

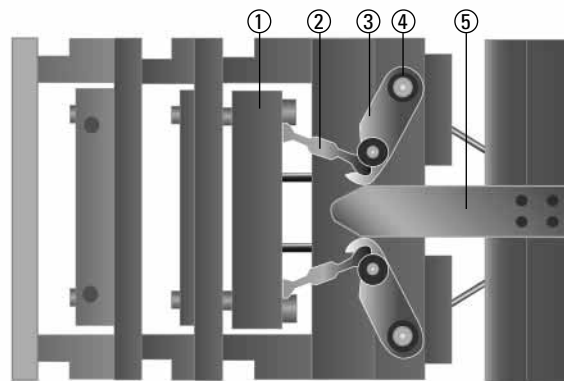
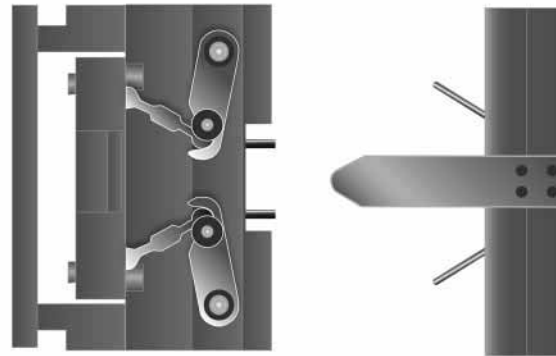
Positive Early Ejector Return

The D-M-E Toggle-Lok is an externally mounted device used to positively return the ejector assembly before the mold completely closes. Employed when ejector pins or other moving components interfere with normal mold closure, the Toggle-Lok returns and locks the ejector assembly firmly in place, preventing expensive mold damage. It uses a positive cam linkage and activator lever rather than springs, pneumatics, hydraulics or other more cumbersome methods. Since it is mounted externally, the Toggle-Lok allows more space for cavities, slides or other required mold components. It is available in three styles to suit a broad variety of applications. Each style is available in a Toggle-Lok Package, which corresponds to a specific mold base requirement.

Operating Sequence

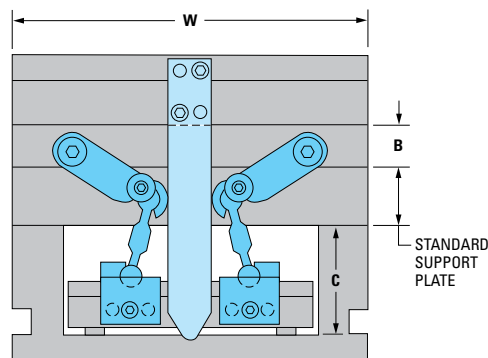
Upper photo shows mold in open position, with ejector assembly fully forward. Before the mold has fully closed, the Toggle-Lok levers engage and move the arms to return the ejector assembly.

U.S. Patent No. 3,226,771

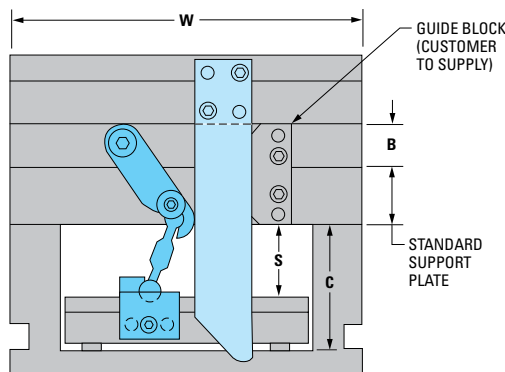


1. Mount and Cover Plate
2. Joint
3. Arm
4. Shoulder Screw
5. Lever

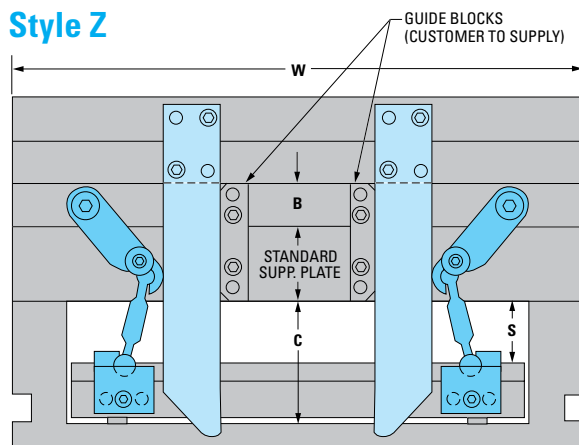
Style X



Style Y



Style Z



Each Standard Toggle-Lok Package includes components and hardware necessary to equip both ends of the mold.

STYLE X PACKAGE INCLUDES:

1. (4) Arms with:
 - (4) Shoulder Screws (TLSS-12)
 - (4) Retainers (TLR-10)
 - (4) Button-Head Screws
2. (4) Joints
3. (4) Side Mounts (standard) or Top Mounts (if specified) with:
 - (4) Cover Plates
 - (4) Socket Head Cap Screws
 - (8) Dowels
4. (2) Levers with:
 - (2) Lever Spacers (TLS-20)
 - (4) Socket Head Cap Screws
 - (4) Dowels
5. (1) Hole Location Template

STYLE Y PACKAGE:

Same as Style X, with half the quantities listed in items 1, 2 and 3.

