PLATE SEQUENCE CONTROL

### PLATE LATCH LOCKS CAM SEQUENCING



#### **APPLICATION GUIDELINES**

- The 7"/180mm assemblies are suggested for pulling 2,000 lbs (900 kg) each and the 12"/300mm assemblies are suggested for pulling 3,000 lbs (1360 kg) each. Weight ratings may vary based on gate size, friction conditions, and velocity.
- On molds that are 12" wide or more, Progressive recommends four assemblies, two sets per side on the opposite ends of the mold.
  Using four assemblies with the addition of four Stripper Plate Kits (-S version) to push plates is recommended for plates 12" or greater in width.



## PLATE LATCH LOCKS 3-PLATE APPLICATION

#### **Design & Installation:**

- 1. Determine Latch travel.
- 2. Determine Stripper Bolt travel, .06 minimum clearance past Latch release.
- 3. Determine the Cam Bar length by utilizing the gauge pin and timing diagram on the opposite page.
- 4. Machine the Latch Bar so that with the mold closed there is .001" clearance between the Wedge Block and Latch Bar as shown in the timing diagram.
- 5. Machine (2) counterbores and (2) dowel holes for Latch and Cam Bar as shown. Two (2) dowels are recommended for proper alignment.



- 6. For all assemblies, the Wedge Block Assembly is installed according to the pocket dimensions below.
- 7. For the 12"/300mm assemblies, the Guide Block must be installed over the Latch and Cam Bars. The Guide Block will help to avoid deflection, causing latch timing issues, during production and can be purchased for optional use on the 7"/180mm assemblies. Screw size and locations are shown below, and it is suggested that location is on the center of the Wedge Block Assembly pocket, opposite the spring pressure.



#### 8. Max operating temperature is 500°F (260°C).

#### Inch Standard

CATALOG NUMBER	<b>A</b> +.001 000	<b>B</b> ± .005	<b>C</b> ± .005	<b>D</b> +.001 000	<b>E</b> +.001 000	<b>F</b> ± .005	G REF	J	L	М	R	<b>X</b> ± .005	<b>Y</b> ± .005	THD	
PLC75-7	3.001	7 0 0 1	0.44	4	000	1000	1 71	1.00	750	750	500	250	7.005	500	1/4-20
PLC75-12		2.44	.45	.900	1.000	1.51	1.80	.750	.750	.500	.250	3.625	.500	x .50 Deep	

#### Metric Standard

CATALOG NUMBER	<b>A</b> +.03 00	<b>B</b> ± .1	<b>C</b> ± .1	<b>D</b> +.03 00	<b>E</b> +.03 00	<b>F</b> ± .1	G REF	J	L	м	R	<b>X</b> ± .1	<b>Y</b> ± .1	THD		
PLCM20-180	0002	64	12	24	27	75	40	20	20	14	7	02	17 5	M6-1.0		
PLCM20-300	80.02	80.02	80.02	04		24	27	- 35	49	20	20	14		92	13.5	x 10mm Deep

CAD insertion point 12"/300mm Latch/Cam Bar Length Installation G F J Provided Length = 12" (300mm) P<sub>2</sub> Guide Block ₽ı 0 ][... 6 ŧ Provided Length = D 12' (300mm) P23 (Main) 0  $\odot$ 0  $\odot$ - L

PLATE SEQUENCE CONTROL

## PLATE LATCH LOCKS



#### **Dual Ejection**

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Plate Latch Locks keep both ejector sets together until the release point. The Wedge Block Assembly would be installed in the bottom ejector plate, following the installation of all components.

#### **APPLICATION GUIDELINES**

- Stripper plate applications can be utilized as shown above with the optional Stripper Plate Kit as sold on page J-4. The Latch Bar will be discarded and replaced with the Driver, Cap, and Spacer offered in the kit.
- All pocket and component machining is similar to the 3-plate application shown on page J-2 except for calculation of the "T" dimension for timing the release point according to the graphic at right.
- Use the Spacer as a template for machining the bolts/dowels on the Driver/Cap assembly.
- Attach the Spacer to the Driver, which will provide .03"(.75mm) gap between the Driver and the mold to avoid interference.





