

Plate Control









Info: LL-KL-DKL -

Latch Locks are used to control and float plates during the mold opening and closing sequence. With three different types, **DME** provides a range of installation solutions for all applications:

1. LL: the original **DME** latch lock, successfully used in the field for almost 20 years. A simple, compact design which can be mounted in various configurations on the outside of the mold. Available in small, medium and large in one standard length which is easily cut to size by the toolmaker.



2. KL: very sturdy construction available in 6 different sizes to handle any mold dimension. Simple machining and adjustment allow easy mounting to the outside of the mold.



3. DKL: the modern alternative launched in 2004 and hugely popular with mold designers, builders and injectors. Completely contained inside the mold, DKL does not interfere with external cooling lines and no longer prevents mold being placed on its side.

Greatly simplifies mold-making as plates no longer need side-machining, only vertical machining. Optional guided ejection saves space in the mold.







T.C.P.

"A"

PI ATF

"B"

PLATE

SUPPORT

PLATE

EJECTOR

Jiffy Latch Lock

1. To control stripper plate.

the number of parts per shift.

knock-out bar.

Cycle time is often wasted waiting for the press

knock-out bar to function. With the application of

the DME Jiffy Latch-Lok, as illustrated to the left,

the stripper plate is moved in a secondary action

of the mold opening without the aid of the press

The Jiffy Latch-Lok permits you to shorten the

ejection stroke, improve cycle time and increase





1ST MOLD

OPENING

2ND MOLD

OPENING



3. To float A-plate away from top clamping plate while locking A- and B-plates. In the **DME** Latch-Lok application illustrated here, the "A" plate moves away from the top clamp plate in the first mold opening. During this portion of the cycle, the "A" and "B" plates are locked. As the release bar passes the rocker, the "A" and "B" plates part in the second mold opening.



4. Actuation of ejector assembly without aid of press knock-out bar.

For those mold applications where a shorter press stroke is required, the **DME** Jiffy Latch-Lok is extremely effective. You can activate the Jiffy Latch-Lok at any time after the mold begins to open, and pull the ejector assembly forward. This simple action shortens cycle time and increases part production.



LL

LL

LL

Jiffy Latch Lock

REF	W = MOLD WIDTH
LL 051 E	W <= 200
LL 101 E	200 < W < 400
LL 151	200 < W < 400
LL 201	W > 400

P	
	1



Α	В	C	Rocker Ø	Spring	For REF
80,0	35,0	25,0	LL 052 E: 22	LL 059 E	LL 051 E
127,0	47,0	37,0	LL 102 E: 32	LL 109 E	LL 101 E
127,0	49,2	36,5	LL 102: 31,2	LL 109	LL 151
152,5	74,6	61,9	LL 202: 50,2	LL 209	LL 201



Latch bar

REF	E	F	G2	For REF
LL 053 E	180	7,9	16,0	LL 051 E
LL 103 E	254	11,9	24,0	LL 101 E
LL 153	254	12,1	24,8	LL 151
LL 203	406	24,8	37,5	LL 201

Release bar

REF	М	Р	0	For REF
LL 054 E	180	7,9	16,0	LL 051 E
LL 104 E	254	9,9	24,0	LL 101 E
LL 104	254	9,0	24,8	LL 151
LL 204	406	12,1	37,5	LL 201



Е

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Spacer				
REF	U	V	W	For REF
LL 056 E	55,0	8,0	12,0	LL 051 E
LL 106 E	75,0	12,0	20,0	LL 101 E

12,4

25,3

22,2

38,1

LL 151

LL 201



76,2

114,3

LL 106

LL 206

🙀 MILACRON°

– Jiffy

Installation instructions LL-051 / LL-101 / LL-201



For one mold at least 2 Latch-loks are required, which are respectively mounted at outer surfaces (center of the mold).

Body must be parallel screwed and doweled at the molding plate. Latch and release bars must be screwed at 90° to the parting line (Slotted holes facilitate final adjustment). The bars have to slide properly in the body.

Adjustment:

Both Latch-loks must be accurately adjusted. Inaccuracies can lead to canting of stripper plates and to breaking of the bars.

