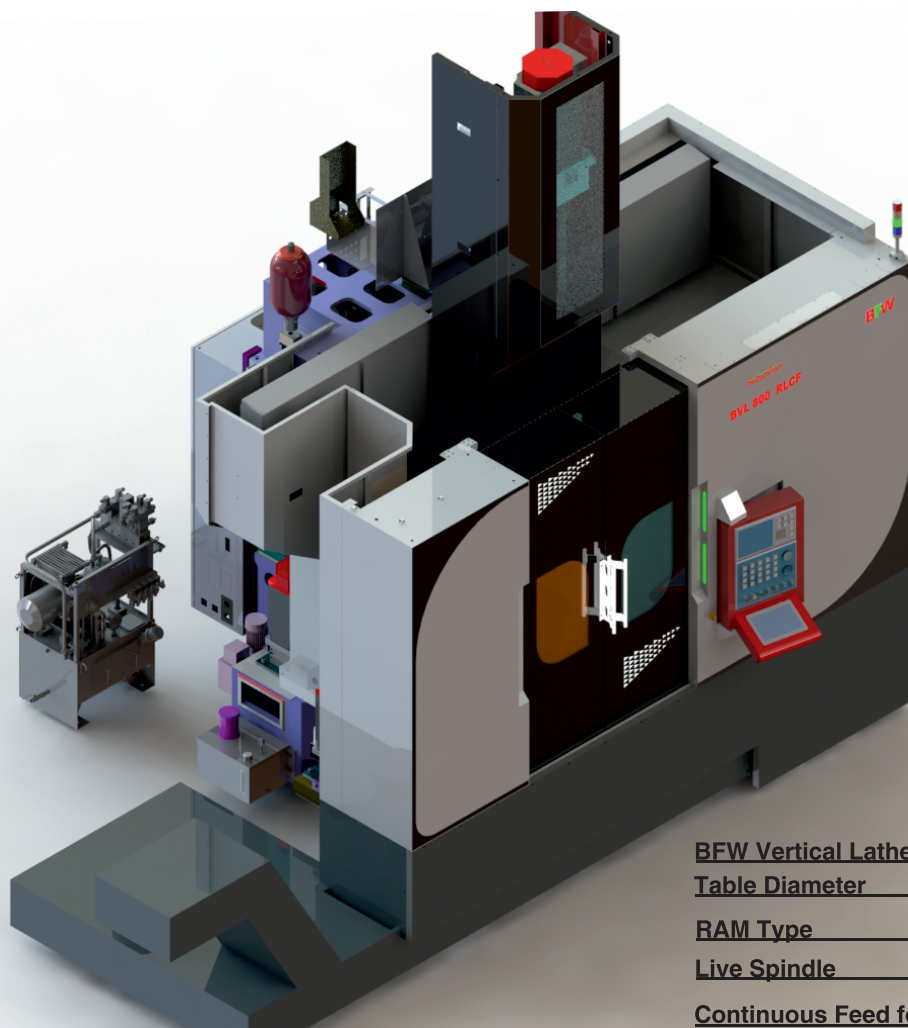


Vertical Turning

Vertical Turning Centers - RAM Type

Series: BVL 800-R | BVL 800-RL | BVL 800-RLCF



BVL 800 R L CF

BFW Vertical Lathe

Table Diameter

RAM Type

Live Spindle

Continuous Feed for Table

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BFW
Bharat Fritz Werner

Vertical Turning

Multi-tasking Vertical Turning Centers

RAM Type Series: BVL 800-R | BVL 800-RL | BVL 800-RLCF

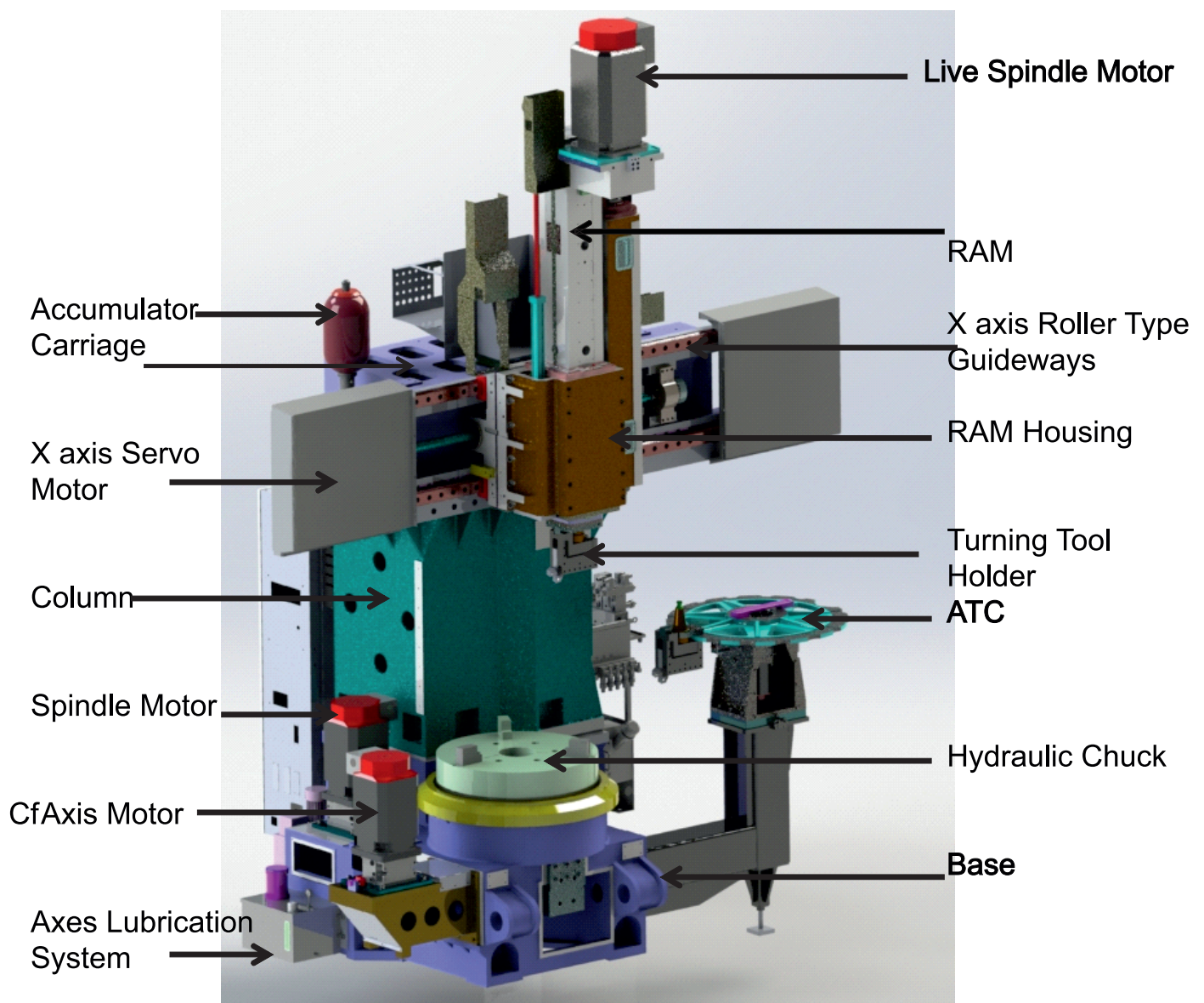
BVL 800-R is the smallest RAM Type VTL with ATC added to BFW's RAM series VTL machines.

