



Model	Unit	VB-1515	VB-2015	VB-2515	VB-3015	VB-4015	VB-2020	VB-2520	VB-3020	VB-4020
ACCURACY										
Positioning accuracy	mm	±0.005/300 /±0.015 Full travel								
		P0.025	P0.025	P0.25	P0.03	P0.03	P0.25	P0.03	P0.03	P0.03
Repeatability accuracy	mm	±0.003	±0.003	±0.003	±0.003	±0.003	±0.003	±0.003	±0.003	±0.003
		Ps0.02	Ps0.02	Ps0.02	Ps0.025	Ps0.025	Ps0.02	Ps0.02	Ps0.025	Ps0.025
ATC										
Tool storage capacity	pcs	32	32	32	32	32	32	32	32	32
Max. tool weight	kg	18	18	18	18	18	18	18	18	18
Tool size (Diameter x Length) (Full tools)	mm	φ 125×380L	φ 125×380L	φ 125×380L	φ 125×380L	φ 125×380L	φ 125×380L	φ 125×380L	φ 125×380L	φ 125×380L
Max. tool size (Diameter x Length) (next pocket empty)	mm	φ 180×380L	φ 180×380L	φ 180×380L	φ 180×380L	φ 180×380L	φ 180×380L	φ 180×380L	φ 180×380L	φ 180×380L
Tool shank		BT50/CAT50	BT50/CAT50	BT50/CAT50	BT50/CAT50	BT50/CAT50	BT50/CAT50	BT50/CAT50	BT50/CAT50	BT50/CAT50
Pull stud bolt		P50T-1	P50T-1	P50T-1	P50T-1	P50T-1	P50T-1	P50T-1	P50T-1	P50T-1
Others										
Electric Power Consumption	KVA	55	55	55	55	55	55	55	55	55
Machine net weight	kg	18500	21500	24500	27500	30500	23500	26500	29500	32500
Machine gross weight	kg	22000	25000	28000	31000	34000	27000	30000	33000	35000
Max floor space (standard column)	mm	6600x5355x40 43	7580x5355x40 43	8580x5355x40 43	9780x5355x40 43	11780x5355x4 043	7580x5755x40 43	8580x5755x40 43	9780x5755x40 43	11780x5755x40 43
Max floor space (+200mm column)	mm	6600x5355x42 43	7580x5355x42 43	8580x5355x42 43	9780x5355x42 43	11780x5355x4 243	7580x5755x42 43	8580x5755x42 43	9780x5755x42 43	11780x5755x42 43



2. Accessories List

STANDARD ACCESSORIES	OPTIONAL ACCESSORIES
Auto power off	Cooling through the tool holder system
Auto lubrication equipment	Coolant through spindle system
Full splash guard	Oil skimmer system
Work lamp	Mist coolant system
Air blast through spindle	Adding 4 TH interface
Leveling bolts & blocks	NC rotary table
Tool box	Closed-loop linear scale positioning system
Operation manual & electric drawing equipment	XYZ axes ballscrew oil cooling system
RS-232 interface	Manual 90 angel head
Cutting coolant unit	Manual universal head
Heat exchanger in control box	Automatic tool length measure unit
Remote manual pulse generator	Automatic coordinate measure system
Transformer	
Screw type and link type chip conveyor	
Spindle cooling unit	



3. Spindle torque/power output diagram

A. Gear type: 2-stage speed

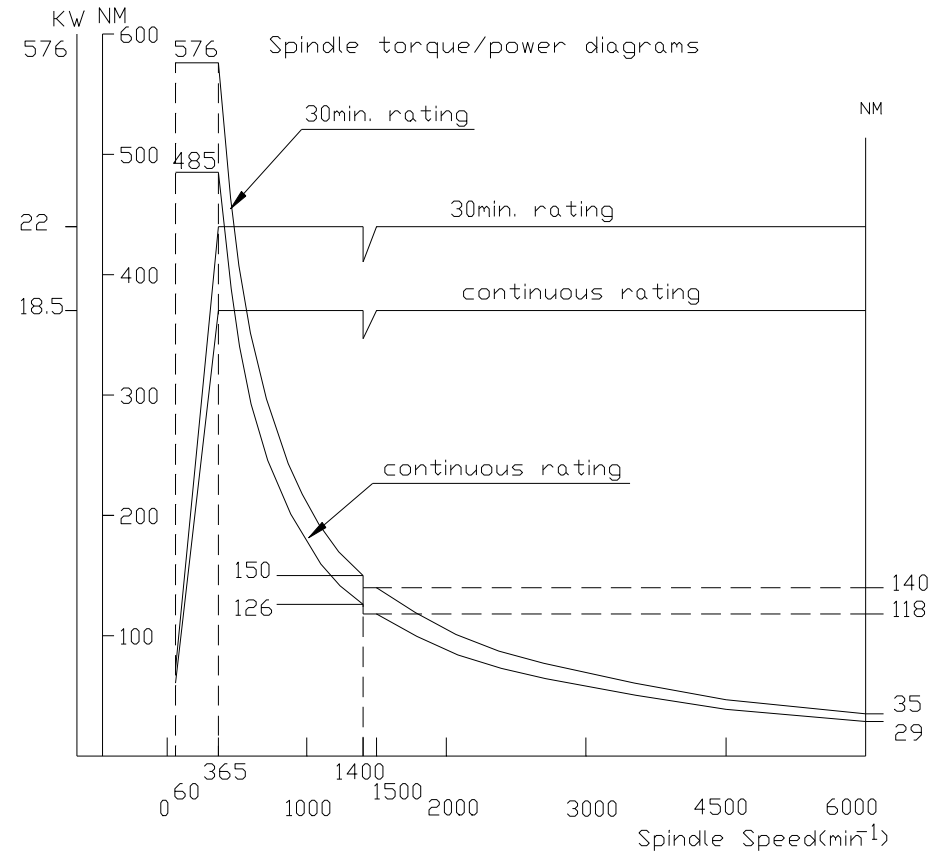
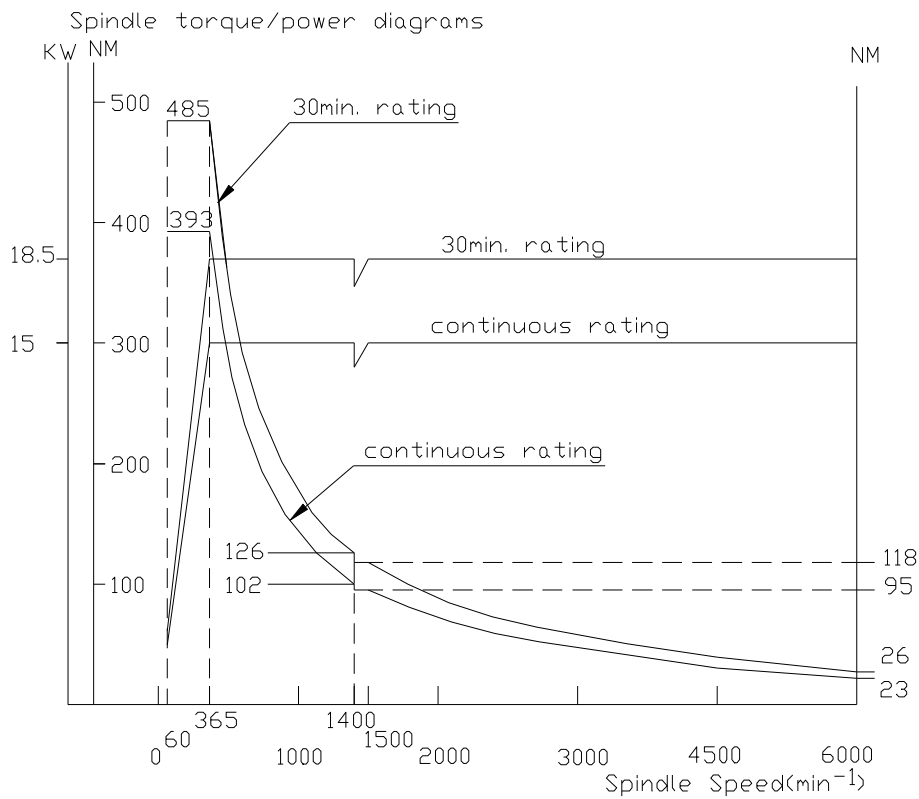
Spindle speed:4500rpm

Standard spindle power:15/18.5KW(con./30 min)

Fanuc a15 / MELDAS SJ-V18.5-01

Optional spindle power:18.5/22KW(con./30 min)

MELDAS SJ-V22-01





B. Pulley type:

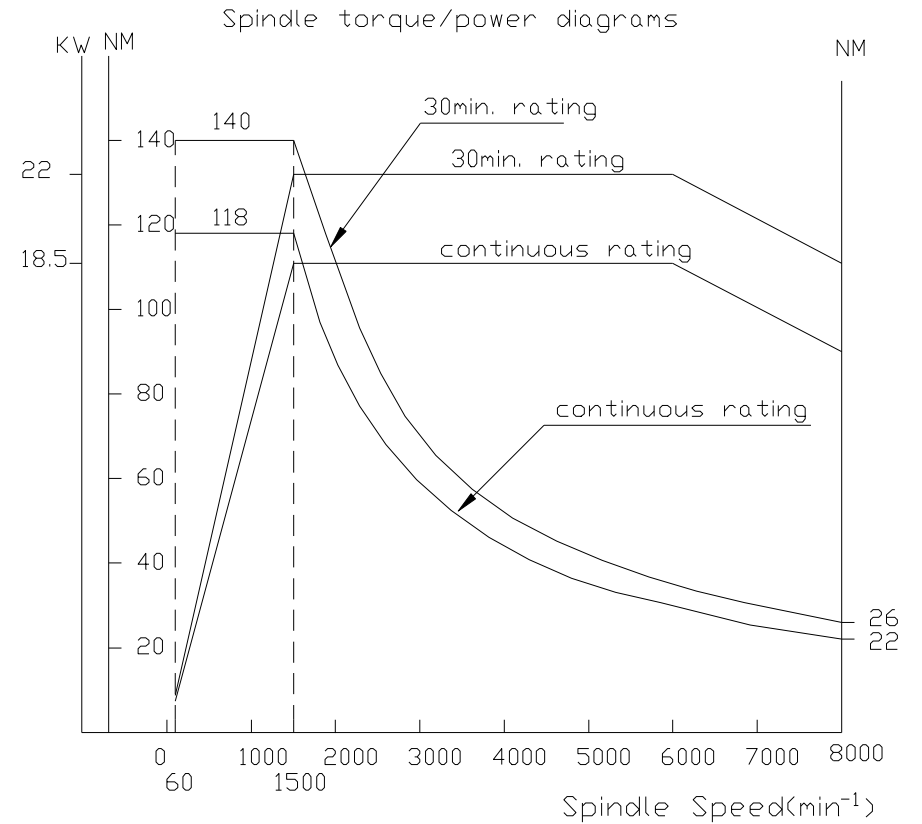
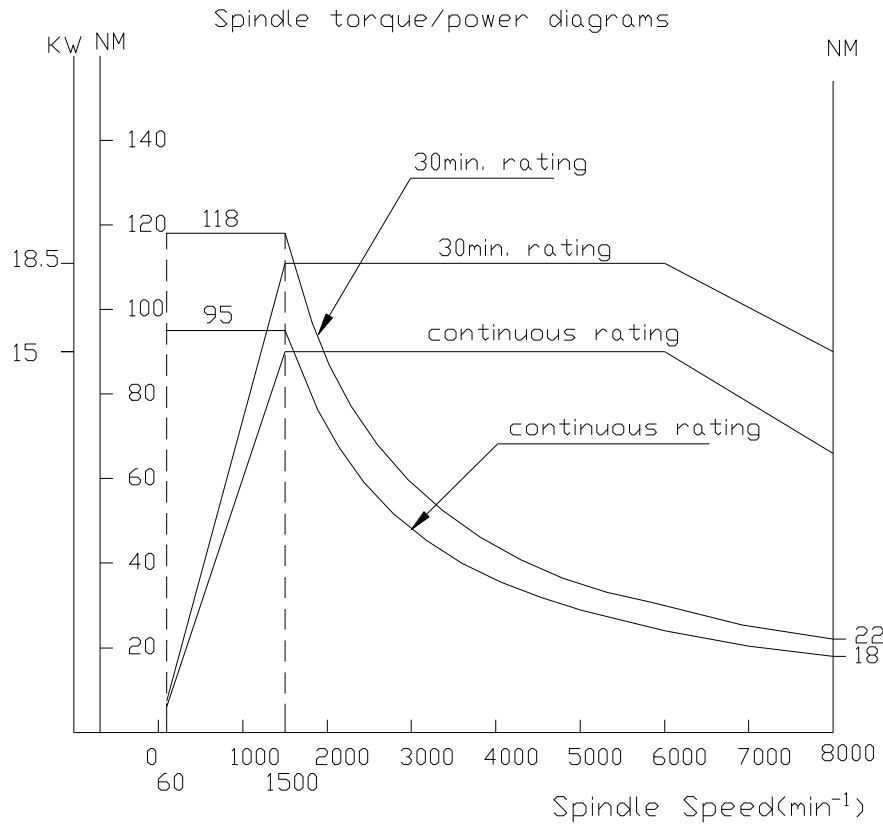
Spindle Speed:8000rpm

