	120	1371	1070	120	1070	25	25	515	260	1140
FCL-30TSL15	155	470	600	40	25	120	1671	1370	120	1370	25	25	515	260	1440
FCL-30TSL22	155	470	570	40	25	120	2271	1970	120	1970	25	25	515	260	2040
FCL-36TSL07	235	506	770	40	25	120	803	470	120	470	62	62	538	315	540
FCL-36TSL12	235	506	740	40	25	120	1403	1070	120	1070	62	62	538	315	1140
FCL-36TSL15	235	506	740	40	25	120	1703	1370	120	1370	62	62	538	315	1440
FCL-36TSL22	235	506	710	40	25	120	2303	1970	120	1970	62	62	538	315	2040

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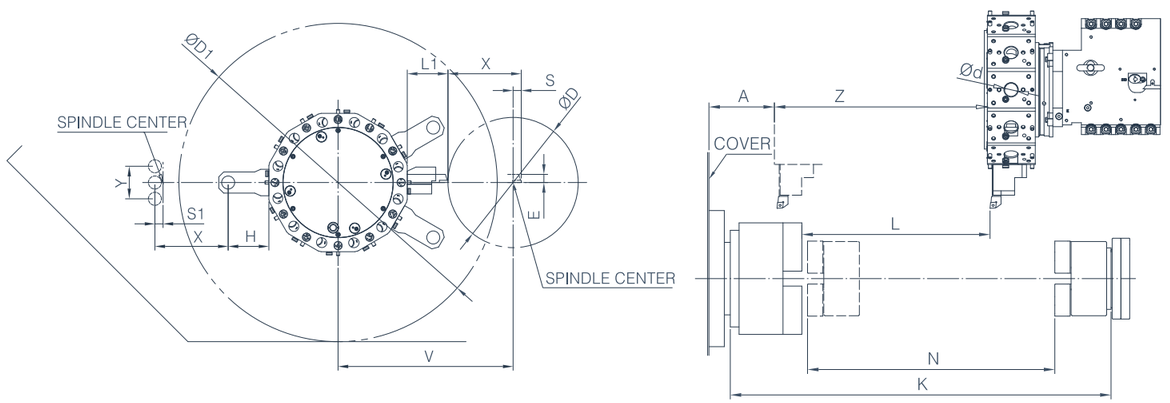

POWER TURRET / TWIN SPINDLE / Y AXIS
VDI RADIAL MOUNTING OPT.

Unit:mm

MODEL	A	Turning Dia D	D1	VDI d	E	H	K	Turning L	L1	N	S	S1	V	Y	Travel X	Z
FCL-15TSYL04	160	300	680	30	20	100	490	192	100	250	25	25	420	±40	175	224
FCL-15TSYL07	160	300	680	30	20	100	790	492	100	550	25	25	420	±40	175	524
FCL-15TSYL12	160	300	650	30	20	100	1390	1092	100	1150	25	25	420	±40	175	1124
FCL-15TSYL15	160	300	650	30	20	100	1690	1392	100	1450	25	25	420	±40	175	1424
FCL-15TSYL22	160	300	620	30	20	100	2290	1992	100	2050	25	25	420	±40	175	2024
FCL-20TSYL07	160	300	680	30	20	100	780	467	100	500	25	25	420	±40	175	500
FCL-20TSYL12	160	300	650	30	20	100	1380	1067	100	1100	25	25	420	±40	175	1100
FCL-20TSYL15	160	300	650	30	20	100	1680	1367	100	1400	25	25	420	±40	175	1400
FCL-20TSYL22	160	300	620	30	20	100	2280	1967	100	2000	25	25	420	±40	175	2000
FCL-30TSYL07	169.5	380	660	40	25	120	798	494	120	490	30	30	470	±60	220	540
FCL-30TSYL12	169.5	380	630	40	25	120	1398	1094	120	1090	30	30	470	±60	220	1140
FCL-30TSYL15	169.5	380	630	40	25	120	1698	1394	120	1390	30	30	470	±60	220	1440
FCL-30TSYL22	169.5	380	600	40	25	120	2298	1994	120	1990	30	30	470	±60	220	2040

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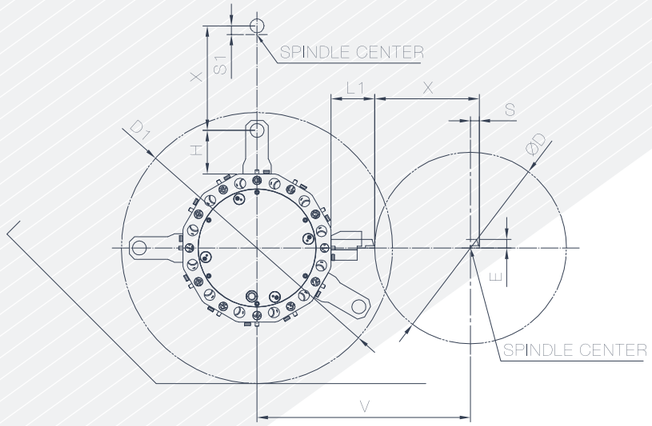
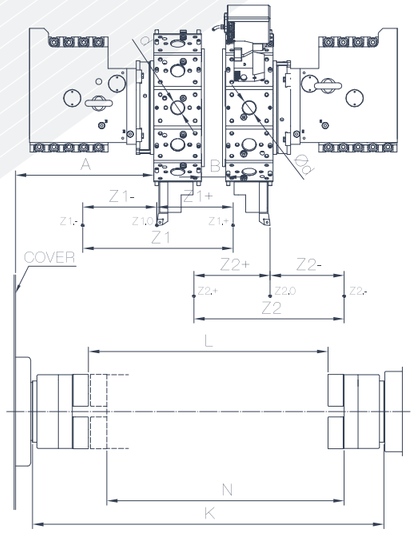
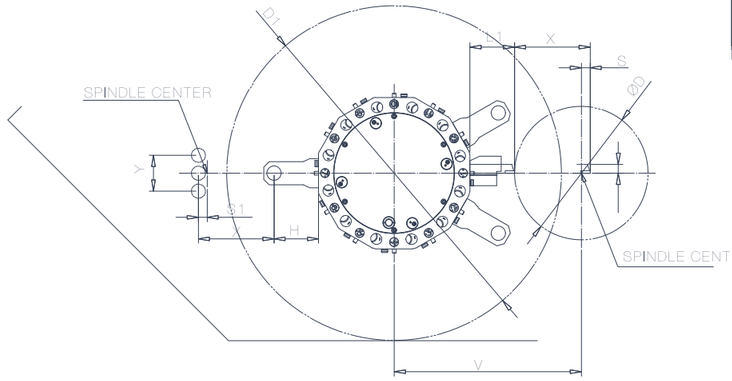
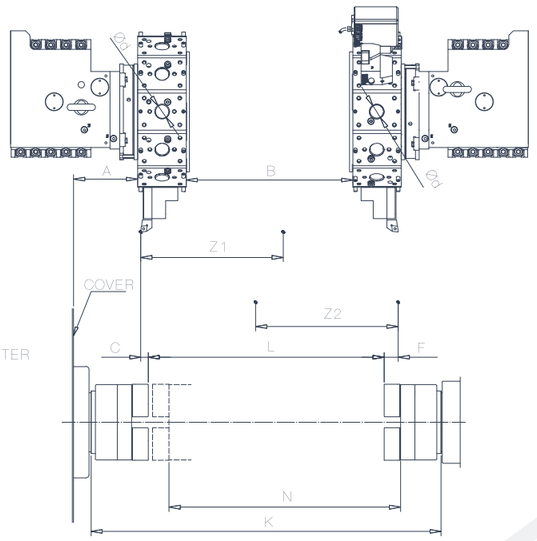
WORKING RANGE









POWER TURRET / TWIN SPINDLE / TWIN TURRRET
RADIAL MOUNNTING OPT.

