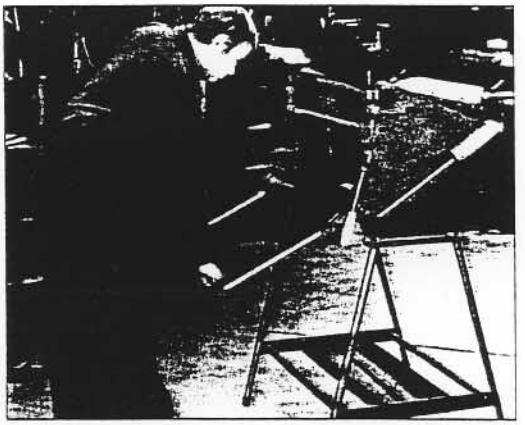
RMT GABRO

A MEMBER OF THE M.J. ALLEN GROUP OF COMPANIES

BOX PAN AND GENERAL PURPOSE FOLDERS



Model BF1000

Model BF620-2

GABRO Folders are extremely versatile machines and ideally suited for development and prototype applications, production work, general workshop use and for training purposes.

Assembly and operating Instructions for RMT-Gabro BF620-2-c and BF1000-c Hand Box and Pan Folders

Important Safety Warning

Before any machine is used by an employee or is loaned or rented, make absolutely certain that the operator(s) prior to operating the machine

Are instructed in safe and proper use
Reviews and understands the manuals pertaining to that machine

It is the user's responsibility to understand and follow the manufactures instruction on machine operation and maintenance and to observe pertaining laws and regulations

Remember a careful operator is always the best insurance against accident
Always give complete and undivided attention to the job at hand

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Use

These machines must only be used for the intended purpose any incorect use may result in dammage or injury to operator

Hazard areas

Always make sure that hands are clear of the clamping bar, when clamping the sheet for folding and keep all areas around the machine clear

Service / Maintenance

Any repairs or maintenance should only be carried out by skilled maintenance personnel, keep all bearings oiled or greased, DO NOT oil or gease clamping frame pivot as this has a Fibre friction washer to hold the clamp bar in the up position when loading and setting the sheet material in the machine folding area

Floor Space

BF620-2 Stand Mounted	460mm x 810mm D
BF1000 Stand Mounted	890mm x 970mm D

Table Height

BF620-2 Stand Mounted	810mm H
BF1000 Stand Mounted	810mm H

Assembly and Operating Instructions for RMT-Gabro Box and Pan Folders

BF620-2-c and BF1000-c Models

Initial Assembly (Machines are supplied part assembled)

Assemble the Stand first (if supplied)

> BF620.2, Bolt cross member tubes to the left and right "A" frame, when all bolts are assembled the tighten
> BF1000, Bolt cross member tubes to left and right hand "A" frames (Lugs on the cross member tube to the rear and lugs on the "A" frames to face inwards, Fit the rear brace bars and once all bolts are assembled tighten.

Mount the machine on the stand, (the bolts for this are screwed into the "A" frame top plates), and tighten down.

To release the fold bar from its transport position, Lift the clamping frame handle and at the same time let the fold bar down. Screw adjuster knobs down about half way and clip in the clamp bar (32 x 32 x 6mm with 45deg angle milled off the front edge by placing the angle on the bed aligning with strut jaws and press down with the clamp frame.

Now finish off the adjustmemts, remember to allow approximatly three times the gauge of material to be folded, from the front of the clamp bar back from the fold bar in the up position, ie. at 45deg to machine.

The fold bar exerts great pressure and need for udue force indicates faulty setting or job to heavy for the machine.

The machine will only bend to their maximum capacities if the clamp bar is set by an amount equal to three times the gauge of the material (see instructions)

Assemble rear sheet supports, these push into holes in the back of the bed and clip into the grooves on the sheet support cross bar. Then clamp back stop assembly onto these and check it slides DO NOT grease this as it needs to clamp tight when in use.

Remove the large nut on the right hand side of the fold bar pivot, place the counterbalance bracket on bolt and retighten the nut now assemble the bolt and spacer in the lower hole and tighten.