800 size RAM type VTL comes with three variants - BVL 800-R, BVL 800-RL and BVL 800RLCf to cater wide application requirement from Basic Turning, Boring, Deep Boring etc. to Turnmill Application viz., Drilling, Tapping, Milling, Helical Interpolation, Thread Milling, Profile machining Etc.,

“RAM Type Turning Centers” Engineering philosophy is based on three strong pillars.

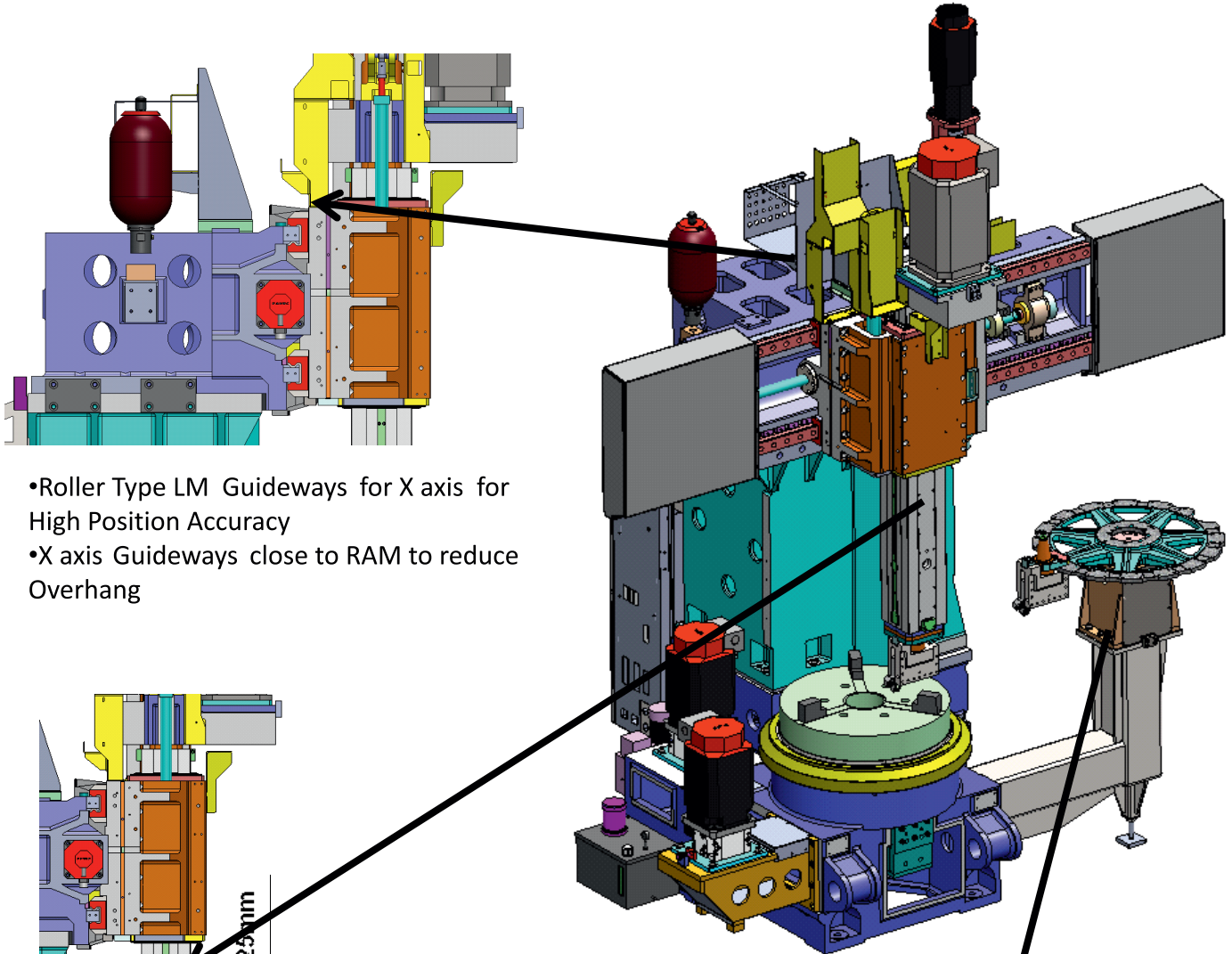
- ▶ Rigidity
- ▶ Higher Productivity
- ▶ Extensive Series Range

