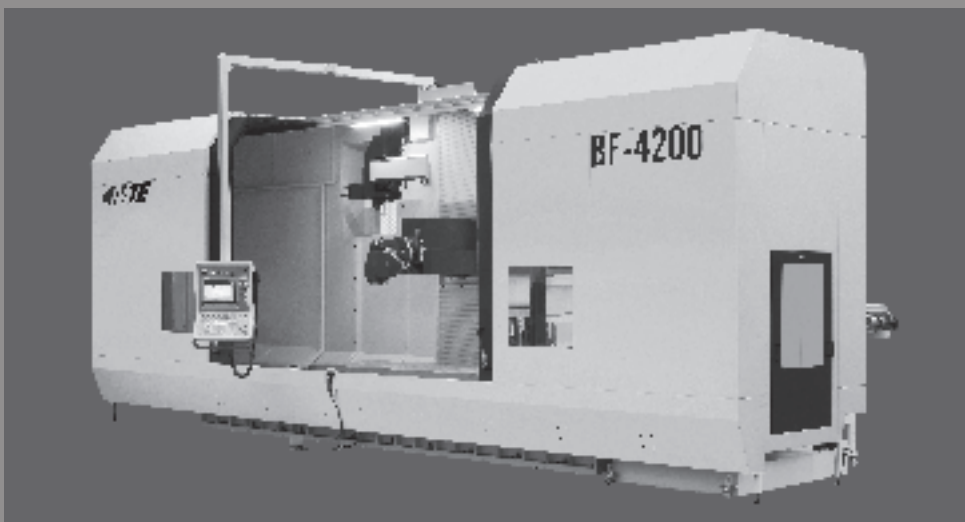


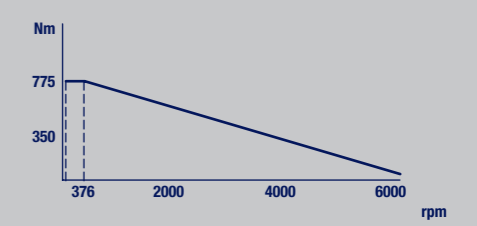
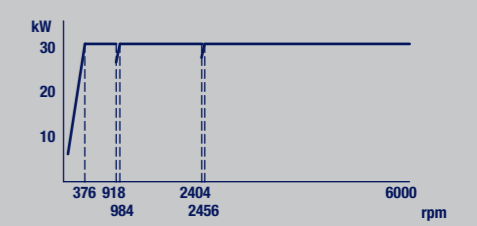
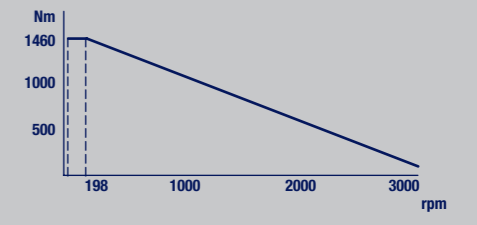
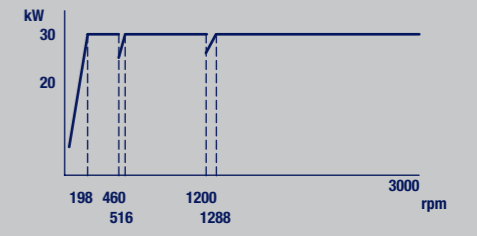
**BETTFRÄSMASCHINEN
FRAISEUSES A BANC FIXE
BED TYPE MILLING MACHINES
FRESADORAS DE BANCADA FIJA**

BF



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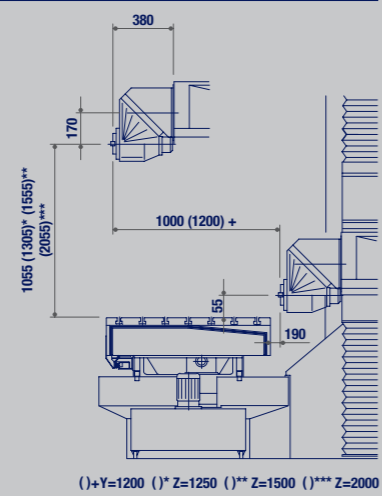
02 MODELS
BF 2200/ 2700/
 3200/ 4200/
 4700/ 5200/