Latch bars and release bars must be preset when the mold is closed. Open mold and check motion sequence of bars and stripper plate. Fine tuning is necessary. Repeat this procedure until both Latch-loks work together exactly. Then latch bar and release bar can be doweled. Before and during operation apply to all moving parts of the Latch-lok C 168 type grease.



Installation instructions LL-151

Jiffy

Release bar is ready to disengage rocker from latch bar at the end of the stroke /



With Latch-lok LL-151 especially the ejector plate is moved, ejector plate (N 50) has to overhang enough, so that body and, if necessary spacer* could be mounted. Body and spacer are to be screwed and doweled with N 50. Machine cut-out slot for bars in spacer* and overhanging ejector plates. All other installation instructions as described on LL-051, LL-101 and LL-201.

External Latch Lock

Positive and Precise Positioning of Floating Plates



ITEM NUMBER SA(W1)-(L1)-(DI)	w1	L1	DI	x1	w2	L2	x2	w3	L3	x3	w4	d4	x4	d5	x5	w6	L6	x6	L7	L9	STROKE 1			
SA55-130-00			00														130							
SA55-130-15]	130	15]													160				4-60			
SA55-130-25	55		25	222	22.2	22.6	14	24	15	22	22		10	MG	7	12 /	100	121	15.6	10 5				
SA55-160-00	55		00	23	32.2	32.0	14	34	15	23	22	4	10	1010	'	12.4	130	12.4	15.0	10.5				
SA55-160-15]	160	15]													160				4-90			
SA55-160-25			25														100							
SA65-150-00			00														150							
SA65-150-18]	150	18]													200				5-80			
SA65-150-32	65		32	26	38.2	35	16 3	40	16	25	26	4	10	M8	10	16.4	200	15.4	17	12				
SA65-200-00			00	20	00.2	00	10.0	-10		25	20	- T		1110	10	10.4	150	10.4		12				
SA65-200-18		200 <u>18</u> 32	200 18	200 18	.00 18															200				5-120
SA65-200-32							_									200								
SA80-200-00	1		00]													200							
SA80-200-25		200	25														250				6-110			
SA80-200-50	80		50	31	49.2	42	19	52	20	30	32	5	12	M10	12	20.4	200	16.4	20	14				
SA80-250-00			00	0.	10.2		10	02	20		02					20.1	200	10.1	20	17				
SA80-250-25		250	25	ļ													250				6-160			
SA80-250-50			50																					
SA95-250-00			00														250							
SA95-250-30		250 30	30														300				7-140			
SA95-250-55	95		55	38	62.2	54	24	66	27	38	40	6	15	M12	14	25.4		23	25	16				
SA95-300-00	30		00													20.1	250	20	20					
SA95-300-30	1	300	30														300				7-190			
SA95-300-55			55														000							



DME External Latch Lock Allows Precision Control of Mold Plate Latching Operation

- Ideal for molds with floating plates, including stripper plates & 3-plate molds
- Floating plates are positively locked in place during mold opening and closing, preventing potential mold damage
- Ensures floating plates will be where they should be throughout the life of the mold
- Positively and precisely positions plates every time the mold opens and closes, allowing molds to run faster
- · Simplifies mold design while improving design flexibility
- Designed and engineered to hold large loads while saving space inside the mold

- Simple design reduces machining time & labor costs
- · Standardized components simplify mold maintenance
- Eliminates springs & associated play in plates, and reduces mold maintenance
- Standard sizes accommodate most mold base sizes and stroke lengths
- (4) sizes of housings with (2) housing lengths each; (3) puller bar lengths
- Puller bars & housing may be shortened as desired
- · Stroke may be with or without delay

Example with delayed stroke sequence





w1 (2pcs)	INTENDED MOLD SIZE	TR max. (TRACTION FORCE)	LF MAX.(LOCKING FORCE)	Sz	BACKLASH
55	246 x 246	20kN	1.5kN	2.0	0.25
65	396 x 396	35kN	2.0kN	2.3	0.25
80	646 x 646	50kN	3.0kN	2.7	0.30
95	796 x 796	80kN	4.0kN	3.2	0.35