Robust Construction

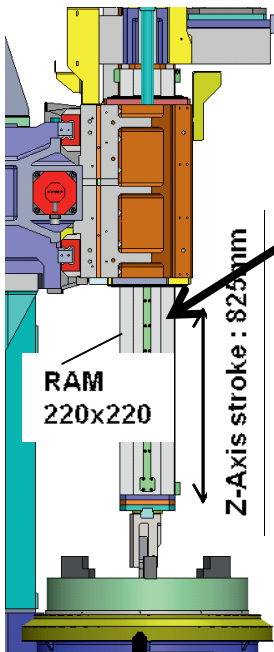


Vertical Turning

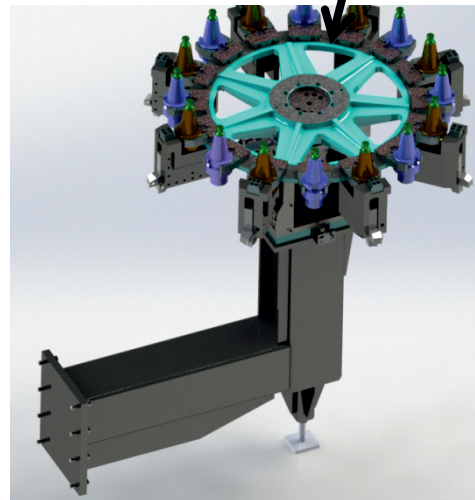
Mechanical Construction Details



- Roller Type LM Guideways for X axis for High Position Accuracy
- X axis Guideways close to RAM to reduce Overhang

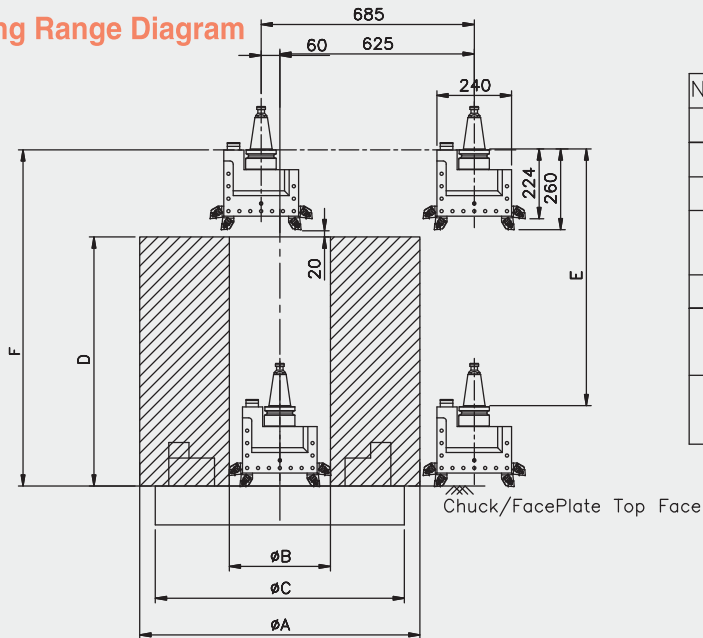


- 220 Square Ram Guided by Turcite slide
- Deep Boring Application upto 800 deep



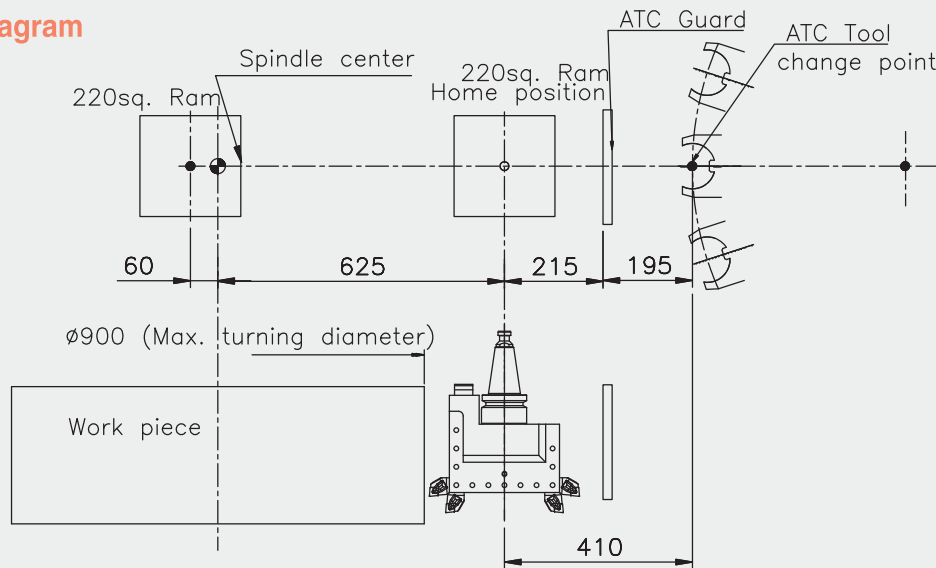
- 12 Tools Servo Drive ATC for Quick Indexing
- Side clamped to Base and supported on floor