Unit:mm

MODEL	A	B	Turning Dia D	D1	VDI d	E	H	K	Turning L	L1	N	S	S1	V	Travel X	Z1	Z1+	Z1-	Z2	Z2+	Z2-
FCL-15TTL07	317.5	56	440	600	30	20	100	806	550	100	545	20	20	490	240	345	175	170	345	175	170
FCL-15TTL 12	597	92	440	600	30	20	100	1406	1150	100	1085	20	20	490	240	620	220	400	620	220	400
FCL-15TTL 15	722	142	440	570	30	20	100	1706	1450	100	1385	20	20	490	240	745	220	525	745	220	525
FCL-15TTL22	1047	192	440	540	30	20	100	2406	2150	100	2085	20	20	490	240	1070	220	850	1070	220	850
FCL-20TTL07	317.5	56	440	600	30	20	100	794	525	100	520	20	20	490	240	345	175	170	345	175	170
FCL-20TTL 12	597	92	440	600	30	20	100	1394	1125	100	1085	20	20	490	240	620	220	400	620	220	400
FCL-20TTL 15	722	142	440	570	30	20	100	1694	1425	100	1385	20	20	490	240	745	220	525	745	220	525
FCL-20TTL22	1047	192	440	540	30	20	100	2394	2125	100	2085	20	20	490	240	1070	220	850	1070	220	850
FCL-25TTL07	317.5	56	440	600	30	20	100	788	484	100	475	15	15	490	235	345	175	170	345	175	170
FCL-25TTL 12	597	92	440	600	30	20	100	1398	1094	100	1085	15	15	490	235	620	220	400	620	220	400
FCL-25TTL 15	722	142	440	570	30	20	100	1698	1394	100	1385	15	15	490	235	745	220	525	745	220	525
FCL-25TTL22	1047	192	440	540	30	20	100	2398	2094	100	2085	15	15	490	235	1070	220	850	1070	220	850
FCL-30TTL07	284.5	125	480	660	40	25	140	791	494	130	490	10	20	530	250	345	224.5	120.5	345	224.5	120.5
FCL-30TTL 12	564	161	480	660	40	25	140	1386	1089	130	1085	10	20	530	250	620	220	400	620	220	400
FCL-30TTL 15	689	211	480	630	40	25	140	1686	1389	130	1385	10	20	530	250	745	220	525	745	220	525
FCL-30TTL22	1014	261	480	600	40	25	140	2386	2089	130	2085	10	20	530	250	1070	220	850	1070	220	850

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POWER TURRET / TWIN SPINDLE / TWIN TURRRET / Y AXIS
RADIAL MOUNNTING OPT.

Unit:mm

MODEL	A	B	C	Turning Dia D	D1	VDI d	E	F	H	K	Turning L	L1	N	S	S1	V	Travel X	Y	Z1	Z2
FCL-15TTYL07	144	374	16.5	300	740	30	20	31.5	100	786	530	100	520	20	20	420	170	±40	320	320
FCL-15TTYL 12	144	974	16.5	300	720	30	20	31.5	100	1386	1130	100	1085	20	20	420	170	±40	620	620
FCL-15TTYL 15	144	1274	16.5	300	720	30	20	31.5	100	1686	1430	100	1385	20	20	420	170	±40	745	745
FCL-15TTYL22	144	1874	16.5	300	700	30	20	31.5	100	2386	2130	100	1985	20	20	420	170	±40	1070	1070
FCL-20TTYL07	148	370	37.5	300	740	30	20	31.5	100	774	505	100	500	20	20	420	170	±40	295	295
FCL-20TTYL12	148	970	37.5	300	720	30	20	31.5	100	1374	1105	100	1085	20	20	420	170	±40	620	620
FCL-20TTYL15	148	1270	37.5	300	720	30	20	31.5	100	1674	1405	100	1385	20	20	420	170	±40	745	745
FCL-20TTYL22	148	1870	37.5	300	700	30	20	31.5	100	2374	2105	100	1985	20	20	420	170	±40	1070	1070
FCL-25TTYL07	169	351	35.7	300	740	30	20	45.5	120	778	474	100	465	2	22	420	152	±40	295	295
FCL-25TTYL12	169	951	35.7	300	720	30	20	45.5	120	1378	1074	100	1065	2	22	420	152	±40	620	620
FCL-25TTYL15	169	125	35.7	300	720	30	20	45.5	120	1678	1374	100	1365	2	22	420	152	±40	745	745
FCL-25TTYL22	169	185	35.7	300	700	30	20	45.5	120	2378	1974	100	1965	2	22	420	152	±40	1070	1070
FCL-30TTYL07	162	285	33.1	380	750	40	25	32.1	140	711	414	120	400	10	30	470	200	±60	280	280
FCL-30TTYL12	162	885	33.1	380	730	40	25	25.1	140	1318	1021	120	1000	10	30	470	200	±60	600	600
FCL-30TTYL15	162	1185	33.1	380	730	40	25	25.1	140	1618	1321	120	1300	10	30	470	200	±60	720	720
FCL-30TTYL22	162	1785	33.1	380	710	40	25	25.1	140	2218	1921	120	1900	10	30	470	200	±60	990	990

