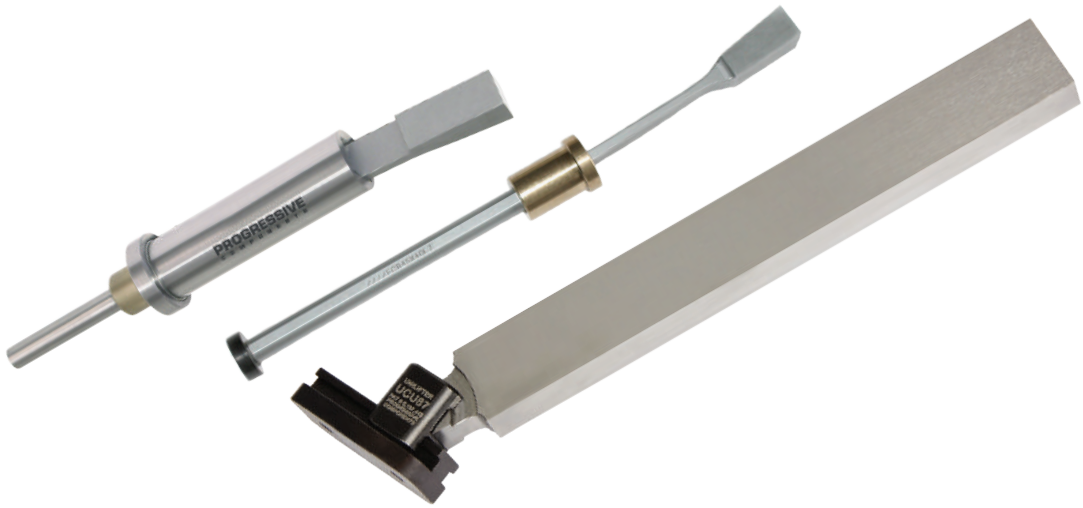
UNILIFTERS
UNDERCUT RELEASE
SECTION H



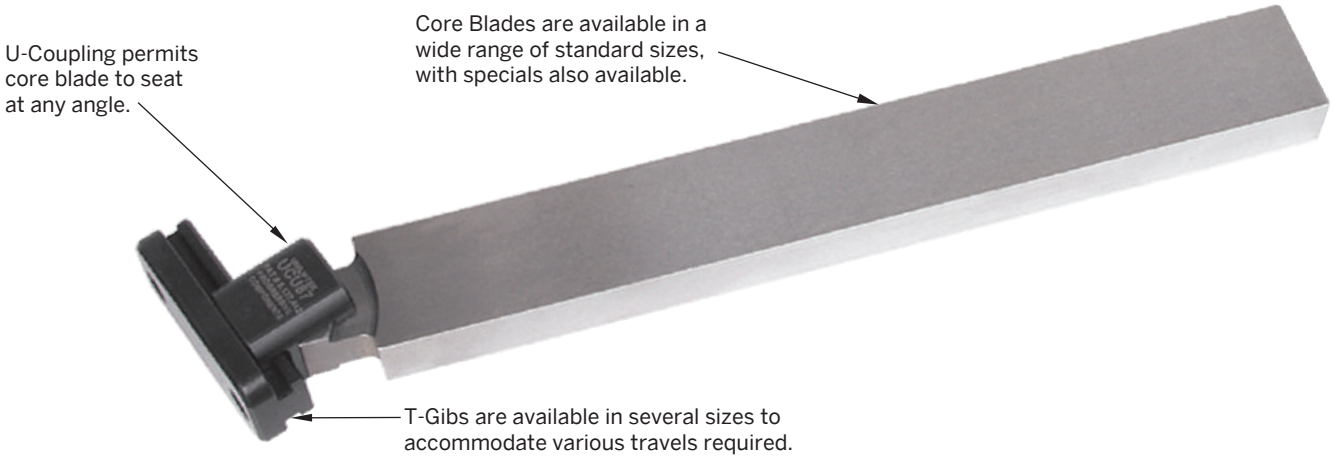
UniLifter System
Prefix: CB, UC, TG
Page: H-1

Versa-Lifter System
Prefix: UGV, SGV, CBV
Page: H-4

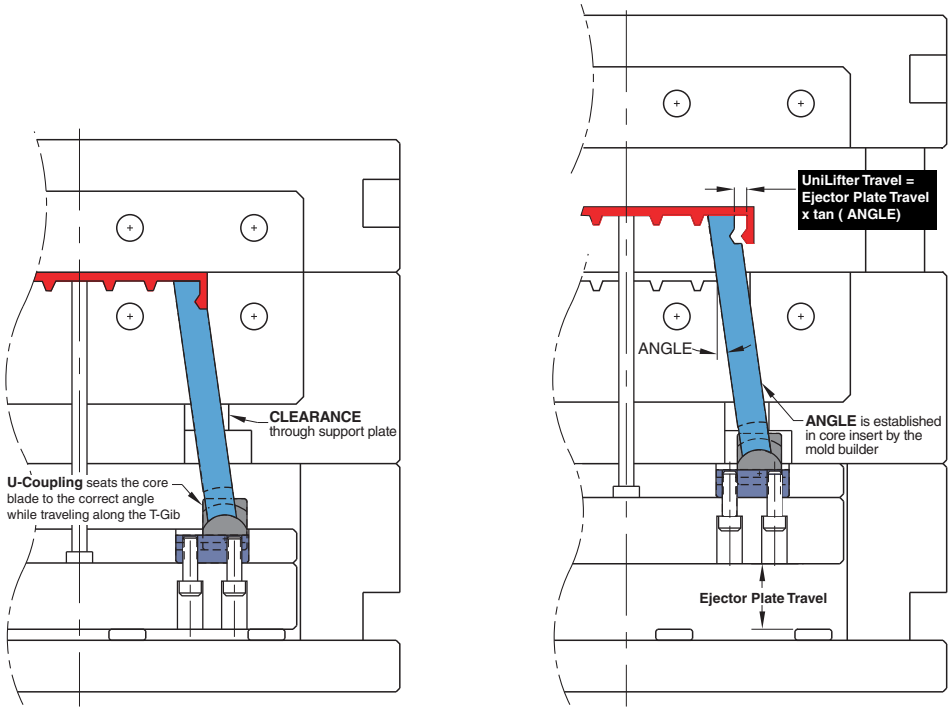
FlexiCore System
Prefix: FCA, FCR, FCDA
Page: H-6

Lifter Blades/Cores
Prefix: LBA, LCA
Page: H-12

PROGRESSIVE COMPONENTS



The UniLifter undercut release system incorporates a three piece set: Core Blade, U-Coupling, and T-Gib.



Mold Closed **Mold Open**

Application Guidelines:

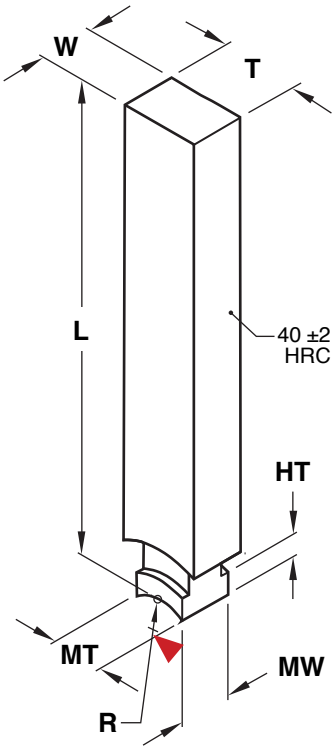
- Typical angle is 5-10˚, though users report success at greater angles with guides installed. Contact Engineering for application review.
- Guided Ejection is recommended, and if there is less than half of the Core Blade bearing in the insert, lifter guide plates should be added.
- Recommended clearance is .001"-.0015" (.025-.038 mm) where permissible.
- Core insert material should be at least 10 HRC higher in hardness than the Core Blade, and for maximum longevity consider coatings or treatments for increased lubricity or hardness.
- Locking angles can be designed to accept molding pressure, and non-standard sizes or pre-roughed Core Blades can be provided by accessing www.procomps.com.

UNILIFTER®
CORE BLADES

Flat Core Blades - Inch Standard

M H-13 H 38-42 HRC

MW	R	HT	CATALOG NUMBER	T +.000 -.001	W +.000 -.001	L +.06 -.00	MT MIN. THK.
MiniLifter® .250	.250	.156	CBS37X25L8	.385	.260	8	.25
			CBS50X25L8	.510	.260	8	.31
			CBS75X37L8	.760	.385	8	.31
UniLifter .500	.406	.187	CBS50X50L8	.510	.510	8	.49
			CBS50X50L14	.510	.510	14	.49
			CBS50X100L8	.510	1.010	8	.49
			CBS50X100L14	.510	1.010	14	.49
			CBS50X150L14	.510	1.510	14	.49
			CBS75X50L14	.760	.510	14	.62
			CBS75X150L8	.760	1.510	8	.62
			CBS75X150L14	.760	1.510	14	.62
			CBS100X50L8	1.010	.510	8	.62
			CBS100X50L14	1.010	.510	14	.62
			CBS150X50L8	1.510	.510	8	.62
			CBS150X50L14	1.510	.510	14	.62
			CBS150X75L8	1.510	.760	8	.62
			CBS150X75L14	1.510	.760	14	.62
XL 1.000	.875	.375	CBS100X100L10	1.010	1.010	10	1.00
			CBS100X100L18	1.010	1.010	18	1.00
			CBS100X150L10	1.010	1.510	10	1.00
			CBS100X150L18	1.010	1.510	18	1.00
			CBS150X100L10	1.510	1.010	10	1.00
			CBS150X100L18	1.510	1.010	18	1.00

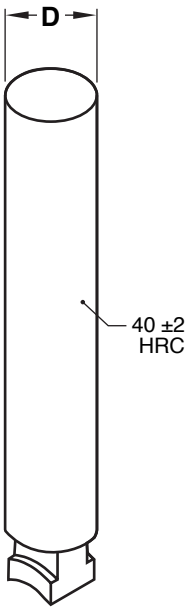


The UniLifter Series (MW=.500) is also available in aluminum bronze. To order, replace "CBS" with "CBA" in the catalog number as shown: CBA50X50L14.

Flat Core Blades - Metric Standard

MW	R	HT	CATALOG NUMBER	T +.000 -.025	W +.000 -.025	L +2 -0	MT MIN. THK.
10	10	5	CBMM10X10L250	10.25	10.25	250	10.0
			CBMM10X20L250	10.25	20.25	250	10.0
			CBMM15X15L250	15.25	15.25	250	15.0
			CBMM15X30L400	15.25	30.25	400	15.0
			CBMM20X10L250	20.25	10.25	250	15.0
			CBMM20X20L400	20.25	20.25	400	15.0
			CBMM30X15L400	30.25	15.25	400	15.0

CAD insertion point

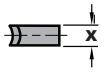


Round Core Blades - Inch Standard

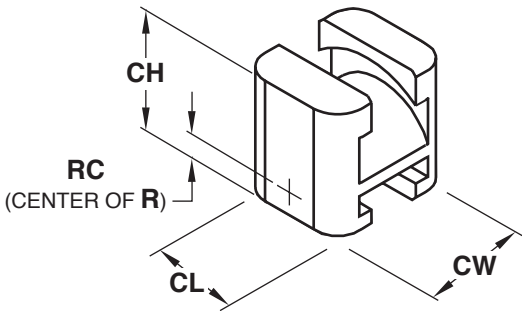
MW	R	HT	CATALOG NUMBER	D +.000 -.001	L +.06 -.00	MT MIN. THK.
MiniLifter .250	.250	.156	CBS43DL8	.437	8	.31
UniLifter .500	.406	.187	CBS75DL8	.750	8	.62
			CBS75DL14	.750	14	.62
			CBS75DL18	.750	18	.62
XL 1.000	.875	.375	CBS125DL10	1.250	10	1.00
			CBS125DL18	1.250	18	1.00

Round Core Blades - Metric Standard

MW	R	HT	CATALOG NUMBER	D +.000 -.025	L +2 -0	MT MIN. THK.
10	10	5	CBMM10DL250	10.00	250	10.0
			CBMM15DL250	15.00	250	10.0



For core blades in different materials or mold-ready sizes refer to the templates in section X.