Moving Range Diagram

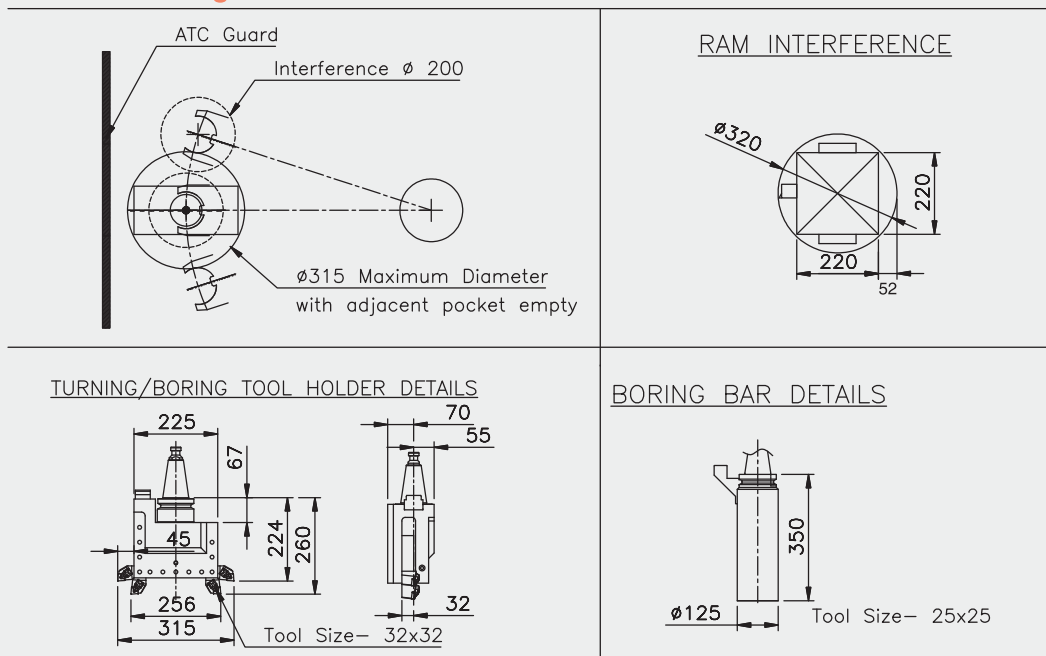


NOTE.	DESCRIPTION	DIM.
A	Max. turning diameter	900
B	Minimum boring diameter for Ram	320
C	Diameter of Face plate /Hyd. Chuck	800
D	Max. Turning height (Component mounted on face plate top)	Face Plate 800 Hydraulic Chuck 778
E	Vertical travel of RAM	825
F	MAX. Daylight	Face Plate 1080 Hydraulic Chuck 1058
G	Jaw Height From Chuck/Face Plate	Face Plate 90 Hydraulic Chuck 90

X axis Travel Diagram



Tool Interference Diagram



Max. tool weight - 35 Kgf
 Max. weight on ATC - 360 Kgf (12 STN) - Avg. Tool Weight 30kg
 Max. weight on ATC - 400 Kgf (16 STN) - Avg. Tool Weight 25kg

Tools should be loaded on ATC Uniformly.

Vertical Turning

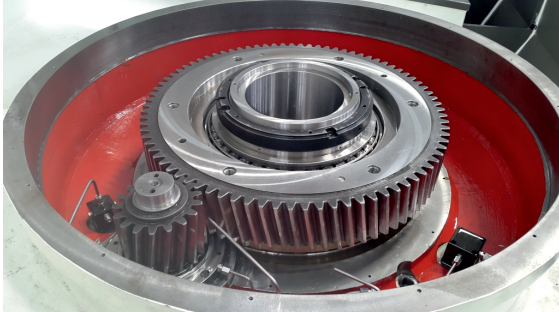
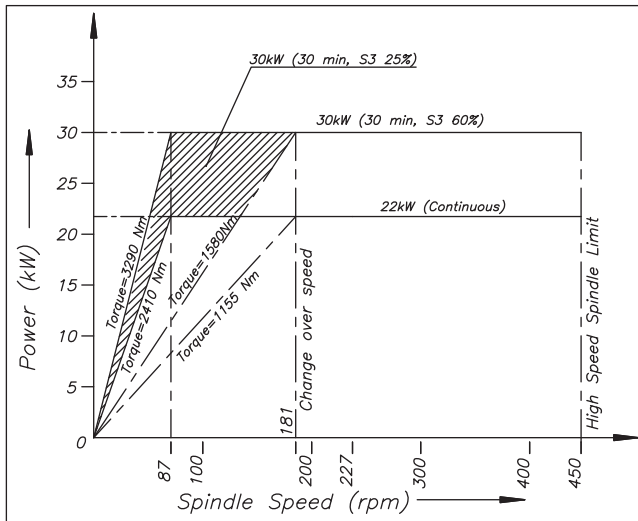