Standard spindle power:15/18.5KW(CON./30 MIN)

FANUC a15

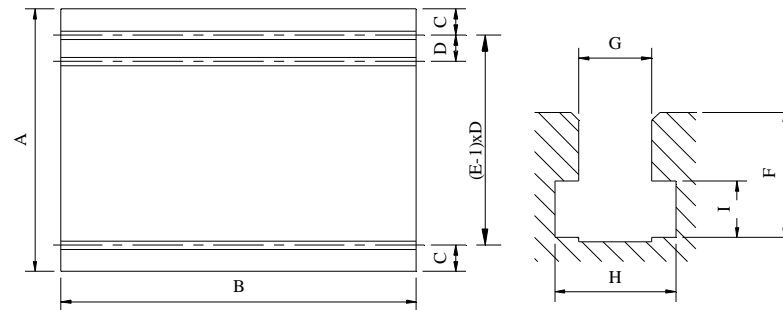
Optional spindle power:18.5/22KW(CON./30 MIN)

FANUC a18





4. Table size & T slot dimension:



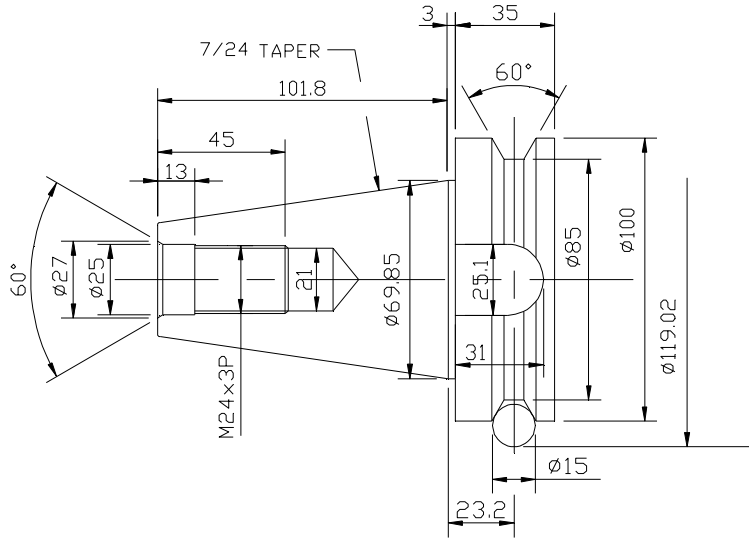
MODEL		A	B	C	D	E	F	G	H	I
VB-2015	mm	1300	2000	110	180	7	38	22H8	38	16
	inch	51.18	78.74	4.33	7.086	7	1.5	0.87H8	1.5	0.63
VB-2015	mm	1300	2000	110	180	7	38	22H8	38	16
	inch	51.18	78.74	4.33	7.086	7	1.5	0.87H8	1.5	0.63
VB-2515	mm	1300	2500	110	180	7	38	22H8	38	16
	inch	51.18	98.43	4.33	7.086	7	1.5	0.87H8	1.5	0.63
VB-3015	mm	1300	3100	110	180	7	38	22H8	38	16
	inch	51.18	122.05	4.33	7.086	7	1.5	0.87H8	1.5	0.63
VB-4015	mm	1300	4100	110	180	7	38	22H8	38	16
	inch	51.18	161.41	4.33	7.086	7	1.5	0.87H8	1.5	0.63
VB-2020	mm	1700	2000	130	180	9	38	22H8	38	16
	inch	66.93	78.74	5.12	7.086	9	1.5	0.87H8	1.5	0.63
VB-2520	mm	1700	2500	130	180	9	38	22H8	38	16
	inch	66.93	98.43	5.12	7.086	9	1.5	0.87H8	1.5	0.63
VB-3020	mm	1700	3100	130	180	9	38	22H8	38	16
	inch	66.93	122.05	5.12	7.086	9	1.5	0.87H8	1.5	0.63
VB-4020	mm	1700	4100	130	180	9	38	22H8	38	16
	inch	66.93	161.41	5.12	7.086	9	1.5	0.87H8	1.5	0.63



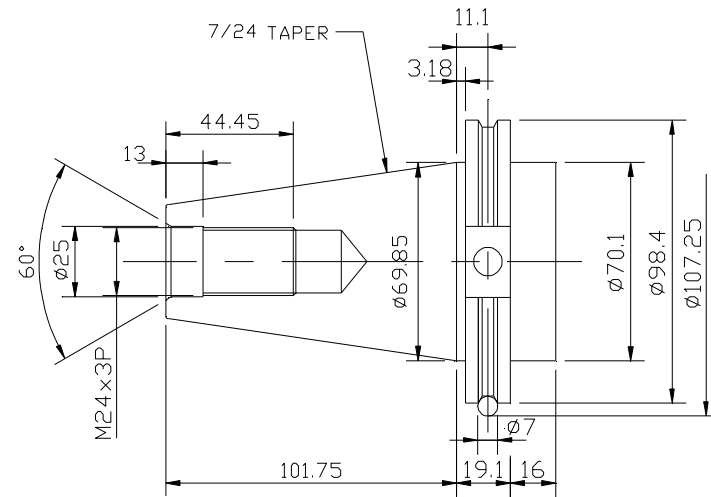
5. Tool shank and pull stud dimension:

Unit: mm

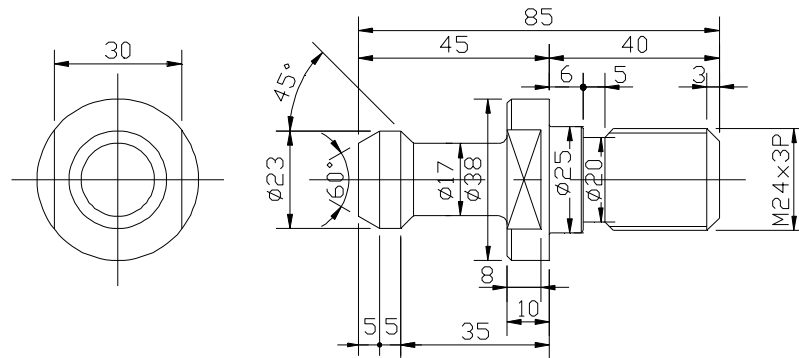
Tool shank(BT-50)



Tool shank(CAT-50)



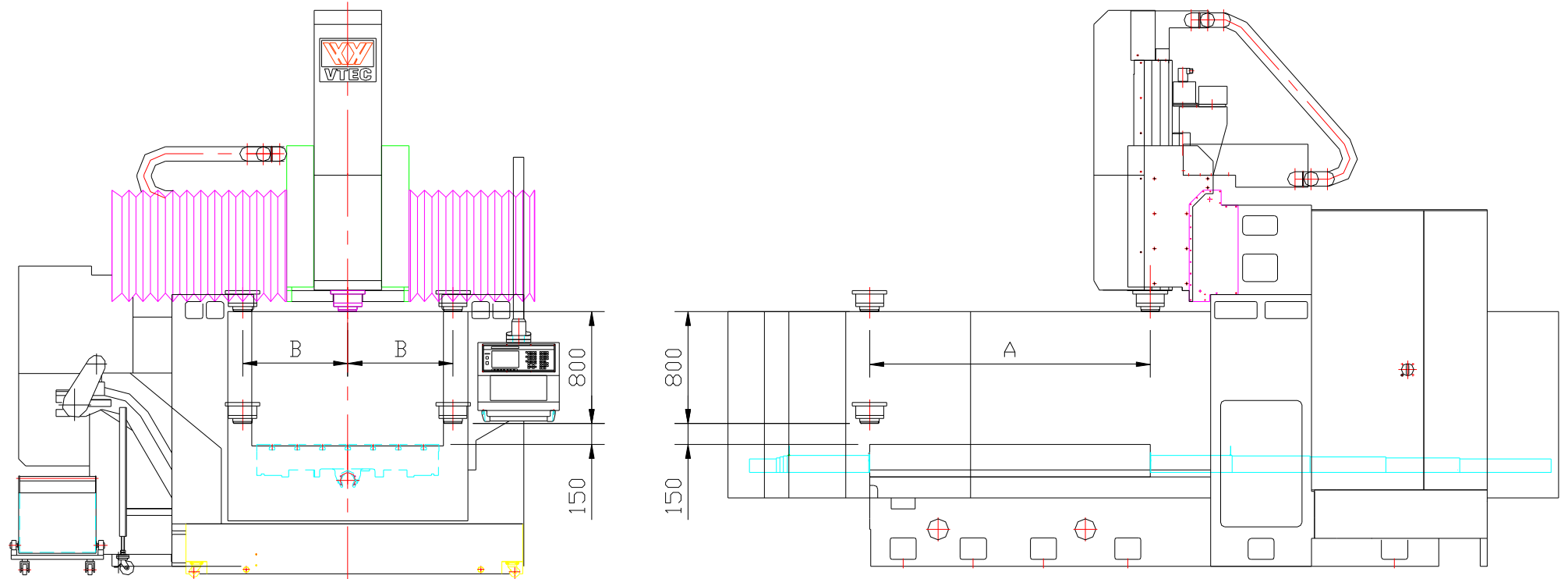
Pull Stud Bolt (P50t-1) for both BT-50 and CAT-50





6. Work range:

Unit: m



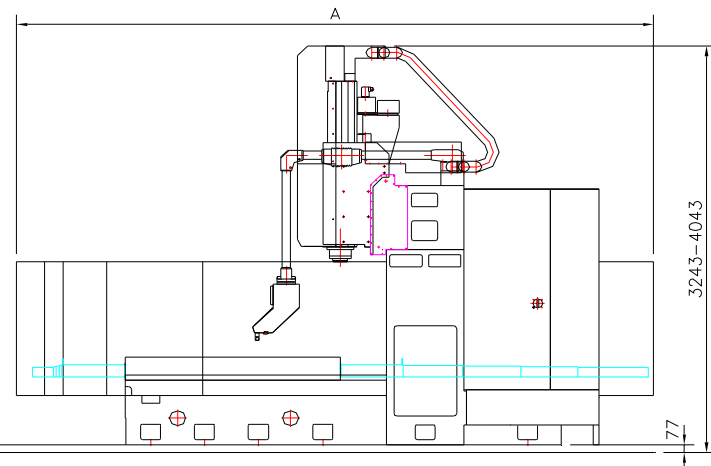
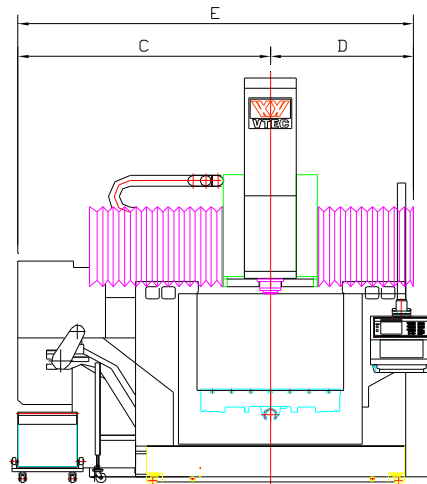
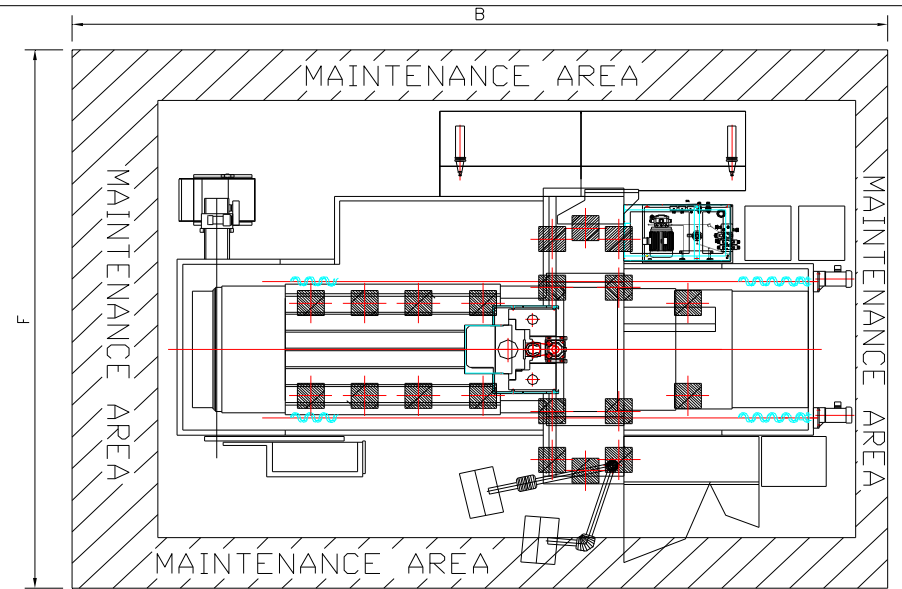
X TRAVLE	VB-1515	VB-2015	VB-2515	VB-3015	VB-4015	VB-2020	VB-2520	VB-3020	VB-4020
A	1500	2000	2500	3100	4100	2000	2500	3100	4100
B	750	750	750	750	950	950	950	950	950