1 UNIVERSAL/
 UNIVERSELLE/
 STANDARD/
 STANDARD/



Universalfräskopf
 Tête universelle
 Standard head
 Cabezal standard

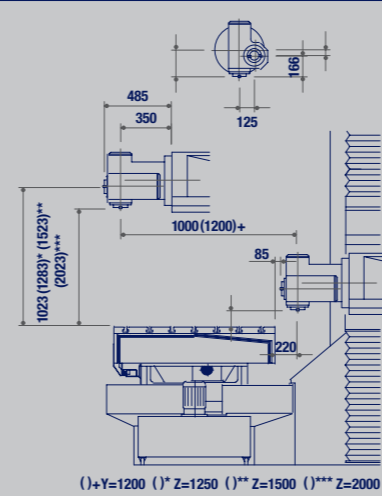


MIT SANDWICH 150 mm.
 ()+Y=1200 ()* Z=1250 ()** Z=1500 ()*** Z=2000

2 2 SPINDEL/
 2 BRACHES/
 2 OUTLETS/
 2 SALIDAS/

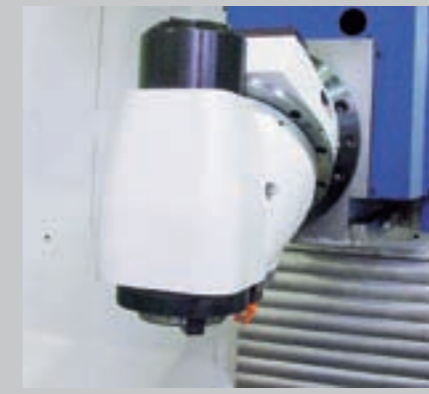


2 - Spindelfräskopf
 Tête à 2 braches à 90°
 2 outlets spindle Head
 Cabezal de 2 salidas

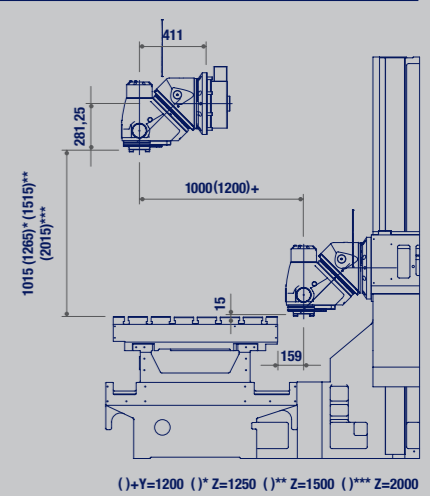


MIT SANDWICH 150 mm.
 ()+Y=1200 ()* Z=1250 ()** Z=1500 ()*** Z=2000

3 AUTOMATIKKOPF/
 AUTOMATIQUE/
 AUTOMATIC/
 AUTOMÁTICO/



Automatikkopf 2,5° X 2,5° oder 2,5° X 1°
 mit 3000 U/min o der 6000 U/min
 Tête automatique 2,5° X 2,5° ou 2,5° X 1°
 avec 3000 rpm or 6000 rpm
 Automatic Head 2,5° X 2,5° o 2,5° X 1°
 with 3000 rpm or 6000 rpm
 Cabezal automático 2,5° X 2,5° ó 2,5° X 1°
 con 3000 rpm ó 6000 rpm



MIT SANDWICH 150 mm.
 ()+Y=1200 ()* Z=1250 ()** Z=1500 ()*** Z=2000

SERIENZUBEHÖR

- Digitale numerische Steuerung.
- Elektronisches Handrad.
- Digitale Antriebe.
- Ölkühler für Spindelgetriebe.
- Universalfräskopf.
- Thermische-Kompensation für den Fräskopf (Y - Achse).
- Direktes lineares Meßsystem.
- Automatische Zentralschmierung.
- Hydraulisches Gegengewicht in der Vertikalachse.
- Separate Kühlmittelanlage.
- Spritzschutzverkleidung / Vollkabine oben offen nach CE Norm.
- Gewindebohren ohne Ausgleichsfutter.

