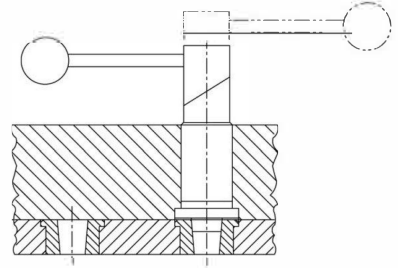


TAPERED INDEX PLUNGERS

PLUNGER, BODY, CAM, AND BUSHING: 1144 STEEL, HEAT TREATED. CENTER SHAFT: 1144 STEEL. SPRING: MUSIC WIRE.
BALL KNOB: BLACK PHENOLIC PLASTIC WITH MOLDED-IN BRASS INSERT

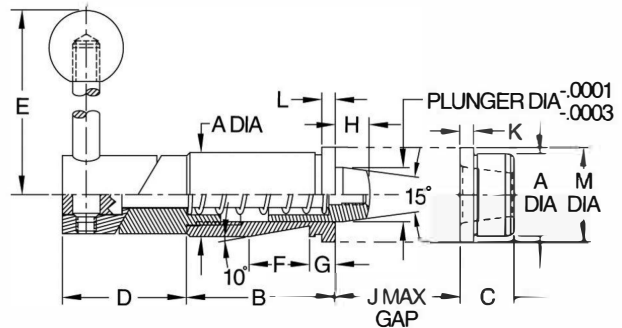


**Tapered Index Plungers
Rotary Cam
Standard Mount**



Index Plungers are precision, heavy-duty assemblies with a retractable spring-loaded plunger and a matching locating bushing. Tapered Index Plungers feature a 15° taper on the plunger tip with a mating taper on the bushing. The taper makes alignment easier and also eliminates any binding during retraction. Straight Index Plungers have an entirely cylindrical plunger with a slight radius at the tip, used together with a straight bushing. A straight plunger provides slightly greater positional accuracy. Order plunger and bushing separately.

The rotary-cam version completely retracts when the handle is rotated 180°. Cam surfaces are hardened steel. The standard-mount configuration has a precision ground body with a whistle notch for orientation with a setscrew (also available with a slightly oversize unground body to allow custom grinding to size). Index Plungers are manufactured with precision working tolerances and are designed for very light interference-fit installations to avoid binding of the mechanism. Set screws with nylon tip inserts are recommended. Set screws should firmly contact the whistle notch, but not exert significant force.



TAPERED INDEX PLUNGERS — ROTARY CAM, STANDARD MOUNT (INCH)

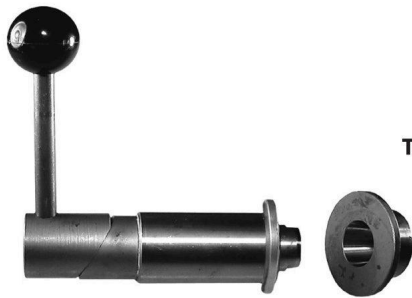
PART NO. INDEX PLUNGER	PART NO. BUSHING	PLUNGER DIA	A DIA			B	C	D	E	F	G	H	J	K	L	M DIA
			NOMINAL	GROUND	UNGROUND											
CL-22018-TIP	CL-22032-TIPB	1/2	3/4	.7518/.7515	—	1-3/8	1/2	1-1/8	3	7/16	5/16	5/16	3/32	1/8	1/8	7/8
CL-22016-TIP	CL-22030-TIPB			—	.766/.765											
CL-22118-TIP	CL-22132-TIPB	3/4	1-1/8	1.1268/1.1265	—	2	5/8	1-5/8	3-1/2	9/16	3/8	13/32	1/8	1/8	1/8	1-1/4
CL-22116-TIP	CL-22130-TIPB			—	1.141/1.140											
CL-22218-TIP	CL-22232-TIPB	1	1-1/2	1.5021/1.5018	—	2-1/4	3/4	2-1/8	4-1/2	11/16	7/16	7/16	1/8	1/8	1/8	1-5/8
CL-22216-TIP	CL-22230-TIPB			—	1.516/1.515											

TAPERED INDEX PLUNGERS — ROTARY CAM, STANDARD MOUNT (METRIC)