Inch Standard

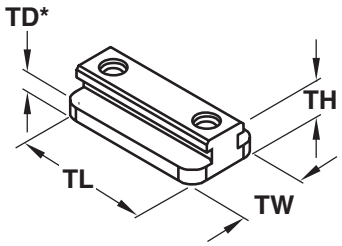
M H-13 S Salt Bath Nitride

SERIES	R	RC	CATALOG NUMBER	CW	CL	CH
MiniLifter	.250	.125	**UCM50**	.50	.44	.62
UniLifter	.406	.187	**UCU87**	.87	.75	.87
XL	.875	.125	**UCX175**	1.75	1.50	1.65

Metric Standard

SERIES	R	RC	CATALOG NUMBER	CW	CL	CH
Metric	10	6	**UCMM22**	22	18	25

UNILIFTER®
T-GIBS



Inch Standard

M 4140 H 28-32 HRC S Salt Bath Nitride

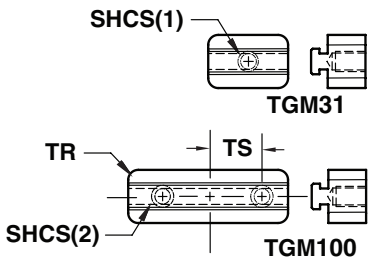
SERIES	TW +.000 -.001	TH +.010 -.000	TD* +.010 -.000	TR	SHCS (INCLUDED)	CATALOG NUMBER	TS	TL +.000 -.010	TRAVEL ALLOWED
MiniLifter	.500	.500	.344	.093	#10-32x1	**TGM31**	-	.750	.312
						TGM100	.500	1.50	1.000
UniLifter	.875	.468	.219	.187	1/4-20x3/4	**TGU25**	-	1.00	.250
						TGU50	.375	1.25	.500
						TGU100	.625	1.75	1.000
						TGU150	.750	2.25	1.500
XL	1.750	.615	.250	.312	3/8-16x1-1/4	**TGX50**	.625	2.00	.500
						TGX100	.875	2.50	1.000
						TGX250	1.375	4.00	2.500

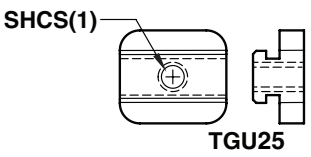
*TD Includes fitting stock for final adjustments.

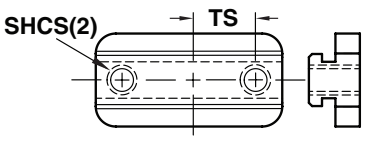
Metric Standard

SERIES	TW +.000 -.025	TH +.25 -.00	TD* +.25 -.00	TR	SHCS (INCLUDED)	CATALOG NUMBER	TS	TL +.00 -.25	TRAVEL ALLOWED
Metric	22	13	6	5	M-5x20	**TGMM10**	10	33	10
						TGMM30	15	52	30

*TD Includes fitting stock for final adjustments.

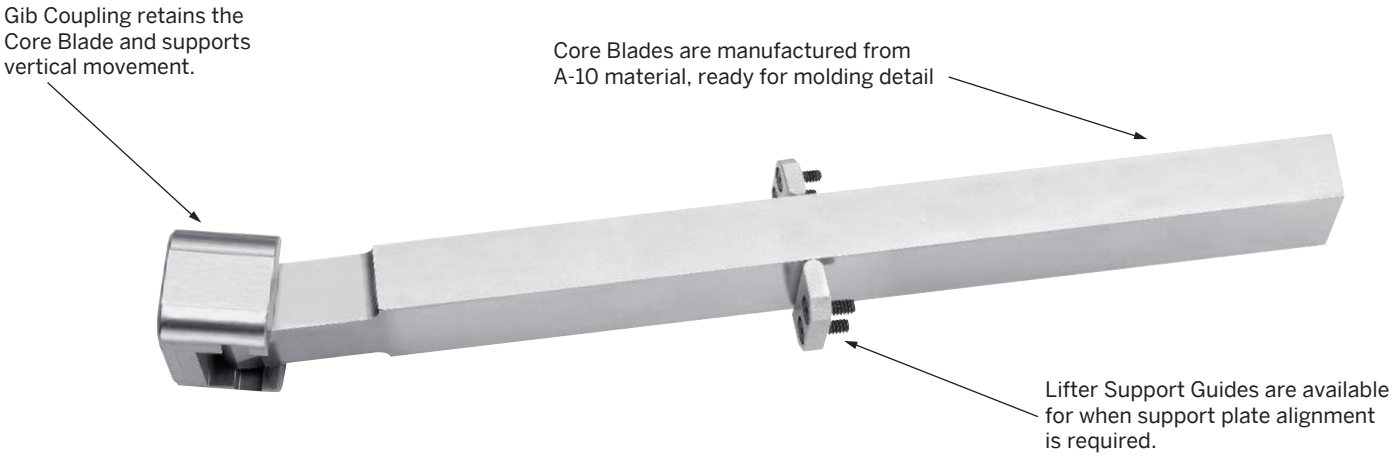


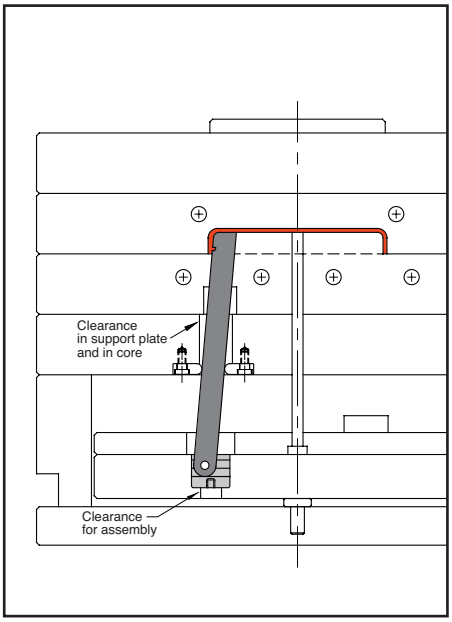




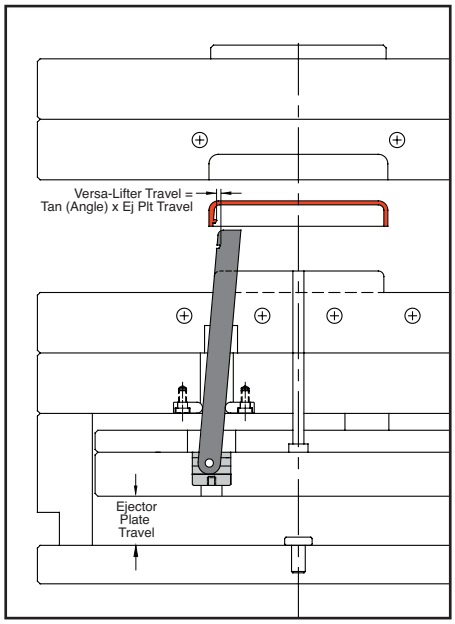
TGU50, TGU100, TGU150
TGX50, TGX100, TGX250
TGMM10, TGMM30

VERSA-LIFTER®
UNDERCUT RELEASE SYSTEM





Mold Closed



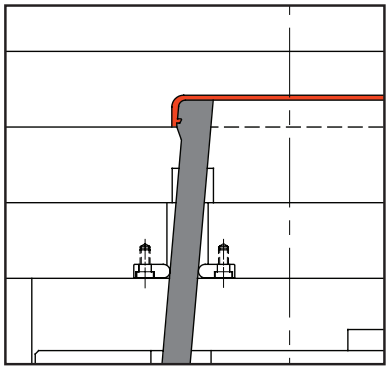
Mold Open

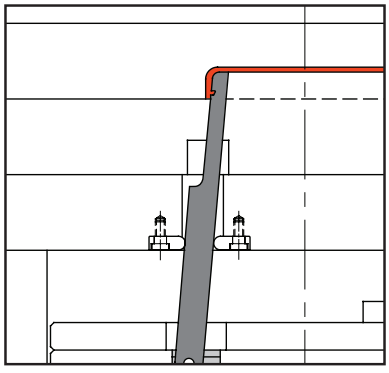
Design Guidelines:

- Typical angles are 5-15˚, but users have reported success at larger angles for unique applications with greater bearing, such as cavity side core pulls. Contact Engineering for an application review.
- Guided Ejection is required, and the Lifter Support Guides are recommended in all applications.
- Recommended total clearance is .001"-.0015" (.025-.038mm) where permissible.
- Core material should be at least 10 HRC different than the Core Blade material.
- Locking angles can be designed to counter molding pressure.
- Non-standard sizes or mold-ready Core Blades can be provided by sending a request to tech@procomps.com.

Design Options:

- For positive return, a locking angle can be designed into the Core Blade as shown at right.
- In addition, if space is limited at parting line, the Core Blade can be stepped.

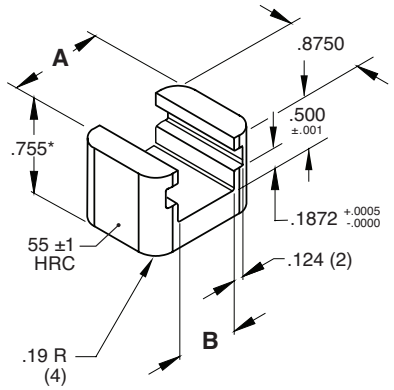




PROGRESSIVE COMPONENTS

US Patent No. 6,491,513

GIB COUPLINGS

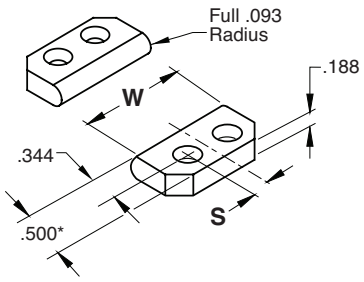


M S-7 H 54-56 HRC S Salt Bath Nitride

CATALOG NUMBER	A Central	B +.001 -.000	Compatible Core Blade Widths (W)	Omni Catalog Number
UGV68	.6860	.190	.1875 & .4375	LG-10
UGV87	.8735	.377	.6250	LG-20
UGV112	1.1235	.627	.8750	LG-30
UGV137	1.3735	.877	1.1250	LG-40

* .005" stock is included on the bottom for fitting.

LIFTER SUPPORT GUIDES

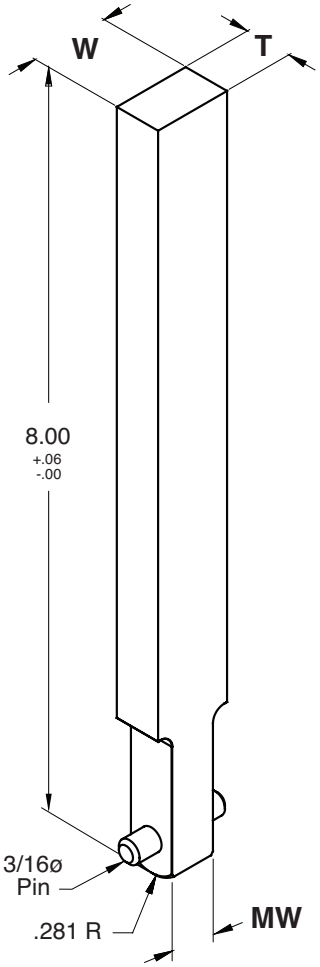


M S-7 H 54-56 HRC

CATALOG NUMBER	W	S	Omni Catalog Number
SGV43	.436	On Center	SG-10
SGV62	.624	On Center	SG-20
SGV87	.874	.187	SG-30
SGV112	1.124	.312	SG-40

Notes:
- *Includes .005" fit stock on flat side.
- The Lifter Support Guides are sold in pairs.
- Four (4) #6-32 LHCS are included.

CORE BLADES



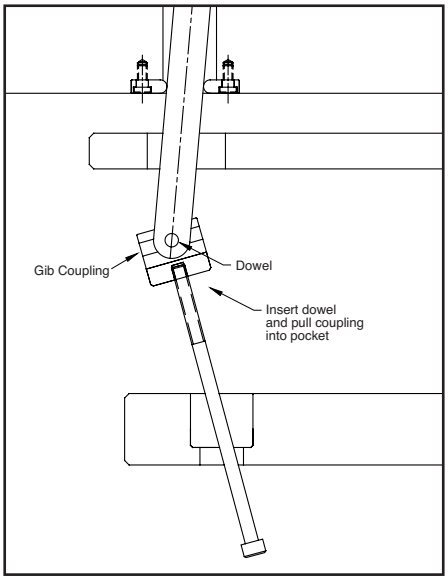
M A-10 H 58-60 HRC

T +.0000 -.0003	CATALOG NUMBER	W +.0000 -.0003	MW +.000 -.001
.5000	**CBV50X18L8**	.1875	.188
	CBV50X43L8	.4375	.188
	CBV50X62L8	.6250	.375
	CBV50X87L8	.8750	.625
	CBV50X112L8	1.1250	.875

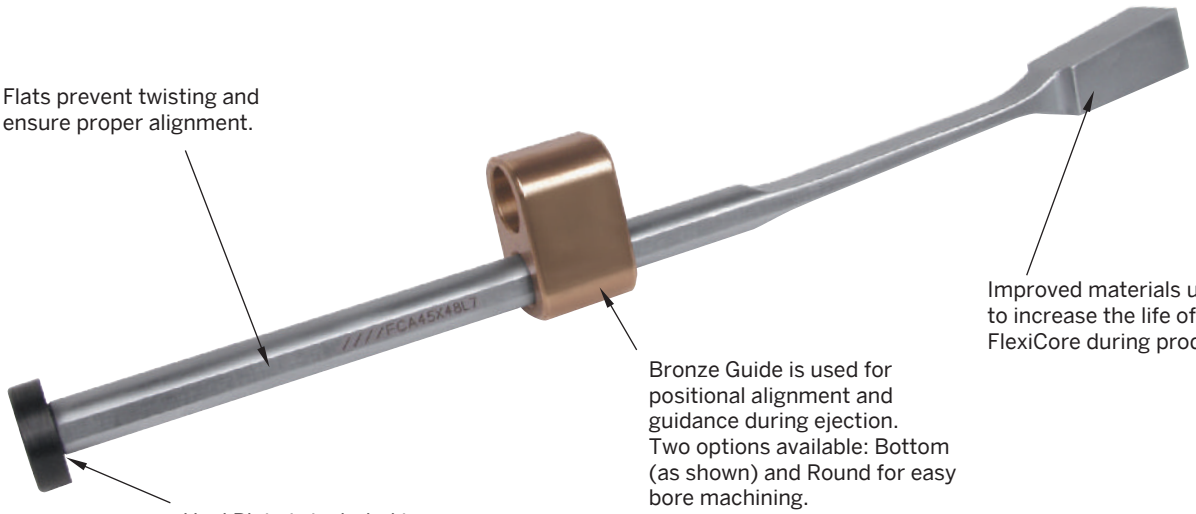
Pre-engineered pin is included.