STYLE Z PACKAGE:

Same as Style X, with twice the quantities listed in item 4.

Assembly Specifications

TOGGLE-LOK PACKAGES		MOLD BASE REQUIREMENTS				DIMENSIONS					PACKAGE INCLUDES				
ITEM NO	STYLE	W DIM (MOLD BASE WIDTH)	C DIM	S DIM (MAX EJECTION STROKE)	B DIM (MIN PLATE THICKNESS)	F	G	H	J	K	ARMS	JOINTS	MOUNTS	LEVERS	TEMPLATE
											(QTY) ITEM NO	(QTY) ITEM NO	(QTY) ITEM NO	(QTY) ITEM NO	(QTY) ITEM NO
TL-825	Y	7 ⁷ / ₈	2 ¹ / ₂	1 ³ / ₁₆	7 ⁷ / ₈	.81	0	3.86	.28	1.28	(2) TLA-20	(2) TLJ-20	(2) TLSM-125	(2) TLL-20-S	TLT-10
TL-830	Y	7 ⁷ / ₈	3	1 ¹¹ / ₁₆	1 ³ / ₈	.75	0	4.84	.28	1.59	(2) TLA-30	(2) TLJ-20	(2) TLSM-125	(2) TLL-20-S	TLT-11
TL-835	Y	7 ⁷ / ₈	3 ¹ / ₂	2 ³ / ₁₆	1 ³ / ₈	.84	0	5.32	.28	1.59	(2) TLA-30	(2) TLJ-24	(2) TLSM-125	(2) TLL-20-S	TLT-12
TL-840	Y	7 ⁷ / ₈	4	2 ¹¹ / ₁₆	1 ⁷ / ₈	2.17	0	5.92	.28	1.22	(2) TLA-40	(2) TLJ-24	(2) TLSM-125	(2) TLL-20-S	TLT-13
TL-845	Y	7 ⁷ / ₈	4 ¹ / ₂	3 ³ / ₁₆	1 ⁷ / ₈	2.13	0	6.44	.28	1.25	(2) TLA-40	(2) TLJ-30	(2) TLSM-125	(2) TLL-20-S	TLT-14
TL-1025	X	9 ⁷ / ₈	2 ¹ / ₂	1 ³ / ₁₆	7 ⁷ / ₈	2.99	1.99	4.13	.50	.735	(4) TLA-20	(4) TLJ-20	(4) TLSM-200	(2) TLL-15	TLT-15
TL-1030	X	9 ⁷ / ₈	3	1 ⁵ / ₁₆	1 ³ / ₈	2.99	2.24	4.76	.50	.735	(4) TLA-24	(4) TLJ-20	(4) TLSM-200	(2) TLL-15	TLT-16
TL-1035	X	9 ⁷ / ₈	3 ¹ / ₂	1 ¹³ / ₁₆	1 ³ / ₈	3.11	2.24	5.19	.50	.735	(4) TLA-24	(4) TLJ-24	(4) TLSM-200	(2) TLL-15	TLT-17
TL-1040	Y	9 ⁷ / ₈	4	2 ⁵ / ₁₆	1 ⁷ / ₈	1.50	0	6.59	.50	1.53	(2) TLA-40	(2) TLJ-24	(2) TLSM-200	(2) TLL-20-S	TLT-18
TL-1045	Y	9 ⁷ / ₈	4 ¹ / ₂	2 ¹³ / ₁₆	1 ⁷ / ₈	3.03	.66	6.87	.50	.41	(2) TLA-40	(2) TLJ-30	(2) TLSM-200	(2) TLL-20-S	TLT-19
TL-1125	X	10 ⁷ / ₈	2 ¹ / ₂	1 ³ / ₁₆	1 ³ / ₈	3.55	1.99	4.17	.50	.735	(4) TLA-24	(4) TLJ-20	(4) TLSM-200	(2) TLL-15	TLT-20
TL-1130	X	10 ⁷ / ₈	3	1 ⁵ / ₁₆	7 ⁷ / ₈	3.55	2.24	4.61	.50	.735	(4) TLA-24	(4) TLJ-24	(4) TLSM-200	(2) TLL-15	TLT-21
TL-1135	X	10 ⁷ / ₈	3 ¹ / ₂	1 ¹³ / ₁₆	1 ⁷ / ₈	3.51	2.64	5.66	.50	.98	(4) TLA-30	(4) TLJ-24	(4) TLSM-200	(2) TLL-20-D	TLT-22
TL-1140	Y	10 ⁷ / ₈	4	2 ⁵ / ₁₆	1 ⁷ / ₈	1.50	0	6.59	.50	1.53	(2) TLA-40	(2) TLJ-24	(2) TLSM-200	(2) TLL-20-S	TLT-18
TL-1145	Y	10 ⁷ / ₈	4 ¹ / ₂	2 ¹³ / ₁₆	1 ⁷ / ₈	2.00	0	6.93	.50	1.33	(2) TLA-40	(2) TLJ-30	(2) TLSM-200	(2) TLL-20-S	TLT-23
TL-1230	X	11 ⁷ / ₈	3	1 ³ / ₁₆	7 ⁷ / ₈	3.92	1.99	4.52	.62	.735	(4) TLA-30	(4) TLJ-20	(4) TLSM-200	(2) TLL-15	TLT-24