ACCESSOIRES STANDARD

- Commande Numerique Digitale.
- Volant électronique.
- Moteurs Digitales.
- Refroidissement du l'huile de la boîte de vitesse.
- Tête universelle.
- Compensation électronique de la dilatation.
- Règles linéaires avec mesure directe
- Graissage automatique centralisé.
- Contre-poid hydraulique pour le déplacement vertical.
- Équipement d'arrosage independant.
- Carénage conforme a la norme CE.
- Taraudage rigide.

STANDARD EQUIPMENT

- Digital CNC System.
- Electronic Handwheel.
- Digital motors.
- Oil refrigerator equipment on speed box.
- Universal manual Head.
- Thermal compensation for the Head (Y axis).
- Direct measuring Linear Scales.
- Automatic Lubrication system.
- Hydraulic counterbalance on the vertical axis.
- Independant coolant equipment.
- Splash Guarding CE Norm.
- Rigid tapping.

ACCESORIOS STANDARD

- Control Numérico Digital.
- Volante electrónico.
- Motores digitales.
- Refrigerador del aceite de la caja de velocidades.
- Cabezal universal.
- Sonda térmica compensación eje Y.
- Reglas ópticas de medición directa.
- Engrase automático centralizado.
- Contrapeso hidráulico para el eje vertical.
- Equipo de refrigeración independiente.
- Carenado norma CE.
- Roscado rígido.

SONDERZUBEHÖR

- Automatikkopf 2,5°x 2,5° mit 3000 U/min oder 6000 U/min.
- Automatikkopf 2,5° x 1° mit 3000 U/min oder 6000 U/min.
- Hochdruckkühlmittelpumpe 20 bar.
- Kühlung durch die Spindel.
- Automatischer Werkzeugwechsler.
- Scharnierspäneförderer.
- 4 - Achse Drehtisch.
- Halogenlampen.
- Fußpedal.
- Ventilator für Schaltschrank.
- Hochfrequenzspindel zum Einsatz in den Spindelkonus.
- Schaltende 3D-Tastsysteme.
- Werkzeug - Tastsysteme.

ACCESSOIRES EXTRA

- Tête automatique 2,5° x 2,5° avec 3000 tpm ou 6000 tpm.
- Tête automatique 2,5° x 1° avec 3000 tpm ou 6000 tpm.
- Arrosage haute pression (20 bar).
- Arrosage par le centre de la broche.
- Changeur d'outils.
- Convoyeur à copeaux.
- Table rotative 4eme Axe.
- Lampe d'eclairage.
- Pedale pour le changement d'outils.
- Refrigeration de l'armoire numérique.
- Électrobroches à monter dans la broche.
- Palpeur d'outils.
- Palpeur 3D.

OPTIONAL EQUIPMENT

- Automatic Head 2,5° x 2,5° with 3000 rpm or 6000 rpm.
- Automatic Head 2,5° x 1° with 3000 rpm or 6000 rpm.
- High pressure Coolant (20 bar).
- Coolant through the spindle.
- Tool Changers.
- Chip conveyor.
- 4th axis Rotary tables.
- Machine lamp.
- Foot pedal.
- Electrical Cabinet Refrigerator.
- Electrospindle to be fitted on the Milling Taper.
- Tools touch probe.
- 3D touch trigger Probe.

ACCESORIOS EXTRA

- Cabezal automático 2,5° x 2,5° con 3000 rpm ó 6000 rpm.
- Cabezal automático 2,5° x 1° con 3000 rpm ó 6000 rpm.
- Refrigeración alta presión (20 bar).
- Refrigeración por el centro del husillo.
- Almacenes de herramientas.
- Arrastradores de viruta.
- Mesas y Divisores automáticos.
- Lámpara halógena.
- Pedal cambio de herramienta.
- Refrigerador armario eléctrico.
- Electrohusillos con fijación por cono al husillo de la fresadora.
- Palpador de herramientas.
- Palpador 3D.