Assembly Guidelines:

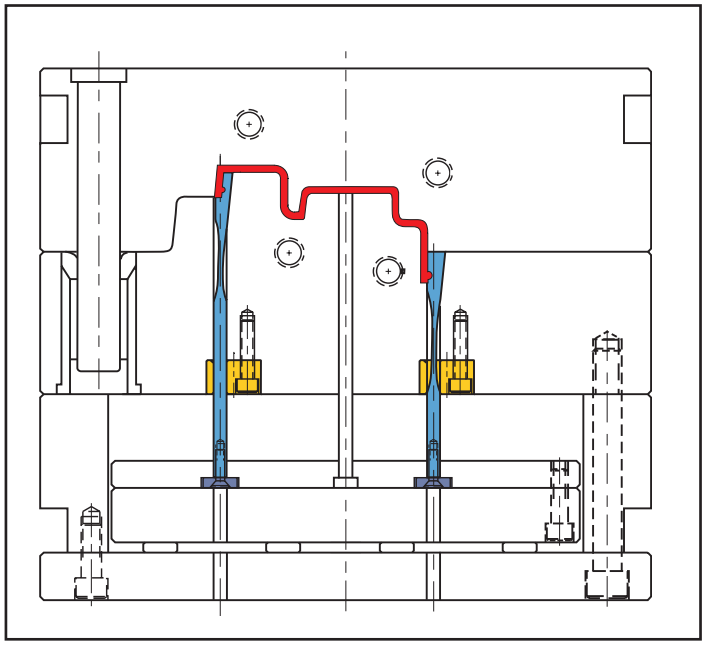
- Assembly length (4") cap screw (#10-32) is included with each lifter.
- Install the assembly screw in the Gib Coupling as shown.
- Connect the lifter pin and pull unit into pocket in ejector plate, removing the screw afterwards.



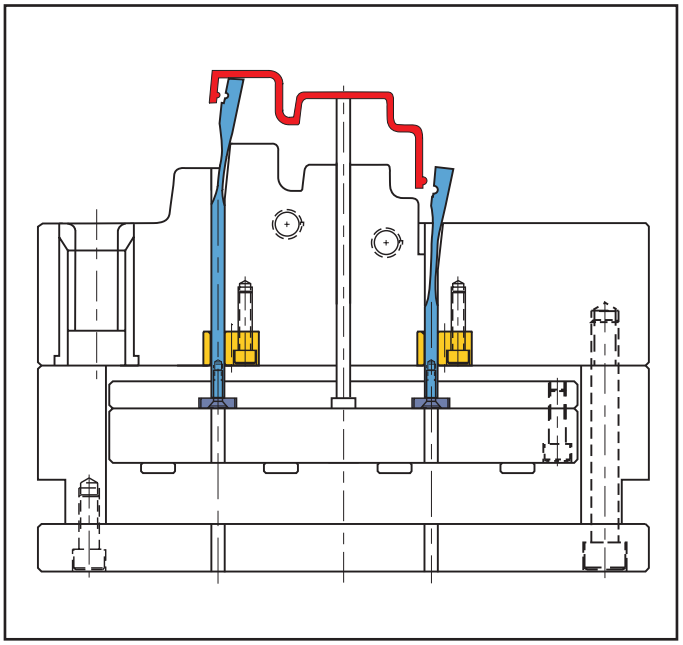
FLEXICORE®
UNDERCUT RELEASE SYSTEM



FlexiCore Assembly includes: FlexiCore, Bronze Guide (Bottom or Round), Heel Plate, and Flat Head Cap Screw.



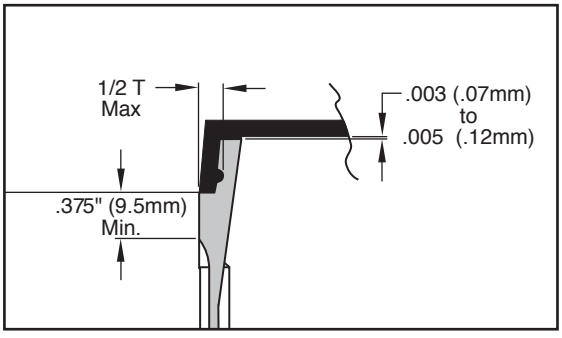
Mold Closed



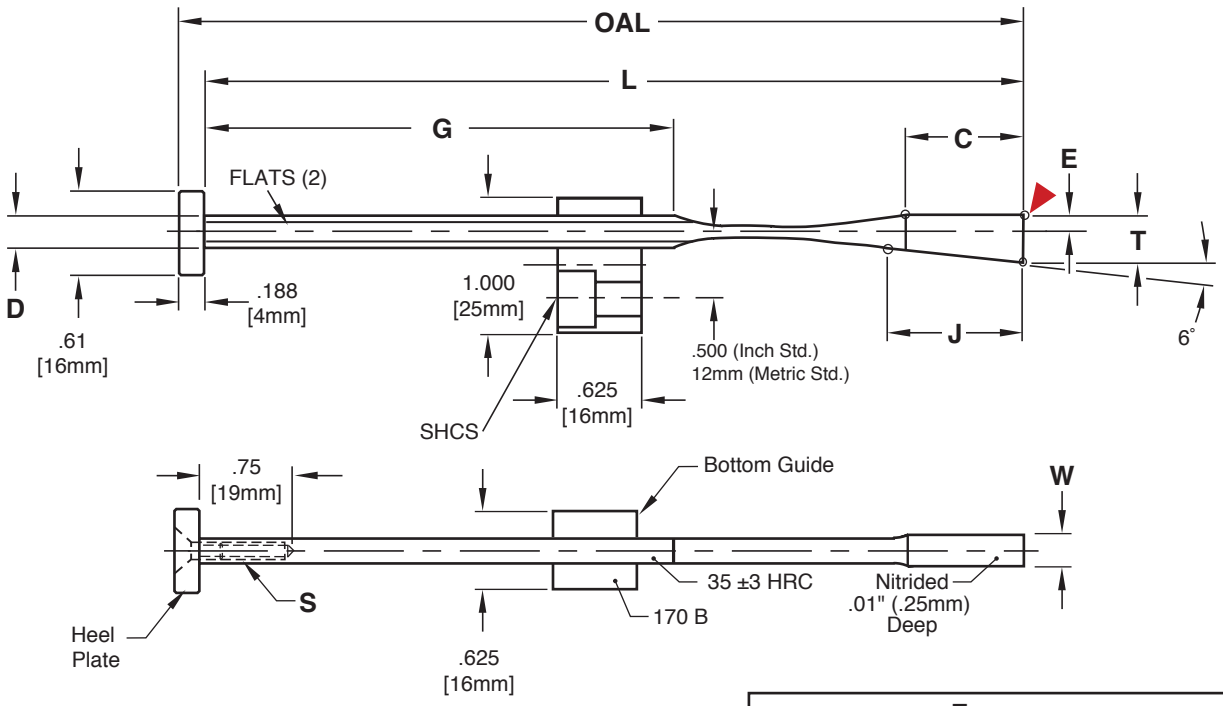
Mold Open

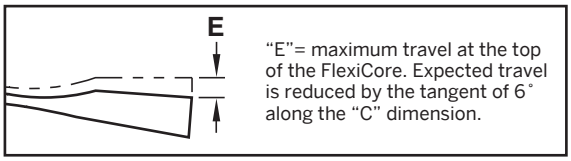
Application Guidelines:

- The FlexiCore diameter (D) must be within the Guide prior to ejection as shown above.
- Only surface treatments applied at low temperatures such as Electroless Nickel-based or chromium deposition treatments are permitted.
- Maximum temperature is 250° F (125° C).
- Please contact Engineering to review any designs if questions arise or if your application differs from the examples shown.



FLEXICORE®
BOTTOM GUIDE ASSEMBLY





Inch Standard

M FlexiCore: AISI 4340 with thin, dense Chromium treatment, Guide: CA954 Solid Bronze, Heel Plate: AISI 1018

CAD insertion point

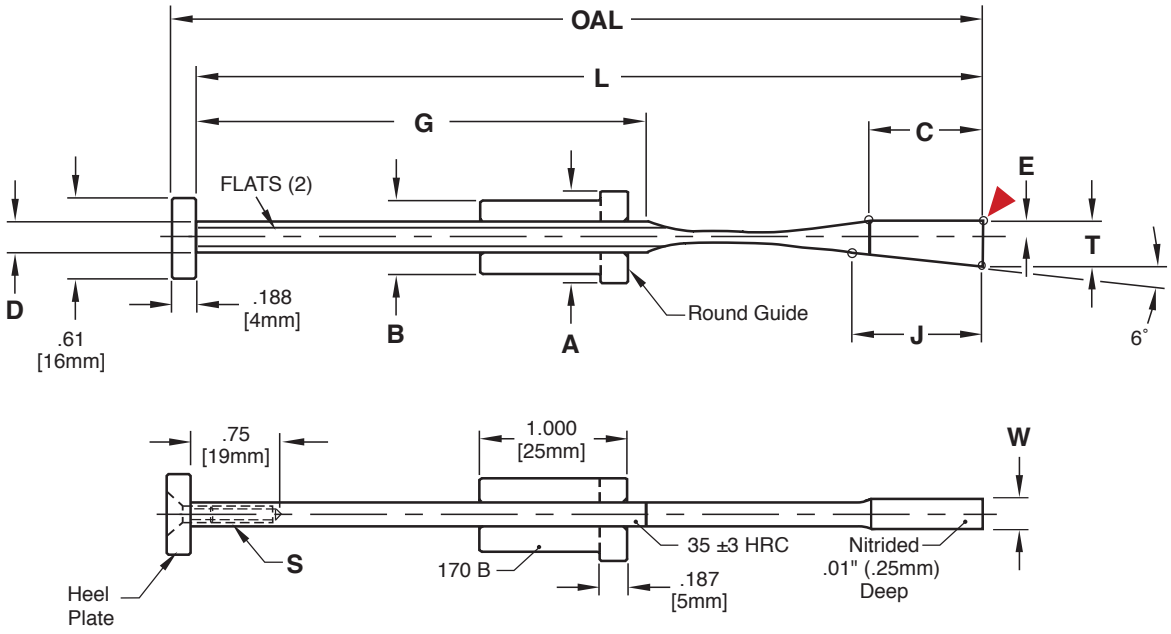
CATALOG NUMBER	T +.002 -.000	W +.002 -.000	L +.010 -.000	OAL REF	D +.000 -.001	C ± .015	E	G +.01 -.00	J	S	SHCS
FCA35X24L6	.354	.244	6.400	6.588	.234	.875	.137	3.49	.957	#8-32	1/4-20
FCA35X32L6	.354	.322	6.400	6.588	.250	.875	.137	3.48	.957	#8-32	1/4-20
FCA45X40L7	.453	.401	7.875	8.062	.312	1.000	.177	4.38	1.025	#10-24	1/4-20
FCA45X48L7	.453	.480	7.875	8.062	.312	1.000	.177	4.38	1.025	#10-24	1/4-20

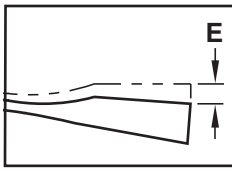
Metric Standard

CATALOG NUMBER	T +.05 -.00	W +.05 -.00	L +.25 -.00	OAL REF	D +.000 -.025	C ± .35	E	G +.25 -.00	J	S	SHCS
FCA9X6L160	9	6.2	162.5	166.5	5.94	22	3.5	88.6	24.3	M4-.7 x 20	M6-1
FCA9X8L160	9	8.2	162.5	166.5	6.35	22	3.5	88.4	24.3	M4-.7 x 20	M6-1
FCA11X10L200	11.5	10.2	200.0	204.0	7.92	26	4.5	111.2	26.0	M5-.8 x 20	M6-1
FCA11X12L200	11.5	12.2	200.0	204.0	7.92	26	4.5	111.2	26.0	M5-.8 x 20	M6-1
FCA12X14L200	12.5	14.2	200.0	204.0	7.92	30	4.5	107.2	28.5	M5-.8 x 20	M6-1
FCA12X16L200	12.5	16.2	200.0	204.0	7.92	30	4.5	107.2	28.5	M5-.8 x 20	M6-1

Assemblies include: FlexiCore, Bottom Guide, Heel Plate, and Flat Head Cap Screw.
Assembly components also sold individually on page H-11.

