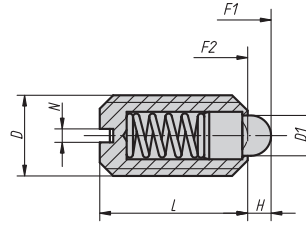




SPRING PLUNGERS

Pin Type | Slotted End | Steel and Stainless Steel | Inch and Metric



Pin type plunger with slotted end. The steel version has a steel sleeve, pin plunger and spring. The sleeve has a black oxide finish and the pin plunger is hardened. The stainless version has a stainless sleeve, pin plunger and spring. The stainless sleeves have a natural finish and the pin plunger is hardened.

INCH - LIGHT END FORCE

Part # Steel	Part # Stainless	D	D1	L	H	N	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03020-1AG	03025-1AG	8-36	.071 (1.8mm)	.35	.06	.02	.45	1.57
03020-1AE	03025-1AE	8-32	.071 (1.8mm)	.35	.06	.02	.67	2.25
03020-1A1	03025-1A1	10-32	.094 (2.4mm)	.47	.08	.03	.67	2.25
03020-1AJ	03025-1AJ	1/4-28	.106 (2.7mm)	.55	.08	.04	.67	2.02
03020-1A2	03025-1A2	1/4-20	.106 (2.7mm)	.55	.08	.04	.90	2.25
03020-1A3	03025-1A3	5/16-18	.157 (4.0mm)	.63	.08	.05	1.57	3.37
03020-1A4	03025-1A4	3/8-16	.177 (4.5mm)	.75	.10	.06	2.02	3.60
03020-1A5	03025-1A5	1/2-13	.236 (6.0mm)	.87	.14	.08	3.15	5.84
03020-1A6	03025-1A6	5/8-11	.335 (8.5mm)	.94	.18	.10	4.95	11.24

INCH - STANDARD END FORCE

Part # Steel	Part # Stainless	D	D1	L	H	N	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03020-AG	03025-AG	8-36	.071 (1.8mm)	.35	.06	.02	1.35	4.50
03020-AE	03025-AE	8-32	.071 (1.8mm)	.35	.06	.02	1.35	4.50
03020-A1	03025-A1	10-32	.094 (2.4mm)	.47	.08	.03	1.35	4.50
03020-AJ	03025-AJ	1/4-28	.106 (2.7mm)	.55	.08	.04	1.57	4.50
03020-A2	03025-A2	1/4-20	.106 (2.7mm)	.55	.08	.04	1.57	4.50
03020-A3	03025-A3	5/16-18	.157 (4.0mm)	.63	.08	.05	3.37	6.74
03020-A4	03025-A4	3/8-16	.177 (4.5mm)	.75	.10	.06	4.50	7.87
03020-A5	03025-A5	1/2-13	.236 (6.0mm)	.87	.14	.08	6.74	12.36
03020-A6	03025-A6	5/8-11	.335 (8.5mm)	.94	.18	.10	10.12	22.48

METRIC - LIGHT END FORCE

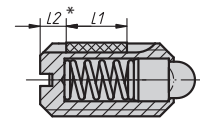
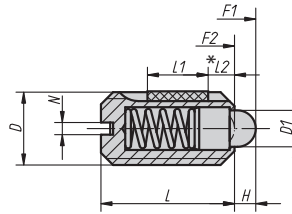
Part # Steel	Part # Stainless	D mm	D1 mm	L mm	H mm	N	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03020-104	03025-104	M4	1.8	9	1.5	0.6	.67	2.25
03020-105	03025-105	M5	2.4	12	2	0.8	.67	2.25
03020-106	03025-106	M6	2.7	14	2	1	.90	2.25
03020-108	03025-108	M8	4	16	2	1.2	1.57	3.37
03020-110	03025-110	M10	4.5	19	2.5	1.6	2.02	3.60
03020-112	03025-112	M12	6	22	3.5	2	3.15	5.84
03020-116	03025-116	M16	8.5	24	4.5	2.5	4.95	11.24
03020-120	03025-120	M20	10	30	6.5	2.5	6.74	13.49

METRIC - STANDARD END FORCE

Part # Steel	Part # Stainless	D mm	D1 mm	L mm	H mm	N	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03020-04	03025-04	M4	1.8	9	1.5	0.6	1.35	4.50
03020-05	03025-05	M5	2.4	12	2	0.8	1.35	4.50
03020-06	03025-06	M6	2.7	14	2	1	1.57	4.50
03020-08	03025-08	M8	4	16	2	1.2	3.37	6.74
03020-10	03025-10	M10	4.5	19	2.5	1.6	4.50	7.87
03020-12	03025-12	M12	6	22	3.5	2	6.74	12.36
03020-16	03025-16	M16	8.5	24	4.5	2.5	10.12	22.48
03020-20	03025-20	M20	10	30	6.5	2.5	13.49	26.98

SPRING PLUNGERS

Pin Type with Nylon Locking | Slotted End | Steel and Stainless Steel | Inch and Metric



Applies to plungers where D =
M4, M5 & M6, 8-36, 8-32, 10-32,
1/4-28 & 1/4-20

*L2 = Approx. two thread turns.

Pin type plunger with slotted end. The Long-Lok nylon locking system prevents loosening from impact or vibrations. The steel version has a steel sleeve, spring and pin plunger. The sleeve has a black oxide finish and the pin plunger is hardened. The stainless version has a stainless sleeve, spring and pin plunger. The stainless sleeves have a natural finish and the pin plunger is hardened.

INCH - LIGHT END FORCE

Part # Steel	Part # Stainless	D	D1	L	+/- .02 L1	H	N	SPRING FORCE	
								F1 Initial Lbs.	F2 Final Lbs.
03021-1AG	03026-1AG	8-36	.071 (1.8mm)	.35	.20	.06	.02	.45	1.57
03021-1AE	03026-1AE	8-32	.071 (1.8mm)	.35	.20	.06	.02	.67	2.25
03021-1A1	03026-1A1	10-32	.094 (2.4mm)	.47	.24	.08	.03	.67	2.25
03021-1AJ	03026-1AJ	1/4-28	.106 (2.7mm)	.55	.28	.08	.04	.67	2.02
03021-1A2	03026-1A2	1/4-20	.106 (2.7mm)	.55	.28	.08	.04	.90	2.25
03021-1A3	03026-1A3	5/16-18	.157 (4.0mm)	.63	.31	.08	.05	1.57	3.37
03021-1A4	03026-1A4	3/8-16	.177 (4.5mm)	.75	.35	.10	.06	2.02	3.60
03021-1A5	03026-1A5	1/2-13	.236 (6.0mm)	.87	.39	.14	.08	3.15	5.84
03021-1A6	03026-1A6	5/8-11	.335 (8.5mm)	.94	.55	.18	.10	4.95	11.24