Setting procedure (fig. 2)

1. Move the two outer struts to their widest apart position and fit the bevelled clamp bar. The bevelled clamp bar is meant to be kept uncut: the Plain bar is kept for cutting into lengths for box and pan forming.
2. Turn back the four top adjuster screws so that the clamp bar is well back from the fold bar and well clear of the bed.
3. Raise the fold bar to the horizontal position and secure it by adjusting the stop quadrant on the left of the machine and turn the knurled headed screw into hole provided
4. Tighten the four adjuster screws a little at a time in turn until the correct gauges are pressed firmly into the corner formed by the bed and fold bar (fig 2)

5. When setting the front edge of the fold bar to a line or measurement it is good practice to release the front adjuster screws one half turn so that the workpiece can be easly moved when the clamp bar is down.

6. Retighten the adjuster screws one half turn before bending workpiece, not a lot of pressure is required for clamping and over pressure will result in dammage to the machine.

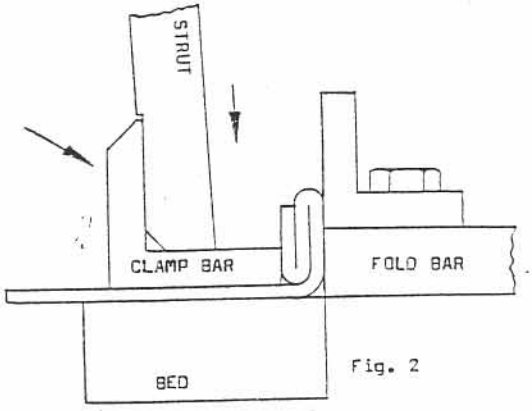


Fig. 2

Folding Procedures

Boxes and Trays _ Vertical Sides

Fold the long side first then use a short piece of clamp bar (cut from the plain bar) to fold the ends as shown in fig 3. The short piece can be up to 25mm shorter than the side, but should be arranged centrally.

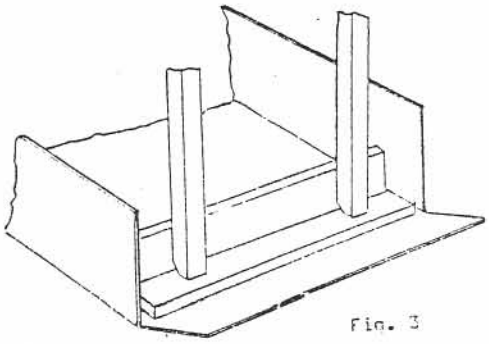


Fig. 3

Lapped Corners

If corners are lapped as fig 4 the blank will proberly be similar to fig 5 and the folding a little more complicated. This is becaused the side E should be bent back one gauge further than lap D. The procedure is to bend the side E and laps D firstwith a piece of one gauge thick packing under side E, after the first few degrees of bend see fig 6. When the bend is made the packing will force the side back one gauge , but of course it must be allowed to slip right down as the bending proceeds. The opposite side is bent next and then the other two.

