



### MBU

# INDEA

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## MEO

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CHECKING FOR BAD SHEETS, JAM DETECTOR:

The photo-cell also serves as a control for incorrectly folded sheets, doubles or "jams". If the photo-cell is not cleared by the passing sheet when 25 is reached then an impulse will not be given to the knife and the machine will switch itself off.

"JAM" DETECTOR WITH PARALLEL FOLD:

If you put the toggle switch (6) in the down position (C), (drawing below) the photo-cell is used for controlling the sheets passing straight through / under the knife. Knife does not operate. If the folded sheet is  $4^{"}$  in length (10cm) set the digital switch on #14 and the machine will keep running. The machine will only stop if a sheet longer than  $4^{"}$  (10cm) passes under the photo-cell or a sheet is stopped under it, ("jam up"). If you do not wish to use this setting then set the digital switch to "OO".

#### SWITCH POSITIONS:

A. Knife operates.

B. Knife does not operate.

C. Straight through imposition (knife fold not required) or ready position to "set-up" sheets for knife fold.





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<u>ATTENTION!</u> When the main switch is turned off, the cabinet is not completely without voltage

The ATTENTION - label on the electrical cabinet states that the cabinet is not completely without voltage.



DO NOT operate your MBO- folder with any of the guards removed or with any of the safety devices disconnected, bypassed or out of order.





DO NOT wear loose clothing around the machine and keep longer hair securely tied up. Remember that these machines are designed to grip and hold material and move it at high speeds.

DO NOT attempt to make any adjustments on the machine while it is in motion, unless adjusting device or controls are provided and the adjustment is specifically mentioned as a running adjustment.



If a mechanical failure should occur, or if adjustments appear to be necessary that are not part of the normal operator's procedures, shut the machine OFF. Get assistance from your MBO service representative.



DO NOT, under any circumstances, attempt to work on or over machine with tools of any kind while it is running.

Should a problem develop that appears to be electrical in nature, shut the machine OFF. Turn OFF incoming power to your machine. Secure the services of an electrician or your local MBO service representative. MRO

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## The "X" knife unit

The new self-timing knife folding "X" unit can be used either attached to the parallel folding unit as a 8 page section or to the 8 page second unit after the fold plates. The folding rollers and knife shafts as well as the electric clutch for the knife motion are driven by a belt from the preceding folding unit. The electric supply to the clutch as well as the electronic controls are made by cable connections. The fold roller perforator shaft adjustments are made at the operators side by caliper settings. Four transport tapes (8) move the sheet to the sheet stops (7), which is adjusted according to the scale at the left side of the machine (2). In accordance to the sheet size use sufficient stop fingers (7) attached to the sheet stop bar (1). For the final positioning of the sheet the side guides (6), have to be set, one on each side. The height of the folding knife (31) can be adjusted by the handle (32) situated on the top of the clutch assembly. Turning the handle COUNTER CLOCKWISE moves the knife nearer to the rollers. CLOCKWISE moves it farther away. The knife may also be moved horizontaly, (perpendicular to the fold rollers) (tips the knife from front to back). This operation is done by turning handle (33). It may be necessary to adjust the knife to correct a "crooked" perforator / knife cut.

The slitter shafts under the fold rollers can be removed by means of plug bearings like in the other folding units.

The stacker / delivery is positioned facing the operator, (operators side).

If the "X" unit is used on the 8 page unit the sheet MUST always run in the center of the 8 page unit, (if a half fold is processed). For that purpose a conveyor system is used with yellow belts / tapes to convey the sheet to the center and under the side lay. This unit is attached to the parallel unit by "hooks" and locking screws. When running a large sheet the 8 page unit MUST be moved away from the parallel unit. This will enable the tail of the sheet to clear the conveyor.



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The above folding machines were developed for folding sheets in sizes as specified in their respective data sheets using pile or continuous feeders (see page 1A). The running speed can be regulated continuously from 200 to 8000 inches / minute depending on the machine and can be varied according to size of the sheet or kind of fold.

The basic machine is supplied with a pile feeder and the well proven MBO features of:

Lattice-type alignment table.

Four (4) fast setting fold plates with attached swinging deflectors and a new sheet stop adjustment.

• Combination polyurethane-steel spiral rollers with new gearless and noiseless belt drive and caliper adjustment at the top of the machine.

<sup>•</sup> Solid, quick change, easily removeable knife shafts equipped with plug bearings.

The 8 page station is a roll-away buckle folding unit with it's own drive, quiet running cross carrier rollers and four (4) plates as described above.

The 16 page section is also a roll-away buckle unit as described above, but with 12" or 15" working width and four (4) fold plates.