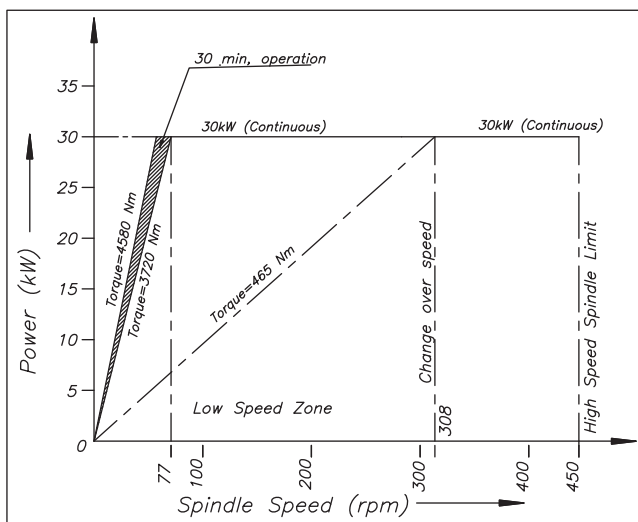
Table construction details

Table is rotated by Accurate Helical gear and Pinion made of heat treated and grounded High grade steel, supported by larger size Taper Roller Bearing and Thrust Ball Bearing.



Spindle Characteristics for BVL 800R / BVL 800RL

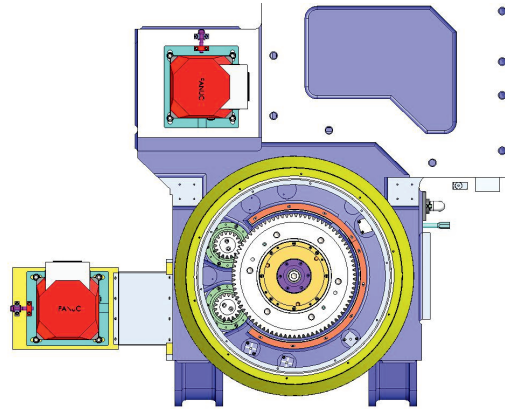
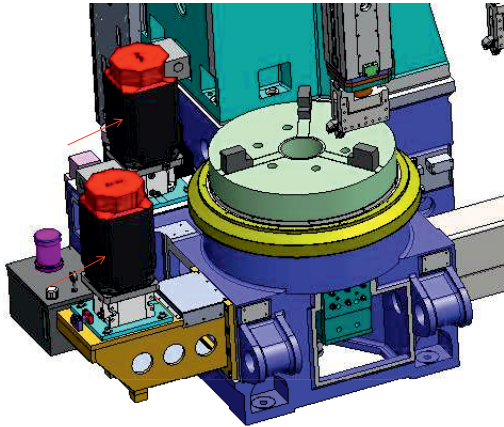
Gear Driven Table with 2 speed Gear Box gives High Torque and Full Power at Minimum RPM



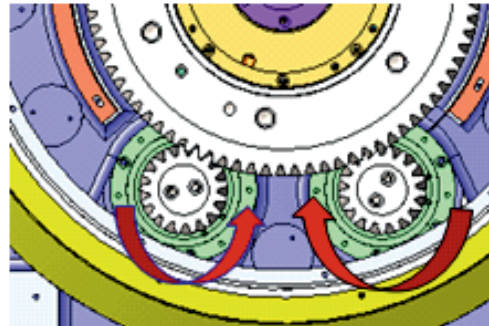
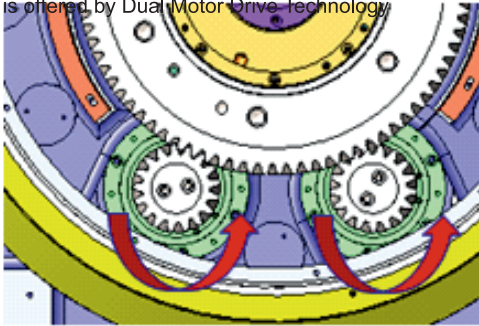
Spindle Characteristics for BVL 800-R / BVL 800-RL / BVL 800-RLCF with High Power Spindle

High Power spindle Motor on Gear Driven Spindle with Two speed Gear Box is offered as optional to get High Torque and full power at minimum RPM.

Advanced Dual Drive Technology



CF-Continuous feed for C axis (interpolation rotary table with linear axis) for Thread Milling, Helical Interpolation, Profile machining etc., is offered by Dual Motor Drive Technology



Turning Mode

In Turning Mode, both the motor rotates in same direction.
The output power & torque will be the summation of both spindle motor

Table Interpolation Mode

In Interpolation Mode, one motor will generate torque & power while other motor will pre-load the table to eliminate the backlash

Benefits of Advanced Dual Drive Technology for CF Axis

- Accurate electronic pre-load system
- More reliable by reduced mechanical parts & simple mechanism
- Better efficiency of output power & torque when compared to worm shaft & worm wheel drive system for CF Axis
- Minimum wear & tear since hardened and grounded pinion and bull gear are the only mechanical parts used for CF axis
- Quick and easy method to vary pre-load for elimination of backlash
- Better accuracy on profile (less wear & tear and their-by less backlash)

Maximum Torque - 2290 Nm

Maximum CF axis feedrate (rapid) - 900 Degree per Minute

Applications



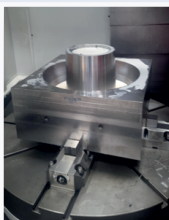
Butterfly Valve



Diffuser



Clutch Plate



Die



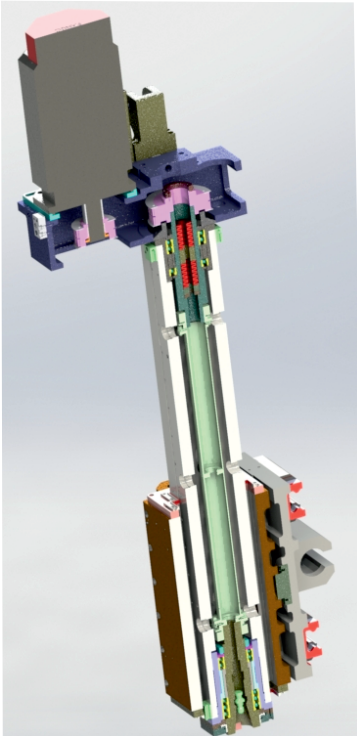
Globe Valve



Case

Many more...