7. General machine outline drawing

Unit: mm

MODEL	A	B	C	D	E	F
VB-1515	4920	6580	2346	1331	3677	5355
VB-2015	5920	7580				
VB-2515	6920	8580				
VB-3015	8120	9780				
VB-4015	10120	11780	2564	1531	4077	5855
VB-2020	5920	7580				
VB-2520	6920	8580				
VB-3020	8120	9780				
VB-4020	10120	11780				

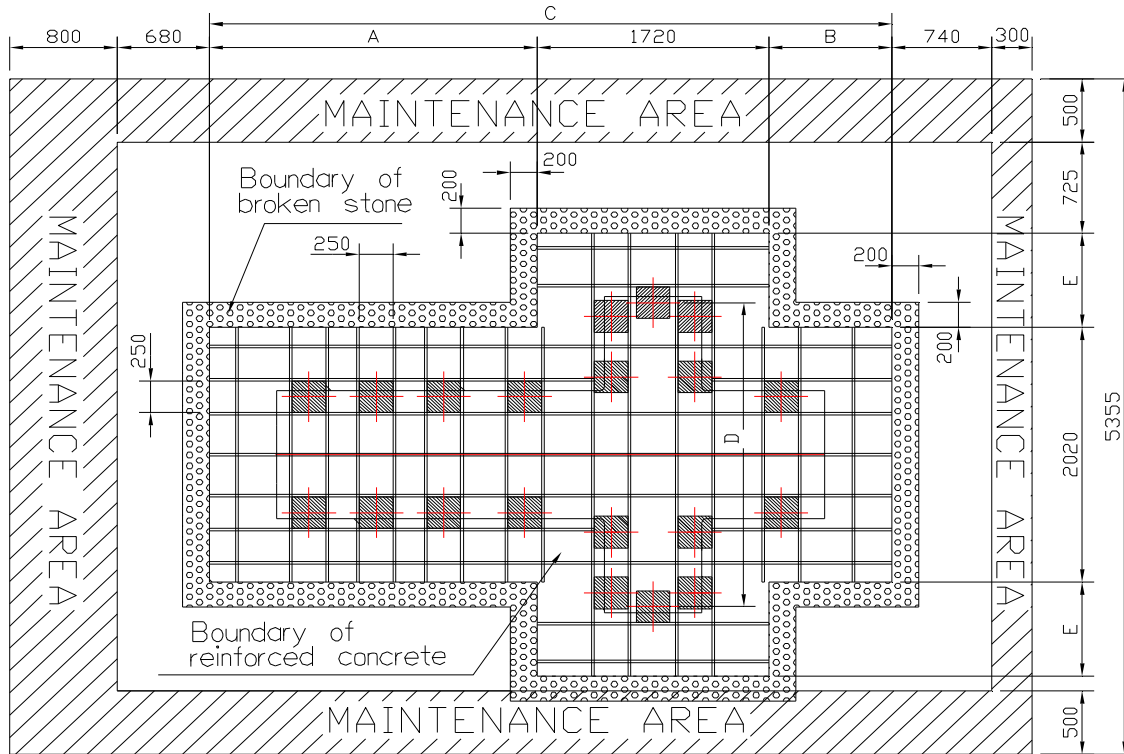




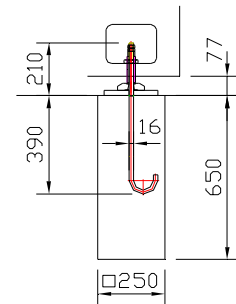
8.Foundation

A. Foundation diagram

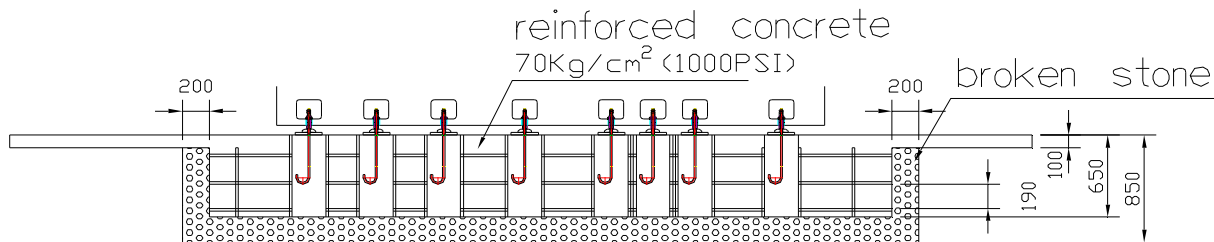
Unit: mm



MODEL	A	B	C	D	E
VB-1515	1930	430	4080	2410	745
VB-2015	2430	910	5060	2410	745
VB-2515	2930	1410	6060	2410	745
VB-3015	3530	2010	7260	2410	745
VB-4015	4530	3010	8260	2410	745
VB-2020	2430	910	5060	2810	945
VB-2520	2930	1410	6060	2810	945
VB-3020	3530	2010	7260	2810	945
VB-4020	4530	3010	8260	2810	945