SA..PU - shock absorber, buffer damper DI - maximum delayed stroke

Sz - switching zone, stroke 2 begins slightly before the end of stroke 1

Animation:

http://www.dme.net/resources/multimedia/external-latch-lock

Backlash - Segments need clearance/play to allow the locking/unlocking sequence (built into the product)

TF - traction force (always retain the lowest)

LF - locking force (maximum holding force after stroke 1)







REF	L	La	Lb	l1		To be ordered seperately
KL 1-2-90	90	117	137	172	KF/KK/KV	KU
KL 1-2-170	170	197	217	252	KF/KK/KV	KU
KL 1-2-220	220	247	267	302	KF/KK/KV	KU
KL 1-2-270	270	297	317	352	KF/KK/KV	KU

CH LOCKS	MILACRON
— KL ———	Latch locks
	WZ8031B
40	II I3 Static Fmax. 65000 newton Dynamic Fmax. 30000 newton
	06 010 010 980 N/mm2

REF	11	13	Includes	To be ordered seperately
KL 1-3-120	120	182	WZ8031 B 10-025	KU
KL 1-3-170	170	232		KU
KL 1-3-220	220	282		KU



Baffle bar

KU -







REF		11	I5 min.	I5 max.	l6 min.	l6 max.
KU 1-1-140	140	120	23	105	23	99
KU 1-1-204	204	184	23	169	23	163
KU 1-1-254	254	234	23	219	23	213

LATCH L	LOCKS		Ň	MILACRON°
k	<u< th=""><th>Baffle bar</th><th></th><th></th></u<>	Baffle bar		
		SM6x20 —		
19	M6x16 Ø4x20 Ø6.6 Ø4H7 24 Bore bole as par customer's requ		M8x35 Ø6x40 M6 30 20	
			/Ø6 H7	€
REF	L		11	
KU 1-2-200 KU 1-2-250	200 250		220	

270

KU 1-2-300

300



REF		Includes	Includes			
KL 2-2-256	KF	KK	KV	KU		



REF for KL 2-2-256
KU2-2-400



Springs

REF	PART A	PART B	В	L1	L	FOR LATCH LOCK
KF 12-70	2x	1x	20	90	110	KL 1-1-70
KF 12-90	2x	1x	20	90	110	KL 1-2-90
KF 12-170	2x	1x	20	90	110	KL 1-2-170
KF 12-220-270	2x	1x	20	127	157	KL 1-2-220 - 270
KF 22-256	2x	1x	25	127	157	KL 2-2-256



В

Heads

REF	А	A1	A2	М	D	В	C
KK 11-12	37,5	23,6	21	157	6	27	20
KK 22	55	40	26,95	157	12	30	27

KK 11-12 for latch lock KL1-1-70 / KL1-2-170 / KL1-2-220 / KL1-2-270 **KK 22** for latch lock KL2-2-256





KV ·

KΚ

Wearing bars

REF	
KV 11-12	FOR ALL KL



WZ 8031

Springs

REF	
WZ 8031 B 10-25	FOR ALL KL 1-3-*



— KL-KU

Example







KL



Example

KL-KU -







— DKL

Internal Latch Lock



DME's unique internally-mounted latch lock mechanism adapts to a number of mold base sizes and plate thicknesses. It is available in three sizes to accommodate most standard **DME** stripper plate mold bases. Two travel ranges and two center puller pin lengths are available for each of the three latch lock sizes. Once installed, **DME**'s internal latch locks control the sequence of one parting line opening after the first parting line has traveled a predetermined distance. After installation there are no adjustments that can be accidentally changed. The internal latch locks are most commonly used on **DME** stripper plate mold bases.



Basic Latch \varnothing	REF	Travel Range (1) Min./Max.	Center Puller Pin Length Options	Recommended max. Standard DME Mold Base Width	Max. Recommended Load Values Static - Dynamic	L8 Body	W(2) Puller Pin	Y(3) Mounting Plate	Z(C'B De	4) are pth
	DKL 2811	5 -> 30	140							
28	DKL 2812		250	206	10 kN 100 kg	40	22 . 0 1	22 > 25	10	+0,04
Small	DKL 2821	30 -> 55	140	290	10 KIN - 100 Kg	40	23 ±0,1	22-2 50	10	0
	DKL 2822		250							
	DKL 3411	6 -> 41	160		396 20 kN - 200 kg	51	32 ±0,1	27 -> 47,6		
34	DKL 3412		280	206					12	+0,04 0
Medium	DKL 3421	41 -> 76	160	390						
	DKL 3422		280							
	DKL 4511	12 -> 58	200							
45	DKL 4512		310	596	20 KN 200 kg	69	12 . 0 1	25 . 60	16	+0,04 0
Large	DKL 4521	58 -> 104	200		30 KIN - 380 Kg	08	43 ±0,1	30->00		
Ű	DKL 4522		310							