The knife unit  $\mathcal{X}$  can be used on the parallel or the 8 page buckle unit of the B15-B18-B12O as an 8 page or 16 page folding unit. The knife is self-timing by a photocell and is independent of the feeder.

The standard delivery is a hang-on motorized stacker delivery with electronic speed control. The newer B115-B118-B120 folders use a mobile motorized stacker as optional.

To give the operator a general understanding of the working of the machine, the following description is made in the sequence of the adjustment of the machine from feeder to delivery.



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# Operation manual

### Sheet infeed control

"Teach in" of suction length and sheet gap.

Make sure the machine is RUNNING by pushing the GREEN start button.

Turn on the START Switch for the pump.

When the button suction length (2) is pushed and the single sheet infeed button is activated at the same time, a single sheet is provided with defined basic suction length (machine relating). When activating the buttons suction length (2), as well as, + (4) or (6), all subsequent single sheets will increase or decrease the suction length respectively.

The sheet length of all subsequent single sheets are measured anew through the photocell B 2 at suction wheel

The "teach in" is finished and the suction length & the sheet gap is determined onto the basis of the last measured sheet length by activating the button stream sheet infeed.

Suction length = 1/3 of sheet length.

Sheet gap at operation mode 1 = suction length + 1 cm (front edge- front edge).

Sheet gap at operation mode O = 1 cm (rear edge -front edge).

The suction length and sheet gap may be altered at a later time.

Alteration of Suction Length

Activate button suction length (2).

The suction length will be indicated in the 8-digit display.

When you push the button suction length (2) jointly with the buttons + (4) or (6), you may increase or decrease the suction length.

input sequence = 3 - 99 cm.

The batch counter mode is automatically switched over to 3 seconds after releasing the button suction length.

\* Notice: The suction length will be reset automatically to 1/3 of the sheet length when the "teach in" for suction length and sheet gap is started.



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Super Score

These drawings will help you to install the scoring device for cover stock.

The method shown will alleviate most (not all) cover stock cracking problems that normally occur when using other methods of scoring.

PLEASE remember to score INTO the fold (see drawings below).



If the sheet cuts in half, it may be necessary to use both of the spacers (1mm and 0,5mm). If the sheet still cuts in half, back off the roller pressure a little. Put one piece of thinner stock under the slitter shaft roller calipers. It is NOT recommended to open the scoring device 2mm (1mm + 2 X 0.5mm) otherwise cracking may re-occur

It is not necessary to purchase the whole accessory. If you have an edge trim device or center bleed, you may use some of these parts.

The rubber tires, spacers and score blades WILL fit on a standard perforator / knife holder on the T65-75 / B26-30 / B123 machines. The B16-20 / T49-55 / B23 standard perforator / knife holder has less thread width, so it will NOT be possible.

**WRO** 

#### Uperation Manual

Pile Feeder

### Pile Feeder B115-118-12O

The self-contained pile table may be loaded from two sides and is controlled by an electric motor. The pile stop (14), which is located at the bearing block (rightside, off operators side) is to be set to half of the sheet width by use of the scale. The right sheet guide bar (angled) behind the sheet stop is also mounted to this pile stop.

The pile table may be moved up or down by use of the selector switch #10 and pilot light button #11 which is located on the main control panel. The table is stopped in the proper position by a limit switch, as the paper is loaded and aerated. The EASY LOAD switch automatically lowers the feed table until the table reaches its lowest position, (maximum height of the pile is approximately 66cms or 26"). There after turn the selector switch for up movement of the pile table, (switch remains in this position). The height control in the up direction is controlled by a microswitch, if the pile is approximately ½" below the suction wheel (40) it should stop, when the pile is uneven the distance may be changed by re-setting (18) the height of the microswitch. The scale (17) will let you see where the microswitch is positioned. Items (24) are small weights that can be removed from the sheet hold backs. The weight required is dependent on the paper. The rubber caps (23) can also be removed. Back stops (19) are positioned at the back of the pile.

Then affix the left sheet guide bar (angled)(21). This bar should be approximately

3mm - 1/8" away from the side of the pile, in order to avoid squeezing the top sheets and to aid good ventilation of the sheets. The microswitch, which is located on the rear end of the pile (center) hinders floating of the sheets if they are excessively ventilated.

The guide bars (21) which are located on the left and right upper edge of the pile, may be adjusted in their height by knurled screws (25). These bars should be placed as deep as possible on top of the pile edges to avoid any leaking of the air blast and, futhermore, to make sure that the sheets are ventilated up to their rear end. Position side guide pin (20) to stop sheets from running into the side guide.