Anchor bolt diagram

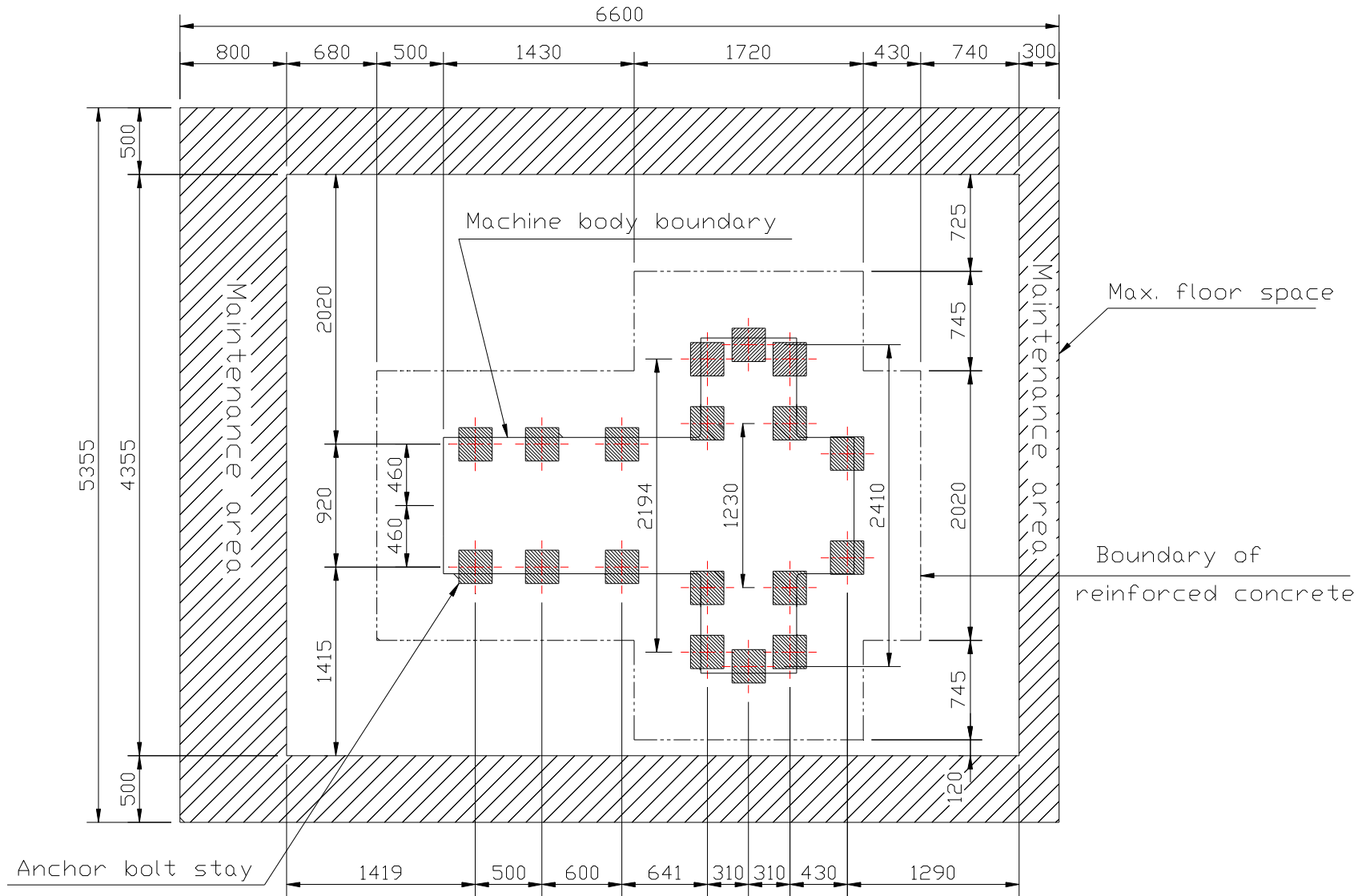




B. Anchor bolt position & floor space diagram

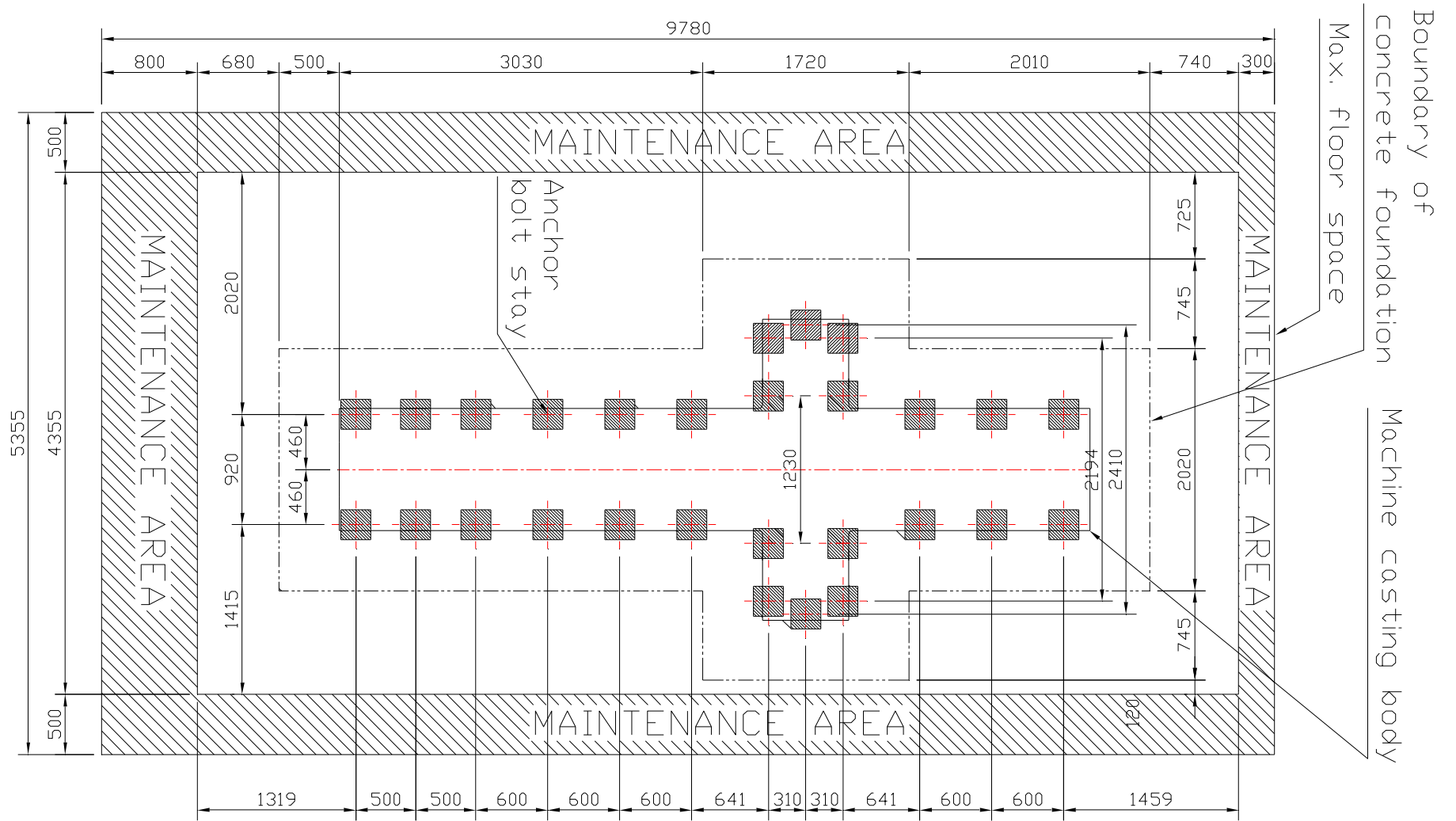
1) VB-1515

Unit: mm



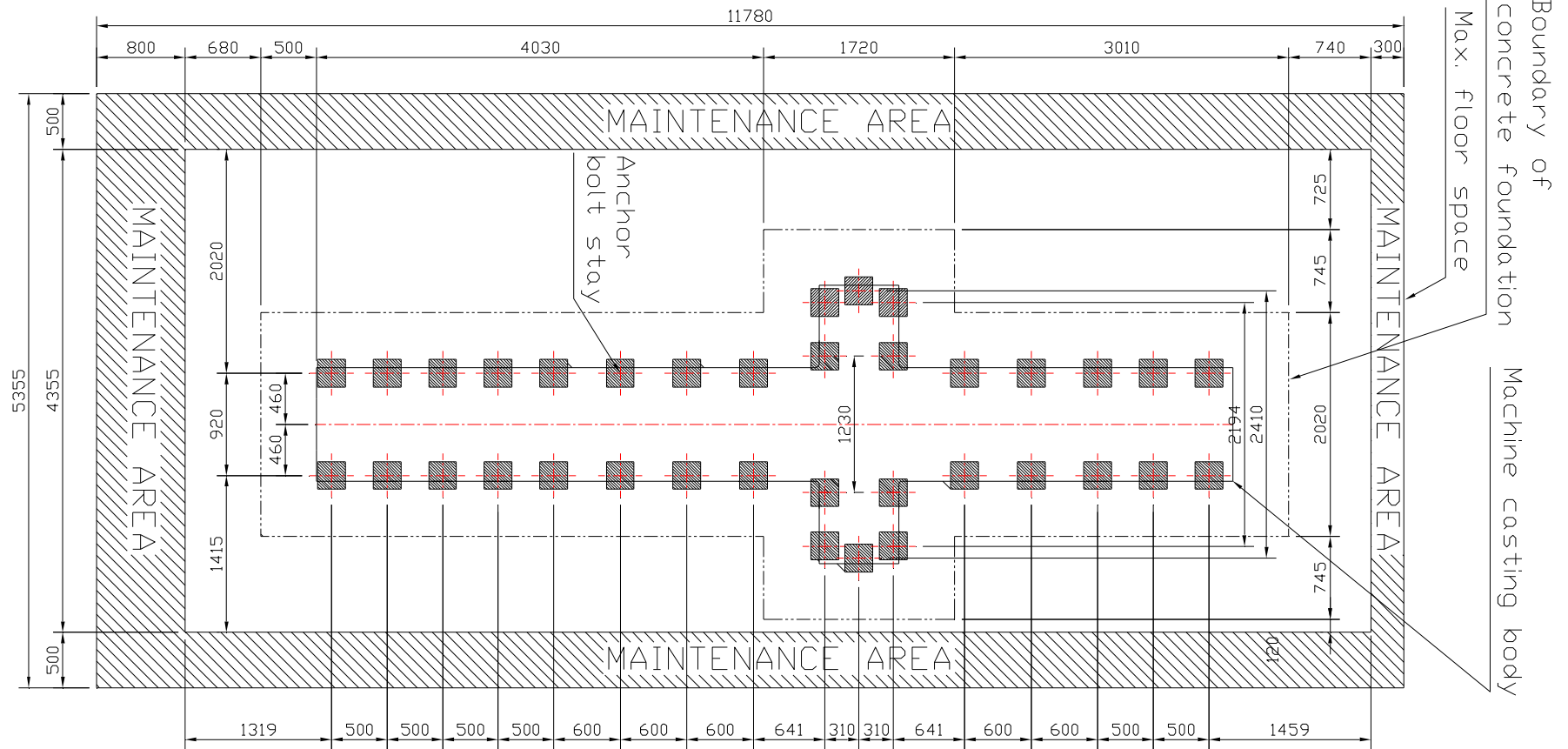


4) VB-3015



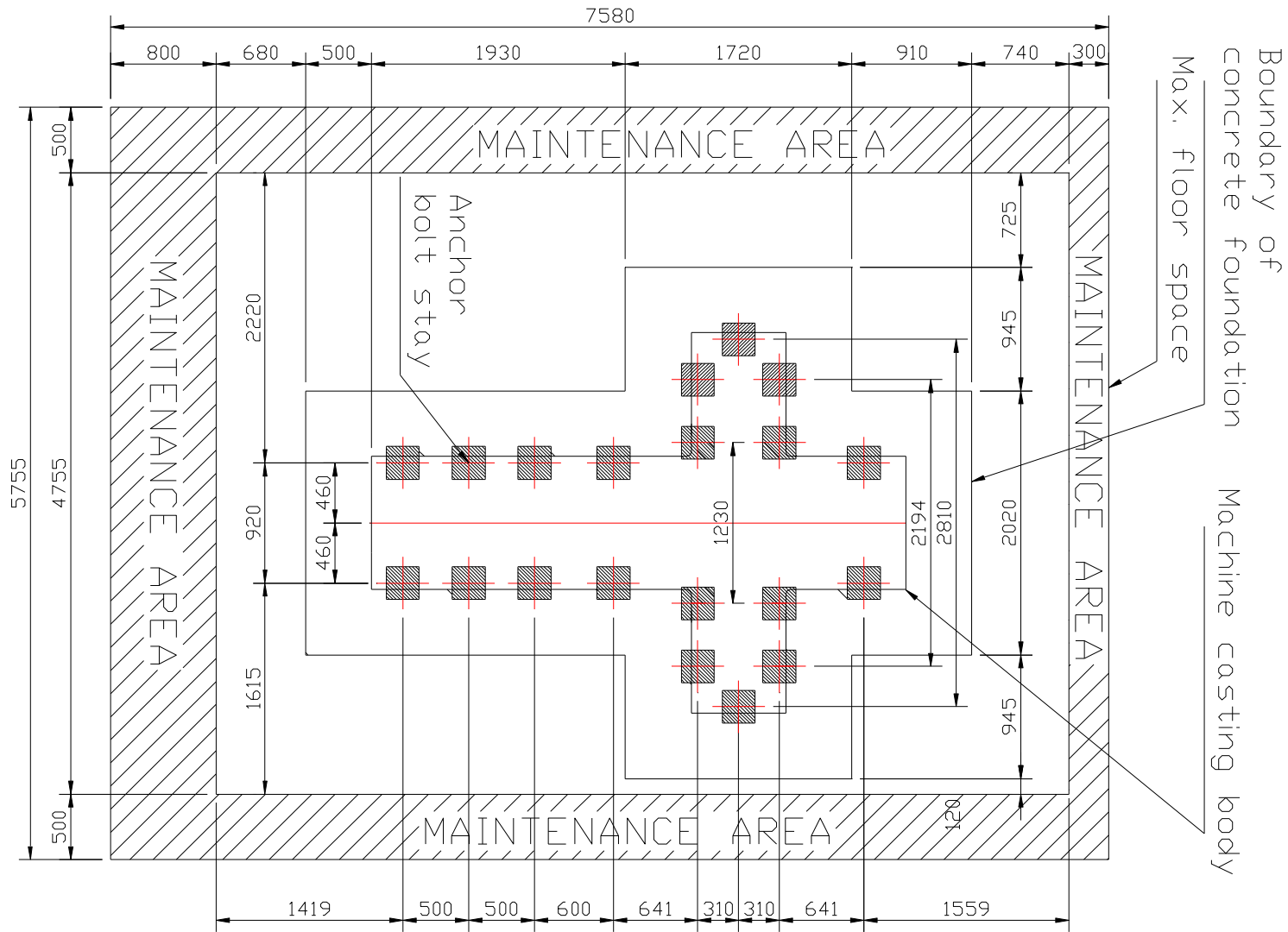


5) VB-4015



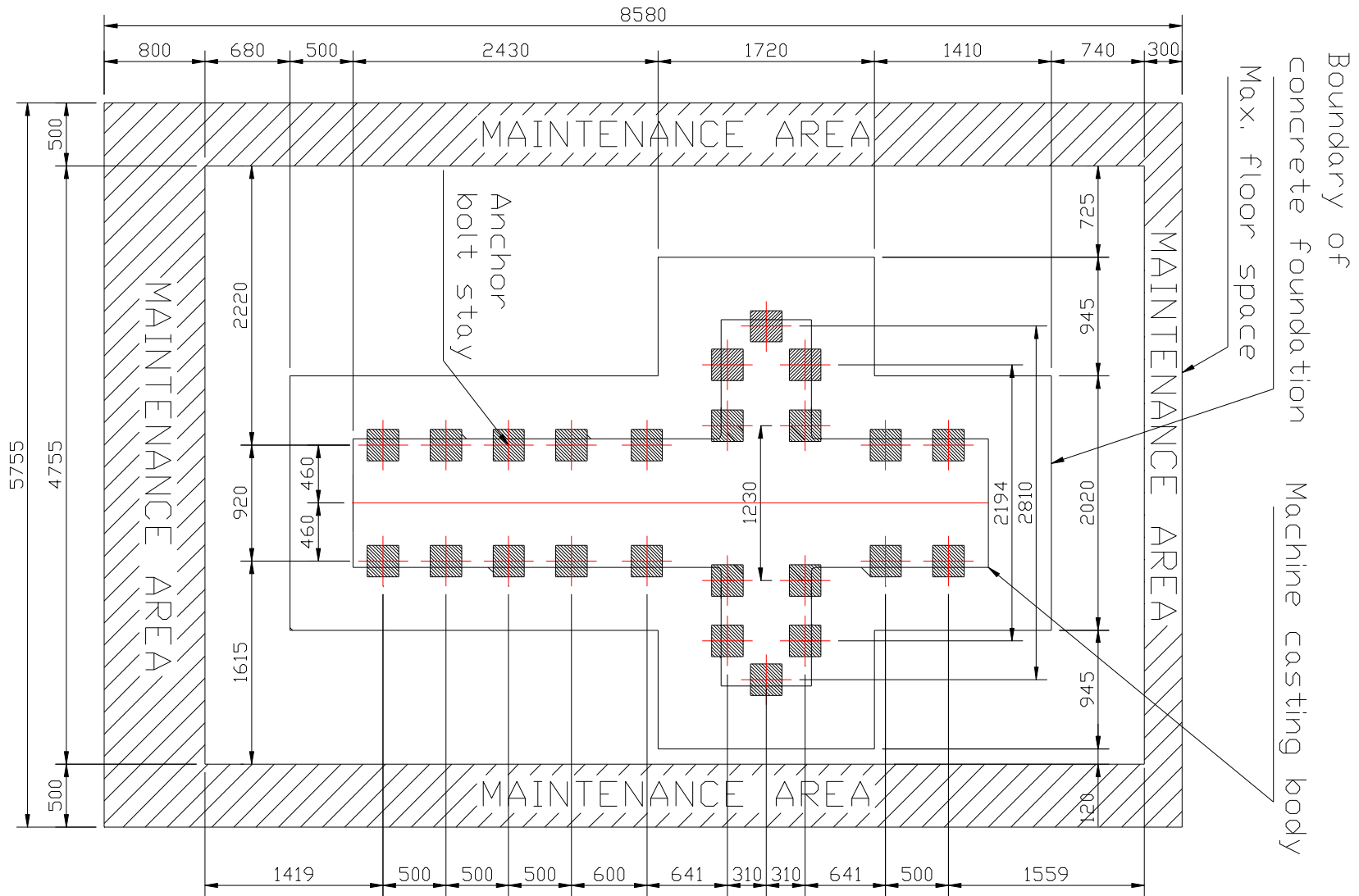


6) VB-2020



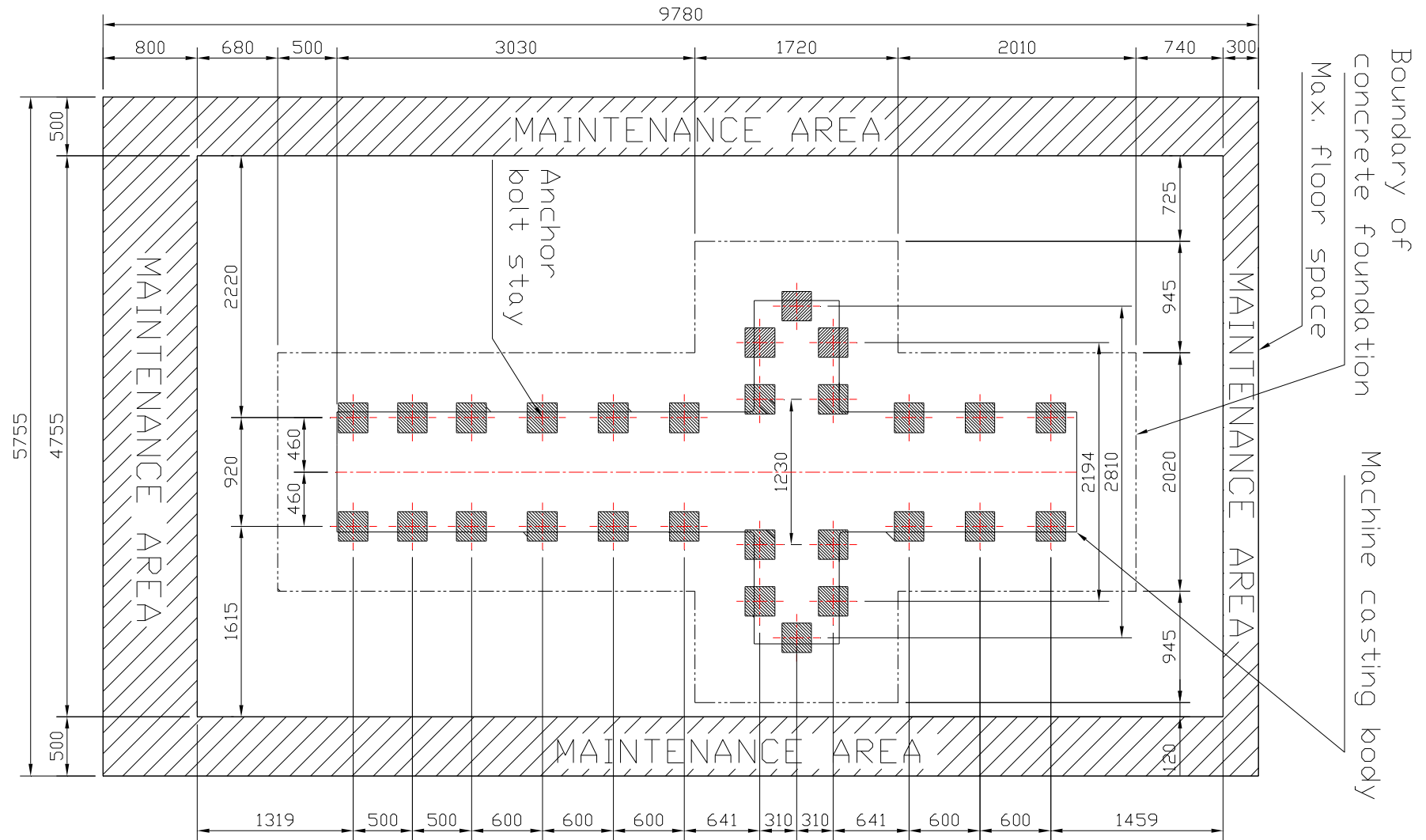


7) VB-2520



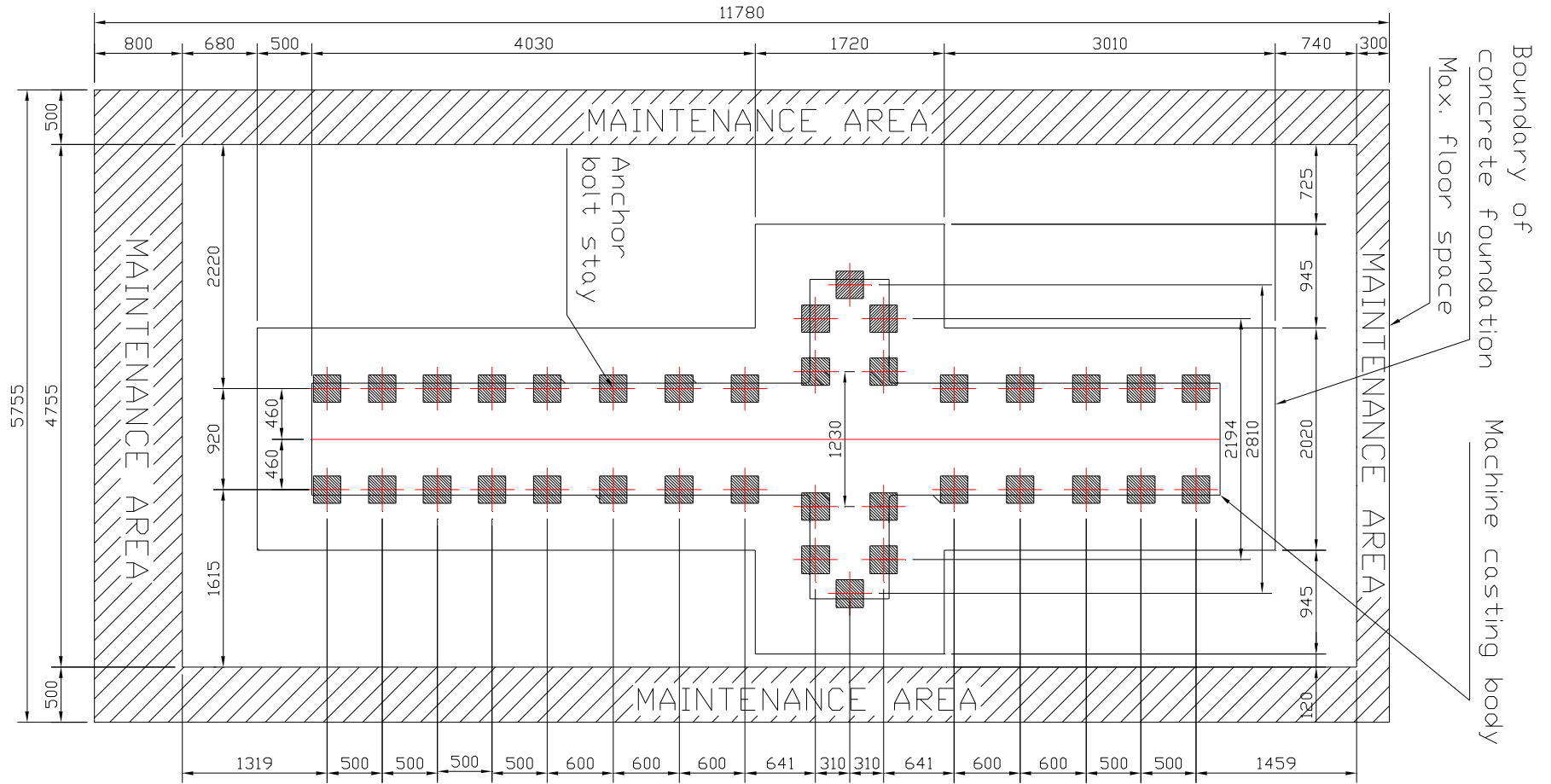


8) VB-3020





9) VB-4020



**9. Main parts specification:****A. Spindle bearing specification:**

Model	Spindle nose	Spindle nose side	Spindle bearing diameter	Manufacture	Lubrication method	Cooling method	Driven method
Gear-4500RPM	#50	B7020CTYSUL P4*4SET	100mm x 150mm	NSK	Grease	Oil	Gear
Gear-6000RPM	#50	HS7020 C.T.P4S*4SET	100mm x 150mm	FAG	Grease	Oil	Gear
Pulley-8000RPM	#50	HS7018CTP4S*4SET	90mm x 140mm	FAG	Graese	Oil	Pulley

Model	Spindle nose	Rear side	Spindle bearing diameter	Manufacture	Lubrication method	Cooling method
Gear-4500RPM	#50	6015*2 SET	75mm x 110mm	NSK	Oil	Oil
Gear-6000RPM	#50	6015*2SET	75mm x 115mm	NSK	Oil	Oil
Pulley-8000RPM	#50	-	-	-	-	-

B. Feed axis bearing specification:

Description		Motor side	Manufacture	Free side	Manufacture	Lubrication method	Cooling method