(1) Supplied to provide maximum travel with no cutoff. To reduce travel between maximum and minimum, cut off slotted travel limiting sleeve on threaded end only per installation data. Cut off to no less than minimum travel; maintain close tolerances per installation data.

(2) This set-up dimension is critical and must be maintained as specified to properly locate pin and cam body to latch. Dimension W is from top of X-1 stripper plate to top end of center puller pin. See installation data for additional information.

(3) "Y" mounting plate dimension will be the "A" plate for stripper plate mold bases.

(4) This counterbore depth is critical and must be maintained as specified to locate split sleeve, cam body and pin to latch.



Internal Latch Lock

Basic selection and application design guidelines

1. Select the appropriate internal latch lock size – 28 mm diameter (small), 34 mm diameter (medium), or 45 mm diameter (large) based on the width of the mold base. However, large molds, thick plates or heavy load applications may require the next largest size assembly than is specified.

2. Select the appropriate travel range from the two choices for each size. This selection is based on the specific application requirements for the amount of travel that must occur at one parting line prior to the latch being released. The total travel requirements are based on the amount needed for the application as explained above, plus 3 mm minimum additional allowance. This added 3 mm minimum will make sure the full required travel has occurred before the latch lock starts its releasing action.

3. Select the appropriate length for the center puller pin from the two choices for each size. The length of the pin is determined by the specific application including the mold base plate thicknesses, where the pin will be mounted, etc. If possible, the center puller pin should be mounted in the support plate. However, some applications require the center puller pin to be mounted in the bottom clamping plate. This will depend on the travel or the length of the split sleeve component which controls the travel and the plate thicknesses in the mold base. 4. A minimum of four assemblies are recommended per mold. However,

for larger molds, thick plates, or an application where loads are near maximum, additional assemblies and/or next largest size assemblies may be required. An application must never exceed the maximum recommended load values. A balanced load must be maintained to avoid cocking and binding which could cause severe overloading. Only one size latch lock assembly should be used in each mold base.

5. The center puller pin should be counterbored into its mounting plate 4 mm minimum for most applications, as shown in the drawings at right. This counterbore aligns the center puller pin with the other components in the assembly.

6. It is important to make sure that the leader pin lengths in all applications are long enough to fully engage the stripper plate through its full travel. The latch lock mechanism latches two plates together but is not intended to provide guidance. Instead it relies on the leader pins in the mold for proper alignment and support of the actuated stripper plates.

7. In the fully latched position the internal latch lock mechanism will allow movement of approximately 0.4 mm for the 28 mm diameter and 34 mm diameter assemblies and approximately 0.5 mm for the 45 mm diameter assemblies.

8. Injection molding machine mold opening speed may have to be reduced in order to make sure that excessive shock loading does not occur.

9. The Internal Latch Lock is not recommended for severe load applications.

10. The Internal Latch Lock must not be exposed to temperatures that exceed 150°C at any time.

11. An optional sleeve can be added to the Latch Lock that provides two additional functions. However, this optional sleeve is not required for the Latch Lock function. The optional sleeve can be added to incorporate guided ejection and/or normal ejector assembly return functions in the mold. DKL -

LATCH LOCKS





Internal Latch Lock application with center puller pins mounted in the support plate. This is typically done in applications where the travel is shorter and/or when mold plates are thicker.





Internal Latch Lock application with center puller pin mounted in the bottom clamping plate. This is typically done in applications where the travel is longer and/or when mold plates are thinner. (Some applications may require a thicker than standard bottom clamping plate.)