TL-1235	X	11 ⁷ / ₈	3 ¹ / ₂	1 ¹¹ / ₁₆	7 ⁷ / ₈	3.92	1.99	5.04	.62	.735	(4) TLA-30	(4) TLJ-24	(4) TLSM-200	(2) TLL-15	TLT-25
TL-1240	Y	11 ⁷ / ₈	4	2 ³ / ₁₆	1 ³ / ₈	.88	0	5.81	.62	1.53	(2) TLA-30	(2) TLJ-24	(2) TLSM-200	(2) TLL-20-S	TLT-26
TL-1245	Y	11 ⁷ / ₈	4 ¹ / ₂	2 ¹¹ / ₁₆	1 ⁷ / ₈	1.41	0	7.07	.50	1.64	(2) TLA-40	(2) TLJ-30	(2) TLSM-200	(2) TLL-20-S	TLT-27
TL-1330	X	13 ³ / ₈	3	1 ¹ / ₁₆	1 ³ / ₈	2.99	2.49	4.46	.75	.735	(4) TLA-20	(4) TLJ-24	(4) TLSM-200	(2) TLL-15	TLT-28
TL-1335	X	13 ³ / ₈	3 ¹ / ₂	1 ⁹ / ₁₆	1 ³ / ₈	3.11	2.49	5.08	.75	.735	(4) TLA-24	(4) TLJ-24	(4) TLSM-200	(2) TLL-15	TLT-29
TL-1340	X	13 ³ / ₈	4	2 ¹ / ₁₆	1 ³ / ₈	4.59	2.41	6.09	.50	.98	(4) TLA-40	(4) TLJ-24	(4) TLSM-200	(2) TLL-20-D	TLT-30
TL-1345	X	13 ³ / ₈	4 ¹ / ₂	2 ⁹ / ₁₆	1 ³ / ₈	4.58	2.51	6.60	.50	.98	(4) TLA-40	(4) TLJ-30	(4) TLSM-200	(2) TLL-20-D	TLT-31
TL-1530	X	14 ⁷ / ₈ TO 17 ⁷ / ₈	3	1 ¹ / ₁₆	7 ⁷ / ₈	2.99	2.24	4.03	.75	.735	(4) TLA-20	(4) TLJ-20	(4) TLSM-200	(2) TLL-15	TLT-32
TL-1535	X	14 ⁷ / ₈ TO 17 ⁷ / ₈	3 ¹ / ₂	1 ⁹ / ₁₆	1 ³ / ₈	2.99	2.99	5.48	.75	.735	(4) TLA-24	(4) TLJ-30	(4) TLSM-200	(2) TLL-15	TLT-33
TL-1540	X	14 ⁷ / ₈	4	2 ¹ / ₁₆	7 ⁷ / ₈	4.58	2.74	5.96	.62	.98	(4) TLA-40	(4) TLJ-24	(4) TLSM-200	(2) TLL-20-D	TLT-34
TL-1545	X	14 ⁷ / ₈	4 ¹ / ₂	2 ⁹ / ₁₆	7 ⁷ / ₈	4.62	2.71	6.48	.62	.98	(4) TLA-40	(4) TLJ-30	(4) TLSM-200	(2) TLL-20-D	TLT-35
TL-1640	X	15 ⁷ / ₈ TO 17 ⁷ / ₈	4	2 ¹ / ₁₆	1 ³ / ₈	3.61	2.29	6.21	.62	.98	(4) TLA-30	(4) TLJ-30	(4) TLSM-200	(2) TLL-20-D	TLT-36
TL-1645	X	15 ⁷ / ₈	4 ¹ / ₂	2 ⁹ / ₁₆	7 ⁷ / ₈	5.22	2.91	6.46	.62	1.48	(4) TLA-40	(4) TLJ-30	(4) TLSM-200	(2) TLL-30	TLT-37
TL-1745*	X*	16 ¹ / ₂	4 ¹ / ₂	2 ⁹ / ₁₆	1 ³ / ₈	4.60*	2.79*	6.47	.62*	.98*	(4) TLA-40*	(4) TLJ-30*	(4) TLSM-200*	(2) TLL-20-D*	TLT-38*
TL-1845	X	17 ⁷ / ₈	4 ¹ / ₂	2 ⁹ / ₁₆	1 ³ / ₈	4.60	2.79	6.47	.62	.98	(4) TLA-40	(4) TLJ-30	(4) TLSM-200	(2) TLL-20-D	TLT-38
TL-1930	Z	19 ¹ / ₂ & WIDER	3	1 ¹ / ₁₆	1 ³ / ₈	2.25	1.50	4.03	.75	TO SUIT	(4) TLA-20	(4) TLJ-20	(4) TLSM-200	(4) TLL-20-S	TLT-32
TL-1935	Z	19 ¹ / ₂ & WIDER	3 ¹ / ₂	1 ⁹ / ₁₆	1 ³ / ₈	2.25	2.25	5.48	.75	TO SUIT	(4) TLA-24	(4) TLJ-30	(4) TLSM-200	(4) TLL-20-S	TLT-33
TL-1940	Z	19 ¹ / ₂ & WIDER	4	2 ¹ / ₁₆	1 ³ / ₈	2.63	1.31	6.21	.62	TO SUIT	(4) TLA-30	(4) TLJ-30	(4) TLSM-200	(4) TLL-20-S	TLT-36
TL-1945	Z	19 ¹ / ₂ & WIDER	4 ¹ / ₂	2 ⁹ / ₁₆	1 ³ / ₈	3.62	1.81	6.47	.62	TO SUIT	(4) TLA-40	(4) TLJ-30	(4) TLSM-200	(4) TLL-20-S	TLT-38