It is possible to aerate both ends (front, nearest blower tube and rear, pile height) of the pile with the 2 side air blowers (30 - 33). The front airbar blast can be regulated with controls (36 and 37), increase or decrease the amount of blow. One control does I side only.

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### Air and vacuum pump

The air pressure and vacuum pump are turned ON by use of switch  $\pm 2$  at the main control panel. Open the required airclips, which are placed on the air tube (30) at the front of the pile. The quantity of air should be proportioned in such a manner that approximately 5 - 10 sheets of the pile are thoroughly ventilated. The air tube may be adjusted up or down by twisting the knurled-head screw (34), which is located on the left side of the air tube. The air tube may also be tilted by use of the lever (35), which is also located on the left side of the air tube. You may carry out the preceding adjustment if the front edge of the sheet pile is bent down to achieve better results.

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The conveyance of vacuum from the suction wheel (40) is controlled by a disk which is placed behind the suction wheel. A red mark is located on this disk. The same mark is located on the housing beside the disk. When these marks are lined up, the sheets are sucked by the suction wheel vacuum in their exact center. A lever (42) is located on the front left hand side of the disk for adjustment of the exact vacuum contact position. If the sheet bends down, you should move the lever to the right (clockwise). The starting position for a normal (even) pile is when the 2 red marks behind the suction wheel are lined up.

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To increase or decrease the amount of vacuum turn the screw (43) on the block next to the vacuum hose, clockwise for more vacuum and counter clockwise for less vacuum.

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1		Scorin	g, Slittir	ng an 1:	d Pe 3/16*	rforator (30mm	blade: ) Diam	s for Sli leter	tter Sho	afts w	ith	
Index	п	Part #	outsid Inch	de Diame n	ter m	Thic	ikness mm		/	Applicat	ion	
1.	2.0	0.5591.020	2	5	ā <b>.</b> 5	Sco 1/32	ies os	St	andard so	core		
2.	2.9	0.5591.080	2	2 50.8		V32 Slitte	0.8 E <b>rs</b>	Sa	Score against rubber. Cover stoc or heavy paper			stock
3.	2.9	5591.010	2 1/8 53.5		1/32	0.8	St	Standard slitter				
4.	2.0	0.5591.090	2 1/8 53.5 1/		1/32	0.8	Hi	High speed steel - longer lasting				
						Perfor	ators					
Index	Ħ	Part #	outside Di Inch	ameter mm	incl	Thickness h mm	Te Quantity	eth per Inch	Cut Le Inch	ngih mm	Bridge L Inch	engih mm
5.	2.0	0.5591.030	2 1/16	53	1/6	4" 0.5	15	2.2	5/16-	8	1/8-	3
6.	2.0	0.5591.040	2 1/16	53	1/6	4 0.5	22	3.4	1/8″	25	3/16-	5
7.	20	0.5591.070	2 1/16	53	1/6	4 0.5	12	1.8	7/16-	n	3/16-	2.5
8.	20	0.5591.050	2 1/16	52.5	1/6	4 0.5	42	6.5	1/87	25	1/16-	1.5
9.	2.0	5.5591.060	2 1/16	52.5	1/6	4 0.5	70	10.8	1/16~	1	1/16-	1.2
10.	20	.5591.100	2 1/8	54	1/10	6~ 1.2	9	1.3	7/16 <sup>-</sup>	n	5/16-	8
11.	20	0.5591.110	2 1/16	53	1/6-	4" 0.5	16	2.4	3/16~	5.5	3/16-	5
12.	2.0	0.5591.120	21/16	53	1/6.	4″ 0.5	10	1.5	7/16-	12	3/16-	5
13.	20	0.5591.X82	2 1/16	53	1/6	4″ O.5	82	11.5				
					1	Applico	tion				<u> </u>	
Index	#	Perf. type	Imposi	tion	Sto	ck weight			Applic	ation		
5 6 7 8 9 10 11 12		Head Head Tear-out Tear-out Spine Spine Spine	ló page ló page ló page ó page 4 page ló page ló page ló page		Me Ligt Me Ligt Light	All d / heavy ht dium ht / medium All All	eavy Reduces dog ears, also for automatic sewing Less creasing than perforator #5 Mailer-multiple perf. high tear strength Light tear strength Punch (notch) perforator for perfect binding Perfect binding Perfect binding		ing g			
			<u> </u>				<u> </u>					

All scores, slitters and perforators measure 1 3/8" (35mm) internal diameter. Scores, slitters and punch perforators are closed. ALL other perforaters are split. Inch measurements, cut lengths and bridge width dimensions are approximate.