INCH - STANDARD END FORCE

Part # Steel	Part # Stainless	D	D1	L	+/- .02 L1	H	N	SPRING FORCE	
								F1 Initial Lbs.	F2 Final Lbs.
03021-AG	03026-AG	8-36	.071 (1.8mm)	.35	.20	.06	.02	1.35	4.50
03021-AE	03026-AE	8-32	.071 (1.8mm)	.35	.20	.06	.02	1.35	4.50
03021-A1	03026-A1	10-32	.094 (2.4mm)	.47	.24	.08	.03	1.35	4.50
03021-AJ	03026-AJ	1/4-28	.106 (2.7mm)	.55	.28	.08	.04	1.57	4.50
03021-A2	03026-A2	1/4-20	.106 (2.7mm)	.55	.28	.08	.04	1.57	4.50
03021-A3	03026-A3	5/16-18	.157 (4.0mm)	.63	.31	.08	.05	3.37	6.74
03021-A4	03026-A4	3/8-16	.177 (4.5mm)	.75	.35	.10	.06	4.50	7.87
03021-A5	03026-A5	1/2-13	.236 (6.0mm)	.87	.39	.14	.08	6.74	12.36
03021-A6	03026-A6	5/8-11	.335 (8.5mm)	.94	.55	.18	.10	10.12	22.48

METRIC - LIGHT END FORCE

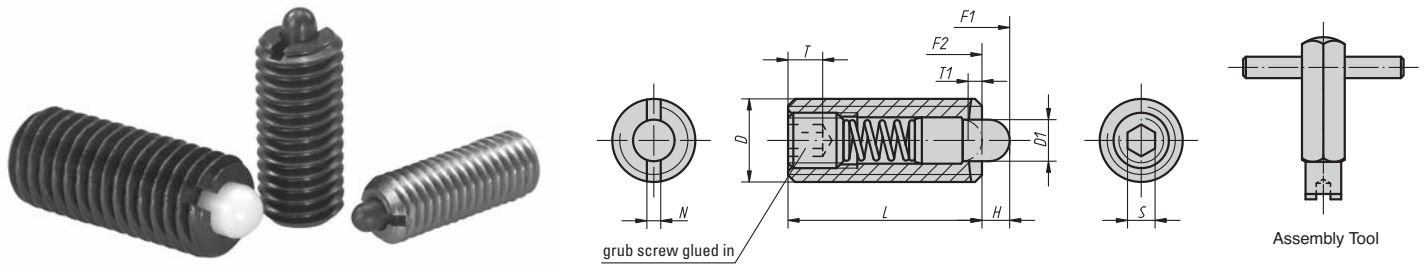
Part # Steel	Part # Stainless	D mm	D1 mm	L mm	+/- .05 L1 mm	H mm	N mm	SPRING FORCE	
								F1 Initial Lbs.	F2 Final Lbs.
03021-104	03026-104	M4	1.8	9	5	1.5	0.6	.67	2.25
03021-105	03026-105	M5	2.4	12	6	2	0.8	.67	2.25
03021-106	03026-106	M6	2.7	14	7	2	1	.90	2.25
03021-108	03026-108	M8	4	16	8	2	1.2	1.57	3.37
03021-110	03026-110	M10	4.5	19	9	2.5	1.6	2.02	3.60
03021-112	03026-112	M12	6	22	10	3.5	2	3.15	5.84
03021-116	03026-116	M16	8.5	24	14	4.5	2.5	4.95	11.24

METRIC - STANDARD END FORCE

Part # Steel	Part # Stainless	D mm	D1 mm	L mm	+/- .05 L1 mm	H mm	N mm	SPRING FORCE	
								F1 Initial Lbs.	F2 Final Lbs.
03021-04	03026-04	M4	1.8	9	5	1.5	0.6	1.35	4.50
03021-05	03026-05	M5	2.4	12	6	2	0.8	1.35	4.50
03021-06	03026-06	M6	2.7	14	7	2	1	1.57	4.50
03021-08	03026-08	M8	4	16	8	2	1.2	3.37	6.74
03021-10	03026-10	M10	4.5	19	9	2.5	1.6	4.50	7.87
03021-12	03026-12	M12	6	22	10	3.5	2	6.74	12.36
03021-16	03026-16	M16	8.5	24	14	4.5	2.5	10.12	22.48

SPRING PLUNGERS

Pin Type | Hex End | Top Slots | Steel and Stainless Steel | Inch



Pin type plunger with hex end. The steel version has a steel sleeve, pin plunger and spring. The sleeve has a black oxide finish and the pin plunger is hardened. The stainless version has a stainless sleeve, pin plunger and spring. The stainless sleeves have a natural finish and the pin plunger is hardened. Slots on top end allow for blind hole or top side fastening with assembly tool. Assembly tool must be ordered separately.

INCH - LIGHT END FORCE

Part # Steel	D	D1	L	H	T	T1	N	S	SPRING FORCE		Assembly Tool
									F1 Initial Lbs.	F2 Final Lbs.	
03040-1AG	8-36	.059 (1.5mm)	.59	.06	.08	.02	.02	.050	.45	1.57	03040-904
03040-1AE	8-32	.059 (1.5mm)	.59	.06	.08	.02	.02	.050	.45	1.57	03040-904
03040-1A1	10-32	.094 (2.4mm)	.71	.09	.08	.03	.03	1/16	.67	2.25	03040-905
03040-1AJ	1/4-28	.106 (2.7mm)	.79	.10	.10	.04	.04	5/64	.67	2.02	03040-906
03040-1A2	1/4-20	.106 (2.7mm)	.79	.10	.10	.04	.04	5/64	.67	2.02	03040-906
03040-1A3	5/16-18	.138 (3.5mm)	.87	.12	.12	.06	.05	3/32	.90	3.60	03040-908
03040-1A4	3/8-16	.157 (4.0mm)	.87	.12	.14	.06	.06	1/8	.90	3.60	03040-910
03040-1A5	1/2-13	.236 (6.0mm)	1.10	.16	.20	.08	.08	5/32	1.12	6.07	03040-912
03040-1A6	5/8-11	.295 (7.5mm)	1.26	.20	.24	.10	.10	3/16	4.50	10.12	03040-916

INCH - STANDARD END FORCE

Part # Steel	Part # Stainless	D	D1	L	H	T	T1	N	S	SPRING FORCE		Assembly Tool
										F1* Initial Lbs.	F2* Final Lbs.	
03040-AD	—	6-32	.039 (1.0mm)	.39	.06	.06	.04	.02	.035	.67	.67	03040-903
03040-AG	03055-AG	8-36	.059 (1.5mm)	.59	.06	.08	.02	.02	.050	1.12	3.60	03040-904
03040-AE	03055-AE	8-32	.059 (1.5mm)	.59	.06	.08	.02	.02	.050	1.12	3.60	03040-904
03040-A1	03055-A1	10-32	.094 (2.4mm)	.71	.09	.08	.03	.03	1/16	1.35	4.50	03040-905
03040-AJ	03055-AJ	1/4-28	.106 (2.7mm)	.79	.10	.10	.04	.04	5/64	1.57	4.50	03040-906
03040-A2	03055-A2	1/4-20	.106 (2.7mm)	.79	.10	.10	.04	.04	5/64	1.57	4.50	03040-906
03040-A3	03055-A3	5/16-18	.138 (3.5mm)	.87	.12	.12	.06	.05	3/32	2.02	7.87	03040-908
03040-A4	03055-A4	3/8-16	.157 (4.0mm)	.87	.12	.14	.06	.06	1/8	2.02	7.87	03040-910
03040-A5	03055-A5	1/2-13	.236 (6.0mm)	1.10	.16	.20	.08	.08	5/32	2.25	12.36	03040-912
03040-A6	03055-A6	5/8-11	.295 (7.5mm)	1.26	.20	.24	.10	.10	3/16	10.12	22.48	03040-916