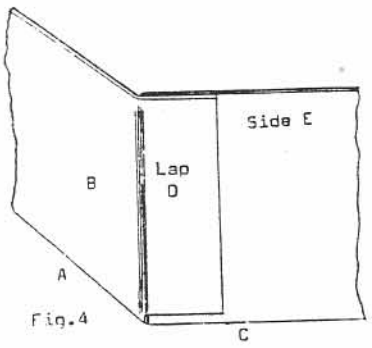


Fig.4

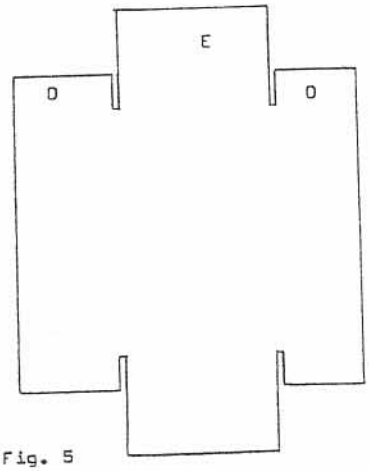


Fig. 5

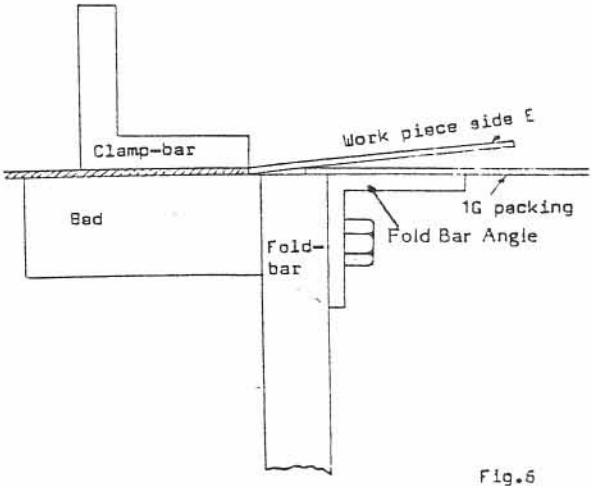


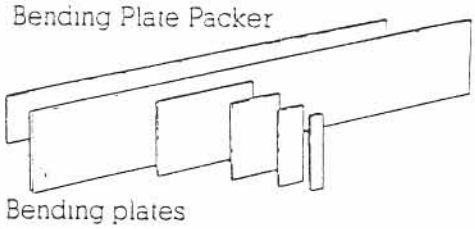
Fig.6

The Fold Bar Stop

The stop is the knurled head srcew mounted on the slotted quadrant on the left of the machine. If it is screwed part way , it will engage the small block on the side of the fold bar and acts as a dead stop:screwed in further it will enter the hole in the fold bar adjacent to the small block and hold the fold bar id any up position for setting.

Boxes and Trays with sloping sides

When two sides only are sloping, bend the two tapered sides first. When all four sides are tapered, remove the fold bar angle, fit the bed raising plate and place a bending plate of appropriate length into the fold bar channel. The sides of the blank are necessarily dove-tail shaped and the length of the bending plate is somewhat shorterthan the root length.particularly for thin gauge materials and so that the bending plate applies the folding force as near to the line of fold as near to the line of fold as possible, place the packing piece in the fold bar channel, in front of the bending plate.



Radius Bends

When an easy bend is required, eg, 10mm radius , this can be done by welding a length of 20mm dia. Rod to the front edge of a piece of 25 x 25 x 6mm angle, shown in fig 7. Set front edge of rod back one gauge from the fold bar.

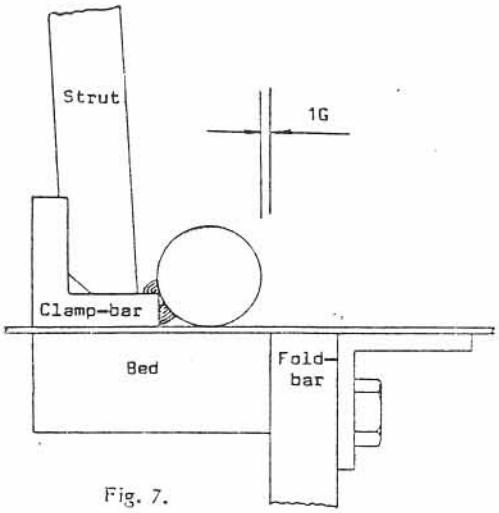


Fig. 7.

Bends over 90 degs

In normal use the fold bar can be turned up to 20deg beyond the right angle, depending on the position of the clamp bar, and up to 60deg with a bevelled clamp bar, but the fold bar angle should be removed
Also to make safety edges fold as above as far as possible and with the clamping frame press it down to close as shown in fig 11.

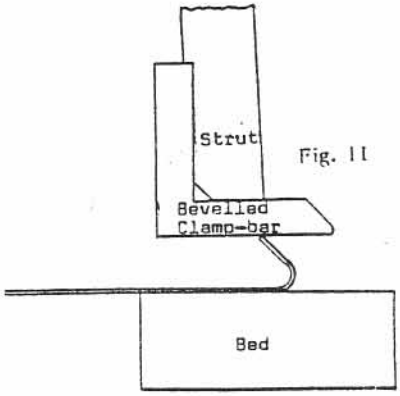


Fig. 11

Repetition Work

The backstop can be used for repetition work but it must be remembered that folding in the thicker gauges can set up considerable pressure and the backstop must be well secured.
The difficulty can be easily overcome by dropping the bed raising plate in front of it and removing before folding up.