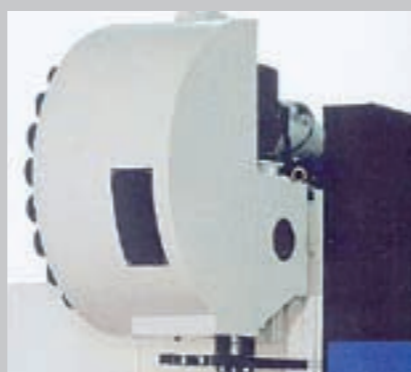


Horizontal / Vertikal
Werkzeugmagazin 40/60 Werkzeuge

Changeur d'outils
horizontal / vertical 40/60 postes

Horizontal / Vertikal
tool magazine 40/60 tools

Cargador
de herramientas
horizontal / vertical 40/60 herramientas



Vertikal
Werkzeugmagazin 24 Werkzeuge

Changeur
d'outils vertical 24 postes

Vertikal
tool changer 24 tools

Cargador
de herramienta
vertical 24 herramientas



Horizontal / Vertikal
Drehtische

Table rotative
Horizontal / Vertical

Horizontal / Vertical
rotary table

Mesa
Horizontal / Vertical

TISCH/ TABLE/ TABLE/ MESA

		BF 2200	BF 2700	BF 3200	BF 4200	BF 4700	BF 5200
Aufspannfläche des Tisches / Surface de la Table/ Working surface / Superficie de la mesa	mm.	2200 x 1000	2700 x 1000	3200 x 1000	4200 x 1000	4700 x 1000	5200 x 1000
Anzahl und Breite "T-Nuten" / N° et largeur des rainures en "T"/ "T" slots, number and size / N° y anchura ranuras en "T7 H8"		7-22 (1 H7, 6 H8)	7-22 (1 H7, 6 H8)	7-22 (1 H7, 6 H8)	7-22 (1 H7, 6 H8)	7-22 (1 H7, 6 H8)	7-22 (1 H7, 6 H8)
Abstand der "T-Nuten" / Distance entre rainures / Distance between "T" slots / Distancia entre ranuras	mm.	140	140	140	140	140	140
Max. zulässige Tischbelastung / Charge max. sur la Table/ Max. admissible load / Carga max. admisible	Kg.	7200	9000	11000	13000	14000	15000

VERFAHRWEGE/ COURSES/ TRAVELS/ RECORRIDOS

Längsweg des Tisches / Longitudinale de la table / Longitudinal Table / Longitudinal de mesa	mm.	2000	2500	3000	4000	4500	5000
Querweg des Frässlittens / Transversale du bélier / Cross traverse Ram / Transversal del carnero	mm.	1000 (Optional 1200)	1000 (Optional 1200)	1000 (Optional 1200)	1000 (Optional 1200)	1000 (Optional 1200)	1000 (Optional 1200)
Senkrechtbewegung / Course verticale / Vertical traverse / Curso vertical	mm.	1000 (Op- tional 1250 / 1500 / 2000)	1000 (Op- tional 1250 / 1500 / 2000)	1000 (Op- tional 1250 / 1500 / 2000)	1000 (Op- tional 1250 / 1500 / 2000)	1000 (Op- tional 1250 / 1500 / 2000)	1000 (Op- tional 1250 / 1500 / 2000)

SPINDEL/ BROCHE/ SPINDLE/ HUSILLO

		DIN 69871 A	DIN 69871 A	DIN 69871 A	DIN 69871 A	DIN 69871 A	DIN 69871 A
Aufnahmekegel / Emmanchement / Spindle taper/ Cono del husillo							
Spindeldrehzahlen / Vitesses de rotation / Variable speed / Velocidades de rotación	(rpm) / (U/min)	40 - 3000 (Optional 6000)	40 - 3000 (Optional 6000)	40 - 3000 (Optional 6000)	40 - 3000 (Optional 6000)	40 - 3000 (Optional 6000)	40 - 3000 (Optional 6000)
Drehzahlbereiche / Gamme de vitesses / Speed ranges / Gama de velocidades		3	3	3	3	3	3
Leistung / Puissance / Spindle motor / Potencia	Kw	30	30	30	30	30	30
Max. Spindeldrehmoment / Couple max. à la broche / Max. torque at spindle / Max. par en el husillo	Nm	1460	1460	1460	1460	1460	1460