NOTE: All dimensions are nominal reference dimensions. Use the hole location template, which is included with each assembly, to establish hole locations on the mold.

*The centerline of the lever is offset 1" from the centerline of the mold. The centerline of the lever on the other end of the mold must also be offset 1", but in the opposite direction from the mold centerline for balanced operation.

WHEN ORDERING, PLEASE SPECIFY:

1. Item Number of Toggle-Lok package
2. Quantity
3. "Top Mount," if required (no charge)
4. "Special Lever with Fitting Spacer," if required (special order only)
5. Method of shipment

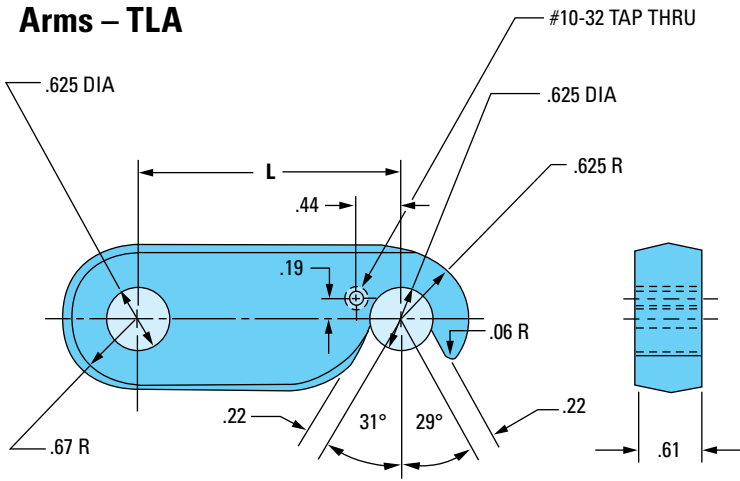
Basic Design Guidelines for Standard Mold Bases

Follow Installation Instructions Packaged with the D-M-E Toggle-Lok Assembly.

1. It is recommended that guided ejection be used.
2. The side mount should be used when the ejector plate is approximately flush with the end of the mold; either the standard or small side mount should be used as specified in the chart. The top mount should be used when the ejector plate extends beyond the end of the mold, since it is designed to be mounted on top of the ejector plate.
3. When the ejector plate is recessed inside the mold, spacers must be used so the mounts will clear the support plate by 0.016". Customer to supply spacers to suit mold requirements (see drawings, Styles X, Y or Z).
4. Be sure the levers do not interfere with part ejection. If there is insufficient mold open stroke, it may be necessary to rotate the mold 90° from its normal position so the levers will not interfere with ejecting parts.
5. Locate all levers so they will push evenly and return the ejector plate without cocking.
6. When the lever is offset from the centerline of the mold (Style X) or when the mount is offset from the centerline (Style Y), their locations on the other end of the mold must also be offset. The offset distance on each end of the mold should be the same, but in opposite directions from the mold centerline for balanced operation.
7. When using Styles Y or Z, hardened lever support blocks are required. These support blocks prevent the levers from deflecting when they contact the arms in the full ejection forward position. Customer to supply hardened support blocks to suit mold requirements (see drawings, Styles Y and Z).
8. The ejector assembly will normally return within .010" to .020" of complete return, although this will depend on how carefully the installation is made.
9. If it is necessary to return the ejector assembly closer than .010" to .020", levers with fitting spacers should be ordered. These are available on special order.
10. Edges of the ejector plate must be finished square before installing side mounts.
11. Be sure to provide a clearance slot in the ejector plate for the lever when necessary.
12. Locate lever mounting holes (two 3/8 S.H.C.S. and two 3/8 dowels) to avoid interference with leader pins, water lines and other mold components.
13. Be sure there is no interference between the Toggle-Lok components and other elements of the mold.
14. The knockout rods in the press must not interfere with the full return of the ejector assembly.
15. The levers must not interfere with the platens of the press when the mold is completely closed.
16. For packages TL-840, TL-845 and special applications only: If the joints are entirely below the bottom of the support plate in the mold closed position, the retainers must be attached to the joints rather than the arms. This will prevent the joints from sliding under the support plate where they would interfere with normal ejection forward movement.