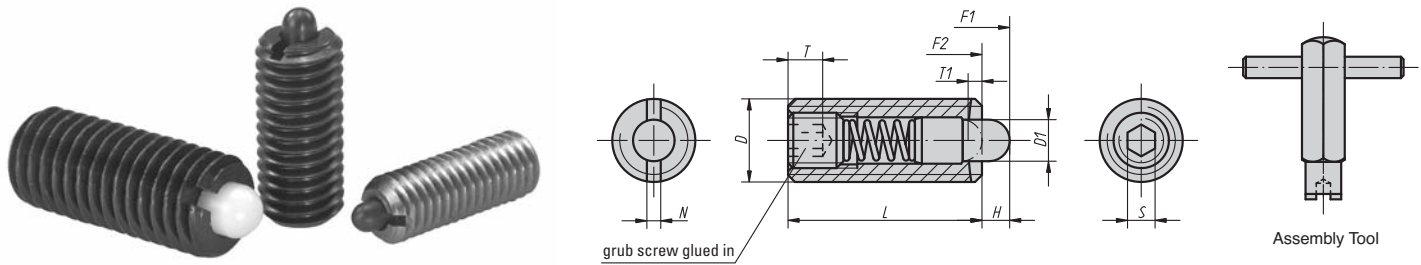
* Spring Forces may be slightly lower for the stainless steel versions.

INCH - HEAVY END FORCE

Part # Steel	D	D1	L	H	T	T1	N	S	SPRING FORCE		Assembly Tool
									F1 Initial Lbs.	F2 Final Lbs.	
03040-2A1	10-32	.094 (2.4mm)	.71	.09	.08	.03	.03	1/16	2.47	6.52	03040-905
03040-2AJ	1/4-28	.106 (2.7mm)	.79	.10	.10	.04	.04	5/64	3.15	8.32	03040-906
03040-2A2	1/4-20	.106 (2.7mm)	.79	.10	.10	.04	.04	5/64	3.15	8.32	03040-906
03040-2A3	5/16-18	.138 (3.5mm)	.87	.12	.12	.06	.05	3/32	4.95	14.61	03040-908
03040-2A4	3/8-16	.157 (4.0mm)	.87	.12	.14	.06	.06	1/8	4.27	15.74	03040-910
03040-2A5	1/2-13	.236 (6.0mm)	1.10	.16	.20	.08	.08	5/32	5.62	19.11	03040-912
03040-2A6	5/8-11	.295 (7.5mm)	1.26	.20	.24	.10	.10	3/16	13.49	33.72	03040-916

SPRING PLUNGERS

Pin Type | Hex End | Top Slots | Steel and Stainless Steel | Metric



Pin type plunger with hex end. The steel version has a steel sleeve, pin plunger and spring. The sleeve has a black oxide finish and the pin plunger is hardened. The stainless version has a stainless sleeve, pin plunger and spring. The stainless sleeves have a natural finish and the pin plunger is hardened. Slots on top end allow for blind hole or top side fastening with assembly tool. Assembly tool must be ordered separately.

METRIC - LIGHT END FORCE

Part # Steel	D mm	D1 mm	L mm	H mm	T mm	T1 mm	N mm	S mm	SPRING FORCE		Assembly Tool
									F1 Initial Lbs.	F2 Final Lbs.	
03040-104	M4	1.5	15	1.5	2	0.6	0.6	1.3	.45	1.57	03040-904
03040-105	M5	2.4	18	2.3	2	0.8	0.8	1.5	.67	2.25	03040-905
03040-106	M6	2.7	20	2.5	2.5	1	1	2	.67	2.02	03040-906
03040-108	M8	3.5	22	3	3	1.4	1.2	2.5	.90	3.60	03040-908
03040-110	M10	4	22	3	3.5	1.4	1.6	3	.90	3.60	03040-910
03040-112	M12	6	28	4	5	2	2	4	1.12	6.07	03040-912
03040-116	M16	7.5	32	5	6	2.5	2.5	5	4.50	10.12	03040-916

METRIC - STANDARD END FORCE

Part # Steel	Part # Stainless	D mm	D1 mm	L mm	H mm	T mm	T1 mm	N mm	S mm	SPRING FORCE		Assembly Tool
										F1* Initial Lbs.	F2* Final Lbs.	
03040-03	-	M3	1	10	1.5	1.5	1	0.4	0.7	.11	.67	03040-903
03040-04	03055-04	M4	1.5	15	1.5	2	0.6	0.6	1.3	1.12	3.60	03040-904
03040-05	03055-05	M5	2.4	18	2.3	2	0.8	0.8	1.5	1.35	4.50	03040-905
03040-06	03055-06	M6	2.7	20	2.5	2.5	1	1	2	1.57	4.50	03040-906
03040-08	03055-08	M8	3.5	22	3	3	1.4	1.2	2.5	2.02	7.87	03040-908
03040-10	03055-10	M10	4	22	3	3.5	1.4	1.6	3	2.02	7.87	03040-910
03040-12	03055-12	M12	6	28	4	5	2	2	4	2.25	12.36	03040-912
03040-16	03055-16	M16	7.5	32	5	6	2.5	2.5	5	10.12	22.48	03040-916
03040-20	-	M20	10	40	7	8	3	2.5	6	13.49	26.98	-
03040-24	-	M24	12	52	10	10	3	2.5	8	17.98	35.97	-

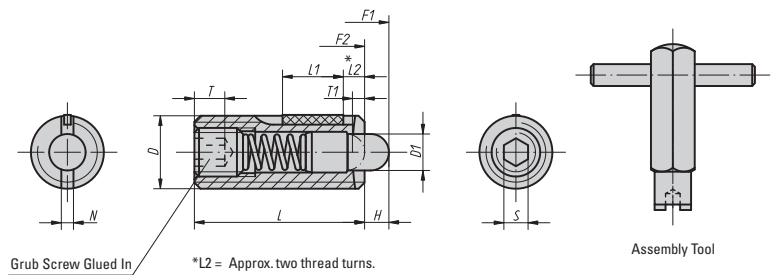
* Spring Forces may be slightly lower for the stainless steel versions.