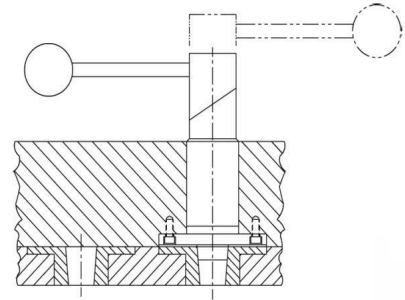
PART NO. FOR INDEX PLUNGER	PART NO. BUSHING	PLUNGER DIA (mm)	A DIA NOMINAL (mm)	A DIA ACTUAL (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (mm)	K (mm)	L (mm)	M DIA (mm)
CLM-22018-TIP	CLM-22032-TIPB	12	20	20.046 / 20.038 (Ground)	35	12	28.5	76	11	8	8	2.4	3	3	22
CLM-22118-TIP	CLM-22132-TIPB	20	30	30.046 / 30.038 (Ground)	51	16	41.5	89	14	9.5	10.5	3.2	3	3	32

TAPERED INDEX PLUNGERS

PLUNGER, BODY, RETAINER, AND CAM: 1144 STEEL, HEAT TREATED. CENTER SHAFT: 1144 STEEL. SPRING: MUSIC WIRE.
BALL KNOB: BLACK PHENOLIC PLASTIC WITH MOLDED-IN BRASS INSERT

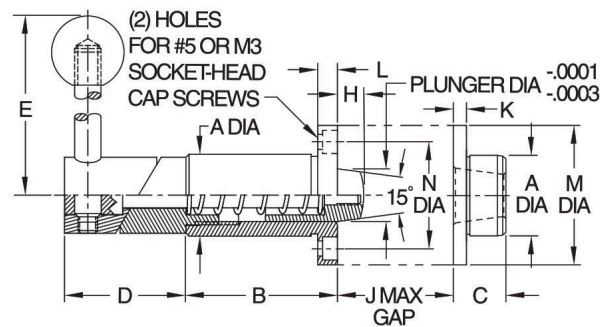


**Tapered Index Plungers
Rotary Cam
Flange Mount**



Index Plungers are precision, heavy-duty assemblies with a retractable spring-loaded plunger and a matching locating bushing. Tapered Index Plungers feature a 15° taper on the plunger tip with a mating taper on the bushing. The taper makes alignment easier and also eliminates any binding during retraction. Straight Index Plungers have an entirely cylindrical plunger with a slight radius at the tip, used together with a straight bushing. A straight plunger provides slightly greater positional accuracy. Order plunger and bushing separately.

The rotary-cam version completely retracts when the handle is rotated 180°. Cam surfaces are hardened steel. The flange-mount configuration shown here has a precision ground body with a flange used for orientation by fastening with two Socket-Head Cap Screws (also available with a slightly oversized unground body to allow custom grinding to size). Flange mounting is designed for installations where a cross hole for a set screw is not practical. Index plungers are manufactured with precision working tolerances and are designed for a very light interference-fit installations to avoid binding of the mechanism.



TAPERED INDEX PLUNGERS — ROTARY CAM, FLANGE MOUNT (INCH)

PART NO. INDEX PLUNGER	PLUNGER DIA	A DIA			B	D	E	H	J	L	M DIA	N DIA
		NOMINAL	GROUND	UNGROUND								
CL-22019-TIP	1/2	3/4	.7518/.7515	—	1-3/8	1-1/8	3	5/16	3/32	3/16	-	1
CL-22017-TIP			—	.766/.765								
CL-22119-TIP	3/4	1-1/8	1.1268/1.1265	—	2	1-1/2	3-1/2	13/32	1/8	3/16	-	1-3/8
CL-22117-TIP			—	1.141/1.140								

TAPERED INDEX PLUNGERS — ROTARY CAM, FLANGE MOUNT (METRIC)

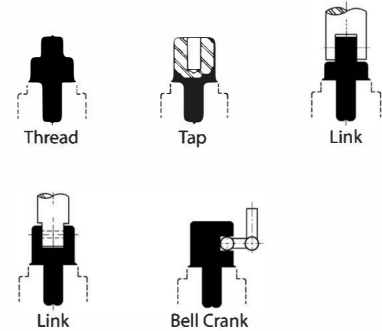
PART NO. INDEX PLUNGER	PLUNGER DIA	A DIA			B	D	E	H	J	L	M DIA	N DIA
		NOMINAL	GROUND	UNGROUND								
CLM-22019-TIP	12mm	20mm	.7892/.7889	----	35mm	28-1/2	76mm	8	2.4	5mm	34mm	25mm
CLM-22119-TIP	20mm	30mm	1.1829/1.1826	----	51mm	45-1/2	89mm	10.5	3.2	5mm	42mm	35mm

TAPERED INDEX PLUNGERS

PLUNGER, BODY, CAM, AND BUSHING: 1144 STEEL, HEAT TREATED. CENTER SHAFT: 1144 STEEL. SPRING: MUSIC WIRE.