Roll Forming

Slide a piece of tubing over the clamp bar and position it between two strut assemblies, set and lock the fold bar at an angle of 30-30deg using the side quadrant and fold bar stop. Feed the material under the tube while at the same time applying a repetitive clamping action. The size of the roll will depend on material thickness, size of tube and angle at which the fold bar is set

Adjustments and Maintenance

The only adjustments likely to be needed are on the lock nuts which hold the clamping handle and the ecentric stop which is sets the "just over centre clamping position" . These should be readjusted if necessary.

Keep pivots and and adjusting screws oiled or greased and all bolts tightened. DO NOT oil of grease the clamp frame pivots these have a fibre washer friction to hold the clamp bar up while moving the material in or out of the machine.

Capacities Model BF620-2c

Showing maximum depth of boxes of given length and width with the standard machine and standard procedure. In pratice the range can be extended with a little ingenuity or modified procedure.return bends on all four sides of a box can be usually be accommodated without reduction of depth, but bends must be made in correct sequence. These capacities apply when using up to 18g (1.2mm)mild steel.

Width of Box in millimetres

Length of Box in Millimetres	25	50	100	150	200	250	300	350	400	450	500	550
600	6	20	64	100	150	175	150	125	100	75	50	25
550	25	25	64	100	150	175	150	125	100	75	50	25
500	50	50	64	100	150	175	150	125	100	75	50	
450	76	76	76	100	150	175	150	125	100	75		
400	100	100	100	100	150	175	150	125	100			
350	130	130	130	130	150	175	150	125				
300	152	152	152	152	152	175	150					
250	180	180	180	180	180	180						
200	152	152	152	152	152							
150	100	100	100	100								
100	64	64	64									
50	20	20										
25	6											

MODEL BF620-2

Showing maximum material thickness for given length of bend

Maximum Length of Bend	Maximum Gauge of Material in mm.	
	Mild Steel	Soft Aluminium
620mm	1.2	1.6
475mm	1.6	2.0
300mm	2.0	2.6
200mm	2.6	3.2
100mm	3.2	4.0
25mm	5.0	6.0