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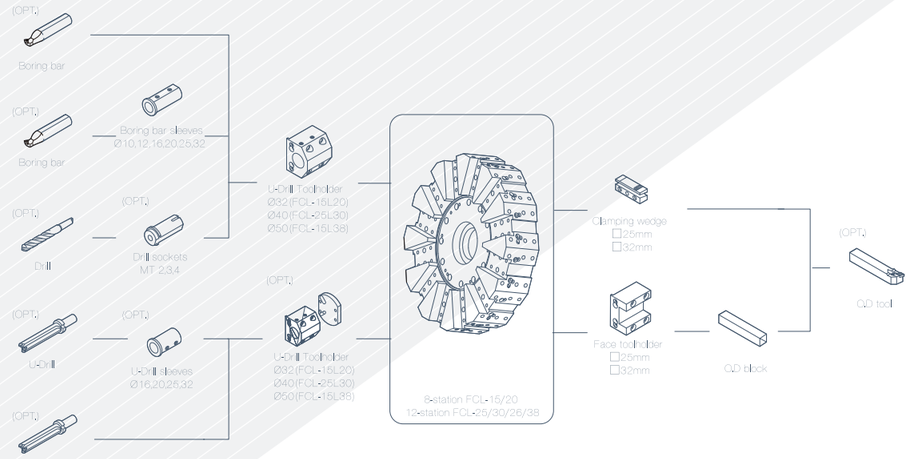
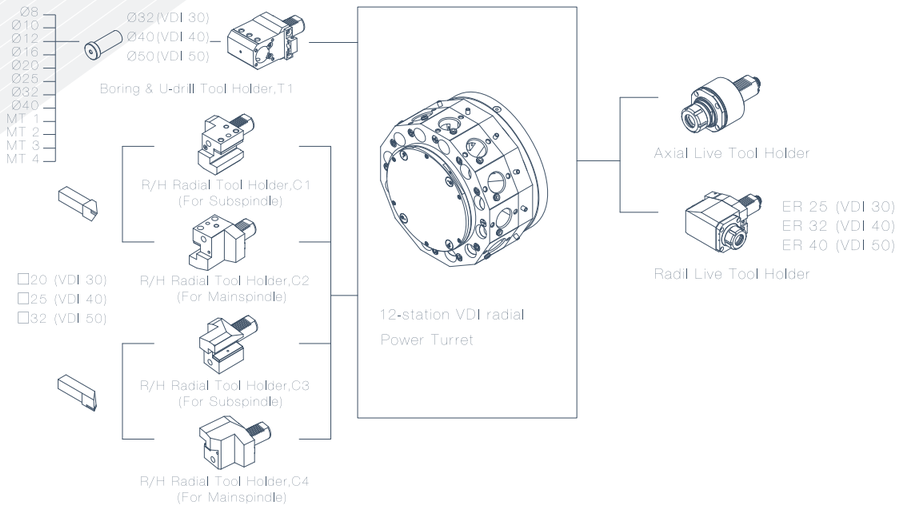
TOOLING SYSTEM

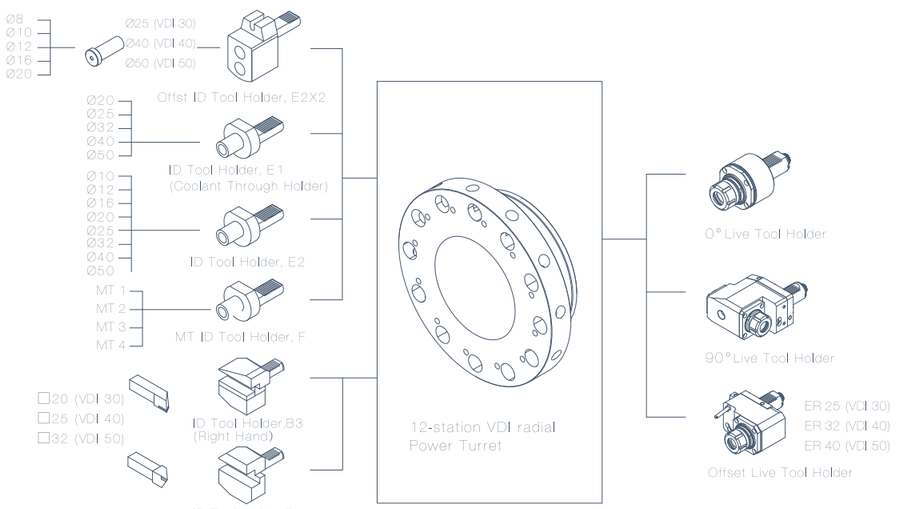
DIRECT TYPE TURRET STD.



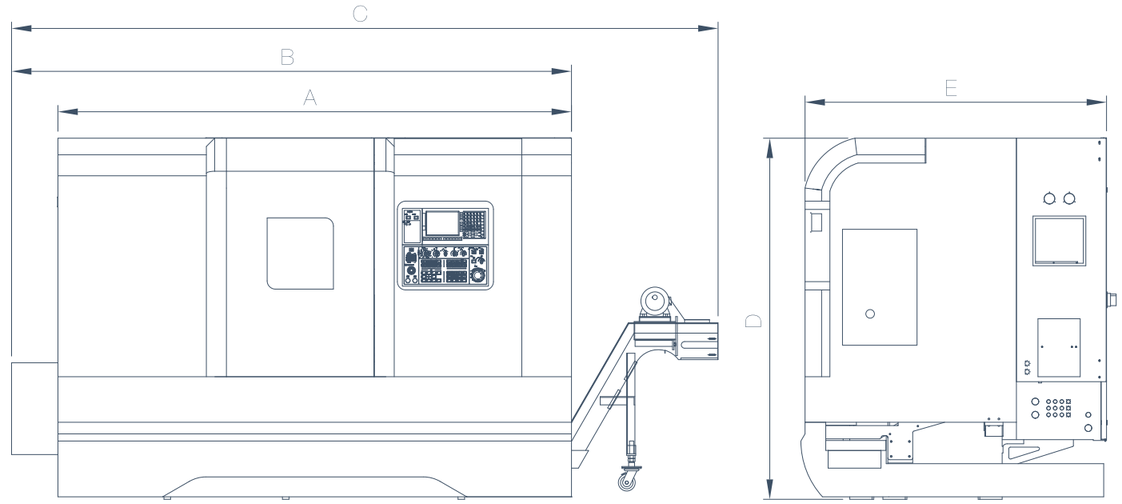
VDI RADIAL TYPE OPT.



VDI AXCIAL TYPE OPT.



DIMENSIONAL DARWINGS
TWIN AXIS SERIES



MODEL	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	W (kg)
FCL-15L03	1600	1850	2800	1739	1500	3600
FCL-20L04	2235	2440	3210	1739	1575	4800
FCL-20L07	2700	2900	3760	1739	1575	5100
FCL-20L12	3135	3340	4110	1739	1575	5500
FCL-20L15	3470	3675	4440	1739	1575	6000
FCL-20L22	4275	4275	5040	1739	1575	6400
FCL-25L04	2430	2600	3430	2010	1820	5000
FCL-25L07	2800	2950	3890	1982	1820	5600
FCL-25L12	3600	3750	4740	1982	1820	6400
FCL-25L15	3900	4050	5040	1982	1820	7400
FCL-25L22	4650	4650	5640	1982	1820	8200
FCL-30L07	2930	3100	3930	2040	1820	5600
FCL-30L12	3600	3770	4760	2040	1820	6400
FCL-30L15	3900	4070	5060	2040	1820	7400
FCL-30L22	4670	4670	5660	2040	1820	8200
FCL-36L07	2760	3355	4180	2090	1895	6400
FCL-36L12	3360	3955	4780	2090	1895	7200
FCL-36L15	3660	4255	5080	2090	1895	8200
FCL-36L22	5000	5000	5800	2090	1895	9000
FCL-38L07	3000	3450	4440	2090	1895	7000
FCL-38L12	3600	4050	5040	2090	1895	7800
FCL-38L15	3900	4350	5340	2090	1895	8800
FCL-38L22	4950	4950	5940	2090	1895	9600