#### **Stripper Plate**

The Drivers push the stripper plate forward until the parts are stripped from the core. The lock then releases, allowing the ejector pins to push the parts from the stripper plate.

## PLATE LATCH LOCKS CAM SEQUENCING

ASSEMBLY CATALOG NUMBER	LATCH/CAM BAR LENGTHS
PLC75-7	7"
PLC75-12	12″
PLCM20-180	180mm
PLCM20-300	300mm

#### Assemblies include:

- All machined components listed below.
- Items within the Wedge Block Assembly:
  - Compression Springs (2)
  - 1/4-20 LHCS or M6-1.0 LHCS (2 per assembly)
  - 1/8 or 3mm Diameter Dowel Pin (1 per assembly)
- Screws within the Guide Block (12"/300mm assemblies)
  - 1/4-20 LHCS or M6-1.0 LHCS (2 per assembly)

PART NAME	MATERIAL/TREATMENT						
Latch Bar	4340, 35-40 HRC, Nitride/Black Oxide						
Cam Bars (2)	4340, 35-40 HRC, Nitride/Black Oxide						
Wedge Block	Wedge Block: A-2, 58-60 HRC Titanium Nitride						
Assembly	Guide & Guide Plate: H-13, 52-54 HRC Nitride/Black Oxide						
Guide Block	H-13, 52-54 HRC, Nitride/Black Oxide						

The Guide Block may also be utilized on the 7"/180mm assemblies. To order the assembly which includes screws, specify PLC75-GBA for inch standard and PLCM20-GBA for metric.

## PLATE LATCH LOCKS STRIPPER PLATE KIT

For stripper plate applications, purchase the appropriate metric or inch assembly from the top of the page and the matching kit below. The mold maker will discard the Latch Bar, replacing it with the Cap/Driver/Spacer shown at right.

CATALOG NUMBER	STANDARD
PLC75-S	Inch
PLCM20-S	Metric

Assembly includes:

- All machined components listed below.
- (1) #10-32 x .75 or M5-.8 x 30mm SHCS

PART NAME	MATERIAL/TREATMENT
Сар	4340, 35-40 HRC, Nitride
Driver	4140, 28-35 HRC, Black Oxide
Spacer	303 Stainless Steel, 35-40 HRC







#### **Inch Standard**

CATALOG NUMBER	<b>A</b> +.001 000	<b>B</b> ± .005	<b>C</b> ± .005	<b>D</b> +.001 000	<b>E</b> +.001 000	<b>F</b> ± .005	G REF	J	К	L	<b>R</b> pocket	THD
PLC125-16	4.001	3.25	.45	.900	1.500	2.00	2.875	1.875	1.250	1.125	.250	5/16-18

#### **Metric Standard**

CATALOG NUMBER	<b>A</b> +.03 00	<b>B</b> ±.1	<b>C</b> ± .1	<b>D</b> +.03 00	<b>E</b> +.03 00	<b>F</b> ±.1	G REF	J	к	L	<b>R</b> роскет	THD
PLCM32-400	100	82	12	24	36	50	75	47	32	28	7	M8-1.25



# PLATE LATCH LOCKS



- Determine the Cam Bar length by utilizing the gauge pin and timing diagram.
  Machine the Latch Bar so that with the mold closed there is .001" (.03mm)
- Machine the Latch Bar so that with the mold closed there is .001" (.03mm) clearance between the Wedge Block and Latch Bar as shown in the timing diagram.
- Machine (2) counterbores and (2) dowels for Latch and Cam Bar as shown on page J-5. Two (2) dowels are recommended for proper alignment.
- Max operating temperature is 500°F (260°C)

- Items within the Wedge Block Assembly:
- Compression Springs (2)
  5/16-18 x 1.75" SHCS or
- M8-1.25 x 40mm SHCS (2)
- 1/8 Diameter Dowel Pin (1)



#### **Floating A-Plate**



#### A-Side Ejection



#### **Stripper Plate Ejection**