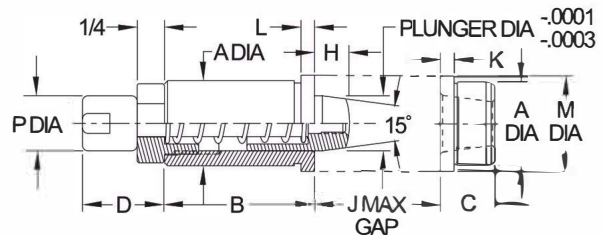


**Tapered Index Plunger
Blank Machinable End**



Index Plungers are precision, heavy-duty assemblies with a retractable spring-loaded plunger and a matching locating bushing. Tapered Index Plungers feature a 15° taper on the plunger tip with a mating taper in the bushing. The taper makes alignment easier and also eliminates any binding during retraction. Straight Index Plungers have an entirely cylindrical plunger with a slight radius at the tip, used together with a straight bushing. A straight plunger provides slightly greater positional accuracy. Order plunger and bushing separately.

The version shown on this page has a blank machinable end for easy adaptation to various actuating devices, including automated setups. Precision ground body (also available with a slightly oversize unground body to allow custom grinding to size). Index Plungers are manufactured with precision working tolerances and are designed for a very light interference-fit installations to avoid binding of the mechanism.



TAPERED INDEX PLUNGERS — BLANK MACHINABLE END (INCH)

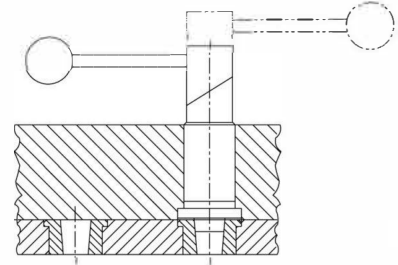
PART NO. INDEX PLUNGER	PART NO. BUSHING	PLUNGER DIA	A DIA			B	C	D	H	J	K	L	M DIA	P DIA
			NOMINAL	GROUND	UNGROUND									
CL-22014-TIP	CL-22032-TIPB	1/2	3/4	.7518/.7515	—	1-3/8	1/2	3/4	5/16	3/32	1/8	1/8	7/8	1/2
CL-22012-TIP	CL-22030-TIPB			—	.766/.765									
CL-22114-TIP	CL-22132-TIPB	3/4	1-1/8	1.1268/1.1265	—	2	5/8	1	3/8	1/8	1/8	1/8	1-1/4	3/4
CL-22112-TIP	CL-22130-TIPB			—	1.141/1.140									
CL-22214-TIP	CL-22232-TIPB	1	1-1/2	1.5021/1.5018	—	2-1/4	3/4	1-1/4	3/8	1/8	1/8	1/8	1-5/8	15/16
CL-22212-TIP	CL-22230-TIPB			—	1.516/1.5018									

STRAIGHT INDEX PLUNGERS

PLUNGER, BODY, CAM, AND BUSHING: 1144 STEEL, HEAT TREATED. CENTER SHAFT: 1144 STEEL. SPRING: MUSIC WIRE.
BALL KNOB: BLACK PHENOLIC PLASTIC WITH MOLDED-IN BRASS INSERT