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	Delivery	
The c may onto adjus (signo corre by a contre	lelivery (hang on or mobile) which is delivered with the folding measily be used at all exits. When each sheet is finished folding the delivery. There are wheels mounted to a round bar and they deted depending on the finished sheet size. To prevent the atures) from inserting into one another, the wheels must be positive along with the height of the delivery. The speed of the belts DC. motor) can be regulated via a potentiometer on the opicility panel on the delivery.	achine ey exit can be sheets itioned (driven erators
Two previa unit t unde	cables, one power supply (5) and one control cable (6) plug ir ous unit (7 and 8). If the delivery is used in conjunction with the p hen these cables MUST be plugged into their respective sockets rside of the main control panel on the parallel.	nto the arallel on the
lf you and c	are using an 8 page and 16 page section then the delivery unit control cable will plug into the sixteen page control panel.	power
	Summary	
The c foldin "Jam- or me In suc setting	Juality and quantity of work which may be produced with the g machine depends on the care the operator gives the mac ups" or inacurrate folding which do not relate to the condition of the echanical faults, mostly occur due to inaccurate adjustments or se is cases, the operator should investigate whether all adjustme gs are in accordance with the operators manual.	e MBO chine, ne pile ttings, ents or

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			] ]
		Parallel Unit	
The sheet to the buc plates hav swinging o you require	is leaving the :kle plates and ve scales to s deflectors up e to use).	alignment table towards the par d deflectors, obtains one or mul set the sheet length of the fold or down (depending on which	allel unit where it, du tiple folds. All buckl . You may bring th buckle plate / plate
		Buckle Plates	
	Fol	d Plates depths in inche	25
Paralle #1 = 18 #2 = 18	   	8 Page #1 = 13½" #2 = 13½"	16 Page #1 = #2 =
#3 = 13 #4 = 13	1/2" 1/2"	#3 = 13½" #4 = 13½"	#3 = #4 =
	Minimum si	ze on each buckle plate is appro	eximately 17.
		Speed Control	
At the low knob). Thi	rer front of the s controls the knobs). To incr	e parallel unit section is a hand speed of the machine (each t rease the running speed turn the	adjuster (black "sta unit has one of thes "star" knob clockwis







## How to install perforators / knifes on knife shafts

The scoring (creasing), perforating, cutting and other devices as well as the transport rollers are installed onto the knife shafts (40). These shafts with their plug bearing (42) features may easily be removed and installed in the folding unit when it is necessary.

To remove the knife shafts, loosen the socket head screw (41). This is located in the bronze bushing on the operators side of the machine. While holding the knife shaft firmly with one hand, pull the knob with the other. To remove the shaft, pull it towards you so that the pins on the knife shaft (on the off-operators side) are tree from their housing.

To reinstall the shafts, reverse the procedure. Make sure that the pins are located in their housing and the plug bearings are PUSHED all the way in.

How to install and adjust the scoring blades

Attach the scoring blade on the knife holder (3-5) and hold it firmly by use of the locking screw-ring. A "C" wrench is used for loosening and locking this "ring". NORMALLY ONLY HAND TIGHTENING OF THIS RING IS NECESSARY

If the scoring blade and upper buckle plate are being used then this holder must be mounted with the "ring" facing the drive side (off-operator side) of the machine on the upper knife shaft. If a fold is processed using the bottom (#2) plate then the scoring device must go on the bottom shaft and the "ring" MUST face the operator.

There are exceptions to this rule but......MAKE SURE YOU UNDERSTAND THEM.

Place the transport rollers with the "rounded" edges towards the score blade one either side. Opening and closing the gap between these rollers will result in a "heavy" or "light" score. This will be dependent on the thickness of the paper and how many folds.

Failure to install any knife shaft accessories correctly can result in damage to the accessory and shafts!



# **Operation Manual**

490.2C







## Illustration #7

Parallel fold 12 pages

Caliper #1 .....insert 1 thickness of paper Calipers #2 to #4 .....insert 2 thicknesses of paper Calipers #5 & #6 .....adjust to ½ of sheet length Sheet stop #1 .....adjust to ½ of sheet length Deflectors #3 ......Set in position/ plates closed

Illustration #8

Parallel section/ unit adjust in accordance with illustration #1 The adjustments below are for the 8 page section / unit

Caliper #1 .....insert 2 thicknesses of paper Calipers #2 to #6 .....insert 4 thicknesses of paper Sheet stop #1 .....adjust to ½ of sheet length Deflectors #2 - #4 .....Set in position/ plates closed