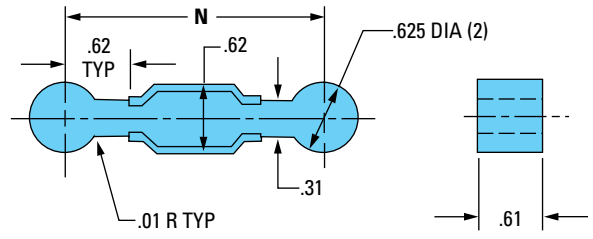
Toggle-Lok Components

Arms – TLA



ITEM NUMBER	L
TLA-20	2.00
TLA-24	2.50
TLA-30	3.00
TLA-40	4.00

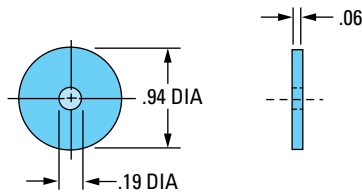
Joints – TLJ



ITEM NUMBER	N
TLJ-20	2.00
TLJ-24	2.50
TLJ-30	3.00

Retainer – TLR

Mount on arm with button head screw to retain joint



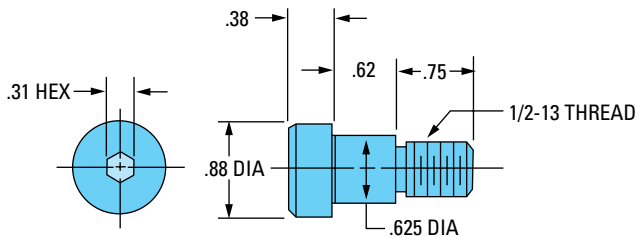
ITEM NUMBER
TLR-10

Typical Hole Location Template – TLT



D-M-E TOGGLE-LOK TEMPLATE ITEM NUMBER
TLT-32

Shoulder Screw



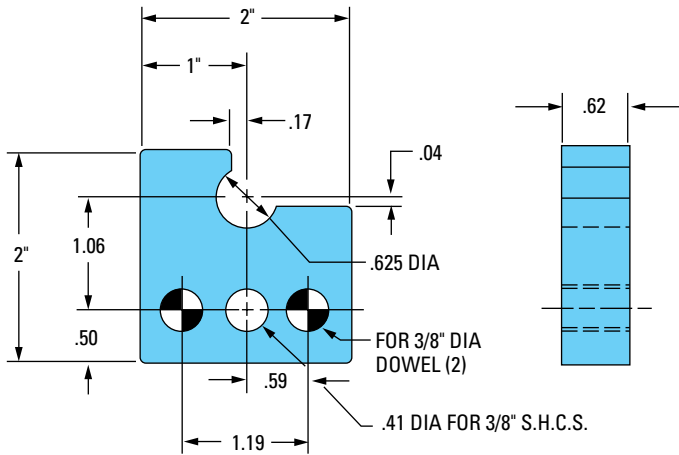
ITEM NUMBER