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Internal Latch Lock



Basic Latch	Plate Latching Assembly	Assembly Retaining Screw	Spring Retainer	Body for Cam Fingers without Cam Fingers	Body for Cam Fingers with 4 Cam Fingers*	Cam finger Replacement kit**	Spring for Holding Pin	Holding Pin For Cams	Slotted Travel Lim	iting Sleeve	Center Pull	ler Pin
Ø	REF	DKL 11	DKL 21	DKL 31	DKL 32	DKL 62	DKL 41	DKL 51	DKL 71/72	T ravel range	DKL 81/82	Length
	DKL 2811							חאו	DVI 2071	F 20	DKL-2081	140
28	DKL 2812	DVI 2011	DVI 2021	DVI 2021	DVI 2022	DVI 2062	DVI 20/1		DKL-2071	5 - 30	DKL-2082	250
Small	DKL 2821	DKL-ZUII	DKL-2021	DKL-2031	DKL-2032	DKL-2002	DKL-2041	DKL-2031	DKI 2072	30 -	DKL-2081	140
	DKL 2822								DKL-2072	55	DKL-2082	250
	DKL 3411								DKI 2071	6 11	DKL-3081	160
34	DKL 3412	DKI 2011	DKI 2021	DKI 2021	DKI 2022	DKI 2062	DKI 20/1	DKI 2051	DICE-3071	0-41	DKL-3082	280
Medium	DKL 3421	DICL-JUIT	DICL-JUZI	DKL-3031	DIL-JUJZ	DICL-JUUZ	DICE-3041	DKL-3031	DKI 2072	41 -	DKL-3081	160
	DKL 3422								DKL-JU/Z	76	DKL-3082	280
	DKL 4511								DVI /071	12 -	DKL-4081	200
45	DKL 4512	DKI 4014			DVI 4041		DKL-4071	58	DKL-4082	310		
Large	DKL 4521	UKL-4011	UKL-4021	DKL-4031	DKL-4032	DKL-4062	UKL-4041	UKL-4051	DKL-4072	58 -	DKL-4081	200
	DKL 4522									104	DKL-4082	3100



DKL11

DKL41

Assembly retaining screw

REF	Size	D1	D2	D3	L1	L2	L3	F1
DKL-2011	Small	28	M22x1,25	13,5	34	5	26	10
DKL-3011	Medium	33	M26x1,5	16	46	6	35	12
DKL-4011	Large	42	M34x1,5	18,4	59	10	42	14



Spring for holding pin

REF	Size	D15	L18
DKL-2041	Small	6,5	56
DKL-3041	Medium	8	70
DKL-4041	Large	9,7	90

Holding	pin	for	cams
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REF	Size	D16	D17	L19	L20
DKL-2051	Small	12,3	12,9	15	3
DKL-3051	Medium	14,4	15,4	23	5
DKL-4051	Large	19,4	20,4	32	7

Spring retainer

REF	Size	D4	D5	D6	D7	L4	L5	L6	L7	F2
DKL-2021	Small	12,6	M16x1	6,8	2,6	18	7	7	15	11
DKL-3021	Medium	15,0	M19x1	8,3	3,0	21	8	8	17	13
DKL-4021	Large	17,2	M24x1	10,0	3,5	25	10	9	21	15



DKL51 —



DKL21 -





— DKL62

Cam finger replacement kit





REF	Size	L16	L17
DKL-2062	Small	5,8	4,2
DKL-3062	Medium	7,2	4,8
DKL-4062	Large	9	6,0



											D13					
REF	Size	D8	D9	D10	L8	L9	L12	L14	L15	R1	Drill Ø	C'bore Ø	C'bore depth	Metric S.H.C.S.		
DKL-2032	Small	54	20,6	M16x1	40	13	7	40	12,6	2,5	6,8	10,4	6,8	M6x1		



											D13						
REF	Size	D8	D9	D10	L8	L9	L12	L14	L15	R1	Drill Ø	C'bore Ø	Metric S.H.C.S.				
DKL-3032	Medium	60	24,4	M19x1	51	15	8	46	12,6	2,5	6,8	10,4	6,8	M6x1			
DKL-4032	Large	78	32,4	M24x1	68	20	10	60	17	4	8,4	13,7	8,5	M8x1,25			