METRIC - HEAVY END FORCE

Part # Steel	D mm	D1 mm	L mm	H mm	T mm	T1 mm	N mm	S mm	SPRING FORCE		Assembly Tool
									F1 Initial Lbs.	F2 Final Lbs.	
03040-205	M5	2.4	18	2.3	2	0.8	0.8	1.5	2.47	6.52	03040-905
03040-206	M6	2.7	20	2.5	2.5	1	1	2	3.15	8.32	03040-906
03040-208	M8	3.5	22	3	3	1.4	1.2	2.5	4.95	14.61	03040-908
03040-210	M10	4	22	3	3.5	1.4	1.6	3	4.27	15.74	03040-910
03040-212	M12	6	28	4	5	2	2	4	5.62	19.11	03040-912
03040-216	M16	7.5	32	5	6	2.5	2.5	5	13.49	33.72	03040-916
03040-220	M20	10	40	7	8	3	2.5	6	16.86	42.71	-
03040-224	M24	12	52	10	10	3	2.5	8	21.36	53.95	-

SPRING PLUNGERS

Pin Type with Nylon Locking | Hex End | Top Slots | Steel and Stainless Steel | Inch



Pin type plunger with hex end. The Long-Lok nylon locking system prevents loosening from impact or vibrations. The steel version has a steel sleeve, pin plunger and spring. The sleeve has a black oxide finish and the pin plunger is hardened. The stainless version has a stainless sleeve, pin plunger and spring. The stainless sleeves have a natural finish and the pin plunger is hardened. Slots on top end allow for blind hole or top side fastening with assembly tool. Assembly tool must be ordered separately.

INCH - LIGHT END FORCE

Part # Steel	D	D1	L	+/- .02 L1	H	T	T1	N	S	SPRING FORCE		Assembly Tool
										F1 Initial Lbs.	F2 Final Lbs.	
03041-1A1	10-32	.094 (2.4mm)	.71	.28	.09	.08	.03	.03	1/16	.67	2.25	03040-905
03041-1AJ	1/4-28	.106 (2.7mm)	.79	.28	.10	.10	.04	.04	5/64	.67	2.02	03040-906
03041-1A2	1/4-20	.106 (2.7mm)	.79	.28	.10	.10	.04	.04	5/64	.67	2.02	03040-906
03041-1A3	5/16-18	.138 (3.5mm)	.87	.31	.12	.12	.06	.05	3/32	.90	3.60	03040-908
03041-1A4	3/8-16	.157 (4.0mm)	.87	.35	.12	.14	.06	.06	1/8	.90	3.60	03040-910
03041-1A5	1/2-13	.236 (6.0mm)	1.10	.39	.16	.20	.08	.08	5/32	1.12	6.07	03040-912
03041-1A6	5/8-11	.295 (7.5mm)	1.26	.55	.20	.24	.10	.10	3/16	4.50	10.12	03040-916

INCH - STANDARD END FORCE

Part # Steel	Part # Stainless	D	D1	L	+/- .02 L1	H	T	T1	N	S	SPRING FORCE		Assembly Tool
											F1* Initial Lbs.	F2* Final Lbs.	
03041-A1	03056-A1	10-32	.094 (2.4mm)	.71	.28	.09	.08	.03	.03	1/16	1.35	4.50	03040-905
03041-AJ	03056-AJ	1/4-28	.106 (2.7mm)	.79	.28	.10	.10	.04	.04	5/64	1.57	4.50	03040-906
03041-A2	03056-A2	1/4-20	.106 (2.7mm)	.79	.28	.10	.10	.04	.04	5/64	1.57	4.50	03040-906
03041-A3	03056-A3	5/16-18	.138 (3.5mm)	.87	.31	.12	.12	.06	.05	3/32	2.02	7.87	03040-908
03041-A4	03056-A4	3/8-16	.157 (4.0mm)	.87	.35	.12	.14	.06	.06	1/8	2.02	7.87	03040-910
03041-A5	03056-A5	1/2-13	.236 (6.0mm)	1.10	.39	.16	.20	.08	.08	5/32	2.25	12.36	03040-912
03041-A6	03056-A6	5/8-11	.295 (7.5mm)	1.26	.55	.20	.24	.10	.10	3/16	10.12	22.48	03040-916

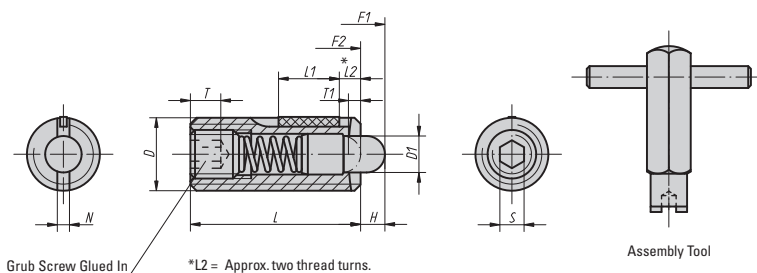
* Spring Forces may be slightly lower for the stainless steel versions.

INCH - HEAVY END FORCE

Part # Steel	D	D1	L	+/- .02 L1	H	T	T1	N	S	SPRING FORCE		Assembly Tool
										F1 Initial Lbs.	F2 Final Lbs.	
03041-2A1	10-32	.094 (2.4mm)	.71	.28	.09	.08	.03	.03	1/16	2.47	6.52	03040-905
03041-2AJ	1/4-28	.106 (2.7mm)	.79	.28	.10	.10	.04	.04	5/64	3.15	8.32	03040-906
03041-2A2	1/4-20	.106 (2.7mm)	.79	.28	.10	.10	.04	.04	5/64	3.15	8.32	03040-906
03041-2A3	5/16-18	.138 (3.5mm)	.87	.31	.12	.12	.06	.05	3/32	4.95	14.61	03040-908
03041-2A4	3/8-16	.157 (4.0mm)	.87	.35	.12	.14	.06	.06	1/8	4.27	15.74	03040-910
03041-2A5	1/2-13	.236 (6.0mm)	1.10	.39	.16	.20	.08	.08	5/32	5.62	19.11	03040-912
03041-2A6	5/8-11	.295 (7.5mm)	1.26	.55	.20	.24	.10	.10	3/16	13.49	34.00	03040-916

SPRING PLUNGERS

Pin Type with Nylon Locking | Hex End | Top Slots | Steel and Stainless Steel | Metric



Pin type plunger with hex end. The Long-Lok nylon locking system prevents loosening from impact or vibrations. The steel version has a steel sleeve, pin plunger and spring. The sleeve has a black oxide finish and the pin plunger is hardened. The stainless version has a stainless sleeve, pin plunger and spring. The stainless sleeves have a natural finish and the pin plunger is hardened. Slots on top end allow for blind hole or top side fastening with assembly tool. Assembly tool must be ordered separately.

