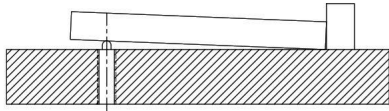
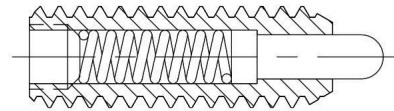


SPRING PLUNGERS

TECHNICAL INFORMATION



Spring plungers are often used to lift parts after machining to make unloading easier.



Nose Extended

Spring Plungers are self-contained plunger-and-spring devices that apply force over a relatively wide range of travel. The plunger nose has a long bearing length to provide smooth, linear operation. Spring Plungers are available in a wide range of sizes and forces, most in a choice of light or heavy end force. A Spring Plunger's end force is very consistent -- beginning at the stated "initial" value, and increasing linearly (due to spring compression) through the range of travel, until it reaches the stated "final" value at maximum travel.

Most Spring Plungers have a locking element to hold it securely in place after installation. This element is a locking patch on small diameters and a nylon locking pellet on larger sizes. To obtain full holding torque on sizes with a locking pellet, countersink the installation hole to avoid cutting the pellet. Countersink at a 90° angle to a diameter 1/32" larger than the major thread diameter. Then, as you screw the plunger into its hole, the locking pellet will be compressed, no cut. The locking pellet does not apply excessive force, so it also works well in softer metals such as aluminum.

Spring Plungers are recommended only for applying straight-line force, not for sideways breakaway from a detent position. For breakaway applications, the rolling ball and short stroke of a Ball Plunger are crucial features for smooth, repeatable operation.

SPRING PLUNGERS

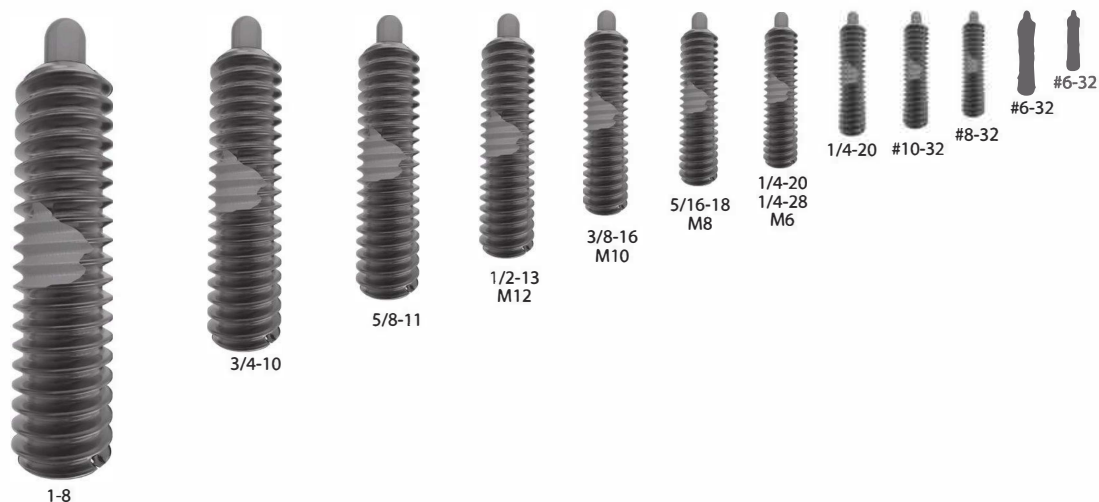
STEEL – BODY: 1215 STEEL, BLACK OXIDE FINISH (METRIC SIZES ZINC PLATED CLEAR CHROMATE).

PLUNGER NOSE: 1215 STEEL, CASE HARDENED, BLACK OXIDE FINISH OR

ZINC PLATED CLEAR CHROMATE (OR DELRIN®). SPRING: MUSIC WIRE.

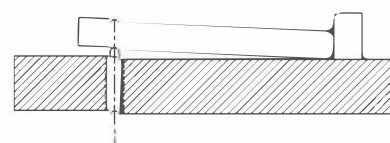
STAINLESS STEEL – BODY: 300-SERIES STAINLESS.

PLUNGER NOSE: 300-SERIES STAINLESS (OR DELRIN®). SPRING: 302 STAINLESS.