VB1515/20 VB2015/20 VB2515/20 VB3015/20	X axis	40BS072PN7B*4 SET	NSK	40BS072PN7B*4 SET	NSK	Grease	Oil
VB4015/20	X axis	50TAC100BSUC10PN7B*4 SET	NSK	50TAC100BSUC10PN7B*4 SET	NSK	Grease	Oil
Y axis		40BS072PN7B*4 SET	NSK	40BS072PN7B*4 SET	NSK	Grease	Oil
Z axis		40BS072PN7B*4 SET	NSK	40BS072PN7B*3 SET	NSK	Grease	Oil

**C. Feed axis ballscrew specification:**

Model	axis	Diameter x pitch	Nut specification	Precision class	Lubrication method	Cooling method	Manufacture
VB1515/20 VB2015/20 VB2515/20	X	50mm x 10mm	FDW	C3	Grease	Oil	CBC
VB3015/20	X	63mm x 12mm	FDV	C3	Grease	Oil	CBC
VB4015/20	X	70mmx12mm	FDW	C3	Grease	Oil	CBC
VB SERIES	Y	50mm x 10mm	FDW	C3	Grease	Oil	CBC
VB SERIES	Z	50mm x 10mm	FDW	C3	Grease	Oil	CBC

D. Feed axis axial-force for FANUC controller

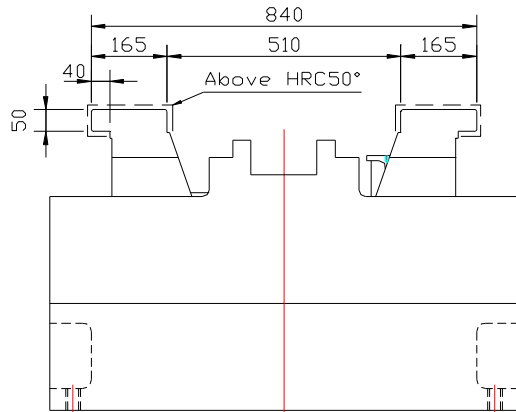
Description	Rated force at stall	Max. force at de/acceleration
X axis	3,760KGF	10,424KGF
Y axis	2,763KGF	8,164KGF
Z axis	2,763KGF	8,164KGF



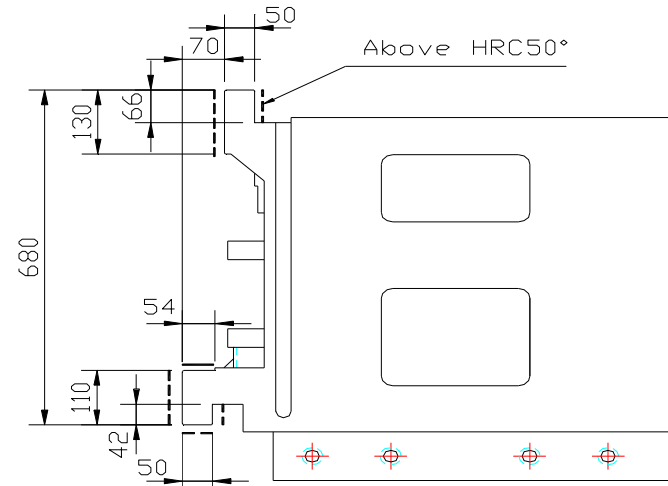
E. Box way dimension:

Unit: mm

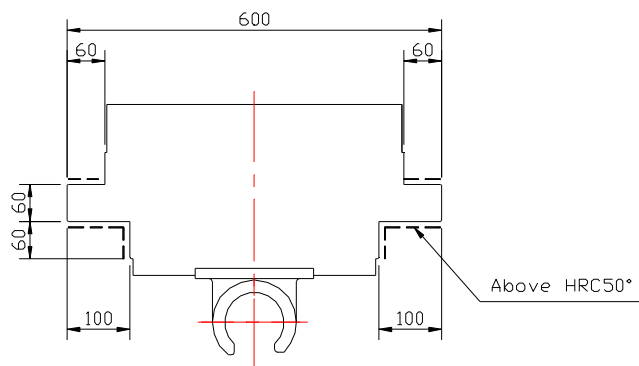
1) X axis



2) Y axis

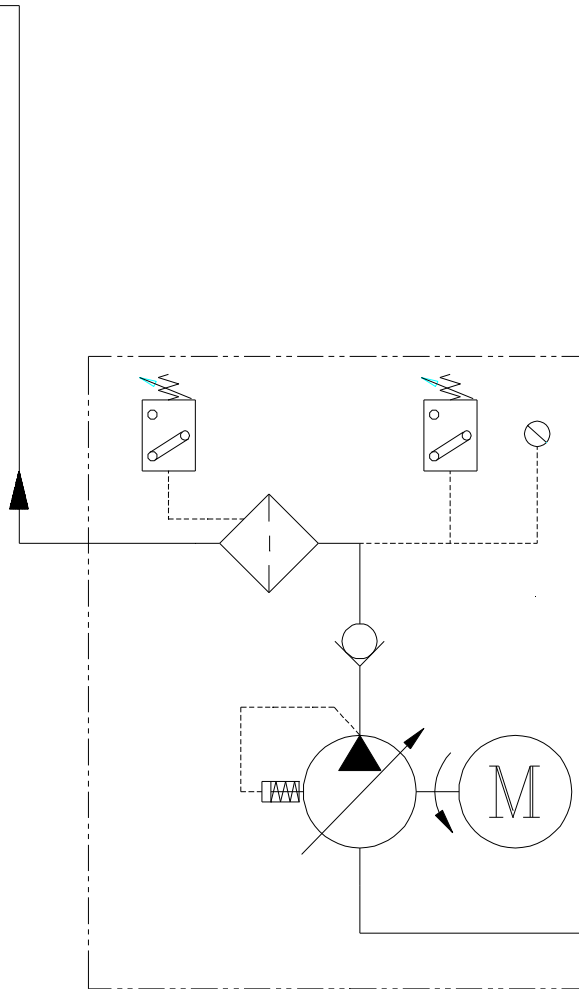
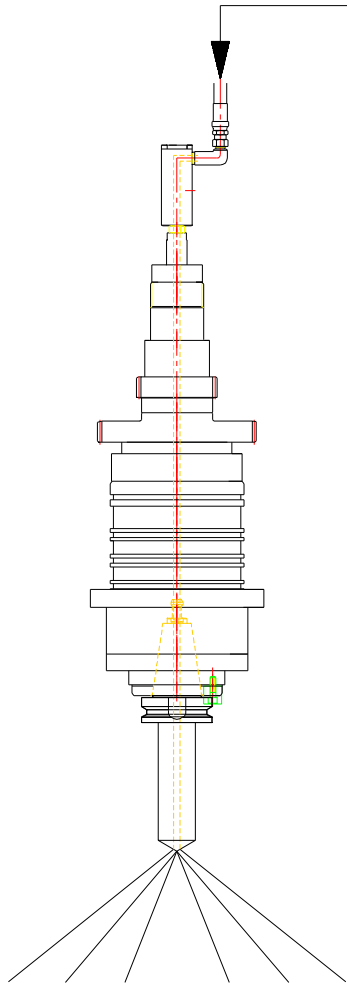