5858SB

Toggle-Lok Components

Standard Side Mount – TISM

ITEM NUMBER

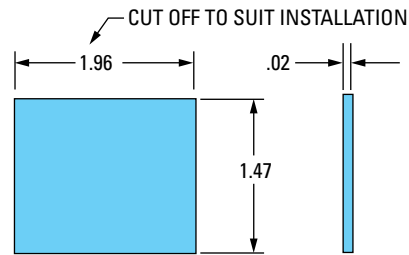
TISM-200



Lever Spacer – TLS

ITEM NUMBER

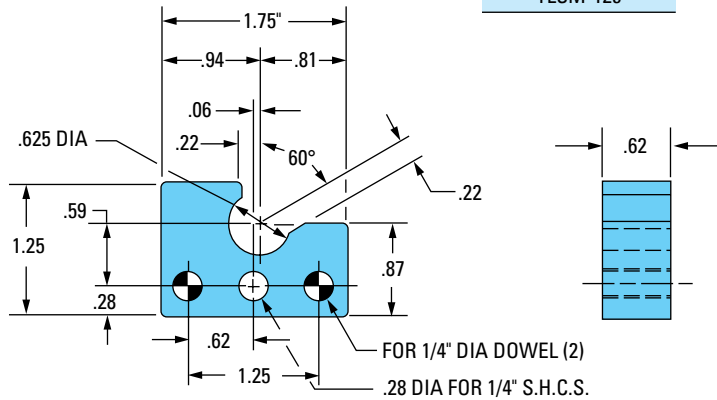
TLS-20



Small Side Mount – TISM

ITEM NUMBER

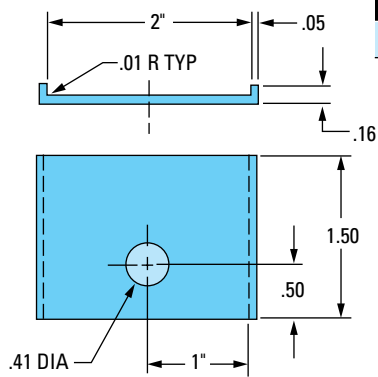
TISM-125



Cover Plate for Standard Side Mount – TLCP

ITEM NUMBER

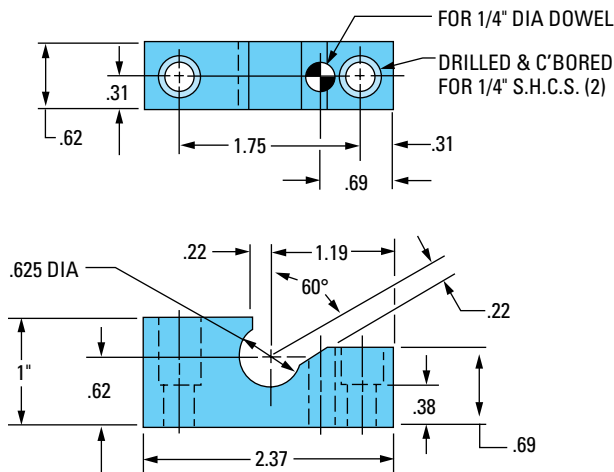
TLCP-200



Top Mount – TTLM

ITEM NUMBER

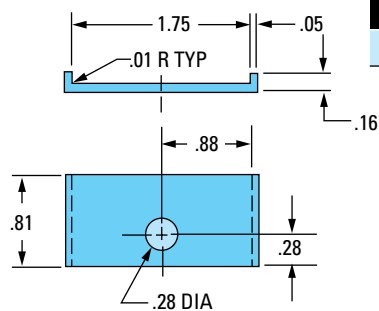
TTLM-100



Cover Plate for Small Side Mount – TLCP