FLEXICORE®
ROUND GUIDE ASSEMBLY





"E"= maximum travel at the top of the FlexiCore. Expected travel is reduced by the tangent of 6° along the "C" dimension.

Inch Standard

M FlexiCore: AISI 4340 with thin, dense Chromium treatment, Guide: CA954 Solid Bronze, Heel Plate: AISI 1018

CATALOG NUMBER	T +.002 -.000	W +.002 -.000	L +.010 -.000	OAL REF	D +.000 -.001	C ± .015	E	G +.01 -.00	J	S	A	B
FCR35X24L6	.354	.244	6.400	6.588	.234	.875	.137	3.49	.957	#8-32	.625	.500
FCR35X32L6	.354	.322	6.400	6.588	.250	.875	.137	3.48	.957	#8-32	.625	.500
FCR45X40L7	.453	.401	7.875	8.062	.312	1.000	.177	4.38	1.025	#10-24	.750	.625
FCR45X48L7	.453	.480	7.875	8.062	.312	1.000	.177	4.38	1.025	#10-24	.750	.625

CAD insertion point

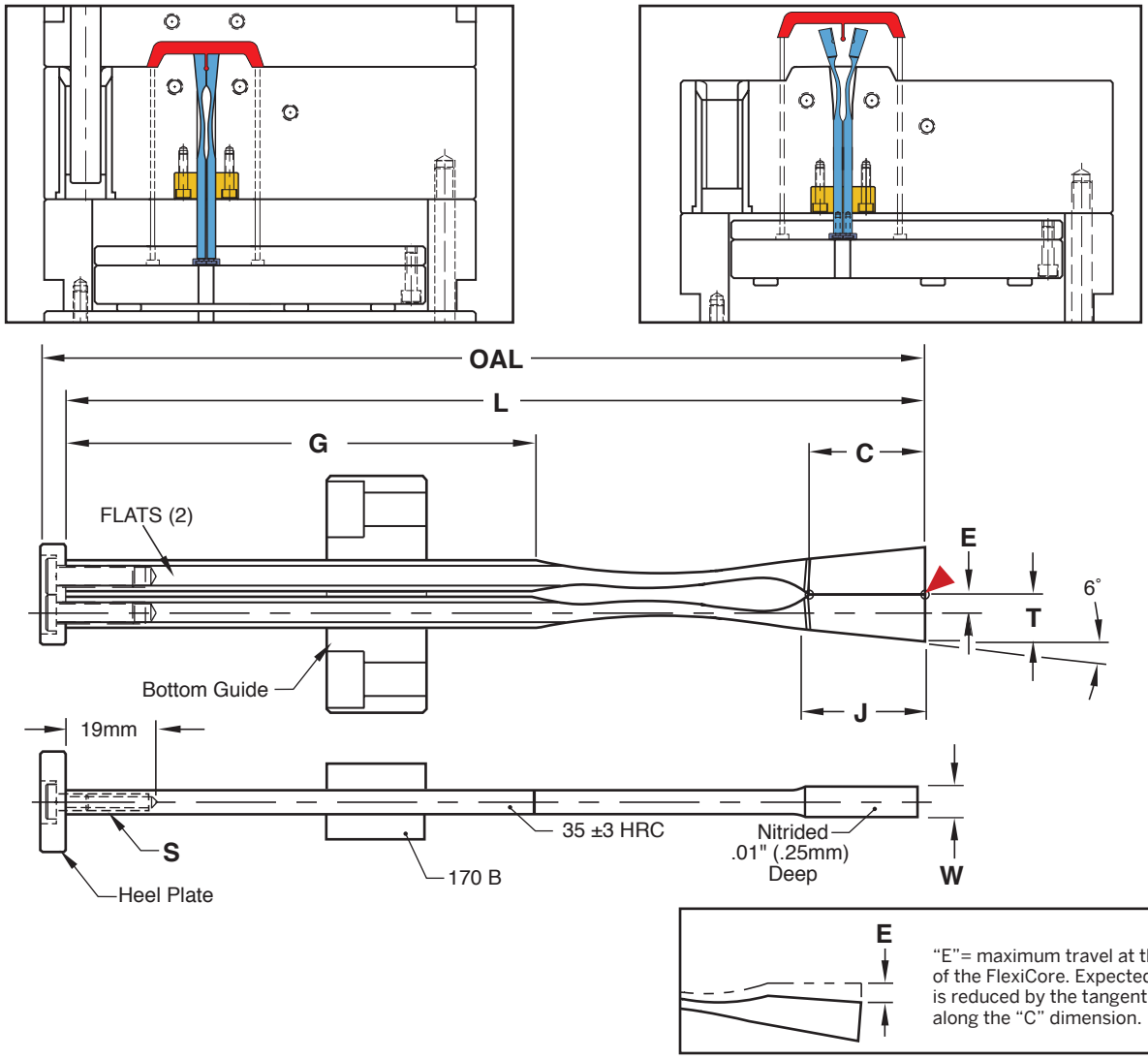
Metric Standard

CATALOG NUMBER	T +.05 -.00	W +.05 -.00	L +.25 -.00	OAL REF	D +.000 -.025	C ± .35	E	G +.25 -.00	J	S	A	B
FCR9X6L160	9	6.2	162.5	166.5	5.94	22	3.5	88.6	24.3	M4-.7 x 20	16	12
FCR9X8L160	9	8.2	162.5	166.5	6.35	22	3.5	88.4	24.3	M4-.7 x 20	16	12
FCR11X10L200	11.5	10.2	200.0	204.0	7.92	26	4.5	111.2	26.0	M5-.8 x 20	20	16
FCR11X12L200	11.5	12.2	200.0	204.0	7.92	26	4.5	111.2	26.0	M5-.8 x 20	20	16
FCR12X14L200	12.5	14.2	200.0	204.0	7.92	30	4.5	107.2	28.5	M5-.8 x 20	20	16
FCR12X16L200	12.5	16.2	200.0	204.0	7.92	30	4.5	107.2	28.5	M5-.8 x 20	20	16

Assemblies include: FlexiCore, Round Guide, Heel plate, and Flat head Cap Screw.
Assembly components also sold individually. Refer to page H-11 for information.

FLEXICORE®
DOUBLE ACTUATION

The double action bottom guide allows for the FlexiCore System to be used to release boss details with undercuts. FlexiCore Double Assembly (FCDA) includes: two FlexiCores, one Bottom Guide, one Heel Plate, and two Low Head Cap Screws.



"E"= maximum travel at the top of the FlexiCore. Expected travel is reduced by the tangent of 6° along the "C" dimension.

Inch Standard

M FlexiCore: AISI 4340 with thin, dense Chromium treatment, Guide: CA954 Solid Bronze, Heel Plate: AISI 1018

CATALOG NUMBER	T +.002 -.000	W +.002 -.000	L +.010 -.000	OAL REF	D +.000 -.001	C ±.015	E .015	G +.01 -.00	J +.01 -.00	S +.000 -.025
FCDA35X24L6	.354	.244	6.400	6.588	.234	.875	.137	3.49	.957	#8-32
FCDA45X48L7	.453	.480	7.875	8.062	.312	1.000	.177	4.38	1.025	#10-24

Metric Standard

CATALOG NUMBER	T +.05 -.00	W +.05 -.00	L +.25 -.00	OAL REF	D +.000 -.025	C ±.035	E 015	G +.25 -.00	J +.01 -.00	S +.000 -.025
FCDA9X6L160	9	6.2	162.5	166.5	5.94	22	3.5	88.6	24.3	M4-.7 x 20
FCDA11X12L200	11.5	12.2	200.0	204.0	7.92	26	4.5	111.2	26.0	M5-.8 x 20
FCDA12X14L200	12.5	14.2	200.0	204.0	7.92	30	4.5	107.2	28.5	M5-.8 x 20
FCDA12X16L200	12.5	16.2	200.0	204.0	7.92	30	4.5	107.2	28.5	M5-.8 x 20

▶ CAD insertion point

FLEXICORE® ACCESSORIES
WEAR BLOCKS

Inch Standard

M P-20 Pre-Hard H Nitrided .005" Deep

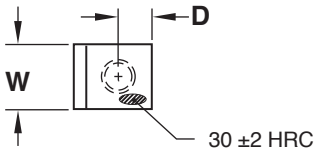
CATALOG NUMBER	W +.002 -.000	D ±.01	B +.001 -.000	C +.001 -.000	H	K	T Thread
FCWB-24	.244	.250	.626	.533	1.000	.115	#10-24
FCWB-32	.322	.250	.626	.533	1.000	.115	1/4-20
FCWB-40	.401	.250	.567	.474	1.000	.115	1/4-20
FCWB-48	.480	.250	567	.474	1.000	.115	1/4-20

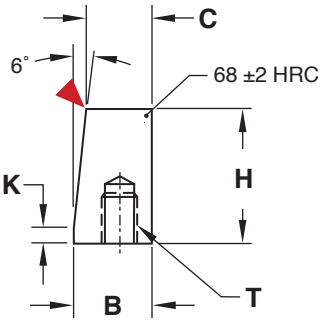
Note: FCWB-24 is designed for use with a 1/4ø shoulder bolt.

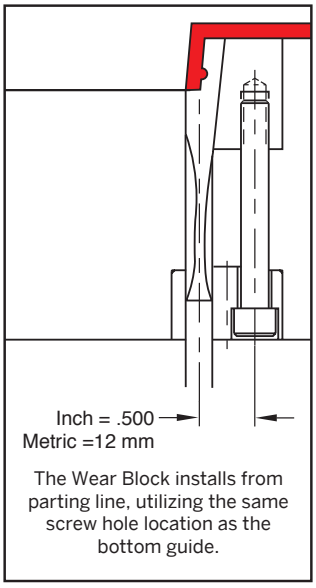
Metric Standard

CATALOG NUMBER	W +.05 -.00	D ±.25	B +.025 -.000	C +.025 -.000	H	K	T Thread
FCWBM-6	6.2	7.2	15.9	13.55	25.4	2.9	M5-.8
FCWBM-8	8.2	7.2	15.9	13.55	25.4	2.9	M6-1
FCWBM-10	10.2	7.2	14.4	12.05	25.4	2.9	M6-1
FCWBM-12	12.2	7.2	14.4	12.05	25.4	2.9	M6-1
FCWBM-14	14.2	8.0	15.2	12.11	33.2	3.5	M6-1
FCWBM-16	16.2	8.0	15.2	12.11	33.2	3.5	M6-1

CAD insertion point

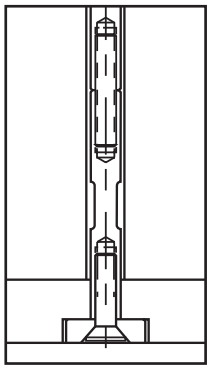


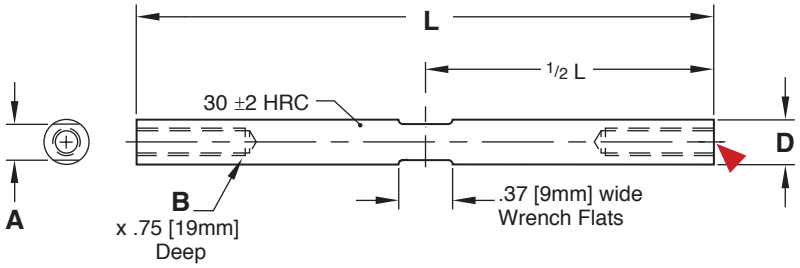




The Wear Block installs from parting line, utilizing the same screw hole location as the bottom guide.

FLEXICORE® ACCESSORIES
EXTENSIONS





Inch Standard

M 4140 Pre-Hard

D +.000 -.005	B	A	L +.01 -.00	
			2"	4"
.232	#8-32	.187	**FCX8L2**	**FCX8L4**
.310	#10-24	.250	**FCX10L2**	**FCX10L4**

Includes threaded stud for attachment to FlexiCore.