3) Z axis





10. Optional accessories specification: A. Coolant through spindle system

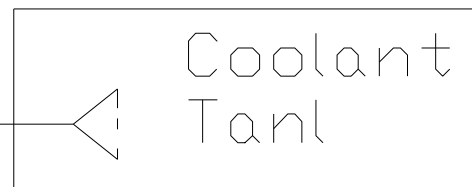


Pump specification:

Max. pressure	20bar
Max. flow capacity	30L/min at 12 bar
Consumption	3HP

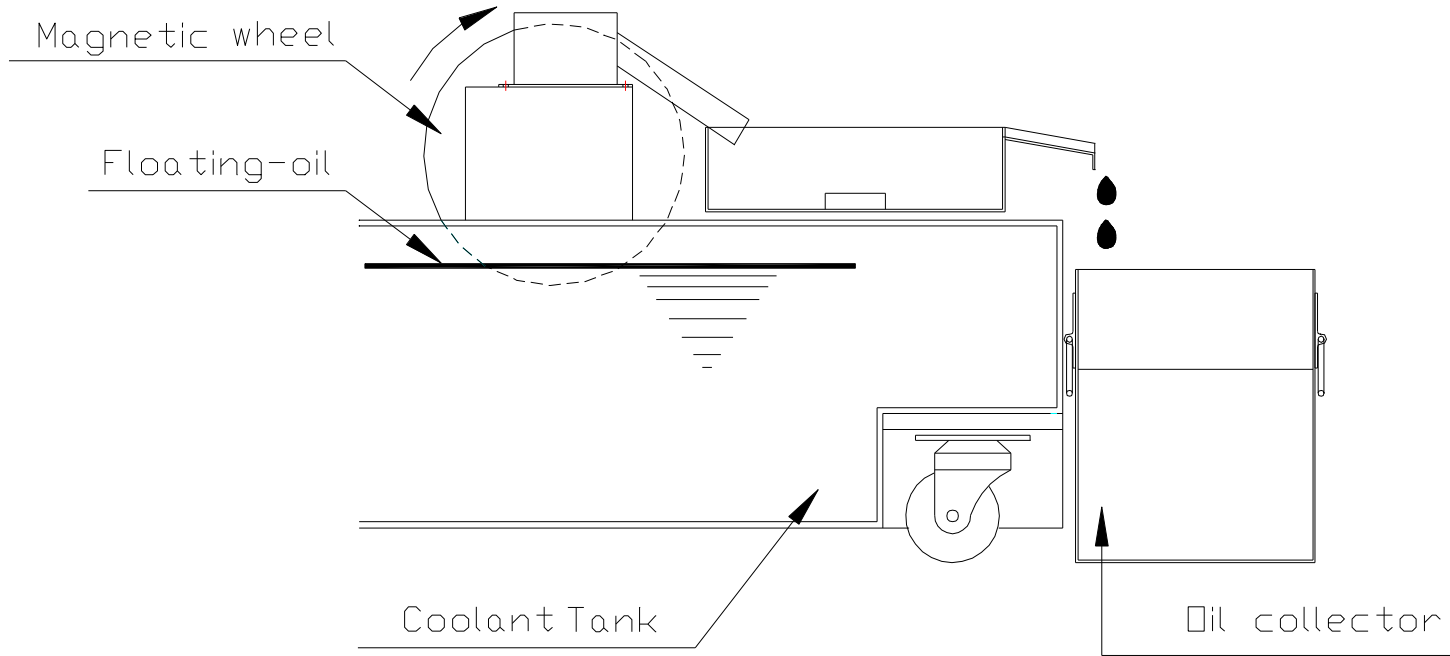
Filter specification:

Filter accuracy	0.02mm
Max. flow capacity	120L/min
Filter material	Grass fiber





B. Oil Skimmer

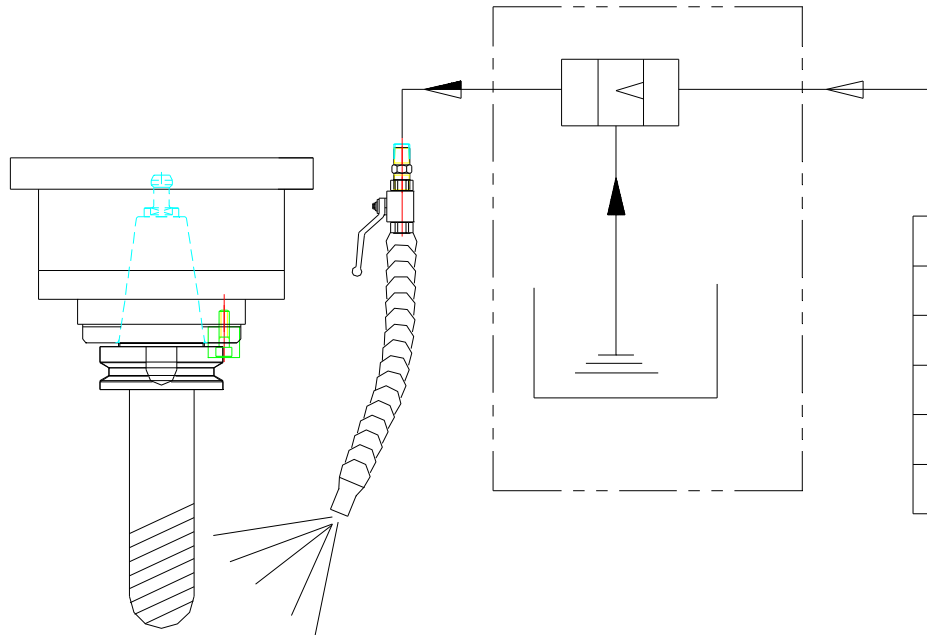


Oil skimmer specification:

Suction capacity	0.8L/hr
Power consumption	20W



C. Mist coolant system



Mix coolant

Specification:

Oil mixed action time	1-99 sec
Oil mixed intermittent time	1-99sec
Oil viscosity range /40°C	32-190cst
Oil discharge volume	0.2L/min(max)
Oil discharge pressure	6kg/cm ²
Reservoir	2Liter

**D. Closed-loop linear scale positioning system**

Description	Specification for Fanuc /Meldas controller	Manufacture
VB1515/20-X axis	LS176 ML1540 05UKH TTLX5 270	Heidenhian
VB2015/20-X axis	LS176 ML2040 05UKH TTLX5 270	Heidenhian
VB2515/20-X axis	LS176 ML2640 05UKH TTLX5 270	Heidenhian
VB3015/20-X axis	LB382 ML03240	Heidenhian
VB4015/20-X axis	LB382 ML04240	Heidenhian
Y axis	LS176 ML2040 05UKH TTLX5 270	Heidenhian
Z axis	LS176 ML840 05UKH TTLX5 270	Heidenhian



Description	Specification for Heidenhian /Simens Controller	Manufacture
VB1515/20-X axis	LS186 ML1540 05UKH	Heidenhian
VB2015/20-X axis	LS186 ML2040 05UKH	Heidenhian
VB2515/20-X axis	LS186 ML2640 05UKH	Heidenhian
VB3015/20-X axis	LB382 ML03240	Heidenhian
VB4015/20-X axis	LB382 ML04240	Heidenhian
Y axis	LS186 ML2040 05UKH	Heidenhian
Z axis	LS186 ML840 05UKH	Heidenhian

Machine positioning accuracy: +/-0.015mm /full travel

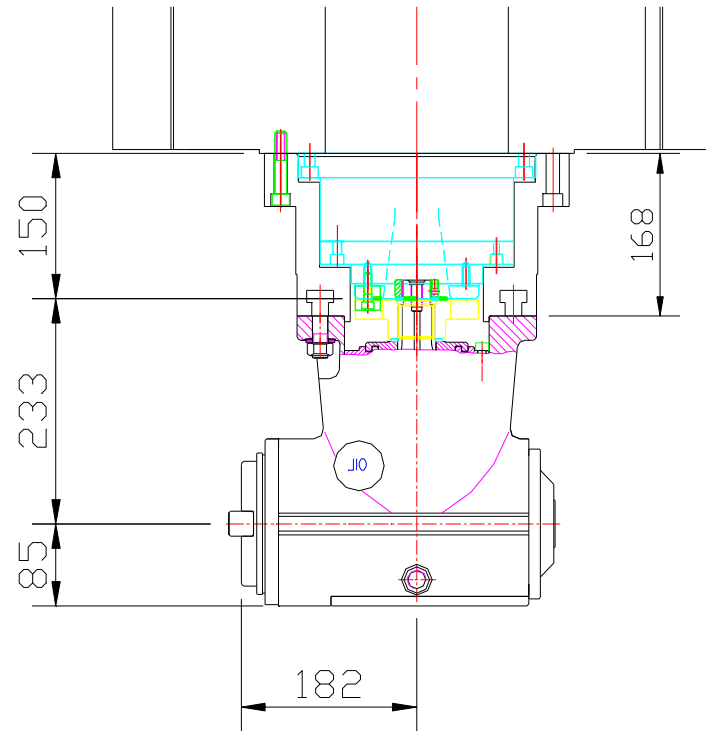
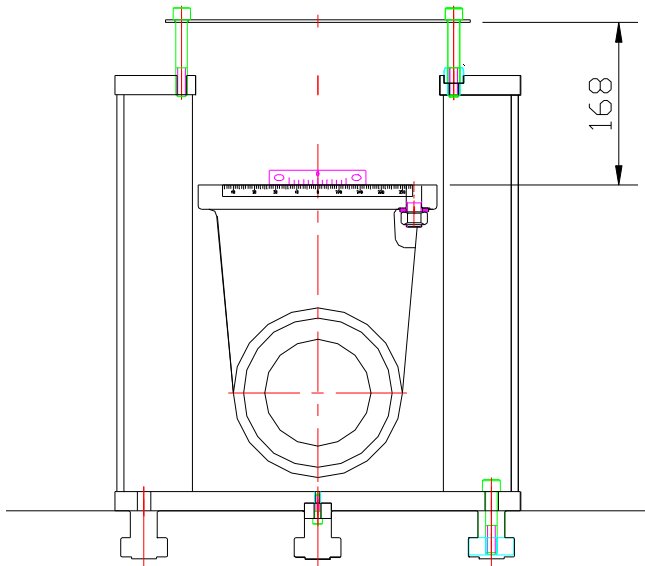
Machine repeatability accuracy: +/- 0.003mm /300mm