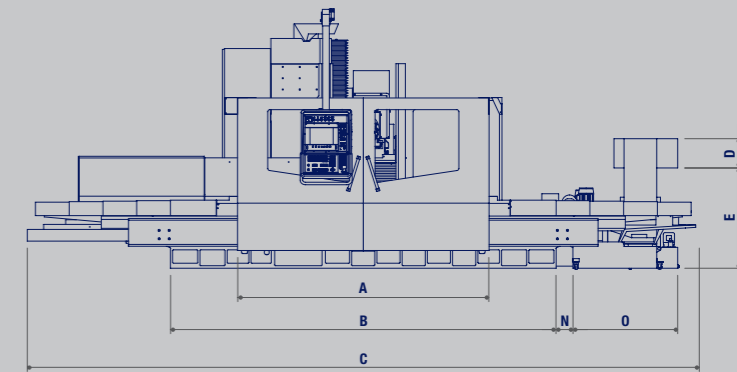
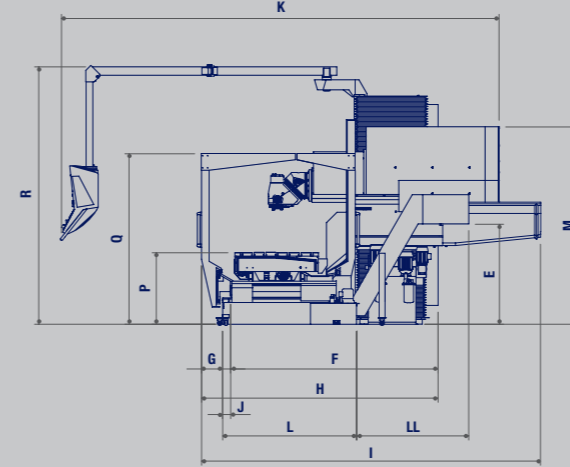
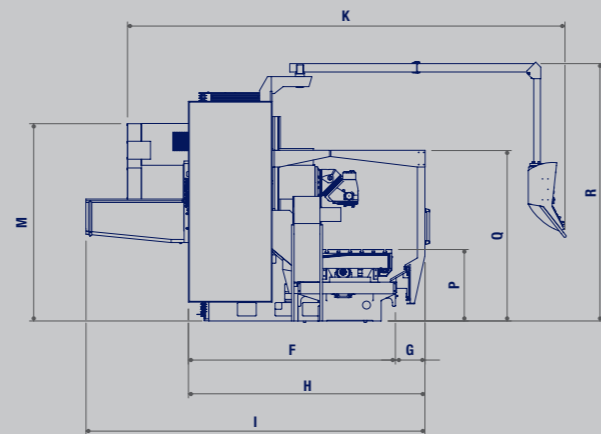
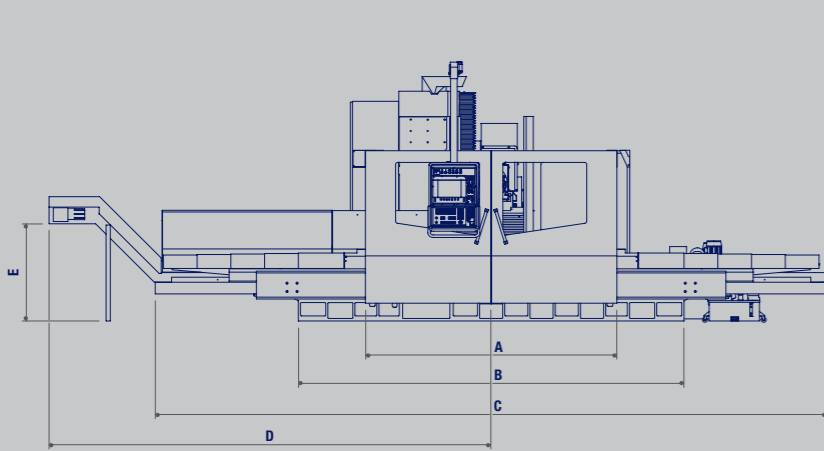
VORSCHÜBE/ DÉPLACEMENTS/ FEEDS/ AVANCES