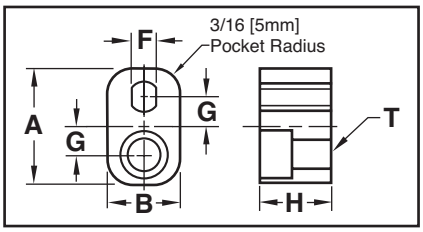
Metric Standard

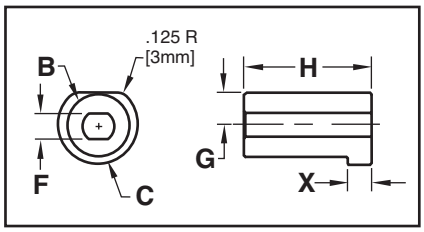
D +.00 -.12	B	A	L +.25 -.00	
			50MM	100MM
6	M4-.7	4.8	**FCXM4L50**	**FCXM4L100**
8	M5-.8	6.3	**FCXM5L50**	**FCXM5L100**

CAD insertion point

PROGRESSIVE COMPONENTS

REPLACEMENT GUIDES





Inch/Metric Standard

M CA954 Solid Bronze

CATALOG NUMBER	A	B	H	F	G	T
FCBG-24	1.000	.625	.625	.190	.250	1/4-20
FCBG-32	1.000	.625	.625	.200	.250	1/4-20
FCBG-40	1.000	.625	.625	.290	.250	1/4-20
FCBG-6	25	16	16	4.8	6	M6-1
FCBG-8	25	16	16	5.0	6	M6-1
FCBG-10	25	16	16	7.3	6	M6-1

Inch/Metric Standard

M CA954 Solid Bronze

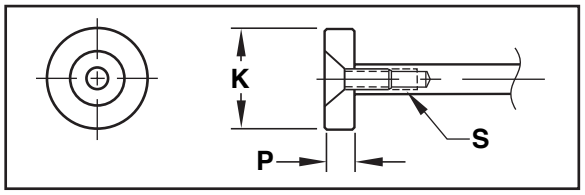
CATALOG NUMBER	B	C	H	F	X	G
FCRG-24	.5000	.625	1.000	.190	.187	.250
FCRG-32	.5000	.625	1.000	.200	.187	.250
FCRG-40	.6250	.750	1.000	.290	.187	.312
FCRG-6	12	16	25	4.8	5	6
FCRG-8	12	16	25	5.0	5	6
FCRG-10	16	20	25	7.3	5	8

REPLACEMENT HEEL PLATES

Inch/Metric Standard

M 4140 Pre-Hard S Black Oxided

CATALOG NUMBER	K	P	S
FCHP-8	.61	.188	#8-32
FCHP-10	.61	.188	#10-24
FCHP-4	16	4	M4 -.7
FCHP-5	16	4	M5 -.8

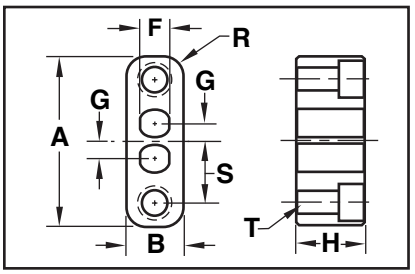


Screw included.

Inch/Metric Standard

M CA954 Solid Bronze

CATALOG NUMBER	A	B	H	F	G	R	S	T
FCDBG-24	1.750	.625	.750	.190	.136	.218	.636	1/4-20
FCDBG-48	1.875	.625	.750	.290	.176	.218	.676	1/4-20
FCDBG-6	45	16	20	4.8	3.5	5	15.5	M6-1
FCDBG-12	48	16	20	7.3	4.5	5	16.5	M6-1

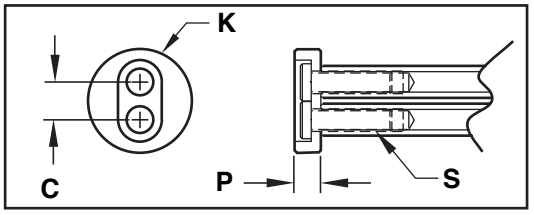


REPLACEMENT HEEL PLATES: DOUBLE ACTUATION

Inch/Metric Standard

M 4140 Pre-Hard S Black Oxided

CATALOG NUMBER	C	K	P	S
FCDHP-8	.272	.750	.188	#8-32
FCDHP-10	.352	.875	.188	#10-24
FCDHP-4	7	20	6	M4-.7
FCDHP-5	9	22	6	M5-.8



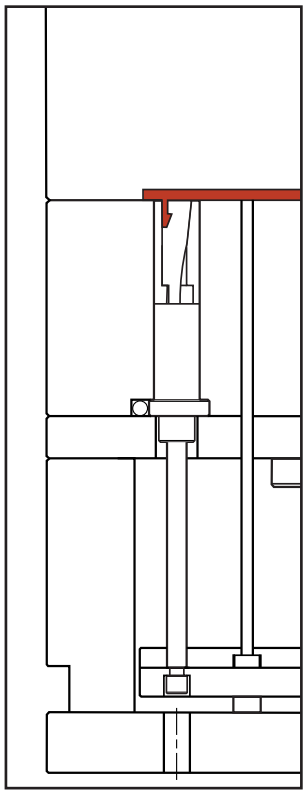
Screws included.

LIFTER BLADES & CORES

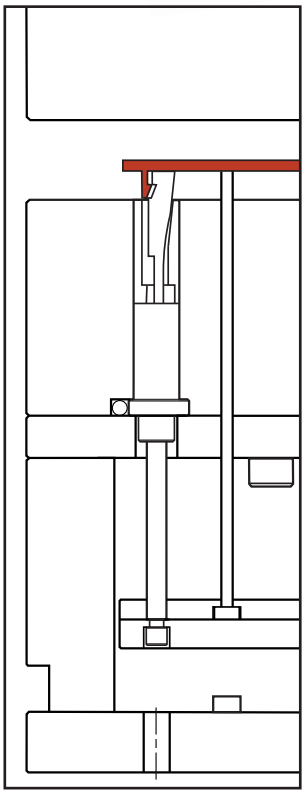
UNDERCUT RELEASE SYSTEM

Lifter Blades™ for details 1.8mm-4.2mm wide.

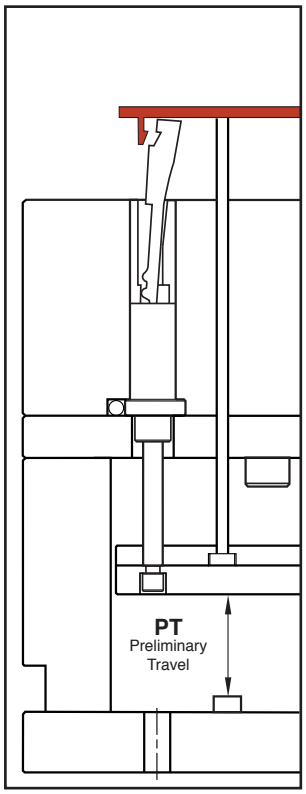
Lifter Cores™ for details 6mm-12mm wide.



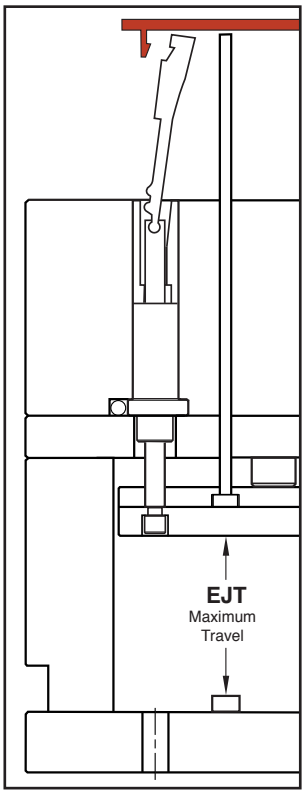
Mold Closed
Lifter seated within bushing to prevent molding pressure movement.



Opening: Part Break
Detail release occurs from preload pin pressure during the initial 7mm of ejection.



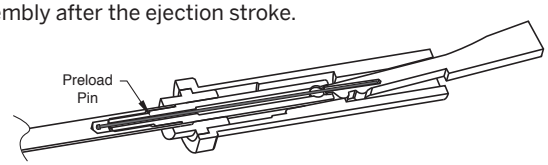
Mold Open: Preliminary Ejection
At the "PT" distance, the mechanical undercut travel limit is reached when the preload pin is removed from the design.

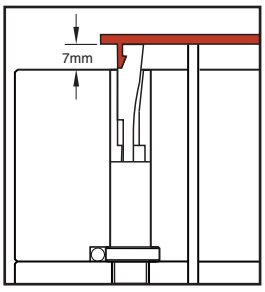


Mold Open: Full Ejection
With the preload pin installed, maxiumum undercut travel is achieved.

Preload Pin Use:

Use the provided preload pin for maximum travel and guided return of the assembly after the ejection stroke.





In applications where parallel movement is required for maintaining part position, the pin is to be removed from the Lifter Blade or Core Assembly. As shown at left, the part is held for the first 7mm of ejection stroke.

As the stroke continues, the Lifter moves horizontally until it eventually begins movement along the angle.

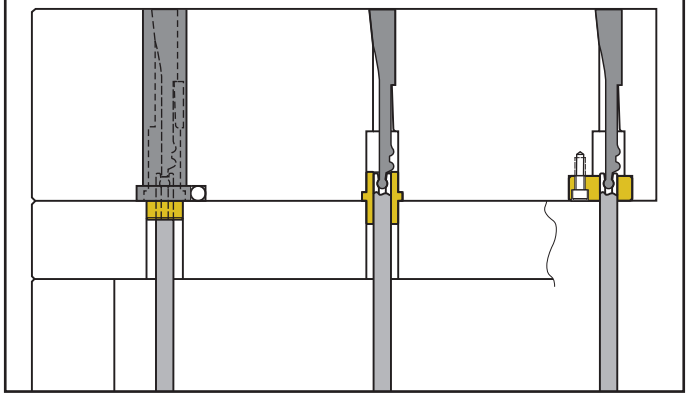
Note that only the preliminary travel (TP) is assured as shown on the next page, as the pin is required for full travel (TF).

Installation Options:

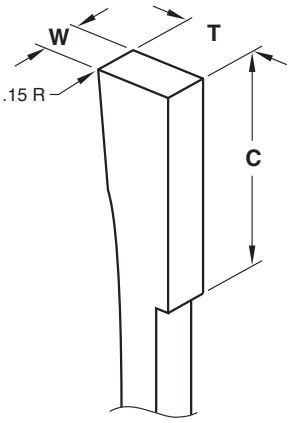
Parting Line Bushing:
Reduces machining in the core half.

Guide Bushing:
Best for applications when space is limited.

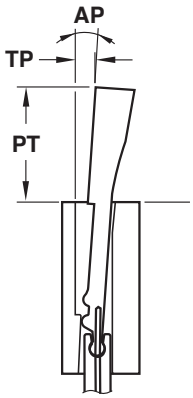
Guide Plate:
Used when the design does not require a support plate.



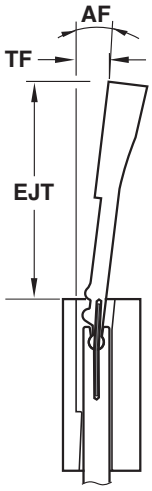
PROGRESSIVE COMPONENTS

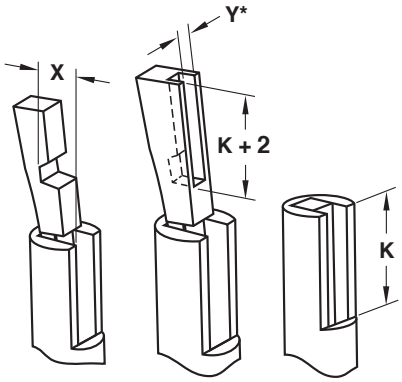


Preliminary Ejection
For mechanical activation, removal of the pin will achieve the travel shown below, using any Bushing or Guide Plate installation.



Full Ejection
With the preload pin installed, the lifter will further arc along the angles as shown, achieving greater undercut release.





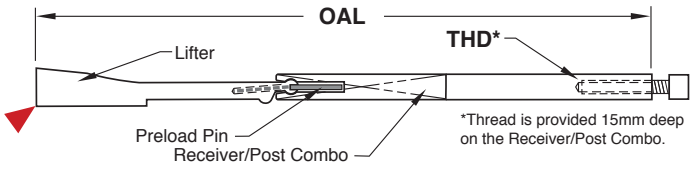
Machining guidelines shown above for all Lifter Assemblies when using the Parting Line Bushing or machining the detail in the core insert. Refer to the Undercut Limits in the chart below.

*Note: On all Lifter Blades (LBA), the undercut must go through the Lifter; "Y" is not applicable.