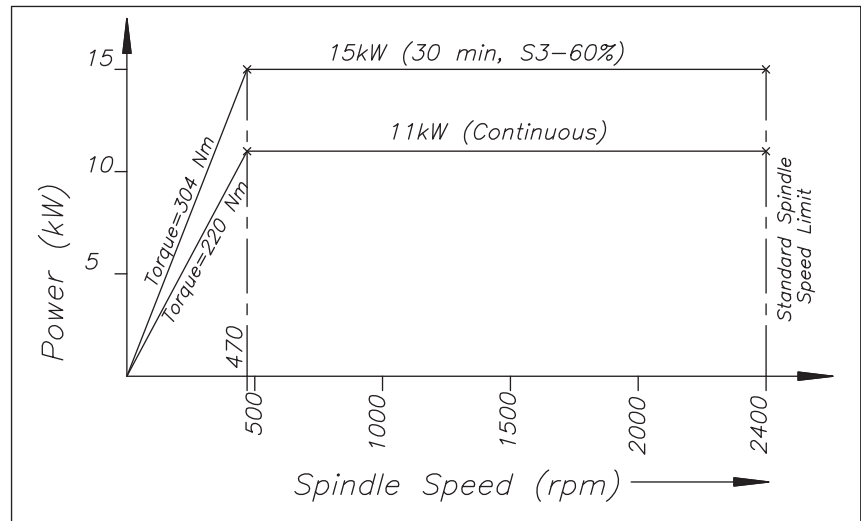
Vertical Turning



BVL 800-RL is offered with BT-50 Live Spindle for Turnmill Application

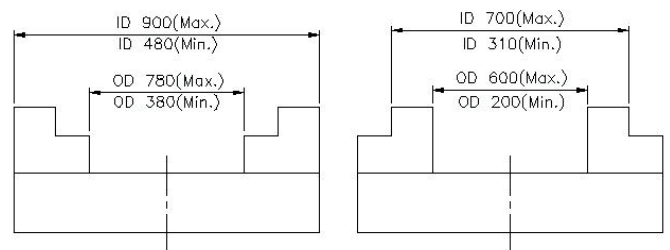
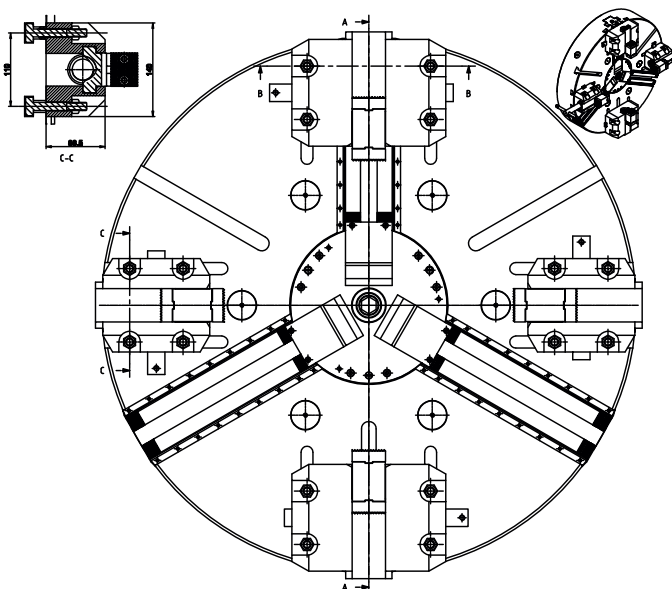
Live Spindle is Driven by 11 kW Power Series Motor

Heavy Duty Spindle Bearing Ensure Ø30 mm Drilling and M24 x 3 P Tapping



Spindle characteristics for BVL 800-RL/ BVL 800-RLCF

Work holding system



Box Jaw Clamping Capacity Chart

BVL 800-R can be offered Optional 800 size 3 Jaw Centering Hydraulic Chuck cum 4 Jaw Manual Independent Chuck.

The Combination Chuck can accommodate Pre-Turned Component on 3 jaw centering chuck and Unsymmetric cast component on 4 jaw Manual Independent Chuck