Slotted travel limiting sleeve

DKL71/72



REF	Size	Travel Range Min./Max.	L22	D19	D20	D24	L23	L24	L25	L28
DKL-2071	Small	5->30	86	28	M22x1,25	16	37	31,5	6	10,8
DKL-2072	Small	30->55	111	28	M22x1,25	16	37	31,5	6	10,8
DKL-3071	Medium	6->41	111	34	M26x1,5	19	49	41	7	12,8
DKL-3072	Medium	41->76	146	34	M26x1,5	19	49	41	7	12,8
DKL-4071	Large	12->58	152	45	M34x1,5	26	65	56	10	17,3
DKL-4072	Large	58->104	198	45	M34x1,5	26	65	56	10	17,3



DKL81/82





DEE	Cinc.	1 20	D25	D26	D27	1.20	191	100	E9	D28	
nLr	3126	LZJ	D2J			L30	LJI	LJZ	ГJ	Metric	
DKL-2081	Small	140	16	12,4	9,8	21	Λ	67	13	M8x1,25	
DKL-2082	Small	250					4	0,7			
DKL-3081	Medium	160	10	14 E	11,7	24	4,6	7,6	15		
DKL-3082	Medium	280	19	14,0						IVITUXT,5	
DKL-4081	Large	200	26	19,5	15,9	31	5,5	9,5	22	N410v1 7E	
DKL-4082	Large	310								1011231,70	

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– DKL



Guided Ejection Sleeve

Add guided ejection and return pin functions to Internal Latch Lock mechanism with this optional sleeve

The optional Guided Ejection and Return Sleeves, although not required for the Internal Latch Lock, can add two functions to the mold base that are typically required in most molds. These optional sleeves can add guided ejection and ejector assembly return functions to the mold base. Additionally, these added functions fall within the space requirements of the plate latching mechanism. However, these optional sleeves do not create an early ejection return system that is occasionally required in some applications.

• Sleeves can add guided ejection function to mold base along with plate latching mechanism

• Sleeves can replace function of return pins in mold base for most applications using the plate latching mechanism

• Sleeves fit around the center puller pin of the plate latching mechanism and are mounted in the ejector assembly, thus eliminating the need for additional mold space usually required for the guided ejection and return pin functions





Basic	DEE Lotohing	Optional – Guided Ejection and Return Sleeve Features											
Latch Size	Assembly	REF Sleeve	L35 Length	D28 Ø	D29 Ø	D30 Ø	L36 Length	L37 Thickness	L38 Length	L39 Length	L40 Length	L41 Min.	
	DKL-2811	DKL-2101	00	24	20	16	12	5	14	40	30	12	
28	DKL-2812	DKL-2101	90	24	30								
(Small) D	DKL-2821	DKL-2102	140	24	30	10	12	5	14	40	30	12	
	DKL-2822	DKL-2102	140			10							
	DKL-3411	DKL-3101	110	28	35	19	14	6	16	50	35	15	
34	DKL-3412	DKL-3101										15	
(Medium)	DKL-3421	DKL-3102	100	00	35	10	14	6	16	50	35	15	
	DKL-3422	DKL-3102	160	28		19							
	DKL-4511	DKL-4101	140	20	40	20	10	0	20	70	40		
45. (Large)	DKL-4512	DKL-4101	140	38	40	20	18	ð	20		40	20	
	DKL-4521	DKL-4102		38	46	20	10	8	20	70	40	20	
	DKL-4522	DKL-4102	200			20	18						

Notes:

1. Choose the appropriate length sleeve so that it can be cut off to a length that will fully return the ejector assembly. See installation data.

2. The center puller pins must support and guide the sleeves, as well as the ejector assembly. The pins must have sufficient bearing surface contact as specified by dimension "L41" minimum.

3. Additional bearing surface contact for the center puller pins may require a thicker bottom clamping plate or the addition of another plate to the bottom of the mold for some applications. 4. A minimum of four assemblies are typically recommended per mold. However, for larger molds, thick plates, or an application where loads are near maximum, additional assemblies and/or next largest size assemblies may be required. An application must never exceed the maximum recommended load values. A balanced load must be maintained to avoid cocking and binding which could cause severe overloading. Only one size Latch Lock assembly should be used in each mold base.