E. Manual 90 degree angle head.

Unit: mm

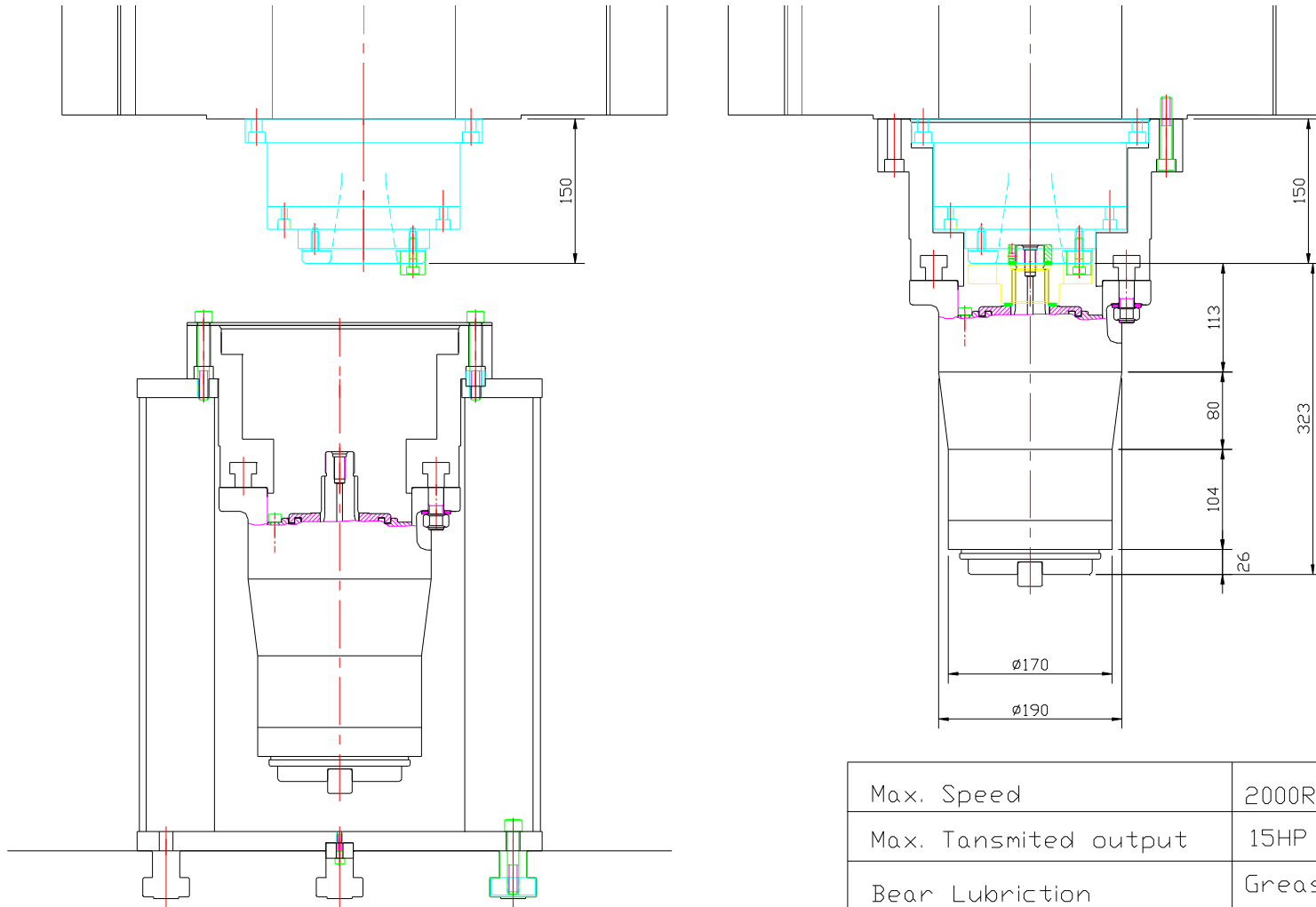
Max. tool diameter	∅200mm
Gear ratio	1:1
Max. speed	1500RPM
Max. Transmitted output	15HP
Reading Accuracy	1/6 °
Bearing Lubrication	Grease
Gear Lubrication	Oil





F. Manual extend head.

Unit: mm



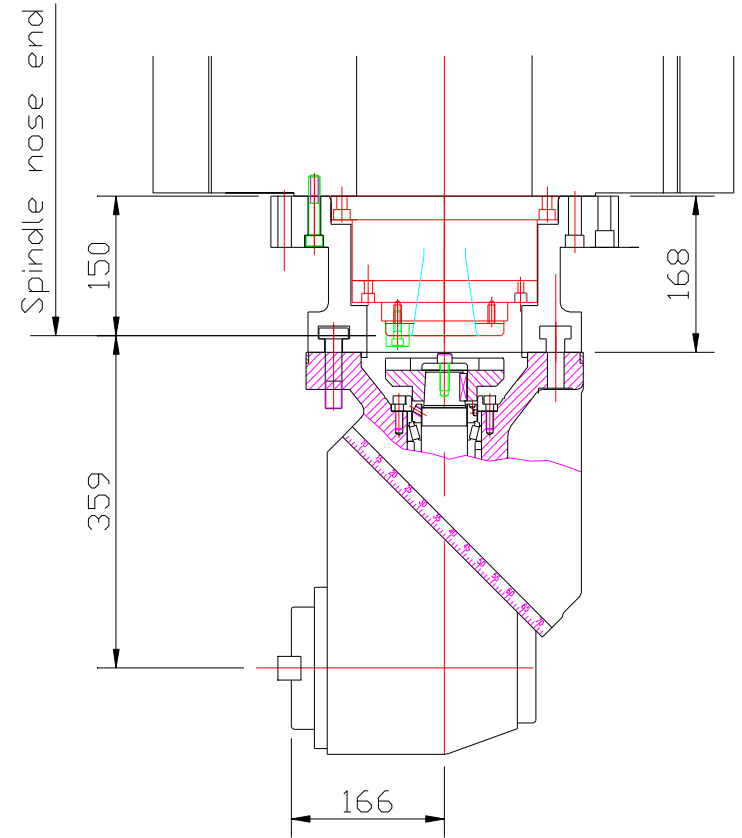
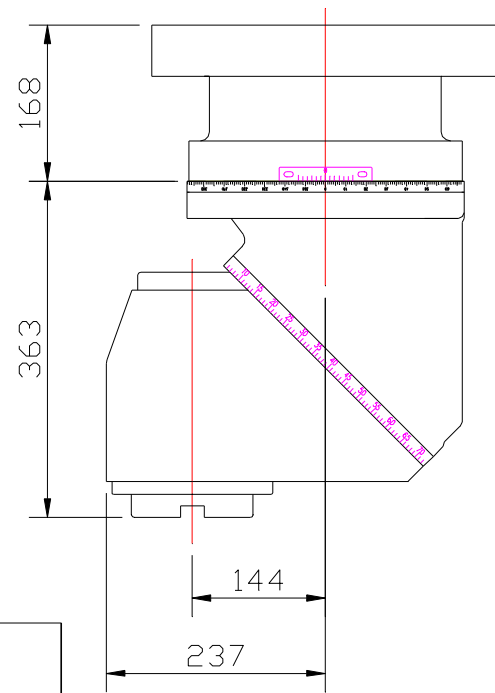
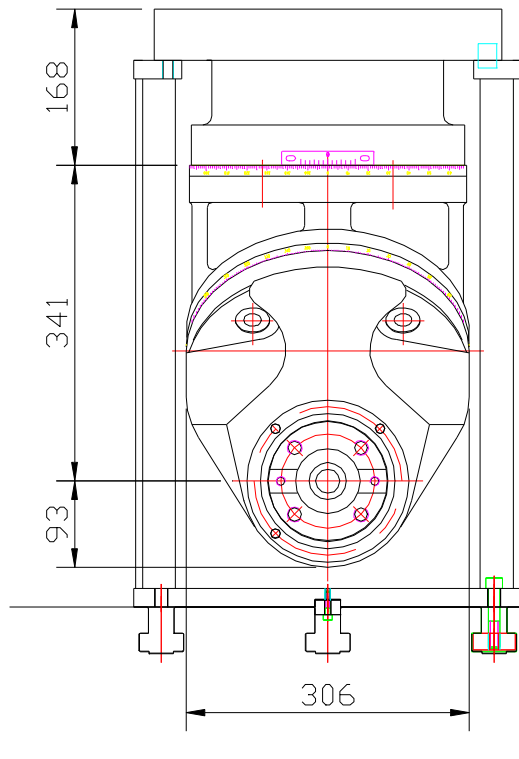
Max. Speed	2000RPM
Max. Tansmitted output	15HP
Bear Lubriction	Grease



G. Manual universal head.

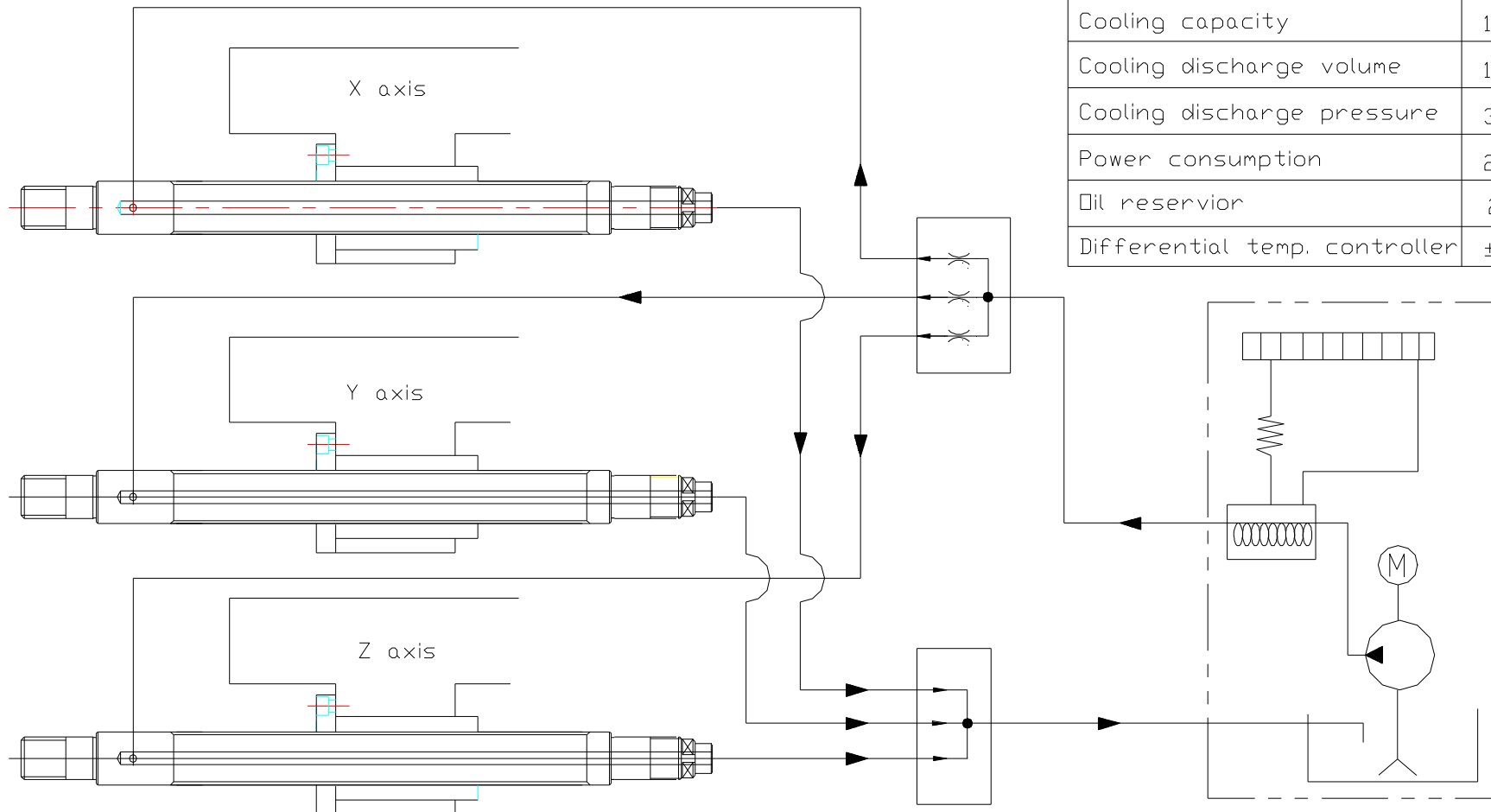
Unit: mm

Max. tool diameter	Ø200mm
Gear ratio	1:1
Max. speed	1200RPM
Max. Transmitted output	20HP
Reading Accuracy	1/6 °
Bearing Lubrication	Grease
Gear Lubrication	Oil





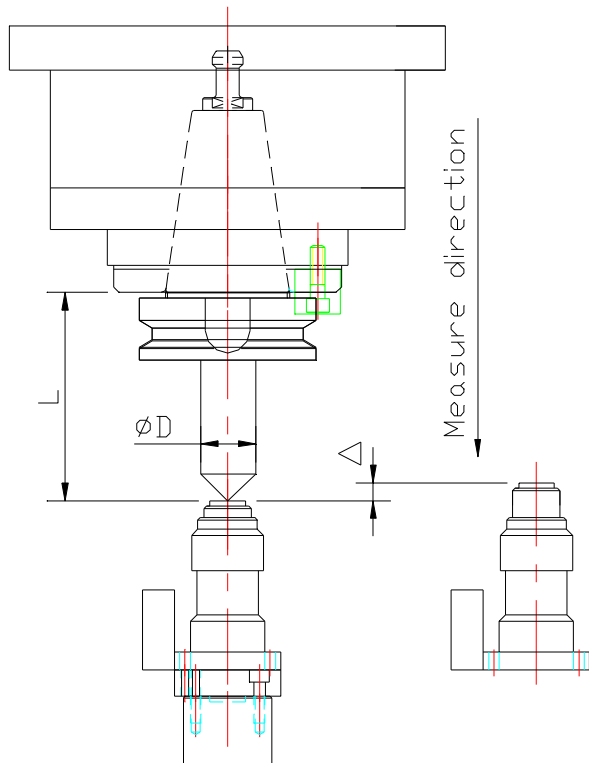
H. XYZ axes ballscrew cooling system



Specification:

Cooling capacity	1750 Kcah/h
Cooling discharge volume	12 L/min
Cooling discharge pressure	3 kg/cm ²
Power consumption	2.85 Kw
Oil reservoir	20L
Differential temp. controller	±2°C

I. Automatic tool length measure system



Specification:

Tool sensor	T24EB-04-08
Measure range of Tool length	L=110-560mm
Allowable range of Tool diameter	$\phi D=20$ mm (max.)
Measure repeatability accuracy	± 0.002 mm
Tool touch force	0.3 kgf (max)
Tool compensation	By program

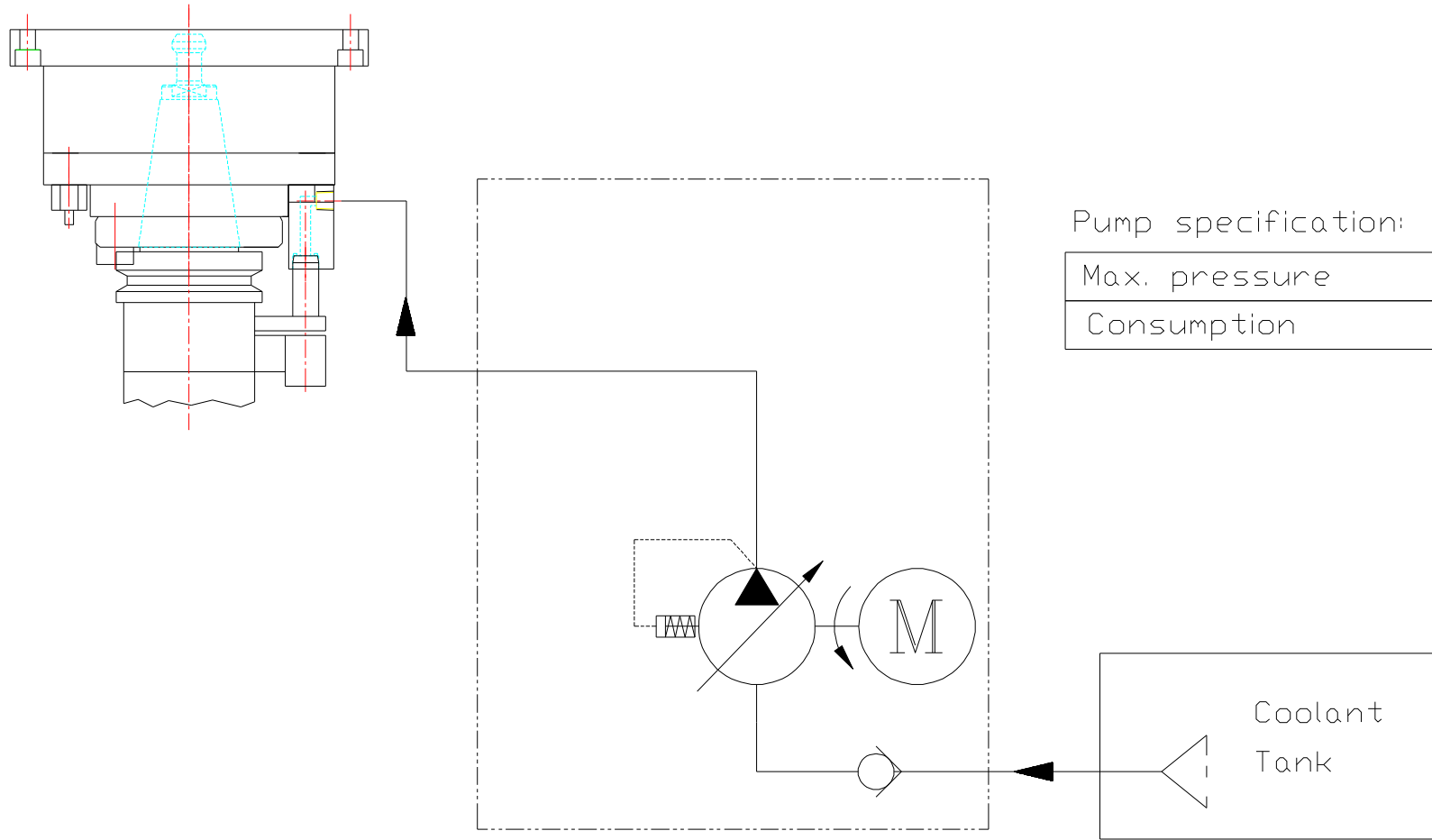
J. Automatic coordinate measure system

Specification:

Probe Module	MP10 Probe / Ranishaw
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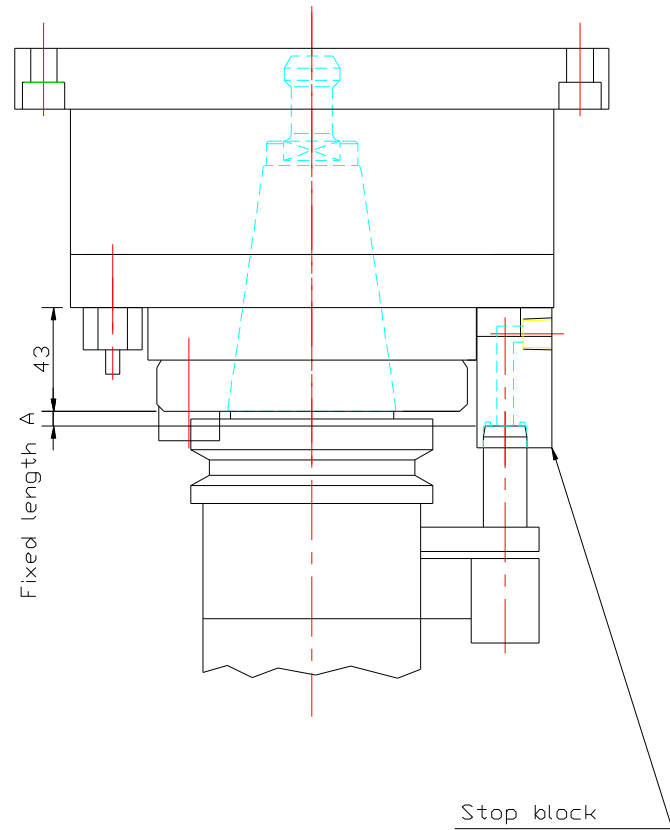
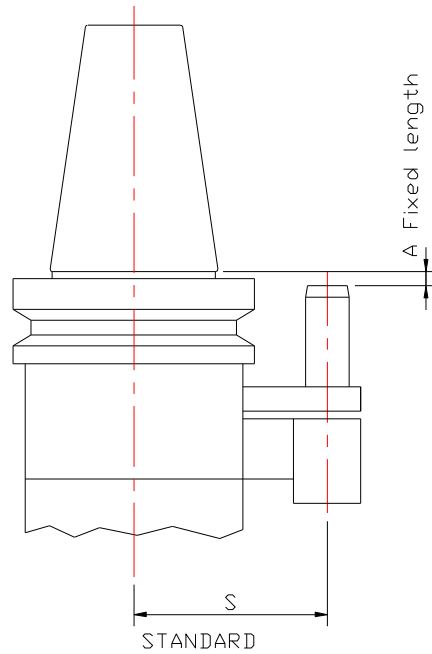
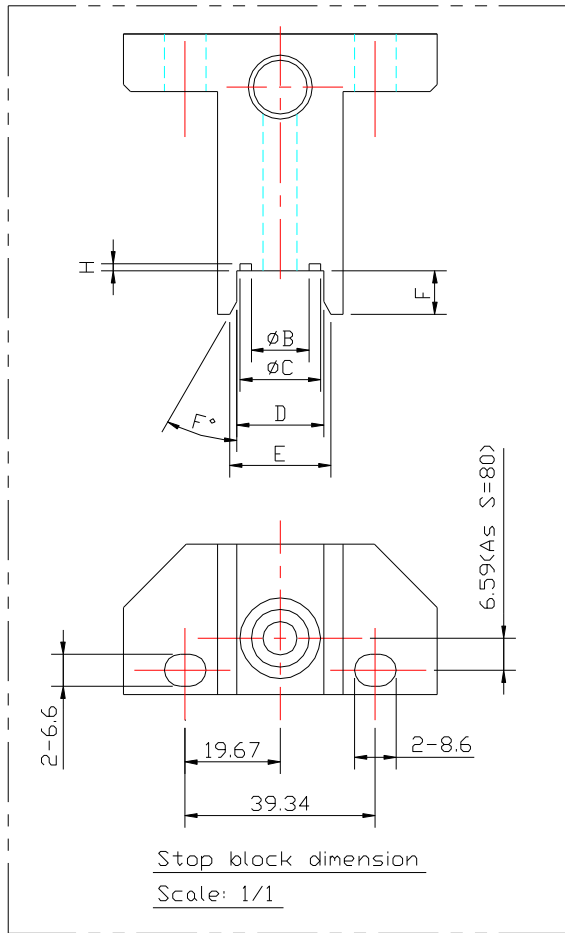


K. Coolant through tool holder interface





Dimension of tool holder interface



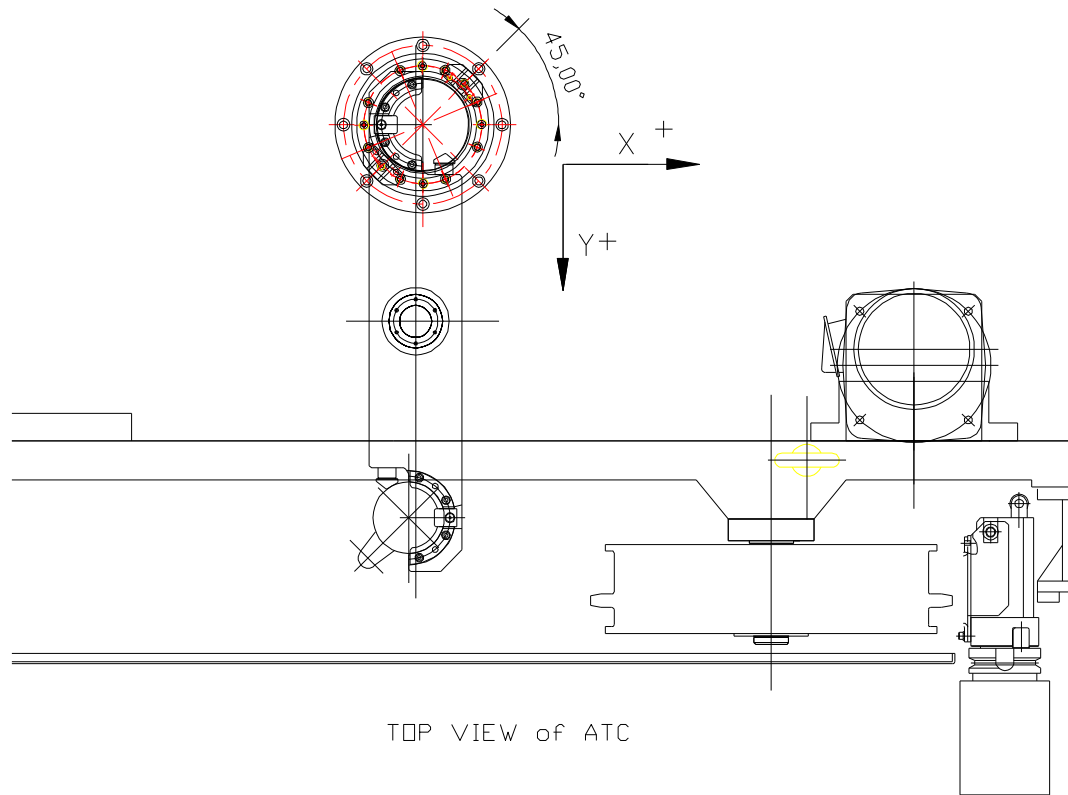
Unit:mm

A	B	C	D	E	F	H	S
6	$\phi 12$	$\phi 16.6$	18	21	30°	1.5	80

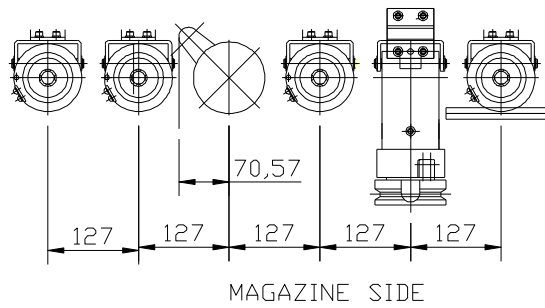


Position of tool holder in magazine

unit:mm



TOP VIEW of ATC



MAGAZINE SIDE