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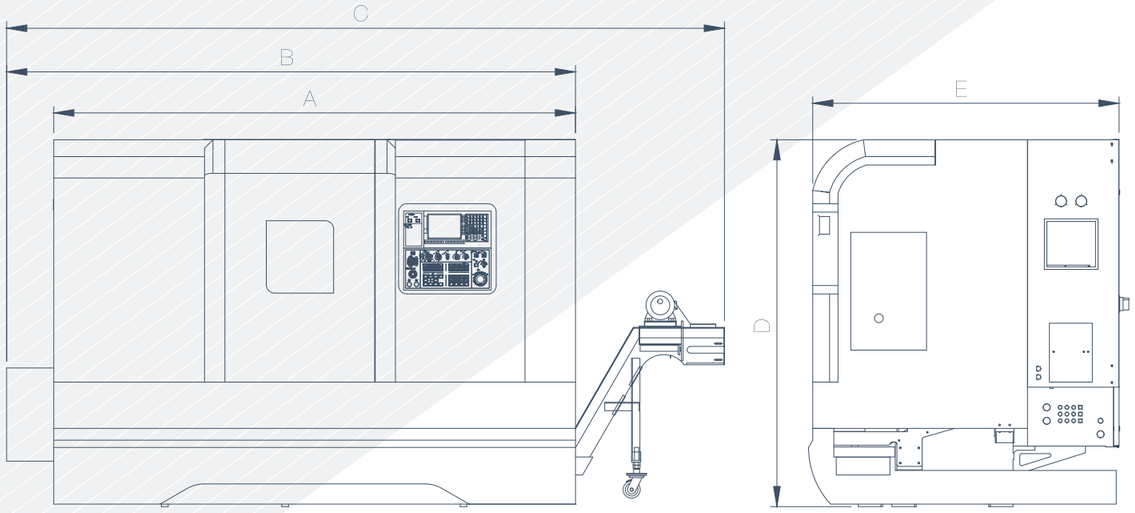
TWIN AXIS WITH Y-AXIS SERIES



MODEL	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	W (kg)
FCL-20YL04	2550	2830	3715	2182	1820	5160
FCL-20YL07 FCL-25YL07	2800	3080	3980	2182	1820	6320
FCL-20YL12 FCL-25YL12	3400	3570	4560	2182	1870	8720
FCL-20YL15 FCL-25YL15	3750	3920	4910	2182	1870	9920
FCL-20YL22 FCL-25YL22	4730	4730	5630	2182	1870	12380
FCL-30YL07	2800	3080	3965	2278	1820	6510
FCL-30YL12	3600	3770	4760	2278	1870	8910
FCL-30YL15	3950	4120	5110	2278	1870	10180
FCL-30YL22	4930	4930	5830	2278	1870	12680
FCL-38YL07	2800	3250	4240	2278	1910	7670
FCL-38YL12	3600	4050	5040	2278	1910	10070
FCL-38YL15	4300	4470	5460	2278	1910	11270
FCL-38YL22	5280	5280	6270	2278	1910	13670

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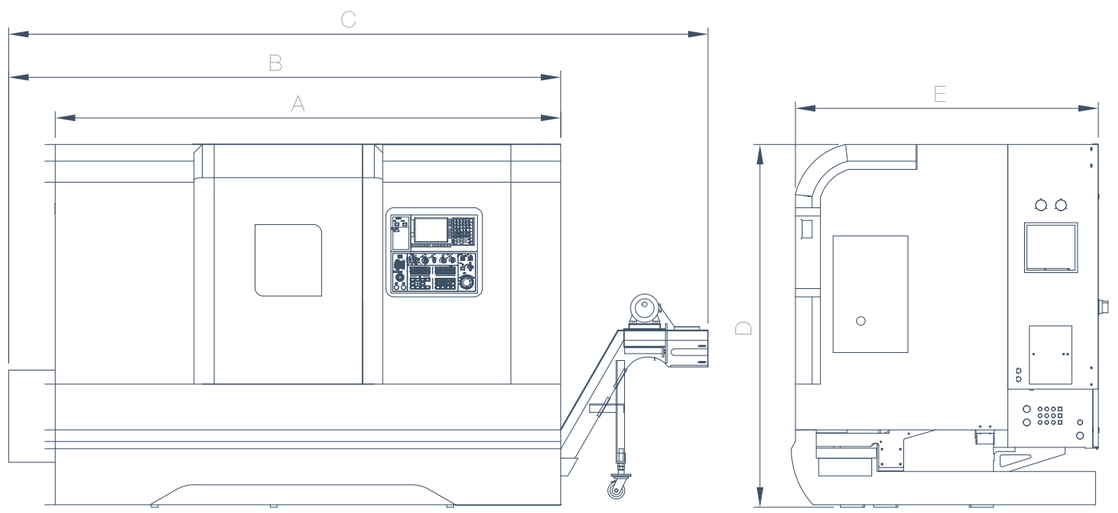
TWIN SPINDLE SERIES



MODEL	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	W (kg)
FCL-15TSL04	2730	2900	3730	1982	1820	5350
FCL-15TSL07 FCL-20TSL07	3100	3250	4190	1982	1820	5950
FCL-15TSL12 FCL-20TSL12	3900	4050	5040	1982	1820	6750
FCL-15TSL15 FCL-20TSL15	4200	4350	5340	1982	1820	7750
FCL-15TSL22 FCL-20TSL22	4950	4950	5940	1982	1820	8550
FCL-30TSL07	3230	3400	4230	2040	1820	5950
FCL-30TSL12	3700	3870	4860	2040	1820	6750
FCL-30TSL15	4000	4170	5160	2040	1820	7750
FCL-30TSL22	4770	4770	5760	2040	1820	8550
FCL-36TSL07	3060	3655	4480	2090	1895	6750
FCL-36TSL12	3460	4055	4880	2090	1895	7550
FCL-36TSL15	3760	4355	5180	2090	1895	8550
FCL-36TSL22	5100	5100	5900	2090	1895	9350

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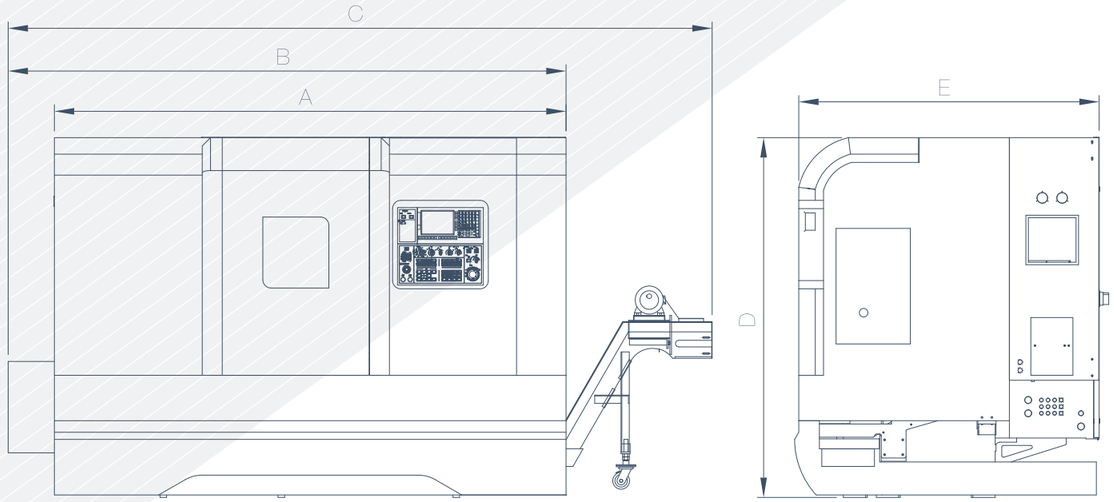
TWIN SPINDLE
WITH Y-AXIS SERIES