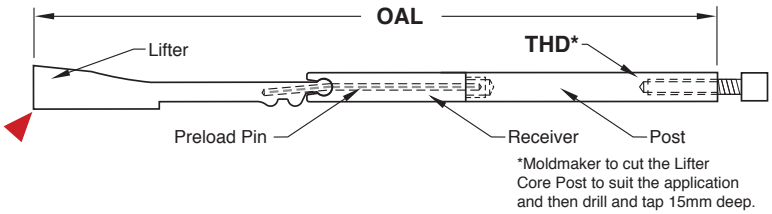
	CATALOG NUMBER	T -.004 -.009	W -.004 -.009	C ±.005	OAL Ref	TP Horiz. Prelim Travel	PT Prelim Ejection Length	AP Prelim Travel Angle	TF Horiz. Full Travel	EJT Full Ejection Length	AF Full Ejection Angle	S Maximum Stroke for Removal	THD Thread Size	Undercut Limits X	Y	K
BLADES	LBA08X018	8	1.8	20	162	3	17	4.0˚	6	38	8˚	50	M4	3.0	N/A	15
	LBA08X024	8	2.4	20	162	3	17	4.0˚	6	38	8˚	50	M4	3.0	N/A	15
	LBA08X032	8	3.2	20	162	3	17	4.0˚	6	38	8˚	50	M4	3.0	N/A	15
	LBA08X042	8	4.2	20	162	3	17	4.0˚	6	38	8˚	50	M4	3.0	N/A	15
CORES	LCA09X06	9	6	26	246	6	26	6.0˚	9	56	9˚	65	M4	3.5	4	21
	LCA10X08	10	8	26	246	6	26	6.0˚	9	56	9˚	65	M4	4.0	6	21
	LCA12X10	12	10	30	256	8	32	6.5˚	10	66	8˚	75	M5	5.0	8	25
	LCA12X12	12	12	30	256	8	32	6.5˚	10	66	8˚	75	M5	5.0	10	25

CAD insertion point

Lifter Blade Assemblies:
Widths 1.8mm to 4.2mm



Lifter Core Assemblies:
Widths 6mm to 12mm



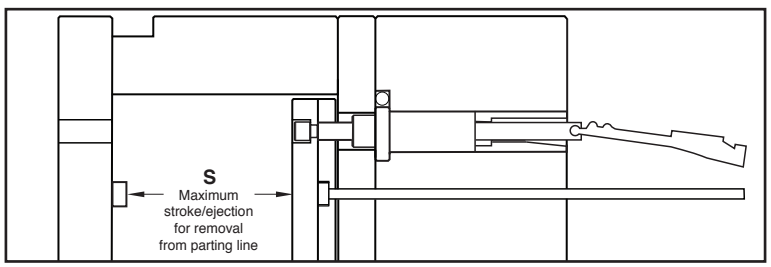
Assembly Part Information:

PART NAME	MATERIAL/TREATMENT
Lifter	H-13, 50-52 HRC Nitride .25 Deep
Receiver	H-13, 50-52 HRC, Titanium Nitride
Post	P-20 Pre-Hard, Black Oxided
Preload Pin	M-2, 62-64 HRC

Note: On the Lifter Blade Assemblies (LBA), the Post and Receiver are a single piece, made from pre-hardened P-20 and TiN coated.

Replacement items are available. Contact Customer Service for pricing and delivery.

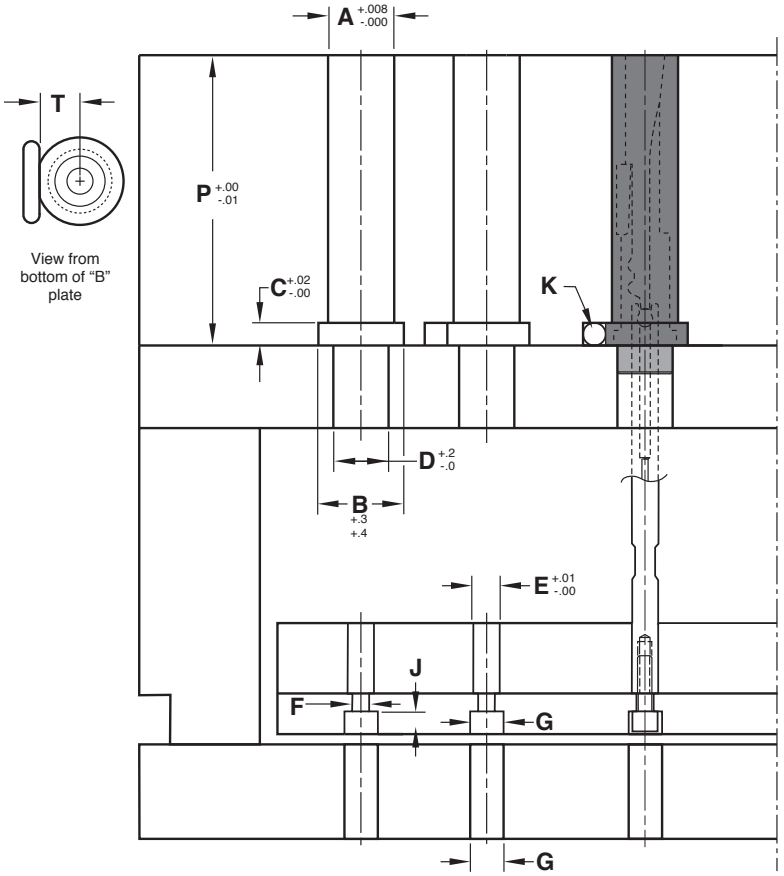
Removability from Parting Line:



With ejector stops removed, the ejector plates can be moved forward to expose the Lifter Blade Assembly, and then the Lifter and the Preload Pin can slide sideways out of the Receiver/Post Combo. On the Lifter Cores, the Receiver can be unscrewed from the Post and then removed from parting line.

LIFTER BLADES & CORES

PARTING LINE BUSHING INSTALLATION

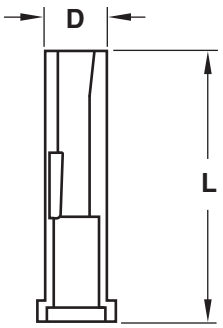


ASSEMBLY REF	A Diam.	B Diam.	C	D Diam.	E Diam.	F Diam.	G Diam.	J	K Dowel Size	T	P
LBA08X018	12	16	5	9.6	6	4.5	8	4.5	5	7	56
LBA08X024	12	16	5	9.6	6	4.5	8	4.5	5	7	56
LBA08X032	12	16	5	9.6	6	4.5	8	4.5	5	7	56
LBA08X042	12	16	5	9.6	6	4.5	8	4.5	5	7	56
LCA09X06	14	20	5	11	6	4.5	8	4.5	5	8.5	66
LCA10X08	16	22	5	13	6	4.5	8	4.5	5	9.5	66
LCA12X10	20	26	6	15	8	5.5	10	5.5	6	11	76
LCA12X12	20	26	6	15	8	5.5	10	5.5	6	11	76

PARTING LINE BUSHINGS

Features:

- Use of the Parting Line Bushing simplifies machining in the mold base.
- Each bushing assembly incorporates a wedge that creates a stop for the Lifter to avoid push back due to molding pressure.
- The Guide Bushing should be utilized with the Parting Line Bushings to locate and guide the Lifter Blade/Core Assembly in the support plate. The bushings, along with Guide Plates, are sold separately on page H-15.

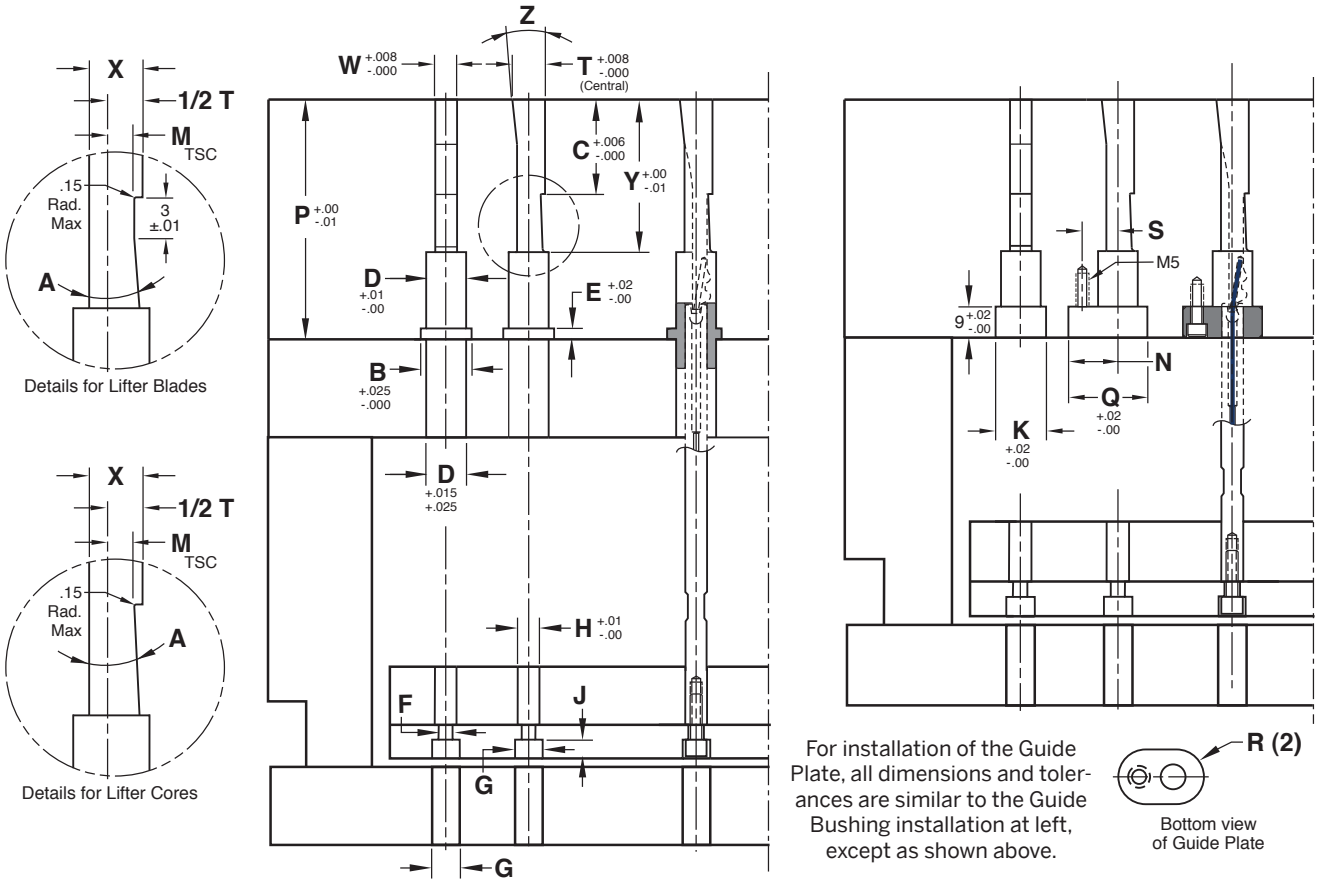


M A-2 S 58-60 HRC

CATALOG NUMBER	For Lifter Widths	D -.003 -.008	L ± .010
LBB018	1.8	12	56
LBB024	2.4	12	56
LBB032	3.2	12	56
LBB042	4.2	12	56
LCB06	6	14	66
LCB08	8	16	66
LCB10	10	20	76
LCB12	12	20	76

LIFTER BLADES & CORES

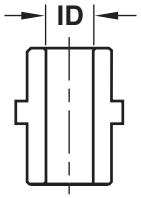
GUIDE BUSHING & GUIDE PLATE INSTALLATION



For installation of the Guide Plate, all dimensions and tolerances are similar to the Guide Bushing installation at left, except as shown above.