METRIC - LIGHT END FORCE

Part # Steel	D mm	D1 mm	L mm	+/-0.5 L1 mm	H mm	T mm	T1 mm	N mm	S mm	SPRING FORCE		Assembly Tool
										F1 Initial Lbs.	F2 Final Lbs.	
03041-105	M5	2.4	18	7	2.3	2	0.8	0.8	1.5	.67	2.25	03040-905
03041-106	M6	2.7	20	7	2.5	2.5	1	1	2	.67	2.02	03040-906
03041-108	M8	3.5	22	8	3	3	1.4	1.2	2.5	.90	3.60	03040-908
03041-110	M10	4	22	9	3	3.5	1.4	1.6	3	.90	3.60	03040-910
03041-112	M12	6	28	10	4	5	2	2	4	1.12	6.07	03040-912
03041-116	M16	7.5	32	14	5	6	2.5	2.5	5	4.50	10.12	03040-916

METRIC - STANDARD END FORCE

Part # Steel	Part # Stainless	D mm	D1 mm	L mm	+/-0.5 L1 mm	H mm	T mm	T1 mm	N mm	S mm	SPRING FORCE		Assembly Tool
											F1* Initial Lbs.	F2* Final Lbs.	
03041-05	03056-05	M5	2.4	18	7	2.3	2	0.8	0.8	1.5	1.35	4.50	03040-905
03041-06	03056-06	M6	2.7	20	7	2.5	2.5	1	1	2	1.57	4.50	03040-906
03041-08	03056-08	M8	3.5	22	8	3	3	1.4	1.2	2.5	2.02	7.87	03040-908
03041-10	03056-10	M10	4	22	9	3	3.5	1.4	1.6	3	2.02	7.87	03040-910
03041-12	03056-12	M12	6	28	10	4	5	2	2	4	2.25	12.36	03040-912
03041-16	03056-16	M16	7.5	32	14	5	6	2.5	2.5	5	10.12	22.48	03040-916

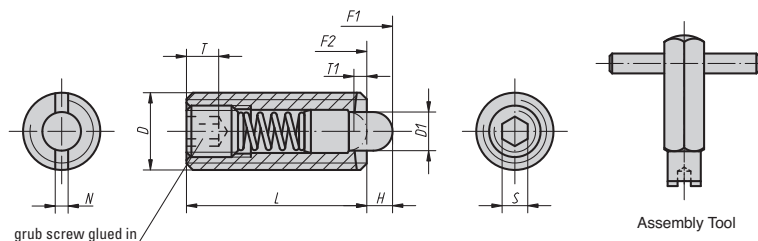
* Spring Forces may be slightly lower for the stainless steel versions.

METRIC - HEAVY END FORCE

Part # Steel	D mm	D1 mm	L mm	+/-0.5 L1 mm	H mm	T mm	T1 mm	N mm	S mm	SPRING FORCE		Assembly Tool
										F1 Initial Lbs.	F2 Final Lbs.	
03041-205	M5	2.4	18	7	2.3	2	0.8	0.8	1.5	2.47	6.52	03040-905
03041-206	M6	2.7	20	7	2.5	2.5	1	1	2	3.15	8.32	03040-906
03041-208	M8	3.5	22	8	3	3	1.4	1.2	2.5	4.95	14.61	03040-908
03041-210	M10	4	22	9	3	3.5	1.4	1.6	3	4.27	15.47	03040-910
03041-212	M12	6	28	10	4	5	2	2	4	5.62	19.11	03040-912
03041-216	M16	7.5	32	14	5	6	2.5	2.5	5	13.49	33.72	03040-916

SPRING PLUNGERS

Pin Type | Hex End | Top Slots | Steel and Stainless Steel with Plastic Plunger | Inch



Pin type plunger with hex end. The steel version has a steel sleeve and spring with a plastic pin plunger. The sleeve has a black oxide finish. The stainless version has a stainless sleeve and spring with a plastic pin plunger. The stainless sleeves have a natural finish. Slots on top end allow for blind hole or top side fastening with assembly tool. Assembly tool must be ordered separately.

INCH - LIGHT END FORCE

Part # Steel	D	D1 (mm)	L	H	T	T1	N	S	SPRING FORCE		Assembly Tool
									F1 Initial Lbs.	F2 Final Lbs.	
03050-1AG	8-36	.059 (1.5mm)	.59	.06	.08	.02	.02	.050	.45	1.57	03040-904
03050-1AE	8-32	.059 (1.5mm)	.59	.06	.08	.02	.02	.050	.45	1.57	03040-904
03050-1A1	10-32	.094 (2.4mm)	.71	.09	.08	.03	.03	1/16	.67	2.25	03040-905
03050-1AJ	1/4-28	.106 (2.7mm)	.79	.10	.10	.04	.04	5/64	.67	2.02	03040-906
03050-1A2	1/4-20	.106 (2.7mm)	.79	.10	.10	.04	.04	5/64	.67	2.02	03040-906
03050-1A3	5/16-18	.138 (3.5mm)	.87	.12	.12	.06	.05	3/32	.90	3.60	03040-908
03050-1A4	3/8-16	.157 (4.0mm)	.87	.12	.14	.06	.06	1/8	.90	3.60	03040-910
03050-1A5	1/2-13	.236 (6.0mm)	1.10	.16	.20	.08	.08	5/32	1.12	6.07	03040-912
03050-1A6	5/8-11	.295 (7.5mm)	1.26	.20	.24	.10	.10	3/16	4.50	10.12	03040-916

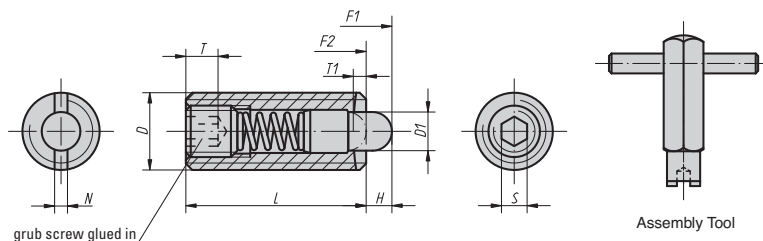
INCH - STANDARD END FORCE

Part # Steel	Part # Stainless	D	D1 (mm)	L	H	T	T1	N	S	SPRING FORCE		Assembly Tool
										F1* Initial Lbs.	F2* Final Lbs.	
03050-AG	03058-AG	8-36	.059 (1.5mm)	.59	.06	.08	.02	.02	.050	1.12	3.60	03040-904
03050-AE	03058-AE	8-32	.059 (1.5mm)	.59	.06	.08	.02	.02	.050	1.12	3.60	03040-904
03050-A1	03058-A1	10-32	.094 (2.4mm)	.71	.09	.08	.03	.03	1/16	1.35	4.50	03040-905
03050-AJ	03058-AJ	1/4-28	.106 (2.7mm)	.79	.10	.10	.04	.04	5/64	1.57	4.50	03040-906
03050-A2	03058-A2	1/4-20	.106 (2.7mm)	.79	.10	.10	.04	.04	5/64	1.57	4.50	03040-906
03050-A3	03058-A3	5/16-18	.138 (3.5mm)	.87	.12	.12	.06	.05	3/32	2.02	7.87	03040-908
03050-A4	03058-A4	3/8-16	.157 (4.0mm)	.87	.12	.14	.06	.06	1/8	2.02	7.87	03040-910
03050-A5	03058-A5	1/2-13	.236 (6.0mm)	1.10	.16	.20	.08	.08	5/32	2.25	12.36	03040-912
03050-A6	03058-A6	5/8-11	.295 (7.5mm)	1.26	.20	.24	.10	.10	3/16	10.12	22.48	03040-916

* Spring Forces may be slightly lower for the stainless steel versions.