MODEL	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	W (kg)
FCL-15TSYL04	2850	3130	4015	2182	1820	5480
FCL-15TSYL07 FCL-20TSYL07	3100	3380	4265	2182	1820	6640
FCL-15TSYL12 FCL-20TSYL12	3700	3870	4860	2182	1870	9040
FCL-15TSYL15 FCL-20TSYL15	4050	4220	5210	2182	1870	10240
FCL-15TSYL22 FCL-20TSYL22	5030	5030	5930	2182	1870	12700
FCL-30TSYL07	3100	3380	4265	2278	1820	6830
FCL-30TSYL12	3700	3870	4860	2278	1870	9230
FCL-30TSYL15	4050	4220	5210	2278	1870	10500
FCL-30TSYL22	5030	5030	5930	2278	1870	13000

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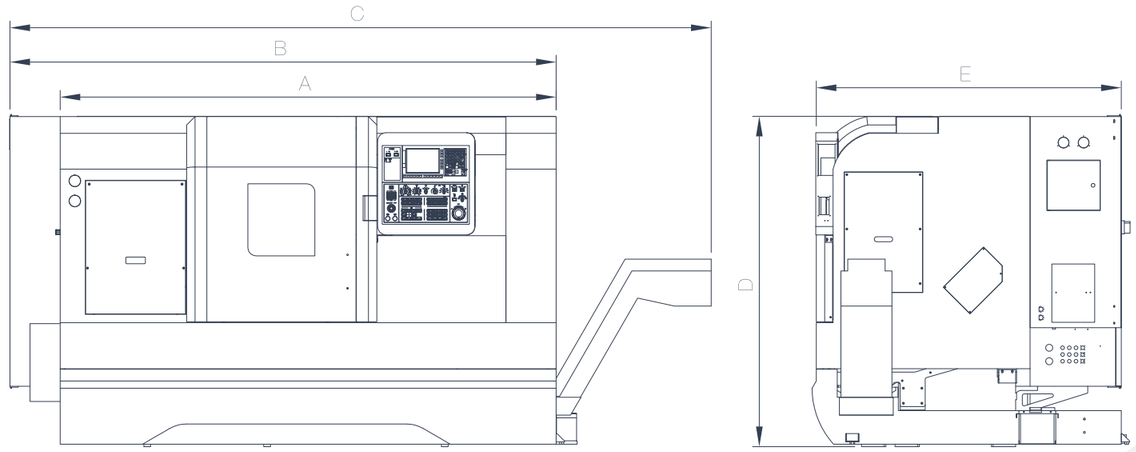
TWIN SPINDLE
TWIN TURRET SERIES



MODEL	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	W (kg)
FCL-15TTL07 FCL-20TTL07 FCL-25TTL07	2960	3260	4185	1972	1820	7300
FCL-15TTL12 FCL-20TTL12 FCL-25TTL12	3560	3860	4785	1972	1880	8000
FCL-15TTL15 FCL-20TTL15 FCL-25TTL15	3860	4160	5085	1972	1880	8500
FCL-15TTL22 FCL-20TTL22 FCL-25TTL22	4760	4760	5685	1972	1880	9200
FCL-30TTL07	3130	3285	4210	2077	1820	7500
FCL-30TTL12	3730	3885	4810	2077	1880	8200
FCL-30TTL15	4030	4185	5110	2077	1880	8700
FCL-30TT/22	4785	4785	5710	2077	1880	9500

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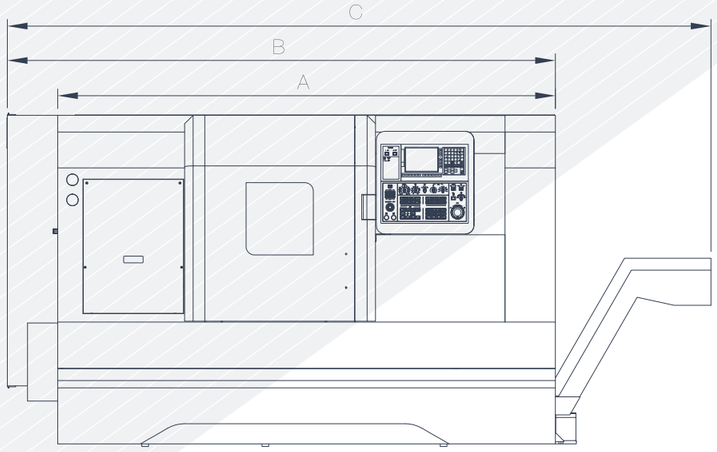
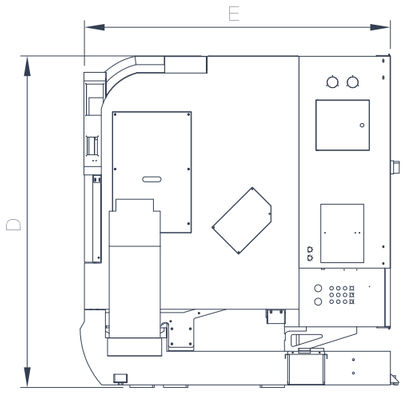
TWIN SPINDLE TWIN TURRET WITH Y-AXIS SERIES





MODEL	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	WW(kg)
FCL-15TTYL07 FCL-20TTYL07 FCL-25TTYL07	3030	3260	4185	2207	1820	7800
FCL-15TTYL12 FCL-20TTYL12 FCL-25TTYL12	3630	3860	4785	2207	1880	8500
FCL-15TTYL15 FCL-20TTYL15 FCL-25TTYL15	3930	4160	5085	2207	1880	9000
FCL-15TTYL22 FCL-20TTYL22 FCL-25TTYL22	4760	4760	5685	2207	1880	9700
FCL-30TTYL07	3200	3285	4210	2278	1820	8000
FCL-30TTYL12	3800	3385	4810	2278	1880	8700
FCL-30TTYL15	4100	4185	5110	2278	1880	9200
FCL-30TTYL22	[redacted]	4785	5710	2278	1880	10000