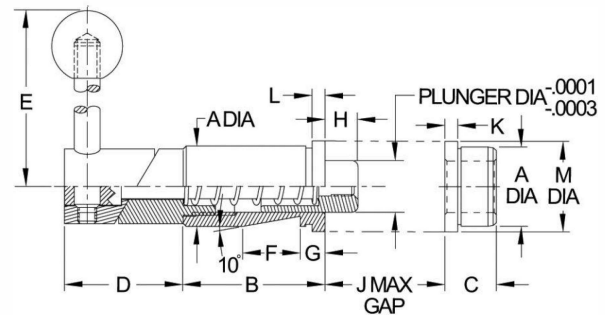


**Straight Index Plungers
Rotary Cam
Standard Mount**



Index Plungers are precision, heavy-duty assemblies with a retractable spring-loaded plunger and a matching locating bushing. Tapered Index Plungers feature a 15° taper on the plunger tip with a mating taper on the bushing. The taper makes alignment easier and also eliminates any binding during retraction. Straight Index Plungers have an entirely cylindrical plunger with a slight radius at the tip, used together with a straight bushing. A straight plunger provides slightly greater positional accuracy. Order plunger and bushing separately.

The rotary-cam version completely retracts when the handle is rotated 180°. Cam surfaces are hardened steel. The standard-mount configuration has a precision ground body with a whistle notch for orientation with a setscrew (also available with a slightly oversized unground body to allow custom grinding to size). Index Plungers are manufactured with precision working tolerances and are designed for very light interference-fit installations to avoid binding of the mechanism. Set screws with nylon tip inserts are recommended. Set screws should firmly contact the whistle notch, but not exert significant force.



STRAIGHT INDEX PLUNGERS — ROTARY CAM, STANDARD MOUNT (INCH)

PART NO. INDEX PLUNGER	PART NO. BUSHING	PLUNGER DIA	A DIA			B	C	D	E	F	G	H	J	L	M DIA
			NOMINAL	GROUND	UNGROUND										
CL-22006-SIP	CL-22028-SIPB	1/2	3/4	.7518/.7515	—	1-3/8	1/2	1-1/8	3	7/16	5/16	5/16	3/32	1/8	7/8
CL-22004-SIP	CL-22026-SIPB	3/4	1-1/8	1.1268/1.1265	—	2	5/8	1-1/2	3-1/2	9/16	3/8	13/32	1/8	1/8	1-1/4
CL-22106-SIP	CL-22128-SIPB	1	1-1/2	1.5021/1.5018	—	2-1/4	3/4	1-7/8	4-1/2	11/16	7/16	7/16	1/8	1/8	1-5/8
CL-22206-SIP	CL-22228-SIPB	1	1-1/2	1.5021/1.5018	—	2-1/4	3/4	1-7/8	4-1/2	11/16	7/16	7/16	1/8	1/8	1-5/8
CL-22204-SIP	CL-22226-SIPB	1	1-1/2	1.5021/1.5018	—	2-1/4	3/4	1-7/8	4-1/2	11/16	7/16	7/16	1/8	1/8	1-5/8

STRAIGHT INDEX PLUNGERS — ROTARY CAM, STANDARD MOUNT (METRIC)

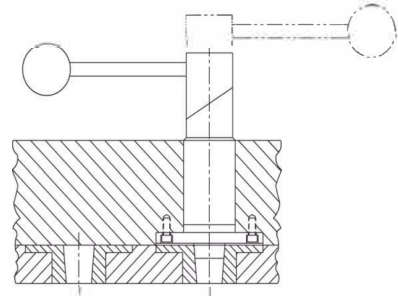
PART NO.	PLUNGER DIA (mm)	A DIA NOMINAL (mm)	A DIA ACTUAL (mm)	B (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (mm)	L (mm)	M DIA (mm)
CLM-22006-SIP	12	20	20.046 / 20.038 (Ground)	35	28.5	76	11	8	8	2.4	3	22
CLM-22106-SIP	20	30	30.046 / 30.038 (Ground)	51	38	89	14	9.5	10.5	3.2	3	32

STRAIGHT INDEX PLUNGERS

PLUNGER, BODY, RETAINER, AND CAM: 1144 STEEL, HEAT TREATED. CENTER SHAFT: 1144 STEEL. SPRING: MUSIC WIRE.
BALL KNOB: BLACK PHENOLIC PLASTIC WITH MOLDED-IN BRASS INSERT