SPRING PLUNGERS

Pin Type | Hex End | Top Slots | Steel and Stainless Steel with Plastic Plunger | Metric



Pin type plunger with hex end. The steel version has a steel sleeve and spring with a plastic pin plunger. The sleeve has a black oxide finish. The stainless version has a stainless sleeve and spring with a plastic pin plunger. The stainless sleeves have a natural finish. Slots on top end allow for blind hole or top side fastening with assembly tool. Assembly tool must be ordered separately.

METRIC - LIGHT END FORCE

Part # Steel	D mm	D1 mm	L mm	H mm	T mm	T1 mm	N mm	S mm	SPRING FORCE		Assembly Tool
									F1 Initial Lbs.	F2 Final Lbs.	
03050-104	M4	1.5	15	1.5	2	0.6	0.6	1.3	.45	1.57	03040-904
03050-105	M5	2.4	18	2.3	2	0.8	0.8	1.5	.67	2.25	03040-905
03050-106	M6	2.7	20	2.5	2.5	1	1	2	.67	2.02	03040-906
03050-108	M8	3.5	22	3	3	1.4	1.2	2.5	.90	3.60	03040-908
03050-110	M10	4	22	3	3.5	1.4	1.6	3	.90	3.60	03040-910
03050-112	M12	6	28	4	5	2	2	4	1.12	6.07	03040-912
03050-116	M16	7.5	32	5	6	2.5	2.5	5	4.50	10.12	03040-916

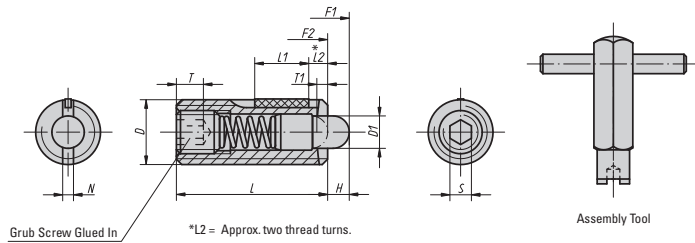
METRIC - STANDARD END FORCE

Part # Steel	Part # Stainless	D mm	D1 mm	L mm	H mm	T mm	T1 mm	N mm	S mm	SPRING FORCE		Assembly Tool
										F1* Initial Lbs.	F2* Final Lbs.	
03050-04	03058-04	M4	1.5	15	1.5	2	0.6	0.6	1.3	1.12	3.60	03040-904
03050-05	03058-05	M5	2.4	18	2.3	2	0.8	0.8	1.5	1.35	4.50	03040-905
03050-06	03058-06	M6	2.7	20	2.5	2.5	1	1	2	1.57	4.50	03040-906
03050-08	03058-08	M8	3.5	22	3	3	1.4	1.2	2.5	2.02	7.87	03040-908
03050-10	03058-10	M10	4	22	3	3.5	1.4	1.6	3	2.02	7.87	03040-910
03050-12	03058-12	M12	6	28	4	5	2	2	4	2.25	12.36	03040-912
03050-16	03058-16	M16	7.5	32	5	6	2.5	2.5	5	10.12	22.48	03040-916

* Spring Forces may be slightly lower for the stainless steel versions.

SPRING PLUNGERS

Pin Type with Nylon Locking | Hex End | Top Slots | Steel and Stainless Steel with Plastic Plunger | Inch and Metric



Pin type plunger with hex end. The Long-Lok nylon locking system prevents loosening from impact or vibrations. The steel version has a steel sleeve and spring with a plastic pin plunger. The sleeve has a black oxide finish. The stainless version has a stainless sleeve and spring with a plastic pin plunger. The stainless sleeves have a natural finish and the pin plunger is hardened. Slots on top end allow for blind hole or top side fastening with assembly tool. Assembly tool must be ordered separately.

INCH - LIGHT END FORCE

Part # Steel	D	D1	L	+/- .02		H	T	T1	N	S	SPRING FORCE		Assembly Tool
				L1	L2						F1 Initial Lbs.	F2 Final Lbs.	
03051-1A1	10-32	.094 (2.4mm)	.71	.28	.09	.08	.03	.03	.03	1/16	.67	2.25	03040-905
03051-1AJ	1/4-28	.106 (2.7mm)	.79	.28	.10	.10	.04	.04	.04	5/64	.67	2.02	03040-906
03051-1A2	1/4-20	.106 (2.7mm)	.79	.28	.10	.10	.04	.04	.04	5/64	.67	2.02	03040-906
03051-1A3	5/16-18	.138 (3.5mm)	.87	.31	.12	.12	.06	.05	.05	3/32	.90	3.60	03040-908
03051-1A4	3/8-16	.157 (4.0mm)	.87	.35	.12	.14	.06	.06	.06	1/8	.90	3.60	03040-910
03051-1A5	1/2-13	.236 (6.0mm)	1.10	.39	.16	.20	.08	.08	.08	5/32	1.12	6.07	03040-912
03051-1A6	5/8-11	.295 (7.5mm)	1.26	.55	.20	.24	.10	.10	.10	3/16	4.50	10.12	03040-916

INCH - STANDARD END FORCE

Part # Steel	Part # Stainless	D	D1	L	+/- .02		H	T	T1	N	S	SPRING FORCE		Assembly Tool
					L1	L2						F1* Initial Lbs.	F2* Final Lbs.	
03051-A1	03059-A1	10-32	.094 (2.4mm)	.71	.28	.09	.08	.03	.03	.03	1/16	1.35	4.50	03040-905
03051-AJ	03059-AJ	1/4-28	.106 (2.7mm)	.79	.28	.10	.10	.04	.04	.04	5/64	1.57	4.50	03040-906
03051-A2	03059-A2	1/4-20	.106 (2.7mm)	.79	.28	.10	.10	.04	.04	.04	5/64	1.57	4.50	03040-906
03051-A3	03059-A3	5/16-18	.138 (3.5mm)	.87	.31	.12	.12	.06	.05	.05	3/32	2.02	7.87	03040-908
03051-A4	03059-A4	3/8-16	.157 (4.0mm)	.87	.35	.12	.14	.06	.06	.06	1/8	2.02	7.87	03040-910
03051-A5	03059-A5	1/2-13	.236 (6.0mm)	1.10	.39	.16	.20	.08	.08	.08	5/32	2.25	12.36	03040-912
03051-A6	03059-A6	5/8-11	.295 (7.5mm)	1.26	.55	.20	.24	.10	.10	.10	3/16	10.12	22.48	03040-916

* Spring Forces may be slightly lower for the stainless steel versions.