ITEM NUMBER

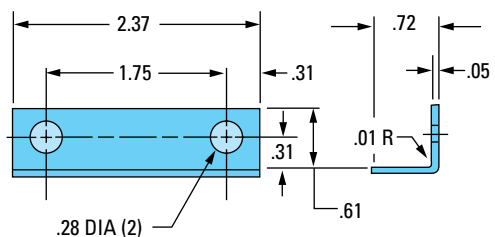
TLCP-125



Cover Plate for Top Mount – TLCP

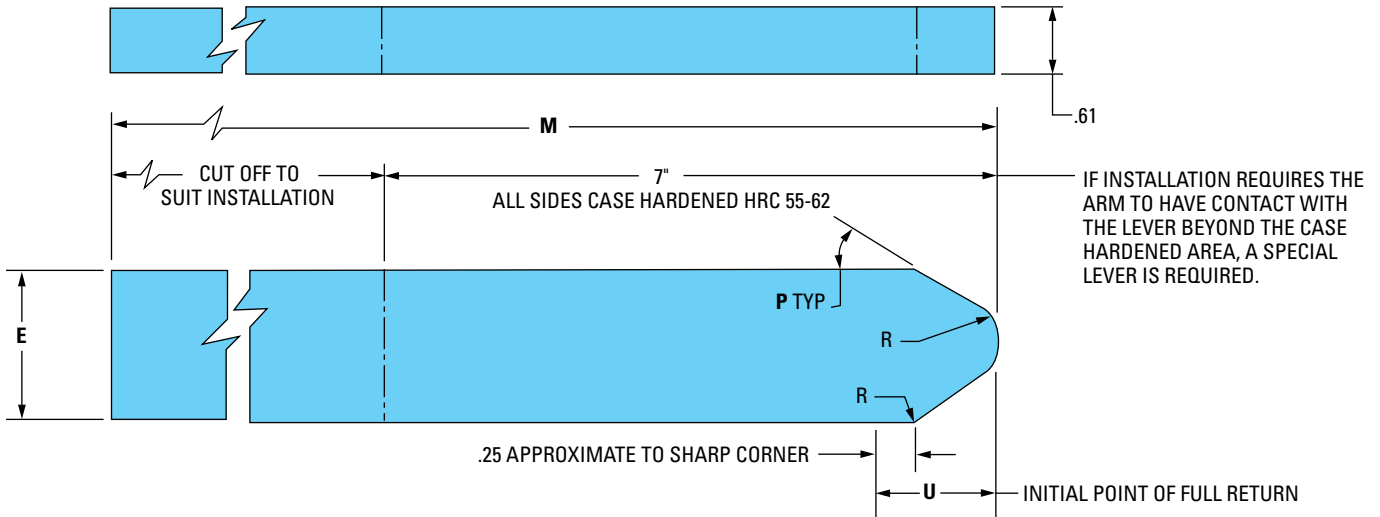
ITEM NUMBER

TLCP-100



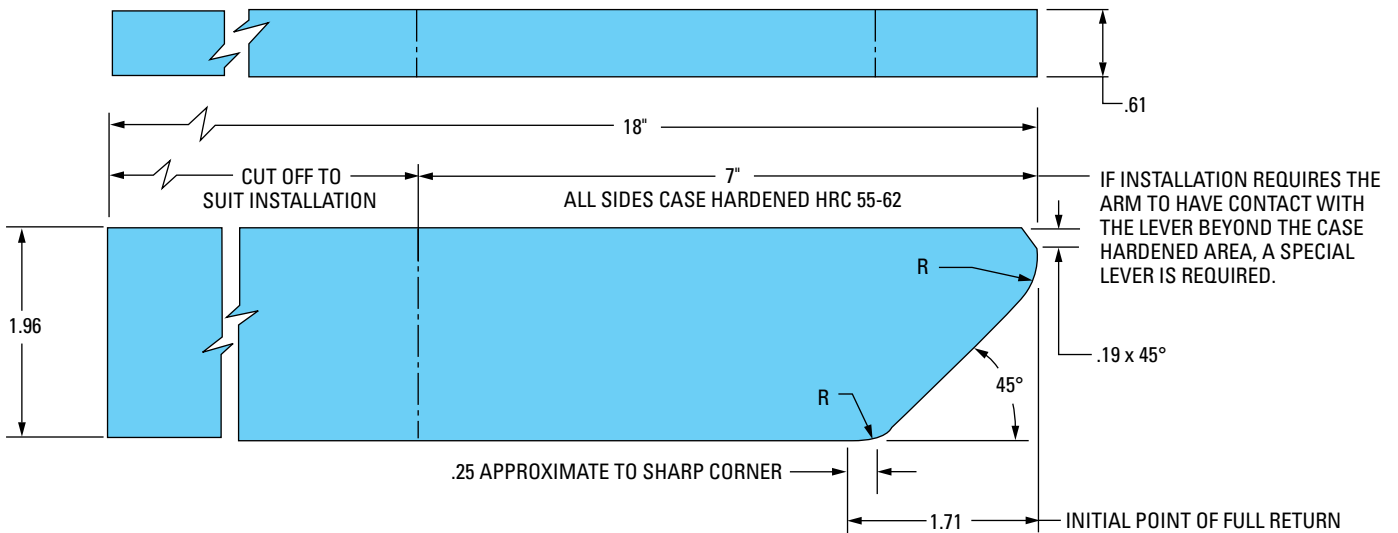
Toggle-Lok Components

Levers – Double Angle



ITEM NUMBER	E	M	P	U
TLL-15	1.47	14.25	30°	1.15
TLL-20-D	1.96	18"	30°	1.57
TLL-30	2.96	18"	45°	1.58

Lever – Single Angle



NOTE: All dimensions are nominal reference dimensions. Use the hole location template, which is included with each assembly, to establish hole locations on the mold.