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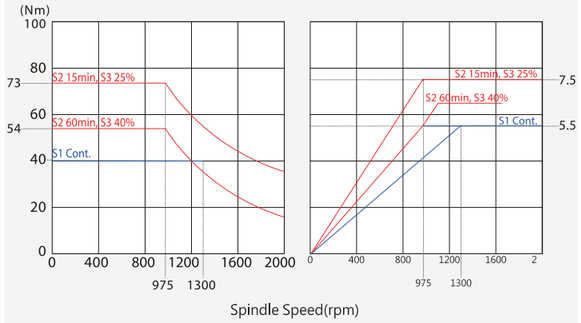
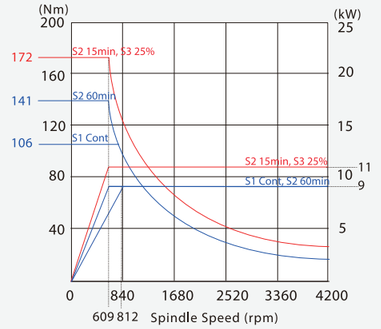
SPINDEL OUTPUT

FCL-15 SERIES



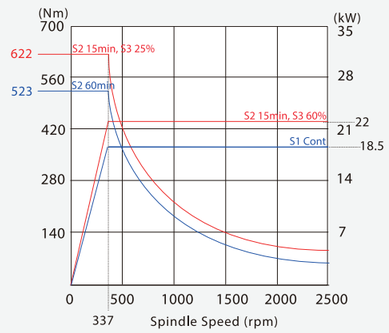
FCL-20 SERIES



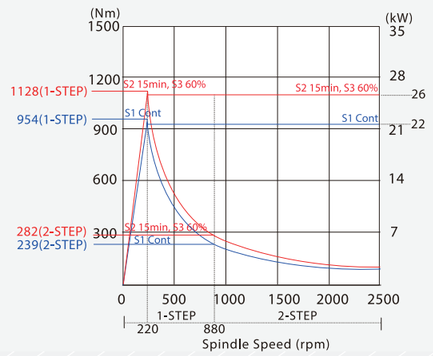
FCL-25 SERIES

FCL-30 SERIES

FCL-36 SERIES



FCL-38 SERIES



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FCL SPECIFICATIONS

MODEL			FCL-15			FCL-20	
	ITEM	UNIT	FCL-15	FCL-15TS	FCL-15TSY	FCL-20	FCL-20TS
Capacity	Swing over bed	mm	Ø460	Ø600	Ø740	Ø460	Ø630
	Swing over saddle	mm	Ø275	Ø450	Ø500	Ø275	Ø400
	Max. turning dia.	mm	Ø280	Ø250	Ø300	Ø280	Ø490
	Working length	mm	300	1) 260~2060 max.	1) 260~2060 max.	1) 455~2200 max.	1) 510~2010 max.
Main Spindle	Spindle nose		A2-5	A2-5	A2-5	A2-6	A2-6
	Spindle bore	mm	Ø56	Ø56	Ø56	Ø61	Ø61
	Bar capacity	mm	Ø45	Ø45	Ø45	Ø52	Ø52
	Range of spindle speed	rpm	6000	6000	6000	4200	4200
	Hydraulic chuck	mm	Ø169 (6")	Ø169 (6")	Ø169 (6")	Ø210 (8")	Ø210 (8")
	Motor (Cont. / 30 min)	kW	5.5/7.5	5.5/7.5	5.5/7.5	9/11	9/11
Sub Spindle	Spindle nose		-	A2-5	A2-5	-	A2-5
	Spindle bore	mm	-	Ø56	Ø56	-	Ø56
	Bar capacity	mm	-	Ø45	Ø45	-	Ø45
	Range of spindle speed	rpm	-	6000	6000	-	6000
	Hydraulic chuck	mm	-	Ø169 (6")	Ø169 (6")	-	Ø169 (6")
	Motor	kW	-	5.5 / 7.5	5.5 / 7.5	-	5.5/7.5
Turret	Tool station		8T	12T	12T	8T	12T
	O.D tooling	mm	□25×25	□20×20	□20×20	□25×25	□20×20
	I.D tooling	mm	Ø32	Ø32	Ø32	Ø32	Ø32
	Living tools speed / kW		-	4000 (OPT.)	4000 / 3	-	4000 (OPT.)
Travels & Rapid Traverse Speed	X axis travel	mm	160 (140+20)	165 (125+40)	175 (150+25)	165(140+25)	280 (245+35)
	Y axis travel	mm	-	-	±40	-	-
	Z axis travel	mm	340	1) 310~2110 max.	1) 224~2024 max.	1) 490~2235 max.	1) 560~2060 max.
	E axis travel	mm	-	1) 260~2060 max.	1) 250~2050 max.	-	1) 500~2000 max.
	Rapid speed (X axis) / kW	m/min	30 / 1.2	30 / 1.6	30 / 3	30 / 1.8	30 / 1.6
	Rapid speed (Y axis) / kW	m/min	-	-	7 / 1.4	-	-
	Rapid speed (Z axis) / kW	m/min	30 / 1.2	30 / 1.6	30 / 3	30 / 1.8	30 / 1.6
	Rapid speed (E axis) / kW	m/min	-	30 / 1.6	20 / 1.6	-	20 /1.6
Tailstock	Quill dia.	mm	Ø75 (OPT.)	-	-	Ø75	-
	Quill stroke	mm	85 (OPT.)	-	-	85	-
	Taper of center		MT 4 (OPT.)	-	-	MT4	-
	Tailstock travel	mm	240 (OPT.)	-	-	1) 415~2160 max.	-
Tank Capacity	Hydraulic tank	Liter	40	60	60	60	60
Machine Dimensions	Length * Width * High	mm	1850*1600	2)			
	Weight (NW/GW)	kg	3600/4050				

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- 1) Refer to tool P.15 - P.24 interference diagram.
- 2) Refer to P.30 - P.35 external dimensions.