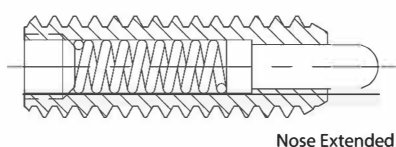


Self-contained plunger-and-spring device available in many sizes and forces. Long bearing length on plunger for smooth operation. Locking element holds the unit securely in place after installation. Install and/or adjust from either end (when using the slot at the plunger end, install with a Plunger Wrench to avoid over-compressing the spring).

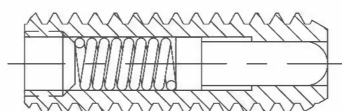
Available in thread sizes from #6-32 to 1"-8 (M6 to M12 in metric). Choice of light or heavy force in each thread size. Available in steel, with hardened plunger nose, or stainless steel. Optionally available with a Delrin® nose to prevent marring.



Spring plungers are often used to lift parts after machining to make unloading easier.



Nose Extended

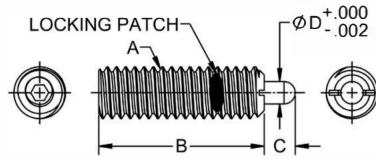


Nose Retracted

PLUNGER NOSE

BODY	NOSE	FORCE
STEEL	STEEL	LIGHT
		HEAVY
	DELRIN®	LIGHT
		HEAVY
STAINLESS	STAINLESS	LIGHT
		HEAVY
	DELRIN®	LIGHT
		HEAVY

SPRING PLUNGERS



STANDARD PLUNGER NOSE, LIGHT FORCE (INCH)

PART NO.		A	END FORCE (LBS)		B	C	D DIA
STEEL	STAINLESS		INITIAL	FINAL			
CL-10-SPS-2	CL-10-SSPS-2	#6-32	0.5	1.5	17/32	1/16	.046
CL-20-SPS-2	CL-20-SSPS-2	#8-32	0.7	2.3	5/8	3/32	.070
CL-30-SPS-2	CL-30-SSPS-2	#10-32	1.3	2.7	3/4	1/8	.093
CL-40-SPS-2	CL-40-SSPS-2	1/4-20	1	4	1	3/16	.119
CL-41-SPS-2	CL-41-SSPS-2	1/4-28					
CL-50-SPS-2	CL-50-SSPS-2	5/16-18	1.5	4.5	1	3/16	.135
CL-60-SPS-2	CL-60-SSPS-2	3/8-16	2.8	7.2	1-1/8	3/16	.186
CL-70-SPS-2	CL-70-SSPS-2	1/2-13	2.7	9.3	1-1/4	1/4	.248
CL-80-SPS-2	—	5/8-11	3.5	10.5	1-1/2	5/16	.310
CL-90-SPS-2	—	3/4-10	4	16	1-3/4	5/16	.374
CL-95-SPS-2	—	1"-8	4	31	2-13/32	1/2	.499

DELIRIN® PLUNGER NOSE, LIGHT FORCE (INCH)

PART NO.		A	END FORCE (LBS)		B	C	D DIA
STEEL	STAINLESS		INITIAL	FINAL			
—	—	#6-32	—	—	—	—	—
CL-20-SPN-2	—	#8-32	0.7	2.3	5/8	3/32	.070
CL-30-SPN-2	—	#10-32	1.3	2.7	3/4	1/8	.093
CL-40-SPN-2	—	1/4-20	1	4	1	3/16	.119
—	—	1/4-28	—	—	—	—	—
CL-50-SPN-2	—	5/16-18	1.5	4.5	1	3/16	.135
CL-60-SPN-2	—	3/8-16	2.8	7.2	1-1/8	3/16	.186
CL-70-SPN-2	—	1/2-13	2.7	9.3	1-1/4	1/4	.248
CL-80-SPN-2	—	5/8-11	3.5	10.5	1-1/2	5/16	.310
—	—	3/4-10	—	—	—	—	—
—	—	1"-8	—	—	—	—	—

STANDARD PLUNGER NOSE, HEAVY FORCE (INCH)