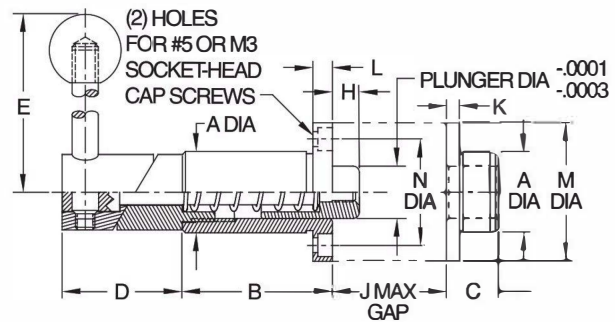


**Straight Index Plungers
Rotary Cam
Flange Mount**



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STRAIGHT INDEX PLUNGERS — ROTARY CAM, FLANGE MOUNT (INCH)

PART NO. INDEX PLUNGER	PART NO. BUSHING	PLUNGER DIA	A DIA			B	C	D	E	H	J	K	L	M DIA	N DIA
			NOMINAL	GROUND	UNGROUND										
CL-22007-SIP	CL-22029-SIPB	1/2	3/4	.7518/.7515	—	1-3/8	1/2	1-1/8	3	5/16	3/32	1/8	3/16	1-5/16	1
CL-22005-SIP	CL-22027-SIPB	1/2	3/4	—	.766/.765	1-3/8	1/2	1-1/8	3	5/16	3/32	1/8	3/16	1-5/16	1
CL-22107-SIP	CL-22129-SIPB	3/4	1-1/8	1.1268/1.1265	—	2	5/8	1-1/2	3-1/2	13/32	1/8	1/8	3/16	1-11/16	1-3/8
CL-22105-SIP	CL-22127-SIPB	3/4	1-1/8	—	1.141/1.140	2	5/8	1-1/2	3-1/2	13/32	1/8	1/8	3/16	1-11/16	1-3/8

STRAIGHT INDEX PLUNGERS — ROTARY CAM, FLANGE MOUNT (METRIC)

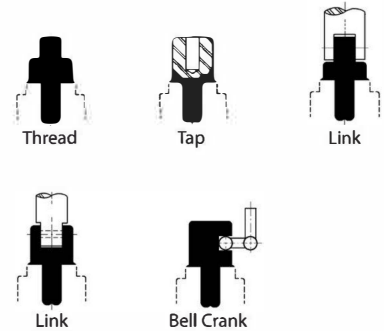
PART NO.	PLUNGER DIA (mm)	A DIA NOMINAL (mm)	A DIA ACTUAL (mm)	B (mm)	D (mm)	E (mm)	H (mm)	J (mm)	L (mm)	M DIA (mm)	N DIA (mm)
CLM-22007-SIP	12	20	20.046 / 20.038 (Ground)	35	28.5	76	8	2.4	5	34	25
CLM-22107-SIP	20	30	30.046 / 30.038 (Ground)	51	38	89	10.5	3.2	5	42	35

STRAIGHT INDEX PLUNGERS

PLUNGER, BODY, CAM, AND BUSHING: 1144 STEEL, HEAT TREATED. CENTER SHAFT: 1144 STEEL. SPRING: MUSIC WIRE.

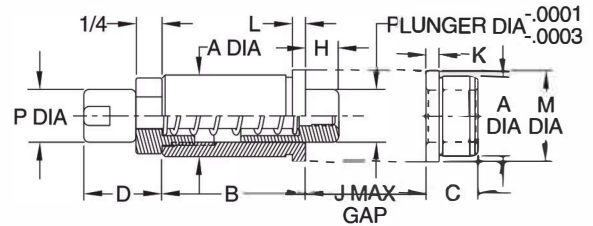


**Straight Index Plunger
Blank Machinable End**



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STRAIGHT INDEX PLUNGERS — BLANK MACHINABLE END (INCH)

PART NO. INDEX PLUNGER	PART NO. BUSHING	PLUNGER DIA	A DIA			B	C	D	H	J	K	L	M DIA	P DIA
			NOMINAL	GROUND	UNGROUND									
CL-22002-SIP	CL-22028-SIPB	1/2	3/4	.7518/.7515	—	1-3/8	1/2	3/4	5/16	3/32	1/8	1/8	7/8	1/2
CL-22102-SIP	CL-22128-SIPB	3/4	1-1/8	1.1268/1.1265	—	2	5/8	1	1/2	1/8	1/8	1/8	1-1/4	3/4
CL-22202-SIP	CL-22228-SIPB	1	1-1/2	1.5021/1.5018	—	2-1/4	3/4	1-1/4	5/8	1/8	1/8	1/8	1-5/8	15/16