Capacities model BF1000c

As page 7/BF, but showing figures for BF1000c machine

Width of Box in Millimetres

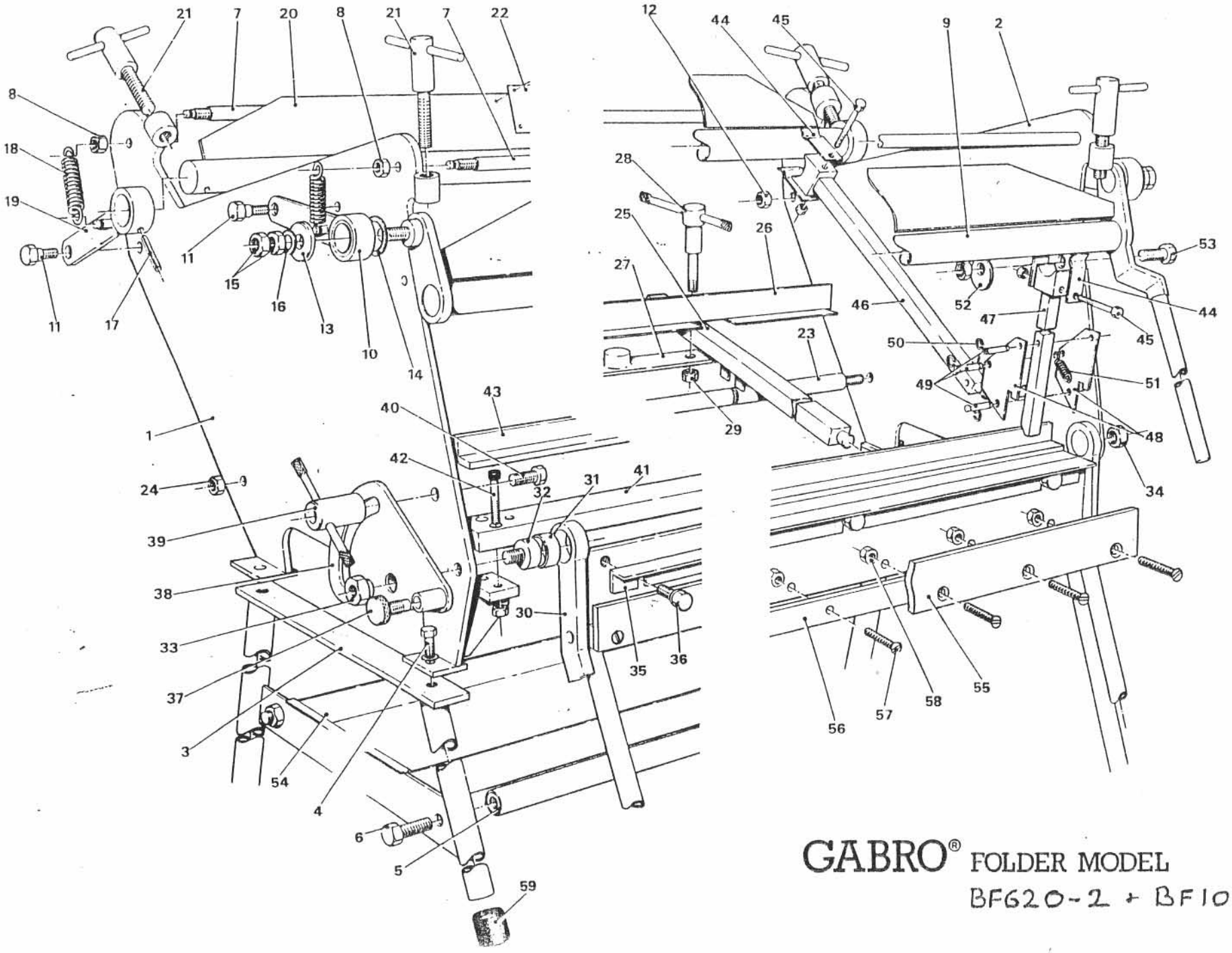
Length of Box in Millimetres	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950
1000	20	64	100	152	180	215	215	215	215	215	215	200	175	150	125	100	75	50	25
950	20	64	100	152	180	215	215	215	215	215	215	200	175	150	125	100	75	50	25
900	20	64	100	152	180	215	215	215	215	215	215	200	175	150	125	100	75	50	
850	20	64	100	152	180	215	215	215	215	215	215	200	175	150	125	100	75		
800	20	64	100	152	180	215	215	215	215	215	215	200	175	150	125	100			
750	20	64	100	152	180	215	215	215	215	215	215	200	175	150	125				
700	20	64	100	152	180	215	215	215	215	215	215	200	175	150					
650	20	64	100	152	180	215	215	215	215	215	215	200	175						
600	20	64	100	152	180	215	215	215	215	215	215	200							
550	20	64	100	152	180	215	215	215	215	215	215								
500	20	64	100	152	180	215	215	215	215	215									
450	215	215	215	215	215	215	215	215	215										
400	215	215	215	215	215	215	215	215											
350	215	215	215	215	215	215	215												
300	215	215	215	215	215	215													
250	180	180	180	180	180														
200	152	152	152	152															
150	100	100	100																
100	64	64																	
50	20																		

MODEL BF1000

Showing maximum material thickness for given length of bend

Maximum Length of Bend (2g Radius)	Maximum Gauge of Material in mm.	
	Mild Steel	Soft Aluminium
1000 mm	1.2	1.6
750 mm	1.6	2.0
500 mm	2.0	2.6
250 mm	2.6	3.2
100 mm	3.2	4.0
25 mm	5.0	6.0

WHERE A 3G RADIUS IS ACCEPTABLE THEN AT THE MAXIMUM LENGTH OF 1000MM THE CAPACITY CAN BE INCREASED UP TO 1.5MM FOR MILD STEEL.