FCL-20		FCL-25		FCL-30			
FCL-20Y	FCL-20TSY	FCL-25	FCL-25Y	FCL-30	FCL-30TS	FCL-30Y	FCL-30TSY
Ø740	Ø740	Ø600	Ø740	Ø630	Ø650	Ø690	Ø690
Ø500	Ø500	Ø450	Ø500	Ø440	Ø440	Ø500	Ø500
Ø300	Ø300	Ø316	Ø300	Ø450	Ø470	Ø430	Ø380
1) 365~2165 max.	1) 500~2000 max.	1) 435~2190 max.	1) 590~2090 max.	1) 700~2200 max.	1) 470~1970 max.	1) 605~2105 max.	1) 495~1995 max.
A2-6	A2-6	A2-6	A2-6	A2-8	A2-8	A2-8	A2-8
Ø61	Ø61	Ø77	Ø77	Ø90/OPT: Ø101	Ø90	Ø90	Ø90
Ø52	Ø52	Ø65	Ø65	Ø77/OPT: Ø91	Ø77	Ø77	Ø77
4200	4200	3500	3500	3500/OPT: 2500	3500	3500	3500
Ø210 (8")	Ø210 (8")	Ø254 (10")	Ø254 (10")	Ø254/OPT: Ø304	Ø254	Ø254	Ø254
9/11	9/11	11/15	11/15	15/18.5	11/15	15/18.5	11/15
-	A2-5	-	-	-	A2-6	-	A2-6
-	Ø56	-	-	-	Ø61	-	Ø61
-	Ø45	-	-	-	Ø52	-	Ø52
-	6000	-	-	-	4200	-	4200
-	Ø169 (6")	-	-	-	Ø210 (8")	-	Ø210 (8")
-	5.5 / 7.5	-	-	-	7.5/11	-	7.5/11
12T	12T	12T	12T	12T	12T	12T	12T
□20×20	□20×20	□25×25	□20×20	□25×25	□25×25	□25×25	□25×25
Ø32	Ø32	Ø40	Ø32	Ø40	Ø40	Ø40	Ø40
4000 / 3	4000 / 3	-	4000 / 3	4000 / 3	4000 (OPT.)	4000 / 3	4000 / 3
175 (150+25)	175 (150+25)	185 (158+27)	175 (150+25)	250(225+25)	260(245+15)	220 (215+5)	220 (190+30)
±40	±40	-	±40	-	-	±60	±60
1) 410~2110 max.	1) 500~2000 max.	1) 490~2235 max.	1) 685~2185 max.	1) 740~2240 max.	1) 540~2040 max.	1) 650~2150 max.	1) 540~2040 max.
-	1) 500~2000 max.	-	-	-	1) 470~1970 max.	-	1) 460~1960 max.
30 / 3	30 / 3	30 / 1.8	30 / 3	20 / 2.5	30 / 3	30 / 4	30 / 4
7 / 1.4	7 / 1.4	-	7 / 3	-	-	7 / 1.6	7 / 1.6
30 / 3	30 / 3	30 / 1.8	30 / 3	20 / 2.5	30 / 3	30 / 3	30 / 3
-	20 / 1.6	-	-	-	20 / 1.6	-	20 / 1.6
Ø75	-	Ø75	Ø75	Ø90	-	Ø75	-
80	-	85	80	100	-	80	-
MT4	-	MT4	MT4	MT5	-	MT5	-
1) 360~2160 max.	-	1) 415~2160 max.	1) 500~2000 max.	1) 650~2150 max.	-	1) 550~2050 max.	-
60	60	60	60	60	60	60	60
2)							

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- 1) Refer to tool P.15 - P.24 interference diagram.
- 2) Refer to P.30 - P.35 external dimensions.

FCL SPECIFICATIONS

MODEL			FCL-36		
	ITEM	UNIT	FCL-36	FCL-36TS	FCL-36Y
Capacity	Swing over bed	mm	Ø770	Ø770	Ø780
	Swing over saddle	mm	Ø590	Ø590	Ø640
	Max. turning dia.	mm	Ø570	Ø506	Ø500
	Working length	mm	1) 600~2100 max.	1) 470~1970 max.	1) 500~2000 max.
Main Spindle	Spindle nose		A2-8/OPT.: A2-11	A2-8	A2-8
	Spindle bore	mm	Ø101/OPT.: Ø131	Ø101	Ø101
	Bar capacity	mm	Ø91/OPT.: Ø117	Ø91	Ø91
	Range of spindle speed	rpm	2500/OPT.: 2000	2500	2500
	Hydraulic chuck	mm	Ø304/OPT.: Ø381	Ø304	Ø304
	Motor (Cont. / 30 min)	kW	18.5/22	18.5/22	18.5/22
Sub Spindle	Spindle nose		-	A2-6	-
	Spindle bore	mm	-	Ø77	-
	Bar capacity	mm	-	Ø65	-
	Range of spindle speed	rpm	-	3500	-
	Hydraulic chuck	mm	-	Ø254 (10")	-
	Motor	kW	-	11/15	-
Turret	Tool station		12T	12T	12T
	O.D tooling	mm	□32×32	□25×25	□25×25
	I.D tooling	mm	Ø50	Ø40	Ø40
	Living tools speed / kW		3000 (OPT.)	4000	4000 / 4
Travels & Rapid Traverse Speed	X axis travel	mm	315 (285+30)	315 (253+62)	270 (250+20)
	Y axis travel	mm	-	-	±80
	Z axis travel	mm	1) 660~2160 max.	1) 540~2040 max.	1) 550~2050 max.
	E axis travel	mm	-	1) 470~1970 max.	-
	Rapid speed (X axis) / kW	m/min	24 / 4	24 / 4	24 / 4
	Rapid speed (Y axis) / kW	m/min	-	-	7 / 1.6
	Rapid speed (Z axis) / kW	m/min	20 / 4	20 / 4	20 / 4
	Rapid speed (E axis) / kW	m/min	-	20 / 3	-
Tailstock	Quill dia.	mm	Ø100	-	Ø100
	Quill stroke	mm	100	-	100
	Taper of center		MT5	-	MT5
	Tailstock travel	mm	1) 595~2095 max.	-	1) 550~2050 max.
Tank Capacity	Hydraulic tank	Liter	60	60	60
Machine Dimensions	Length * Width * High	mm	2)		
	Weight (NW/GW)	kg			

FCL-36	FCL-38	
FCL-36TSY	FCL-38	FCL-38Y
Ø780	Ø840	Ø780
Ø640	Ø670	Ø640
Ø500	Ø670	Ø500
1) 470~1970 max.	1) 600~2100 max.	1) 500~2000 max.
A2-8	A2-8/OPT.: A2-11	A2-8
Ø101	Ø101/OPT.: Ø131	Ø101
Ø91	Ø91/OPT.: Ø117	Ø91
2500	2500/OPT.: 2000	2500
Ø304	Ø304/OPT.: Ø381	Ø304
18.5/22	22/26 (Gear box)	22/26 (Gear box)
A2-6	-	-
Ø77	-	-
Ø65	-	-
3500	-	-
Ø254 (10")	-	-
11/15	-	-
12T	12T	12T
□25×25	□32×32	□25×25
Ø40	Ø50	Ø40
4000 / 4	3000 (OPT.)	4000 / 4
270 (250+20)	365 (335+30)	270 (250+20)
±80	-	±80
1) 540~2040 max.	1) 660~2160 max.	1) 550~2050 max.
1) 470~1970 max.	-	-
24 / 4	24 / 4	24 / 4
7 / 1.6	-	7 / 1.6
20 / 4	20 / 4	20 / 4
20 / 3	-	-
-	Ø100	Ø100
-	100	100
-	MT5	MT5
-	1) 595~2095 max.	1) 550~2050 max.
60	60	60
2)		

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- 1) Refer to tool P.15 - P.24 interference diagram.
- 2) Refer to P.30 - P.35 external dimensions.