ITEM NUMBER
TLL-20-S

Toggle-Lok Ordering Information

TOGGLE-LOK PACKAGES		MOLD BASE REQUIREMENTS			
ITEM NUMBER	STYLE	W MOLD BASE WIDTH	C RISER HEIGHT	B MINIMUM PLATE THICKNESS	S MAXIMUM EJECTION STROKE
TL-825	Y	7 ⁷ / ₈	2 ¹ / ₂	7 ⁷ / ₈	13 ¹ / ₁₆
TL-830	Y	7 ⁷ / ₈	3	13 ³ / ₈	1 ¹¹ / ₁₆
TL-835	Y	7 ⁷ / ₈	3 ¹ / ₂	13 ³ / ₈	2 ³ / ₁₆
TL-840	Y	7 ⁷ / ₈	4	17 ⁷ / ₈	2 ¹¹ / ₁₆
TL-845	Y	7 ⁷ / ₈	4 ¹ / ₂	17 ⁷ / ₈	3 ³ / ₁₆
TL-1025	X	9 ⁷ / ₈	2 ¹ / ₂	7 ⁷ / ₈	13 ¹ / ₁₆
TL-1030	X	9 ⁷ / ₈	3	13 ³ / ₈	1 ⁵ / ₁₆
TL-1035	X	9 ⁷ / ₈	3 ¹ / ₂	13 ³ / ₈	1 ¹³ / ₁₆
TL-1040	Y	9 ⁷ / ₈	4	17 ⁷ / ₈	2 ⁵ / ₁₆
TL-1045	Y	9 ⁷ / ₈	4 ¹ / ₂	17 ⁷ / ₈	2 ¹³ / ₁₆
TL-1125	X	10 ⁷ / ₈	2 ¹ / ₂	13 ³ / ₈	13 ¹ / ₁₆
TL-1130	X	10 ⁷ / ₈	3	7 ⁷ / ₈	1 ⁵ / ₁₆
TL-1135	X	10 ⁷ / ₈	3 ¹ / ₂	17 ⁷ / ₈	1 ¹³ / ₁₆
TL-1140	Y	10 ⁷ / ₈	4	17 ⁷ / ₈	2 ⁵ / ₁₆
TL-1145	Y	10 ⁷ / ₈	4 ¹ / ₂	17 ⁷ / ₈	2 ¹³ / ₁₆
TL-1230	X	11 ⁷ / ₈	3	7 ⁷ / ₈	13 ¹ / ₁₆
TL-1235	X	11 ⁷ / ₈	3 ¹ / ₂	7 ⁷ / ₈	1 ¹¹ / ₁₆
TL-1240	Y	11 ⁷ / ₈	4	13 ³ / ₈	2 ³ / ₁₆
TL-1245	Y	11 ⁷ / ₈	4 ¹ / ₂	17 ⁷ / ₈	2 ¹¹ / ₁₆
TL-1330	X	13 ³ / ₈	3	13 ³ / ₈	1 ¹ / ₁₆
TL-1335	X	13 ³ / ₈	3 ¹ / ₂	13 ³ / ₈	1 ⁹ / ₁₆
TL-1340	X	13 ³ / ₈	4	13 ³ / ₈	2 ¹ / ₁₆
TL-1345	X	13 ³ / ₈	4 ¹ / ₂	13 ³ / ₈	2 ⁹ / ₁₆
TL-1530	X	14 ⁷ / ₈ TO 17 ⁷ / ₈	3	7 ⁷ / ₈	1 ¹ / ₁₆
TL-1535	X	14 ⁷ / ₈ TO 17 ⁷ / ₈	3 ¹ / ₂	13 ³ / ₈	1 ⁹ / ₁₆
TL-1540	X	14 ⁷ / ₈	4	7 ⁷ / ₈	2 ¹ / ₁₆
TL-1545	X	14 ⁷ / ₈	4 ¹ / ₂	7 ⁷ / ₈	2 ⁹ / ₁₆
TL-1640	X	15 ⁷ / ₈ TO 17 ⁷ / ₈	4	13 ³ / ₈	2 ¹ / ₁₆
TL-1645	X	15 ⁷ / ₈	4 ¹ / ₂	7 ⁷ / ₈	2 ⁹ / ₁₆
TL-1745*	X*	16 ¹ / ₂	4 ¹ / ₂	13 ³ / ₈	2 ⁹ / ₁₆
TL-1845	X	17 ⁷ / ₈	4 ¹ / ₂	13 ³ / ₈	2 ⁹ / ₁₆
TL-1930	Z	19 ¹ / ₂ & WIDER	3	13 ³ / ₈	1 ¹ / ₁₆
TL-1935	Z	19 ¹ / ₂ & WIDER	3 ¹ / ₂	13 ³ / ₈	1 ⁹ / ₁₆
TL-1940	Z	19 ¹ / ₂ & WIDER	4	13 ³ / ₈	2 ¹ / ₁₆
TL-1945	Z	19 ¹ / ₂ & WIDER	4 ¹ / ₂	13 ³ / ₈	2 ⁹ / ₁₆

*The centerline of the lever is offset 1" from the centerline of the mold. The centerline of the lever on the other end of the mold must also be offset 1", but in the opposite direction from the mold centerline for balanced operation.

NOTE: If it is necessary to return the ejector assembly closer than .010" to .020" of complete return, levers with fitting spacers should be ordered. Contact D-M-E for details.

Toggle-Lok Component Parts

ITEM NUMBER
TLA-20
TLA-24
TLA-30
TLA-40

Arms

Includes retainer (TLR-10) and button head screw required for installation.

Shoulder Screw

ITEM NUMBER
5858SB

Joints

ITEM NUMBER
TLJ-20
TLJ-24
TLJ-30

Mounts (side and top)

ITEM NUMBER	TYPE
TLSM-200	STANDARD SIDE
TLSM-125	SMALL SIDE
TLSM-100	TOP

Includes socket head cap screws and dowels required for installation.

Cover Plates

ITEM NUMBER	USED WITH MOUNT
TLCP-200	TLSM-200
TLCP-125	TLSM-125
TLCP-100	TLSM-100

Levers (double and single angle)

ITEM NUMBER	TYPE
TLL-15	DOUBLE ANGLE
TLL-20-D	DOUBLE ANGLE
TLL-30	DOUBLE ANGLE
TLL-20-S	SINGLE ANGLE

Includes lever spacer, socket head cap screws and dowels required for installation.

WHEN ORDERING, PLEASE SPECIFY:

- Quantity and Item Numbers from charts
- If the ejector plate extends beyond the ends of the mold, please specify "Top Mount" as part of the Toggle-Lok Package, and add "TM" to end of Item Number; e.g., TL-825-TM (no additional charge)
- Method of shipment