METRIC - LIGHT END FORCE

Part # Steel	D mm	D1 mm	L mm	+/- 0.5		H mm	T mm	T1 mm	N mm	S mm	SPRING FORCE		Assembly Tool
				L1 mm	L2 mm						F1 Initial Lbs.	F2 Final Lbs.	
03051-105	M5	2.4	18	7	2.3	2	0.8	0.8	1.5	1.5	.67	2.25	03040-905
03051-106	M6	2.7	20	7	2.5	2.5	1	1	2	2	.67	2.02	03040-906
03051-108	M8	3.5	22	8	3	3	1.4	1.2	2.5	2.5	.90	3.60	03040-908
03051-110	M10	4	22	9	3	3.5	1.4	1.6	3	3	.90	3.60	03040-910
03051-112	M12	6	28	10	4	5	2	2	4	4	1.12	6.07	03040-912
03051-116	M16	7.5	32	14	5	6	2.5	2.5	5	5	4.50	10.12	03040-916

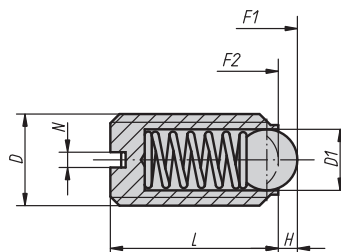
METRIC - STANDARD END FORCE

Part # Steel	Part # Stainless	D mm	D1 mm	L mm	+/- 0.5		H mm	T mm	T1 mm	N mm	S mm	SPRING FORCE		Assembly Tool
					L1 mm	L2 mm						F1* Initial Lbs.	F2* Final Lbs.	
03051-05	03059-05	M5	2.4	18	7	2.3	2	0.8	0.8	1.5	1.5	1.35	4.50	03040-905
03051-06	03059-06	M6	2.7	20	7	2.5	2.5	1	1	2	2	1.57	4.50	03040-906
03051-08	03059-08	M8	3.5	22	8	3	3	1.4	1.2	2.5	2.5	2.02	7.87	03040-908
03051-10	03059-10	M10	4	22	9	3	3.5	1.4	1.6	3	3	2.02	7.87	03040-910
03051-12	03059-12	M12	6	28	10	4	5	2	2	4	4	2.25	12.36	03040-912
03051-16	03059-16	M16	7.5	32	14	5	6	2.5	2.5	5	5	10.12	22.48	03040-916

* Spring Forces may be slightly lower for the stainless steel versions.

SPRING PLUNGERS

Ball Type | Slotted End | Steel and Stainless Steel | Inch and Metric



Ball type plunger with slotted end. The steel version has a steel sleeve, ball and spring. The sleeve has a black oxide finish and the ball is hardened. The stainless version has a stainless sleeve, ball and spring. The stainless sleeves have a natural finish and the ball is hardened.

INCH - STANDARD END FORCE

Part # Steel	Part # Stainless	D	D1	L	H	N	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03000-AD	03010-AD	6-32	.059 (1.5mm)	.28	.02	.02	.34	.67
03000-AG	03010-AG	8-36	.098 (2.5mm)	.35	.03	.02	.90	2.25
03000-AE	03010-AE	8-32	.098 (2.5mm)	.35	.03	.02	.90	2.25
03000-A1	03010-A1	10-32	.118 (3.0mm)	.47	.04	.03	1.35	2.47
03000-AJ	03010-AJ	1/4-28	.138 (3.5mm)	.55	.04	.04	2.02	2.92
03000-A2	03010-A2	1/4-20	.138 (3.5mm)	.55	.04	.04	2.02	2.92
03000-A3	03010-A3	5/16-18	.197 (5.0mm)	.63	.06	.05	3.37	6.74
03000-A4	03010-A4	3/8-16	.236 (6.0mm)	.75	.08	.06	4.50	7.78
03000-A5	03010-A5	1/2-13	.315 (8.0mm)	.87	.10	.08	6.74	12.36
03000-A6	03010-A6	5/8-11	.394 (10.0mm)	.94	.14	.10	14.61	28.10

INCH - HEAVY END FORCE

Part # Steel	Part # Stainless	D	D1	L	H	N	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03000-2A1	03010-2A1	10-32	.118 (3.0mm)	.47	.04	.03	4.27	6.74
03000-2AJ	03010-2AJ	1/4-28	.138 (3.5mm)	.55	.04	.04	6.29	8.99
03000-2A2	03010-2A2	1/4-20	.138 (3.5mm)	.55	.04	.04	6.29	8.99
03000-2A3	03010-2A3	5/16-18	.197 (5.0mm)	.63	.06	.05	10.57	16.41
03000-2A4	03010-2A4	3/8-16	.236 (6.0mm)	.75	.08	.06	14.84	22.48
03000-2A5	03010-2A5	1/2-13	.315 (8.0mm)	.87	.10	.08	14.84	26.98
03000-2A6	03010-2A6	5/8-11	.394 (10.0mm)	.94	.14	.10	20.23	40.46

METRIC - STANDARD END FORCE

Part # Steel	Part # Stainless	D mm	D1 mm	L mm	H mm	N	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03000-03	03010-03	M3	1.5	7	0.5	0.4	.34	.67
03000-04	03010-04	M4	2.5	9	0.8	0.6	.90	2.25
03000-05	03010-05	M5	3	12	0.9	0.8	1.35	2.47
03000-06	03010-06	M6	3.5	14	1	1	2.02	2.92
03000-08	03010-08	M8	5	16	1.5	1.2	3.37	6.74
03000-10	03010-10	M10	6	19	2	1.6	4.50	7.87
03000-12	03010-12	M12	8	22	2.5	2	6.74	12.36
03000-16	03010-16	M16	10	24	3.5	2.5	14.61	28.10
03000-20	03010-20	M20	12	30	4.5	2.5	17.98	35.97

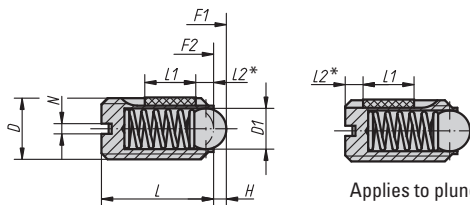
METRIC - HEAVY END FORCE

Part # Steel	Part # Stainless	D mm	D1 mm	L mm	H mm	N	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03000-205	03010-205	M5	3	12	0.9	0.8	4.27	6.74
03000-206	03010-206	M6	3.5	14	1	1	6.29	8.99
03000-208	03010-208	M8	5	16	1.5	1.2	10.57	16.41
03000-210	03010-210	M10	6	19	2	1.6	14.84	22.48
03000-212	03010-212	M12	8	22	2.5	2	14.84	26.98
03000-216	03010-216	M16	10	24	3.5	2.5	20.23	40.46
03000-220	03010-220	M20	12	30	4.5	2.5	25.85	53.95



SPRING PLUNGERS

Ball Type with Nylon Locking | Slotted End | Steel and Stainless Steel | Inch and Metric



*L2 = Approx. two thread turns.