STANDARD ACCESSORIES

- Hydraulic turret 8 position / 12 Position
- Programmable tailstock (Single spindle series, except of FCL-15 series)
- Without tailstock (FCL-15 series)
- 3 bar ~ 750w coolant pump
- Tools & tool box
- Heat exchanger for electrical cabinet
- Coolant tank
- Working light
- Three color alarm light
- Chip conveyor and bucket
- Automatic lubrication system
- Hydraulic unit

OPTIONAL ACCESSORIES

- Manual tailstock (FCL-15)
- CE / TS electric control
- Automatic tool setter
- C axis and TD axis contour capability & power turret
- Servo turret
- Main power transformer
- Automatic door & safety switch
- Automatic parts catcher
- Prevent crash installation of each axis (safety equipment)
- Bar feeder
- Parts cut off detector
- Larger hydraulic chuck
- High conditioner for electrical cabinet
- Larger spindle motor
- High pressure coolant pump
- Oil mist collector
- Oil skimmer
- Manual / Hydraulic steady rest
- Live quill tailstock
- BMT type turret

- All specification, design and characteristics shown on this catalogue are subject to change without prior notice.
- 1) Refer to tool P.15 - P.24 interference diagram.
- 2) Refer to P.30 - P.35 external dimensions.

FCL-TT SPECIFICATION

MODEL			FCL-15		FCL-20
	ITEM	UNIT	FCL-15TT	FCL-15TTY	FCL-20TT
Capacity	Swing over bed	mm	Ø620	Ø740	Ø620
	Maxi turning dia.	mm	Ø440	Ø300	Ø440
	Working length	mm	1) 550 ~ 2050 max.	1) 530 ~ 2030 max.	1) 525 ~ 2050 max.
Main Spindle & Sub Spindle	Spindle nose		Main: A2-5, Sub: A2-5		Main: A2-6, Sub: A2-5
	Spindle bore	mm	Main: Ø56, Sub: Ø56		Main: Ø61, Sub: Ø56
	Bar capacity	mm	Main: Ø45, Sub: Ø45		Main: Ø52, Sub: Ø45
	Range of spindle speed	rpm	Main: 6000, Sub: 6000		Main: 4200, Sub: 6000
	Living tools speed / kW	rpm	4000 (OPT.)	4000 / 3	4000 (OPT.)
Chuck	Hydraulic chuck	mm	Main: Ø169 (6"), Sub: Ø169 (6")		Main: Ø210 (8"), Sub: Ø169 (6")
Turret (L/R)	Tool station	mm	12T		12T
	O.D. tooling	mm	□20×20		□20×20
	I.D tooling	mm	Ø32		Ø32
Cross Slide (X1/X2 axis) & Carriage (Z1/Z2 axis B axis) & Y axis	X1, X2 axis travel	mm	240 (220+20)	170 (150+20)	240 (220+20)
	Z1, Z2 axis travel	mm	1) 345 ~ 1020 max.	1) 320 ~ 1020 max.	1) 345 ~ 1020 max.
	E axis travel	mm	1) 545 ~ 1985 max.	1) 520 ~ 1985 max.	1) 520 ~ 1985 max.
	Y1, Y2 axis travel	mm	—	±40	—
	Rapid speed (X1 / X2 axis) / kW	m/min	20 / 1.6		20 / 1.6
	Rapid speed (Z1 / Z2 axis) / kW	m/min	20 / 1.6		20 / 1.6
	Rapid speed (E axis) / kW	m/min	20 / 1.6		20 / 1.6
	Rapid speed (Y1 / Y2 axis) / kW	m/min	—	7	—
Motor	Main spindle (Cont. / 30 min)	kW	5.5 / 7.5		9 / 11
	Sub spindle (Cont. / 30 min)	kW	5.5 / 7.5		5.5 / 7.5
Tank Capacity	Hydraulic tank	Litres	60		60
Machine Dimensions	Length * Width * High	mm	2)		
	Weight (NW/GW)	kg			

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- 1) Refer to tool P.25 - P.28 interference diagram.
- 2) Refer to P.30 - P.35 external dimensions.

STANDARD ACCESSORIES

- Hydraulic turret 8 position / 12 Position
- Programmable tailstock
- Without tailstock
- 3 bar ~ 750w coolant pump
- Tools & tool box
- Heat exchanger for electrical cabinet
- Coolant tank
- Working light
- Three color alarm light
- Chip conveyor and bucket
- Automatic lubrication system
- Hydraulic unit

OPTIONAL ACCESSORIES

- Manual tailstock
- CE / TS electric control
- Automatic tool setter
- C axis and TD axis contour capability & power turret
- Servo turret
- Main power transformer
- Automatic door & safety switch
- Automatic parts catcher
- Prevent crash installation of each axis (safety equipment)
- Bar feeder
- Parts cut off detector
- Larger hydraulic chuck

FCL-20	FCL-25		FCL-30	
FCL-20TTY	FCL-25TT	FCL-25TTY	FCL-30TT	FCL-30TTY
Ø740	Ø620	Ø740	Ø680	Ø750
Ø300	Ø440	Ø300	Ø480	Ø380
1) 505 ~ 2005 max.	1) 484 ~ 1984 max.	1) 474 ~ 1974 max.	1) 494 ~ 1994 max.	1) 414~1921 max.
Main: A2-6, Sub: A2-5	Main: A2-6, Sub: A2-6		Main: A2-8, Sub: A2-6	
Main: Ø61, Sub: Ø56	Main: Ø77, Sub: Ø61		Main: Ø90, Sub: Ø77	
Main: Ø52, Sub: Ø45	Main: Ø65, Sub: Ø52		Main: Ø77, Sub: Ø65	
Main: 4200, Sub: 6000	Main: 3500, Sub: 4200		Main: 3500, Sub: 3500	
4000 / 3	4000 (OPT.)	4000 / 3	4000(OPT.)	
Main: Ø210 (8"), Sub: Ø169 (6")	Main: Ø254 (10"), Sub: Ø210 (8")		Main: Ø254 (10"), Sub: Ø210 (8")	
12T	12T		12T	
□20×20	□20×20		□25×25	
Ø32	Ø32		Ø40	
170 (150+20)	235 (220+15)	152 (150+20)	250 (240+10)	200(190+10)
1) 295 ~ 1020 max.	1) 345 ~ 1020 max.	1) 295 ~ 1020 max.	1) 345 ~ 1020 max.	1) 280~990 max.
1) 500 ~ 1985 max.	1) 475 ~ 1975 max.	1) 465 ~ 1965 max.	1) 490 ~ 1990 max.	1) 400~1900 max.
±40	—	±40	—	±60
20 / 1.6	20 / 3		20 / 3	20m/min
20 / 1.6	20 / 1.6		20 / 3	20m/min
20 / 1.6	20 / 1.6		20 / 1.6	20m/min
7	—	7	—	7
9 / 11	11 / 15		15 / 18.5	
5.5 / 7.5	7.5 / 11		7.5 / 11	
60	60		60	
2)				

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- 1) Refer to tool P.25 - P.28 interference diagram.
- 2) Refer to P.30 - P.35 external dimensions.

OPTIONAL ACCESSORIES

- Air conditioner for electrical cabinet
- Larger spindle motor
- High pressure coolant pump
- Oil mist collector
- Oil skimmer
- Manual / Hydraulic steady rest
- Live quill tailstock
- BMT type turret