ASSEMBLY REF	T	W	X	C	Y	M	Z	A	D Diam.	B Diam.	E	F Diam.	G Diam.	H	J	K	N	Q	S	R	P
LBA08X018	8	1.8	7.3	20	28	3.1	5˚	13.5˚	9.6	12.8	3	4.5	8	6	4.5	12	18	24	12	6	56
LBA08X024	8	2.4	7.3	20	28	3.1	5˚	13.5˚	9.6	12.8	3	4.5	8	6	4.5	12	18	24	12	6	56
LBA08X032	8	3.2	7.3	20	28	3.1	5˚	13.5˚	9.6	12.8	3	4.5	8	6	4.5	12	18	24	12	6	56
LBA08X042	8	4.2	7.3	20	28	3.1	5˚	13.5˚	9.6	12.8	3	4.5	8	6	4.5	12	18	24	12	6	56
LCA09X06	9	6	7.7	26	46	3.3	6˚	2˚	11	14	3	4.5	8	6	4.5	14	18.5	26	12	7	66
LCA10X08	10	8	8.5	26	46	3.6	8˚	2˚	13	16	4	4.5	8	6	4.5	16	19.5	28	12	8	66
LCA12X10	12	10	10.1	30	55	4.2	8˚	2˚	15	20	4	5.5	10	8	5.5	18	20.5	30	13	9	76
LCA12X12	12	12	10.1	30	55	4.2	8˚	2˚	15	20	4	5.5	10	8	5.5	18	20.5	30	13	9	76

GUIDE BUSHINGS & GUIDE PLATES

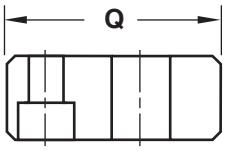


M CA954 Bronze H 170 Brinell

CATALOG NUMBER	For Lifter Widths	ID
LBGB0696	1.8-4.2	6
LCGB0611	6	6
LCGB0613	8	6
LCGB0817	10 & 12	8

M CA954 Bronze H 170 Brinell

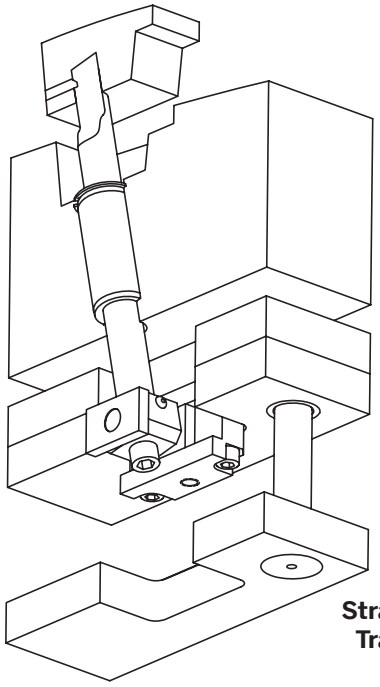
CATALOG NUMBER	For Lifter Widths	Q
LBGP1212	1.8-4.2	24
LCGP1426	6	26
LCGP1628	8	28
LCGP1830	10 & 12	30



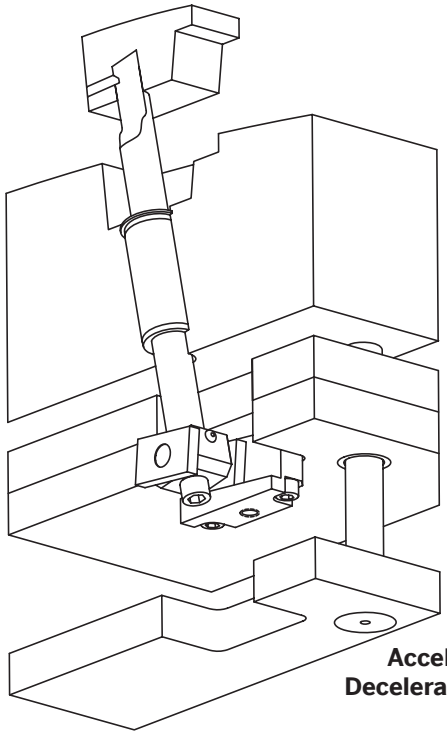
MODULIFTER™
UNDERCUT RELEASE SYSTEM

A standardized modular lifter assembly simplifies undercut release:

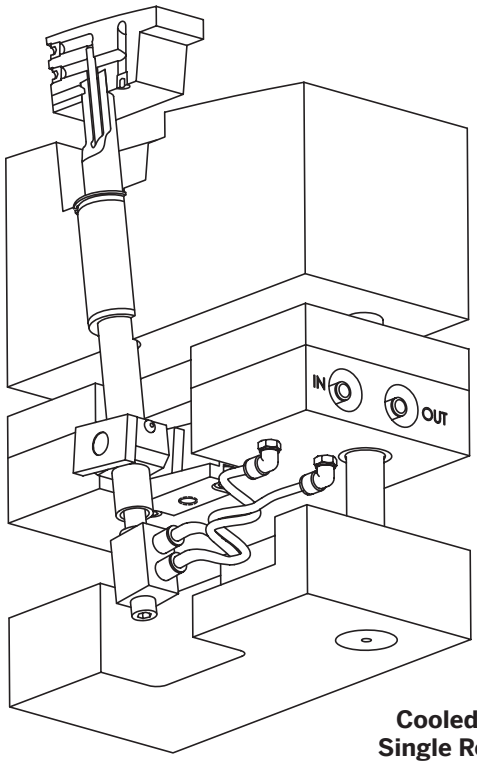
- Specialized design for accelerated and decelerated applications.
- Additional lifter cooling options and components available.



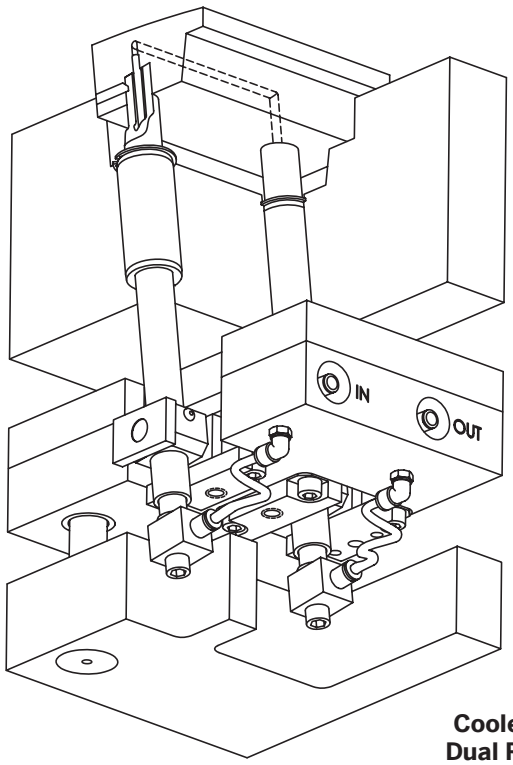
Straight Travel



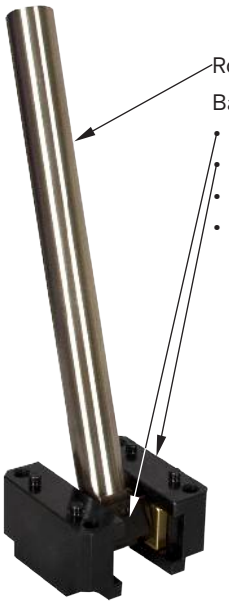
Accelerated/ Decelerated Options

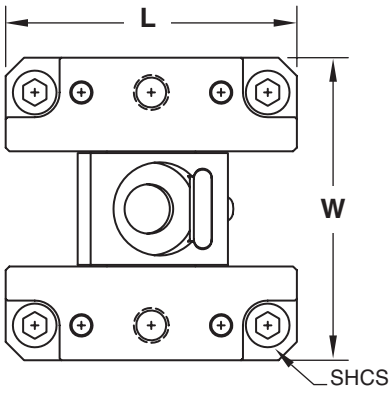


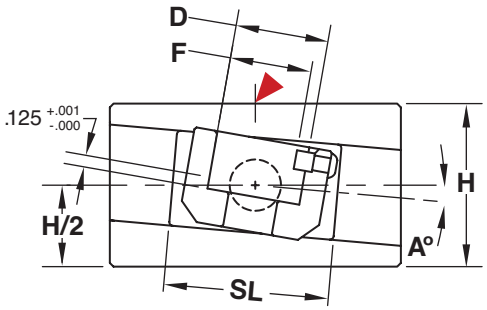
Cooled: Single Rod In/Out



Cooled: Dual Rod In/Out







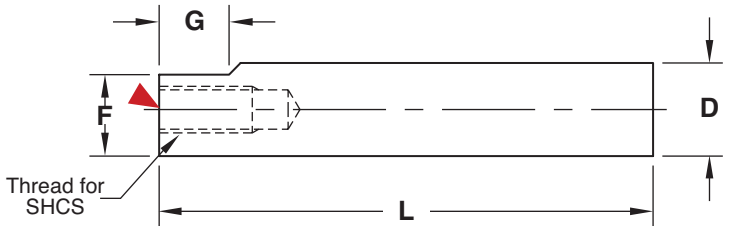
BASE ASSEMBLY

Gibs/Coupling: M 1045 H 28-32 HRC S Nitride Slides: M CAC304 (Graphite Plugs if specified) ▶ CAD insertion point

NOMINAL ROD Ø	CATALOG NUMBER			L +.000 -.002	W +.000 -.002	H +.000 -.001	D +.0003 -.0000	F +.0015 -.0000	SHCS	TRAVEL (L-SL)
	A=0°	A=5°	A=10°							
1/2	MLBA050	MLBA050-5	MLBA050-10	2.250	2.250	1.375	.5003	.4505	1/4-20 X 1-1/2	.87
5/8	MLBA063	MLBA063-5	MLBA063-10	2.625	2.500	1.375	.6253	.5905	1/4-20 x 1-1/2	1.06
3/4	MLBA075	MLBA075-5	MLBA075-10	2.750	3.000	1.750	.7503	.6905	5/16-18 x 2	1.18
1	MLBA100	MLBA100-5	MLBA100-10	3.125	3.250	1.750	1.0003	.9005	5/16-18 x 2	1.35
1-1/4	MLBA125	MLBA125-5	MLBA125-10	3.875	4.000	2.250	1.2503	1.1605	3/8-16 x 2-1/2	1.12
1-1/2	MLBA150	MLBA150-5	MLBA150-10	4.750	4.250	2.500	1.5003	1.4005	3/8-16 x 2-3/4	1.60

Note: Includes (4) SHCS and (4) Dowels. For ModuLifter Base Assemblies with different Gib angles, contact Customer Service.
To order with Graphite Plugged Base, add GP to the part number as shown, Ex: MLBAGPxxx.

LIFTER ROD



M 1045 H 56-58 HRC

D +.0000 -.0003	CATALOG NUMBER	L +.13 -.00	F +.000 -.001	G +.03 -.00	SHCS
.500	MLR050L14	14	.450	.50	1/4-20 X 5/8
.625	MLR063L14	14	.590	.56	5/16-18 x 3/4
.750	MLR075L14	14	.690	.68	3/8-16 x 7/8
1.000	MLR100L16	16	.900	.75	1/2-13 x 1
1.250	MLR125L16	16	1.160	.94	5/8-11 x 1-1/2
1.500	MLR150L18	18	1.400	1.00	5/8-11 x 1-1/2

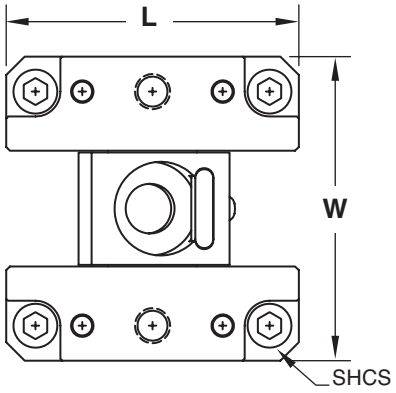
Note: Includes (1) installation SHCS. For additional rod lengths contact Customer Service.

MODULIFTER™

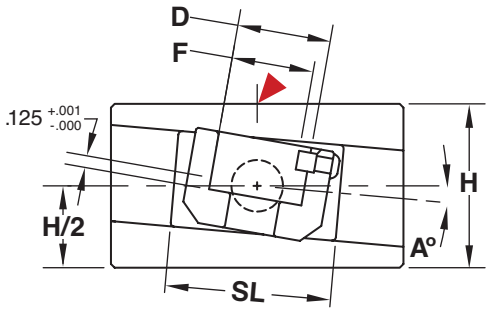
COOLED BASE ASSEMBLY/LIFTER ROD

Base Assembly includes:

- Rod Coupling Assembly
- Gibs (2)
- Mounting Screws (4)
- Dowels installed



Cooling Base Assemblies have three (3) options for varying water connections.



COOLED BASE ASSEMBLY

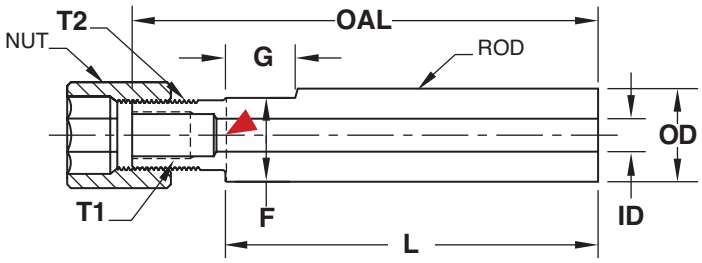
Gibs/Coupling: M 1045 H 28-32 HRC S Nitride Slides: M CAC304 (Graphite Plugs if specified)

CAD insertion point

NOMINAL ROD Ø	CATALOG NUMBER			L +.000 -.002	W +.000 -.002	H +.000 -.001	D +.0003 -.0000	F +.0015 -.0000	SHCS	TRAVEL (L-SL)
	A = 0°	A = 5°	A = 10°							
5/8	MLCBA063	MLCBA063-5	MLCBA063-10	2.625	2.500	1.375	.6253	.5905	1/4-20 x 1-1/2	1.06
3/4	MLCBA075	MLCBA075-5	MLCBA075-10	2.750	3.000	1.750	.7503	.6905	5/16-18 x 2	1.18
1	MLCBA100	MLCBA100-5	MLCBA100-10	3.125	3.250	1.750	1.0003	.9005	5/16-18 x 2	1.35
1-1/4	MLCBA125	MLCBA125-5	MLCBA125-10	3.875	4.000	2.250	1.2503	1.1605	3/8-16 x 2-1/2	1.12
1-1/2	MLCBA150	MLCBA150-5	MLCBA150-10	4.750	4.250	2.500	1.5003	1.4005	3/8-16 x 2-3/4	1.60

Note: Includes (4) SHCS and (4) Dowels. For ModuLifter Base Assemblies with different Gib angles, contact Customer Service.
To order with Graphite Plugged Base, add GP to the part number as shown, Ex. MLCBAGPxxx.