PART NO.		A	END FORCE (LBS)		B	C	D DIA
STEEL	STAINLESS		INITIAL	FINAL			
CL-11-SPS-1	CL-11-SSPS-1	#6-32	1.0	1.6	3/8	1/16	.046
CL-10-SPS-1	CL-10-SSPS-1		1.5	4.5	17/32		
CL-20-SPS-1	CL-20-SSPS-1	#8-32	2.7	7.3	5/8	3/32	.070
CL-30-SPS-1	CL-30-SSPS-1	#10-32	2.9	11.1	3/4	1/8	.093
CL-42-SPS-1	CL-42-SSPS-1	1/4-20	2	9	3/4	1/8	.119
CL-40-SPS-1	CL-40-SSPS-1		3	13	1	3/16	
CL-41-SPS-1	CL-41-SSPS-1	1/4-28					
CL-50-SPS-1	CL-50-SSPS-1	5/16-18	3	15	1	3/16	.135
CL-60-SPS-1	CL-60-SSPS-1	3/8-16	5.5	14.5	1-1/8	3/16	.186
CL-70-SPS-1	CL-70-SSPS-1	1/2-13	6.6	17.4	1-1/4	1/4	.248
CL-80-SPS-1	—	5/8-11	10.5	25.5	1-1/2	5/16	.310
CL-90-SPS-1	—	3/4-10	6.7	37.3	1-3/4	5/16	.374
CL-95-SPS-1	—	1"-8	16	68	2-13/32	1/2	.499

DELIRIN® PLUNGER NOSE, HEAVY FORCE (INCH)

PART NO.		A	END FORCE (LBS)		B	C	D DIA
STEEL	STAINLESS		INITIAL	FINAL			
—	—	#6-32	—	—	—	—	—
CL-20-SPN-1	—	#8-32	2.7	7.3	5/8	3/32	.070
CL-30-SPN-1	—	#10-32	2.9	11.1	3/4	1/8	.093
—	—	1/4-20	3	13	1	3/16	.119
CL-40-SPN-1	—	1/4-28	—	—	—	—	—
CL-50-SPN-1	—	5/16-18	3	15	1	3/16	.135
CL-60-SPN-1	—	3/8-16	5.5	14.5	1-1/8	3/16	.186
CL-70-SPN-1	—	1/2-13	6.6	17.4	1-1/4	1/4	.248
CL-80-SPN-1	—	5/8-11	10.5	25.5	1-1/2	5/16	.310
—	—	3/4-10	—	—	—	—	—
—	—	1"-8	—	—	—	—	—

STANDARD PLUNGER NOSE, LIGHT FORCE (METRIC)

PART NO.		A	END FORCE (LBS)		B	C	D DIA
STEEL	STAINLESS		INITIAL	FINAL			
CLM-6-SPS-1	CLM-6-SSPS-1	M6	1.0	4.0	1	3/16	.119
CLM-8-SPS-1	CLM-8-SSPS-1	M8	1.5	4.5	1	3/16	.135
CLM-10-SPS-1	CLM-10-SSPS-1	M10	2.8	7.2	1-1/8	3/16	.186
CLM-12-SPS-1	CLM-12-SSPS-1	M12	2.7	9.3	1-1/4	1/4	.248

DELIRIN® PLUNGER NOSE, LIGHT FORCE (METRIC)

PART NO.		A	END FORCE (LBS)		B	C	D DIA
STEEL	STAINLESS		INITIAL	FINAL			
CLM-6-SPN-1	—	M6	1.0	4.0	1	3/16	.119
CLM-8-SPN-1	—	M8	1.5	4.5	1	3/16	.135
CLM-10-SPN-1	—	M10	2.8	7.2	1-1/8	3/16	.186
CLM-12-SPN-1	—	M12	2.7	9.3	1-1/4	1/4	.248

STANDARD PLUNGER NOSE, HEAVY FORCE (METRIC)

PART NO.		A	END FORCE (LBS)		B	C	D DIA
STEEL	STAINLESS		INITIAL	FINAL			
CLM-6-SPS-2	CLM-6-SSPS-2	M6	3.0	13.0	1	3/16	.119
CLM-8-SPS-2	CLM-8-SSPS-2	M8	3.0	15.0	1	3/16	.135
CLM-10-SPS-2	CLM-10-SSPS-2	M10	5.5	14.5	1-1/8	3/16	.186
CLM-12-SPS-2	CLM-12-SSPS-2	M12	6.6	17.4	1-1/4	1/4	.248

DELIRIN® PLUNGER NOSE, HEAVY FORCE (METRIC)

PART NO.		A	END FORCE (LBS)		B	C	D DIA
STEEL	STAINLESS		INITIAL	FINAL			
CLM-6-SPN-2	—	M6	3.0	13.0	1	3/16	.119
CLM-8-SPN-2	—	M8	3.0	15.0	1	3/16	.135
CLM-10-SPN-2	—	M10	5.5	14.5	1-1/8	3/16	.186
CLM-12-SPN-2	—	M12	6.6	17.4	1-1/4	1/4	.248