Eilgang / Avance rapide / Rapid feed / Avance rápido	mm/min.	15000	15000	15000	15000	15000	15000
Arbeitsvorschub / Avance de travail / Working feed / Avance de trabajo	mm/min.	0-12000	0-12000	0-12000	0-12000	0-12000	0-12000
Vorschubmotoren (X-Y-Z) / Moteurs d'avances (X-Y-Z) / Feed motors (X-Y-Z) / Motores de avances (X-Y-Z)	Nm	X = 27 Y = 27 Z = 36	X = 36 Y = 27 Z = 36	X = 36 Y = 27 Z = 36	X = 50 Y = 27 Z = 36	X = 50 Y = 27 Z = 36	X = 50 Y = 27 Z = 36
Kugelumlaufspindel (X-Y-Z) / Vis à billes (X-Y-Z) / Ball screws (X-Y-Z) / Husillos a bolas (X-Y-Z)	mm.	X = 50 Y = 50 Z = 50	X = 63 Y = 50 Z = 50	X = 63 Y = 50 Z = 50	X = 63 Y = 50 Z = 50	X = 63 Y = 50 Z = 50	X = 63 Y = 50 Z = 50
Max. Vorschubkraft (X-Y-Z) / Poussée max. (X-Y-Z) / Max. axis pressure (X-Y-Z) / Fuerza max. de avance (X-Y-Z)	kg.	X = 2200 Y = 2200 Z = 3000	X = 2400 Y = 2200 Z = 3000	X = 2400 Y = 2200 Z = 3000	X = 2250 Y = 2200 Z = 3000	X = 2250 Y = 2200 Z = 3000	X = 1750 Y = 2200 Z = 3000

GEWICHT/ POIDS/ WEIGHT/ PESO

	Kg.	16500	18000	19000	21500	22500	23500

BF 2200/ 2700/ 3200/ 4200/ 4700/ 5200/



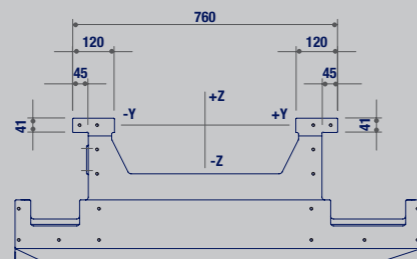
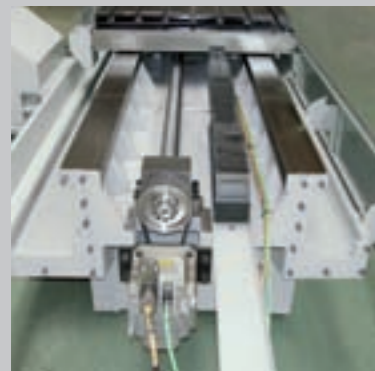
	A	B	C	D	E	F	G	H	I	K	M	P	Q	R
BF 2200	2000	3300	6014	4273	1165	2475 (2625) s	351,5	2826,5 (2976,5) s	4046,5 (4246,5) + (4196,5 (4396,5) +) s	5700 (5900) +	2859,25 (3109,25)* (3359,25)** (3869,25)***	860,5	2039,5 (2289,5)* (2539,5)** (3039,5)***	3075 (3325)* (3575)** (4075)***
BF 2700	3000	4600	7014	4773	1165									
BF 3200	3000	4600	8014	5273	1165									
BF 4200	3000	6450	10014	6273	1165									
BF 4700	3000	6450	11255	6878	1165									
BF 5200	3000	6450	12115	7398	1165									