GABRO® FOLDER MODEL

BF620-2 + BF1000

Ref No	SPARE PARTS FOR BF620-2-C & 1000-C Description	BF 620-2 Part No	Price	BF1000 Part No	Price
1	SIDE PLATE ASSEMBLY (LH)	DE001		DB002	
2	SIDE PLATE ASSEMBLY (RH)	DE002		DB001	
3	STAND SIDE ASSEMBLY	DH001			
3	STAND SIDE ASSEMBLY (LH)			DB013	
3	STAND SIDE ASSEMBLY (RH)			DB014	
-	STAND REAR SUPPORT			DA023	
4	M10 20 HEX HD SET SCREW	X094		X094	
-	M8 X 20 HEX HD BOLT			X024	
-	M8 NUT			X051	
-	M8 X 25 HEX HD BOLT			X025	
-	M10 SPRING WASHER	X138		X138	
5	STAND SPACER TUBE ASSEMBLY	DH002			
5	STAND SPACER TUBE FRONT ASSEMBLY			DB015	
-	STAND SPACER TUBE REAR ASSEMBLY			DB016	
6	M12 X 30 HEX HD SET SCREW	X102		X102	
7	SPACER ROD	D019		DA026	
-	SPRING RETAINING BOLT			DA034	
-	FRONT SPACER ROD			DA035	
-	M10 X 25 HEX HD SET SCREW			X095	
-	M10 X 20 HEX HD SET SCREW			X094	
8	M10 NUT	X120		X120	
9	CLAMPING FRAME ASSEMBLY	DE013		DB007	
10	SWING BEARING - BUSHED	DE007		DE007	
11	SWING BEARING PIVOT BOLT	D020		D020	
12	M10 NUT (FOR D 020)	X120		X120	
13	CLAMPING FRAME PIVOT WASHER	D022		D022	
14	FIBRE WASHER	X156		X156	
15	M12 THIN LOCK NUT	X123		X123	
16	M12 BRASS WASHER	X135		X135	
17	M5 X 45 SPRING PIN	X145		X145	
18	SWING BEARING SPRING	X179		X179	
19	SWING BEARING ASSY - UNBUSHED	DE009		DE009	
	REAR FRAME ASSEMBLY	DE014		DB008	
21	ADJUSTER SCREW	Z130		Z130	
22	NAME PLATE	Z048		Z112	
23	WORK SUPPORT TIE BAR	D049		DA019	
24	M10 NUT	X120		X120	
25	WORK SUPPORT BAR ASSEMBLY	DE018		DE018	
26	BACK STOP ASSEMBLY	DE017		DB010	
27	BACK STOP CLAMP ASSEMBLY	DE006		DB006	
28	BACK STOP CLAMPING SCREW ASSEMBLY	DE020		DE020	
29	M10 NUT	X128		X128	
30	FOLD BAR ASSEMBLY	DE005		DB003	

31	FOLD BAR BUSH	X193	X296
32	FOLD BAR PIVOT	D062	DA009
33	FOLD BAR PIVOT NUT	D063	D063
34	M12 NUT	X122	X122
35	FOLD BAR ANGLE	D035	DA012
36	WASHER & BOLT ASSEMBLY	DE022	
36	M10 X 16 SOCKET HEAD CAP SCREW		X219
37	FOLD BAR HOLDING SCREW	D039	D039
38	STOP QUADRANT ASSEMBLY	DE016	DE016
39	STOP QUADRANT TOMMY NUT ASSEMBLY	DE019	DE019
40	M12 X 35 HEX HD SET SCREW	X102	X102
41	BED ASSEMBLY	DE015	DB009
-	M10 X 10 SOCKET SET SCREW		X327
-	M10 X 16 SOCKET SET SCREW		X032
42	M8 X 35 HEX SKT CAP SCREW	X092	
42	M8 NUT	X118	
42	M8 WASHER	X137	
-	M8 X 20 HEX HEAD SET SCREW		X024
-	M8 SPRING WASHER		X137
43	STANDARD CLAMP BAR	D045	DA031
44	SPRING CLIP	D011	D011
45	M6 X 45 HEX HD BOLT	X088	X088
45	M6 UNF NUT	X116	X116
46	BACK STRUT ASSY (STRUT & THRUST BLOCK ONLY)	DE012	DE012
47	FRONT STRUT ASSY (STRUT & THRUST BLOCK ONLY)	DE011	DE011
48	CLAMPING PLATE	D014	D014
49	PIVOT PIN	D015	D015
50	M6 TRUARC RETAINER	X176	X176
-	STRUT ASSEMBLY COMPLETE	DE027	DE027
	CLAMPING PLATE SPRING	D030	D030
52	CLAMPING HANDLE STOP	D052	D052
53	M10 X 20 HEX HD SET SCREW	X094	XX094
53	M10 THIN NUT	X120	X120
54	TRAY	DG070	DA029
-	BED RAISING PLATE ASSEMBLY	DA028	DB011
55	BENDING PLATE CHANNEL FRONT	D084	DA010
56	BENDING PLATE CHANNEL BOTTOM	D083	DA011
57	M6 X 35 CSK SOCKET HEAD SCREW	X019	X019
58	M6 NUT	X049	X049
59	BLACK FERRULE	DG074	DG074
-	COUNTERBALANCE ASSEMBLY	DE030	DB012
-	M8 X 20 HEX HD SET SCREW	X024	X024