Vertical Turning

Technical Specification

Specifications	Unit	BVL 800-R	BVL 800-RL	BVL 800-RL CF
Machine capacity				
Max swing diameter	mm	Ø 1050	Ø 1050	Ø 1050
Max turning diameter	mm	Ø 900	Ø 900	Ø 900
Max turning height	mm	600	800	800
Table diameter	mm	Ø 825 (face plate)	Ø 825 (face plate)	Ø 825 (face plate)
Max Job envelope (dia x length)	mm	Ø 900 x 600	Ø 900 x 800	Ø 900 x 800
Max weight on the spindle (work holding + job) symmetric	kg	2000	2000	2000
Table spindle				
Spindle motor power (S1/ 30 min)	kW	22/ 30	22/ 30	30 (15+15)
Spindle motor torque (S1/ 30 min)	Nm	2410/ 3290	2410/ 3290	3720/ 4580
Spindle motor torque (S1/ 30 min) - for CF mode	Nm	NA	NA	1860/ 2290
Spindle speed range in turning mode	rpm	10-450	10-450	10-450
Spindle speed range in CF mode	dpm	NA	NA	0.1-20
Live tool spindle				
Spindle taper	type	NA	BT 50	BT 50
Speed range	rpm	NA	50-2400	50-2400
Power (S1/ 30 min)	kW	NA	11/ 15	11/ 15
Torque (S1/ 30 min)	Nm	NA	220/ 304	220/ 304
X axis				
Guideways	type	LM guide-ways	LM guide-ways	LM guide-ways
Stroke (horizontal travel)	mm	685 (- 60 to + 625)	685 (- 60 to + 625)	685 (- 60 to + 625)
Rapid traverse rate (Max)	m/min	20	20	20
Feed rate	mm/min	1 to 5000	1 to 5000	1 to 5000
Z axis				
Guideways	Type	Box type hardened	Box type hardened	Box type hardened
Stroke (vertical travel of RAM)	mm	625	825	825
Rapid traverse rate (max)	m/min	15	15	15
RAM cross section	mm x mm	200 x 200	220 x 220	220 x 220
Automatic Tool changer (ATC)				
Tool taper	type	BT 50	BT 50	BT 50
Number of tool position - Umbrella type	No	12 (16)	12 (16)	12 (16)
Maximum tool weight	kg	35	35	35
Avg tool weight	kg	30 (25)	30 (25)	30 (25)
Maximum tool weight on ATC disc	kg	360 (400)	360 (400)	360 (400)
Maximum tool holder size on ATC	mm	220 W x 150 T x 350 L	220 W x 150 T x 350 L	220 W x 150 T x 350 L
Turning tool size	mm	32 x 32	32 x 32	32 x 32
Boring tool size	mm	25 x 25	25 x 25	25 x 25
Accuracies as per ISO 230 - 2				
Positioning accuracy	mm	0.015	0.015	0.015
Positioning repeatability	mm	0.01	0.01	0.01
Positioning accuracy of C-axis	arc sec	NA	36	20
Tank capacity				
Hydraulic tank	L	50	50	50
Coolant tank	L	600	600	600
Lubrication tank for slides	L	5	5	5
Lubrication tank for table bearings	L	90	90	90
Miscellaneous				
CNC system	make	Fanuc Oi-TF	Fanuc Oi-TF	Fanuc Oi-TF
Machine dimensions (including chip conveyor & coolant system)	mm	5600 x 4100 x 4700	5900 x 4550 x 5200	6100 x 4550 x 5200
Machine weight (aprx)	KVA	50	75	80
Power requirement	kg	10000	12000	12200
Options/ Accessories				
3 jaw self-centering hydraulically operated wedge type closed center chuck	mm	Ø 800	Ø 800	Ø 800

Standard Features / Basic Machine

- ▶ Rigid cast structure for machine base, column, fixed carriage & RAM housing
- ▶ CNC system-Fanuc Oi TF with 10.4" color monitor
- ▶ Fanuc make AC spindle motor - 22/ 30 kW
- ▶ Geared table spindle, supported by taper roller bearing & Thrust ball bearing with re-circulating oil lubrication system
- ▶ Spindle speed range-10 to 450 rpm
- ▶ Heavy-duty LM guide-ways on X axis & box guide-ways on Z axis (RAM)
- ▶ 200 x 200 square RAM for BVL 800-R & 220 x 220 square RAM for BVL 800-RL/ RLCF. BT50 taper for tool clamping.
- ▶ ATC with 12 tool - umbrella type
- ▶ Dia 825 mm face plate with provision to mount jaw box assembly
- ▶ Hydraulic counter balance for RAM
- ▶ Centralized oil lubrication system for box guide, LM guides & ball-screws
- ▶ Chip tray & coolant system for cutting & base flushing with pumps and oil skimmer
- ▶ AC unit for electrical cabinet
- ▶ Machine lamp, 3-tier lamp & manual pulse generator on machine control pannel
- ▶ One No. each of turning & boring tool holder with BT 50 taper
- ▶ Totally enclosed machine Guard
- ▶ Mounting pads with levelling screws
- ▶ Maintenance tool kit consisting of allen keys, spanners & screw-drivers
- ▶ One set of machine manual-operator & spare parts manual

CNC options for FANUC Oi TF System

- ▶ PCMCIA memory card for saving & restoring data
- ▶ Tool life managements

Essential Accessories

- ▶ Four number independently operatable jaw box assembly mountable on faceplate
- ▶ Voltage stabilizer

Optional Accessories

- ▶ Live-spindle on RAM-11/ 15 kW AC spindle motor with speed range - 50 to 2400 (220 Nm)
- ▶ C-axis for accurate indexing to carry-out drilling & tapping function with high resolution hallow shaft encoder & hydraulic table clamping during cutting
- ▶ Dia 800 x 3 jaw hydraulically operated self-centering check with one set of hard & soft jaws with suitable clamping cylinder & hydraulic elements - Airtech make in-lieu of dia 825 faceplate
- ▶ Four number independently operatable jaw box assembly mountable on dia 800 mm x 3 jaw hydraulically operated self-centering chuck.
- ▶ 30/ 37 kW spindle motor with two speed gear box in-lieu of 22/ 30 kW motor
- ▶ CF axis for continuous interpolation of C-axis (rotation of table) & two linear axis (X & Z axis) by tandom control of two spindle motors
- ▶ Right angle head with BT-50 output, 1:1 ratio, maximum torque 250 Nm
- ▶ Slat type chip conveyor (for Steel chips) with chip trolley in-lieu of chip tray
- ▶ Slat type chip conveyor (for cast iron & Aluminum chips) with chip trolley in-lieu of chip tray
- ▶ Coolant thru spindle (pump cap- 25 lpm & 16 bar pressure) hydro cyclone
- ▶ High/ low dual clamping circuit for hydraulic chuck (spindle stationary operation). This option is used when machine is supplied with hydraulic chuck
- ▶ Linear scale for X-axis - integrated with schneeberger LM guide
- ▶ Linear scale for X & Z axis - integrated with schneeberger LM guide
- ▶ Additional turning tool holder with BT 50 taper for TURNING - 1 No.
- ▶ Additional boring tool holder with BT 50 taper for BORING - 1 No.
- ▶ Air gun
- ▶ Coolant gun
- ▶ Extra set of soft jaws
- ▶ Siemens 828D CNC system in-lieu of Fanuc Oi TF CNC system.