COOLED LIFTER ROD

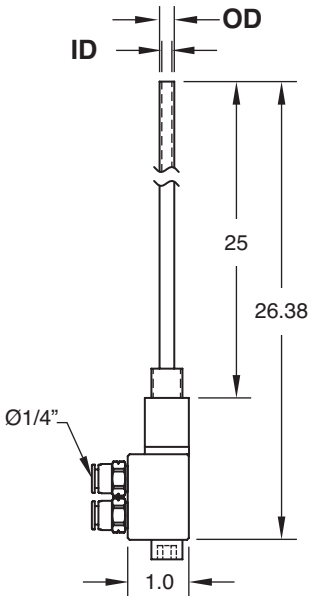


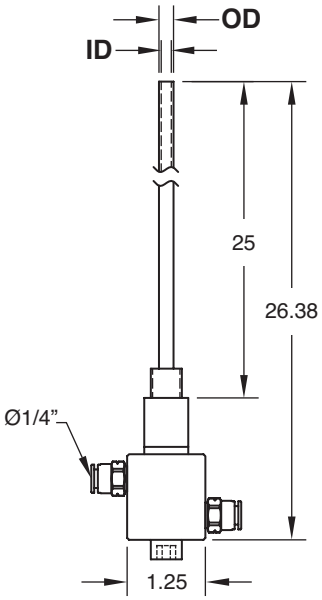
M 1045 H 56-58 HRC

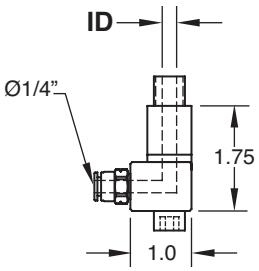
OD +.0000 -.0003	CATALOG NUMBER	ID	OAL	L +.13 -.00	T1 Internal Thread	T2 External Thread	G +.03 -.00	F +.000 -.001
.625	MLCR063L14	.250	14.75	14	5/16-24	1/2-20	.56	.590
.750	MLCR075L16	.250	16.88	16	5/16-24	1/2-20	.68	.690
1.000	MLCR100L16	.375	17.00	16	1/2-20	3/4-20	.75	.900
1.250	MLCR125L16	.375	19.25	16	1/2-20	7/8-20	.94	1.160
1.500	MLCR150L18	.375	19.38	18	1/2-20	7/8-20	1.00	1.400

Note: Includes (1) Installation Nut. For additional Cooling Lifter Rod lengths contact Customer Service.

MODULIFTER™
COOLING CASCADES





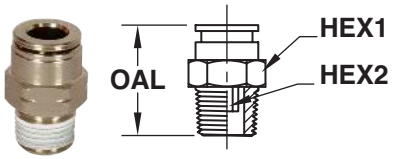


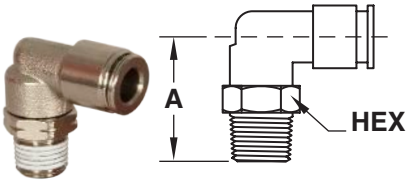
M CAC304 and Stainless Steel. Fittings: Nickel Plated Brass.

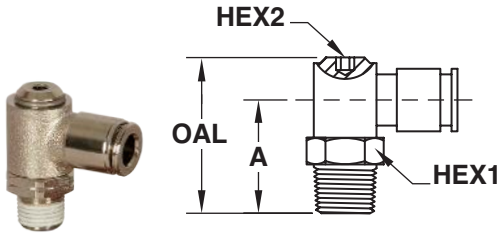
Parallel (In & Out)			Series (In & Out)			Single (In Only)		
OD	ID	CATALOG NUMBER	OD	ID	CATALOG NUMBER	ID	CATALOG NUMBER	NOMINAL ROD Ø
.157	.12	MLCP16L25	.157	.12	MLCS16L25	.20	MLC20	5/8, 3/4
.236	.20	MLCP23L25	.236	.20	MLCS23L25	.31	MLC31	1, 1-1/4, 1-1/2

Note: Straight Fittings included with Cooling Cascades.

PUSH-TO-CONNECT HOSE FITTINGS







FITTING TYPE	CATALOG NUMBER	HOSE OD	THD (NPT)	HEX1	HEX2	A	OAL
Straight	MLFS25	1/4	1/8	1/2	5/32	—	.87
Elbow	MLFE25	1/4	1/8	1/2	—	.83	—
Banjo	MLFB25	1/4	1/8	9/16	1/8	.81	1.22

M Nickel Plated Brass with Sealant

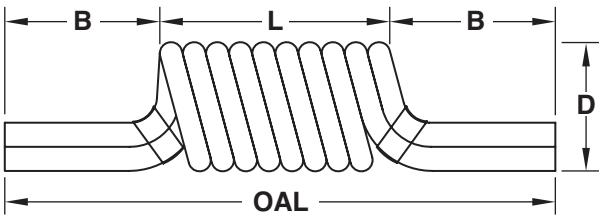
Note: Maximum Operating Temperature 160 °.

PUSH-TO-CONNECT SPIRAL AND STRAIGHT HOSES

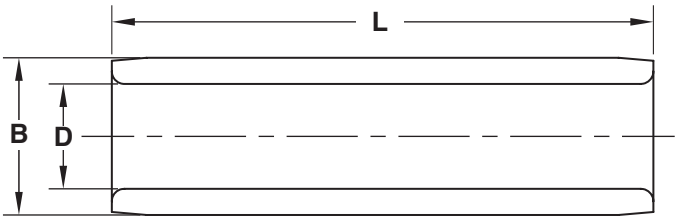
M Polyurethane

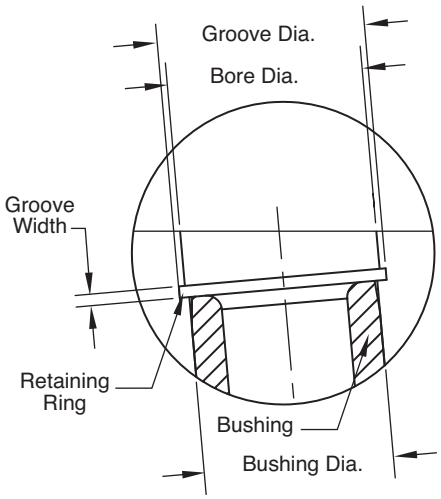
CATALOG NUMBER	HOSE OD	HOSE ID	TURNS	OAL	L	B	D
MLH25-5	1/4	5/32	5	10.5	2.5	4	1.5
MLH25-10	1/4	5/32	10	13.0	5.0	4	1.5
MLH25-25	1/4	5/32	Straight	25.0	—	—	—

Note: Maximum Operating Temperature 160 °.



MODULIFTER™
LIFTER ROD BUSHING



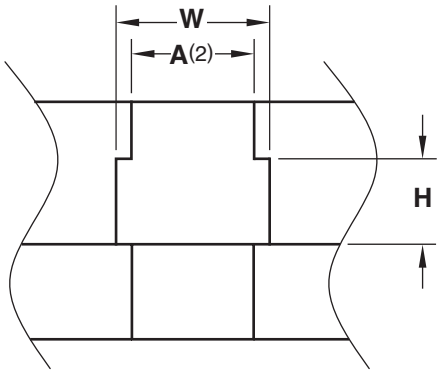


Bushings: M Bronze Retaining Ring: M Steel S Black Oxide

CATALOG NUMBER	D +.001 -.000	B +.001 -.000	L +.00 -.01	Groove Dia. +.005 -.000	Groove Width +.005 -.000	Bore Dia. ±.002
MLBSH50L1.37	.5005	.750	1.375	.862	.046	.813
MLBSH63L1.37	.6255	.875	1.375	1.000	.046	.934
MLBSH75L3.37	.7505	1.125	3.375	1.262	.056	1.188
MLBSH100L4.37	1.0005	1.375	4.375	1.528	.056	1.438
MLBSH125L4.87	1.2505	1.625	4.875	1.792	.068	1.688
MLBSH150L5.87	1.5005	2.000	5.875	2.186	.086	2.063

Note: Includes (1) retaining ring.

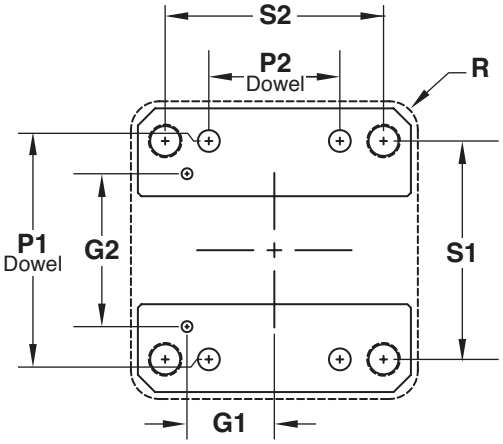
ROD COUPLING ASSEMBLY PLATE MACHINING OPTION

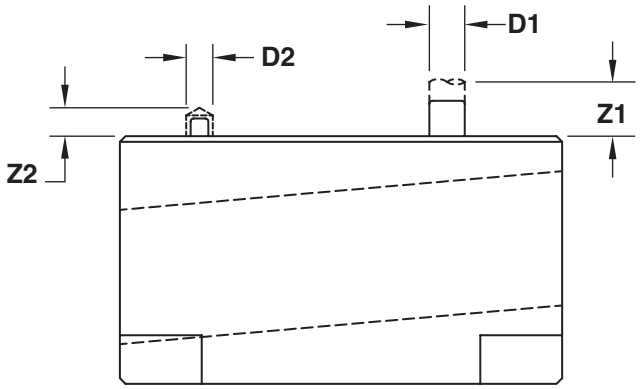


Coupling: M 1045 H 28-32 HRC S Nitride Slides: M CAC304 (Graphite Plugs if specified)

NOMINAL ROD Ø	CATALOG NUMBER		W +.002 -.000	H ±.001	A +.010 -.000
	Non-Cooled	Cooled			
1/2	RC050	—	1.187	.788	.66
5/8	RC063	RCC063	1.310	.788	.78
3/4	RC075	RCC075	1.500	.946	.97
1	RC100	RCC100	1.781	1.024	1.21
1-1/4	RC125	RCC125	2.375	1.340	1.64
1-1/2	RC150	RCC150	2.656	1.498	1.84

Note: To order slides with Graphite Plugs, add GP to the part number as shown, Ex: RCGP050 or RCCGP125.

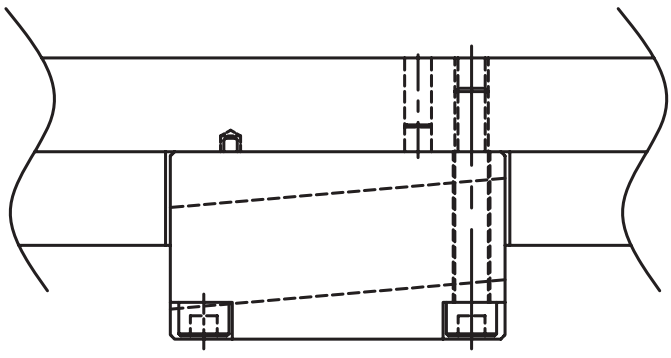




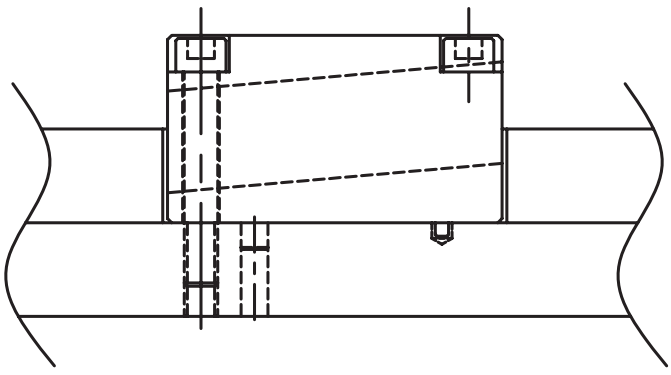
Installation Dimensions							
NOMINAL ROD Ø	S1 ±.005	S2 ±.005	P1 Dowel ±.0005	P2 Dowel ±.0005	R Pocket Max	D1 +.0005 -.0000	Z1 +.03 -.00
1/2	1.750	1.750	1.750	.750	.19	.2500	.28
5/8	2.000	2.000	2.000	1.000			
3/4	2.250	2.250	2.250	1.250			
1	2.500	2.500	2.500	1.500			
1-1/4	3.250	3.250	3.250	1.750	.25	.3750	.41
1-1/2	3.500	4.000	3.500	2.500			

Accel./Decel. Keying Dowel			
G1 ±.005	G2 ±.005	D2 Drill Ø	Z2 Drill Depth +.03/-.00
.75	1.00	.125	.19
.75	1.25		
.75	1.50		
1.00	1.75		
1.25	2.25	.188	
1.50	2.50		

INSTALLATION METHODS



Bottom Mount



Top Mount