() + Y = 1200 ()s Sandwich 150 () * Z = 1250 () ** Z = 1500 () *** Z = 2000

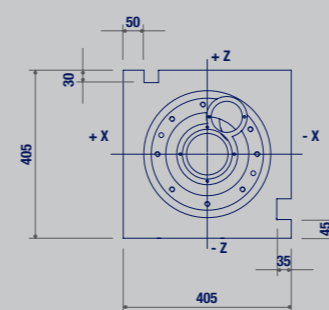
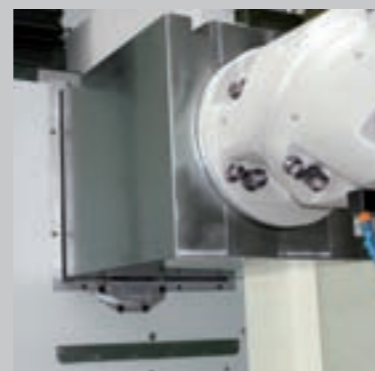
	A	B	C	D	E	F	G	H	I	J	K	L	LL	M	N	O	P	M	M
BF 2200	2000	3300	6014	350	1200	2475 (2625) s	351,5	2826,5 (2976,5) s	4046,5 (4246,5) + (4196,5 (4396,5) +) s	100	5700 (5900) +	1600	1340	2859,25 (3109,25)* (3359,25)** (3869,25)***	200	1250	860,5	2039,5 (2289,5)* (2539,5)** (3039,5)***	3075 (3325)* (3575)** (4075)***
BF 2700	3000	4600	7014	350	1200														
BF 3200	3000	4600	8014	350	1200														
BF 4200	3000	6450	10014	350	1200														
BF 4700	3000	6450	11255	350	1200														
BF 5200	3000	6450	12115	350	1200														

() + Y = 1200 ()s Sandwich 150 () * Z = 1250 () ** Z = 1500 () *** Z = 2000

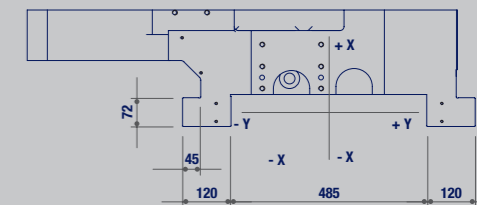
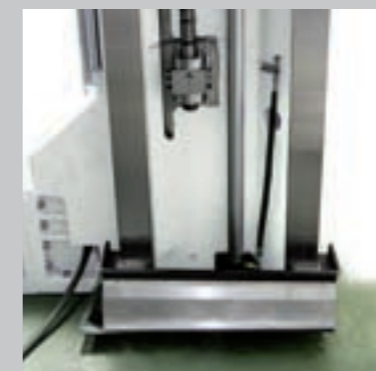
X X ACHSE AXE X X AXIS EJE X

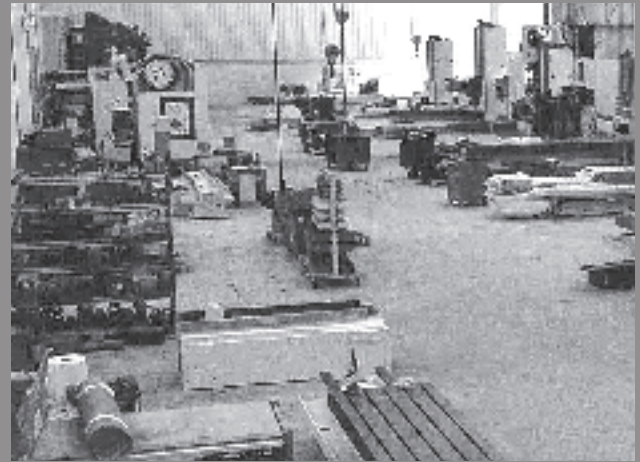
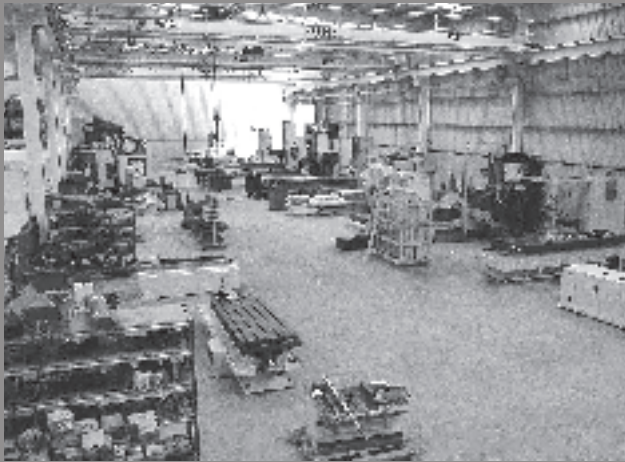


Y Y ACHSE AXE Y Y AXIS EJE Y



Z Z ACHSE AXE Z Z AXIS EJE Z





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