CNC Functions & Features

CNC Functions		
SL. No	System features	Fanuc Oi TF
1	Display & keyboard	10.4" color LCD
2	Max number axis including spindle	4(7)
3	Max number of spindle axis	2(3)
4	Number of simultaneously controllable axis	4
5	Minimum input increment	0.001 mm/ degree
6	Spindle speed function	5-digit S code
7	Spindle speed override	50 % ~ 120 %, in steps of 10 %
8	Feed override	0-120 %
9	Feed rate command	4-digit F code
10	Inch-mm conversion	Yes
11	Part program storage length	512 Kb (1 MB)
12	Number of part programs	400
13	Sub-program call levels	10
14	Number of tool offsets	64 (99 & 200)
15	Search for program No./ Sequence No.	Yes
16	Single block	Yes
17	Optional stop	Yes
18	Dry run	Yes
19	DNC Operations	RS232C/ PCMCIA/ (data server)
20	Run hour & Part count	Yes
21	Graphic display	Yes
22	Embedded Ethernet	Yes
23	Front USB interface	Yes
24	Fast Ethernet/ data server	O
25	Remote Diagnosis	O (Available with fast Ethernet)
26	High speed skip or probe	O
27	Dynamic graphic display	O
28	Animated cycle support	O
29	Simulation-3D & real time	O, dynamic graphics
30	Easy message or SMS Alert	NA
31	Program Editor	ISO/ manual guide Oi/ (Manual guide i)
32	2D Simulation, Tool monitoring	Yes
34	Management of files with external memory	O(memory card editing)
35	Energy monitoring function	Yes
36	Operation history function	Yes
37	Trouble-shooting guidance function	Yes

CNC Features	
SL. No	Standard
1	Linear interpolation
2	Circular interpolation
3	Cylindrical interpolation
4	Absolute/ incremental Programing
5	Canned cycles
6	Work-piece co-ordinate system
7	Background editing
8	Backlash compensation
9	Pitch-error compensation
10	Polar co-ordinate
11	Scaling, mirroring
12	Rigid tapping
13	History of operator alarms & messages
14	Look-ahead function
15	Custom macro B/ parametric programing
16	Simple tool-life management
17	Multi language display
18	Program re-strate/ block search
SL. No	Optional
1	Ethernet & data server facility
2	Manual guide Oi
3	Helical interpolation
4	Remote diagnostics

Associates in India

Ahmedabad : Spinak Engineering , 9824033277
 Bengaluru: JR Rao & Co, 9844102252
 Bengaluru: Upnal CNC, 9341310391
 Chennai: PN Engineering - 9840096822
 Coimbatore: Astra Engineers, 9626269998
 Ernakulam: Prompt Machine Tools, 9846056446
 Hubballi: Nano Machine Tools, 9379276004
 Indore: Alif Industrial Sales, 9329842594
 Jalandhar: GRD Innovation Solutions, 9780153601
 Jamshedpur: IMTS, 9334804275
 Kanpur: Response Engineers, 9838070906
 Kolhapur: Ganesh Technologies, 9822095229
 Krishna: Mr K Sarath Kumar, 9908674736
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 Vapi: Deep Engineering, 9825610842
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 Coimbatore : 7, Karayampalayam Road, Mylapatti (PO) Coimbatore - 641 062. Ph (0422) 262669, E-mail: bfwcoimbatore@bfw.co.in
 Gurgaon : Spaze tech park; office no 769, 7th floor, tower B2, Sector 49, Sohna road, Gurgaon 0- 122018
 Hyderabad : Flat No 204, 1-11-229, Ramaveda Srisampada Apt. Near Shyamalal Bldgs, Begumpet, Hyderabad - 500016, Ph: (040) 27762035, E-mail: bfwhyderabad@bfw.co.in
 Kolkata : D - 4/ 4, Gillander House, 8, Netaji Subhash Road, Kolkata 700001. Ph (033) 40102140 - 42, 22623387, Fax (033) 4005691, E-mail: bfwkolkata@bfw.co.in
 Mumbai : 206, Runwal Commercial Complex, LBS Marg, Mulund West, Mumbai 400080. Ph: (022) 25653362/ 58. Fax: (033) 40056911. E-mail: bfwmumbai@bfw.co.in
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 Pune : BFW House, 124 A, H block, MIDC, Pimpri, Pune 411018. Ph: (020) 32524638. E-mail: bfwpune@bfw.co.in
 Punjab: : Suite No 205, 2nd floor, E-195, Industrial Area, Phase - VIII B, S A S Nagar, Mohali (Punjab) - 160071
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Representatives at Jamshedpur(Jharkhand) - 938030800, Kolhapur (Maharastra)- 9370958107, Hosur (Tamilnadu) 9342336169

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