RMT GABRO

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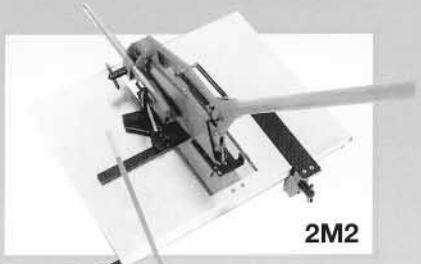
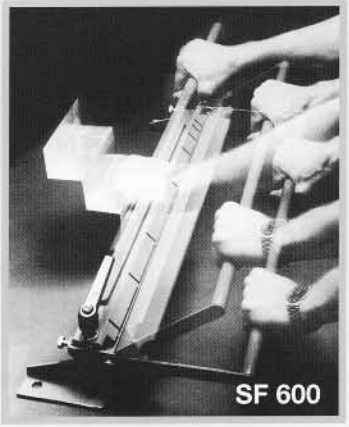
GUILLOTINE/NOTCHERS



Technical Information	2M2	3M2
Maximum Capacity Mild Steel.	1.6mm	3.2mm
Maximum Capacity Stainless Steel.	1.4mm	1.8mm
Maximum Capacity Non-Ferrous Metals.	3.2mm	4.0mm
Minimum Capacity without Die Adjustment.	0.25mm	0.3mm
Usual Blade/Die Clearance.	0.05mm each side	0.08mm each side
Thickness of Standard Blade.	3.3mm	4.5mm
Maximum length of cut at one stroke.	70mm	108mm
Table Size: Width x Depth.	480 x 370mm	859 x 560mm
Floor space, Stand mounted. Width x Depth.	460 x 810mm	890 x 970mm
Table Height, Stand mounted.	810mm	810mm
Height of machine—handle up (Stand mounted).	1619mm	1950mm
Height of machine—handle down (Stand mounted).	1012mm	1040mm
Weight of machine without stand.	12.0kg.	46.0kg
Weight of machine with Tubular/Wheeled Stand.	21.0kg.	67.0kg.

BOX PAN AND GENERAL FOLDERS



Technical Information	BF620-2	BF1000
Thickness		
Mild steel / Soft Aluminium		
1.2mm / 1.6mm	**Maximum length of bend** (2g radius)	
1.6mm / 2.0mm	620mm	1000mm
2.0mm / 2.6mm	475mm	750mm
2.6mm / 3.2mm	300mm	500mm
3.2mm / 4.0mm	200mm	250mm
5.0mm / 6.0mm	100mm	100mm
	25mm	25mm
Maximum box size	250mmx250mmx180mm deep or 600mmx575mmx12mm deep	1000mmx570mmx215mm deep or 1000mmx975mmx12mm deep
Minimum box size	12mmx12mmx6mm deep	12mmx12mmx6mm deep
Dimensions		
Width (Stand or Bench mounted)		
	Stand 750mm Bench 750mm	Stand 1340mm
Depth		
	Stand 579mm Bench 579mm	Stand 700mm
Height		
	Stand 1283mm Bench 546mm	Stand 1400
Weight		
	Stand 109kg Bench 95kg	Stand 143kg

TECHNICAL INFORMATION **Folding and Bending capacities.**
This chart shows the maximum material thickness for a given length of bend.

SF600

Width of bend - 300mm	Width of bend - 600mm
Max thickness	
Mild steel 1.25mm	Mild steel 0.8mm
Aluminium 2.0mm	Mild steel 1.25mm

Dimensions: 752mm wide x 300mm deep x 130mm high.
Weight: 11kg

RMT GABRO LTD

HILTON ROAD, COBBS WOOD INDUSTRIAL ESTATE, ASHFORD, KENT TN23 1EW
TELEPHONE: (01233) 628976 • FAX: (01233) 664909
www.mjallen.co.uk • sales@mjallen.co.uk