Applies to plungers

where D =

M3, M4, M5 & M6, 6-32, 8-36, 8-32, 10-32
1/4-28 & 1/4-20

Ball type plunger with slotted end. The Long-Lok nylon locking system prevents loosening from impact or vibrations. The steel version has a steel sleeve, ball and spring. The sleeve has a black oxide finish and the ball is hardened. The stainless version has a stainless sleeve, ball and spring. The stainless sleeves have a natural finish and the ball is hardened.

INCH - STANDARD END FORCE

Part # Steel	Part # Stainless	D	D1	L	+/- .02 L1	H	N	SPRING FORCE	
								F1 Initial Lbs.	F2 Final Lbs.
03001-AD	03011-AD	6-32	.059 (1.5mm)	.28	.16	.02	.02	.34	6.74
03001-AG	03011-AG	8-36	.098 (2.5mm)	.35	.20	.03	.02	.90	2.25
03001-AE	03011-AE	8-32	.098 (2.5mm)	.35	.20	.03	.02	.90	2.25
03001-A1	03011-A1	10-32	.118 (3.0mm)	.47	.24	.04	.03	1.35	2.47
03001-AJ	03011-AJ	1/4-28	.138 (3.5mm)	.55	.28	.04	.04	2.02	2.92
03001-A2	03011-A2	1/4-20	.138 (3.5mm)	.55	.28	.04	.04	2.02	2.92
03001-A3	03011-A3	5/16-18	.197 (5.0mm)	.63	.31	.06	.05	3.37	6.74
03001-A4	03011-A4	3/8-16	.236 (6.0mm)	.75	.35	.08	.06	4.50	7.87
03001-A5	03011-A5	1/2-13	.315 (8.0mm)	.87	.39	.10	.08	6.74	12.36
03001-A6	03011-A6	5/8-11	.394 (10.0mm)	.94	.55	.14	.10	14.61	28.10

INCH - HEAVY END FORCE

Part # Steel	Part # Stainless	D	D1	L	+/- .02 L1	H	N	SPRING FORCE	
								F1 Initial Lbs.	F2 Final Lbs.
03001-2A1	03011-2A1	10-32	.118 (3.0mm)	.47	.24	.04	.03	4.27	6.74
03001-2AJ	03011-2AJ	1/4-28	.138 (3.5mm)	.55	.28	.04	.04	6.29	8.99
03001-2A2	03011-2A2	1/4-20	.138 (3.5mm)	.55	.28	.04	.04	6.29	8.99
03001-2A3	03011-2A3	5/16-18	.197 (5.0mm)	.63	.31	.06	.05	10.57	16.41
03001-2A4	03011-2A4	3/8-16	.236 (6.0mm)	.75	.35	.08	.06	14.84	22.48
03001-2A5	03011-2A5	1/2-13	.315 (8.0mm)	.87	.39	.10	.08	14.84	26.98
03001-2A6	03011-2A6	5/8-11	.394 (10.0mm)	.94	.55	.14	.10	20.23	40.46

METRIC - STANDARD END FORCE

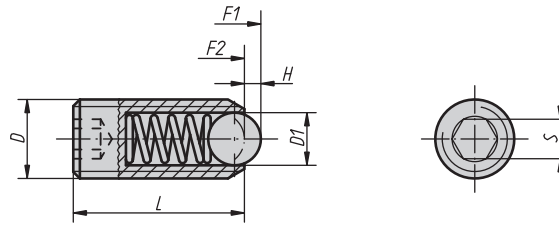
Part # Steel	Part # Stainless	D mm	D1 mm	L mm	+/- .05 L1 mm	H mm	N mm	SPRING FORCE	
								F1 Initial Lbs.	F2 Final Lbs.
03001-03	03011-03	M3	1.5	7	4	0.5	0.4	.34	.67
03001-04	03011-04	M4	2.5	9	5	0.8	0.6	.90	2.25
03001-05	03011-05	M5	3	12	6	0.9	0.8	1.35	2.47
03001-06	03011-06	M6	3.5	14	7	1	1	2.02	2.92
03001-08	03011-08	M8	5	16	8	1.5	1.2	3.37	6.74
03001-10	03011-10	M10	6	19	9	2	1.6	4.50	7.87
03001-12	03011-12	M12	8	22	10	2.5	2	6.74	12.36
03001-16	03011-16	M16	10	24	14	3.5	2.5	14.61	28.10

METRIC - HEAVY END FORCE

Part # Steel	Part # Stainless	D mm	D1 mm	L mm	+/- .05 L1 mm	H mm	N mm	SPRING FORCE	
								F1 Initial Lbs.	F2 Final Lbs.
03001-205	03011-205	M5	3	12	6	0.9	0.8	4.27	6.74
03001-206	03011-206	M6	3.5	14	7	1	1	6.29	8.99
03001-208	03011-208	M8	5	16	8	1.5	1.2	10.57	16.41
03001-210	03011-210	M10	6	19	9	2	1.6	14.84	22.48
03001-212	03011-212	M12	8	22	10	2.5	2	14.84	26.98
03001-216	03011-216	M16	10	24	14	3.5	2.5	20.23	40.46

SPRING PLUNGERS

Ball Type | Hex End | Steel and Stainless Steel | Inch and Metric



Ball type plunger with hex end. The steel version has a steel sleeve, ball and spring. The sleeve has a black oxide finish and the ball is hardened. The stainless version has a stainless sleeve, ball and spring. The stainless sleeves have a natural finish and the ball is hardened.

INCH - STANDARD END FORCE

Part # Steel	Part # Stainless	D	D1	L	H	S	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03030-AJ	03035-AJ	1/4-28	.138 (3.5mm)	.59	.04	1/8	2.02	2.92
03030-A2	03035-A2	1/4-20	.138 (3.5mm)	.59	.04	1/8	2.02	2.92
03030-A3	03035-A3	5/16-18	.197 (5.0mm)	.71	.06	5/32	3.37	6.74
03030-A4	03035-A4	3/8-16	.236 (6.0mm)	.91	.08	3/16	4.50	7.87
03030-A5	03035-A5	1/2-13	.315 (8.0mm)	1.02	.10	7/32	6.74	12.36
03030-A6	03035-A6	5/8-11	.394 (10.0mm)	1.30	.14	5/16	14.61	28.10

INCH - HEAVY END FORCE

Part # Steel	Part # Stainless	D	D1	L	H	S	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03030-2AJ	03035-2AJ	1/4-28	.138 (3.5mm)	.59	.04	1/8	6.29	8.99
03030-2A2	03035-2A2	1/4-20	.138 (3.5mm)	.59	.04	1/8	6.28	8.99
03030-2A3	03035-2A3	5/16-18	.197 (5.0mm)	.71	.06	5/32	10.57	16.41
03030-2A4	03035-2A4	3/8-16	.236 (6.0mm)	.91	.08	3/16	14.84	22.48
03030-2A5	03035-2A5	1/2-13	.315 (8.0mm)	1.02	.10	7/32	14.84	26.98
03030-2A6	03035-2A6	5/8-11	.394 (10.0mm)	1.30	.14	5/16	20.23	40.46

METRIC - STANDARD END FORCE

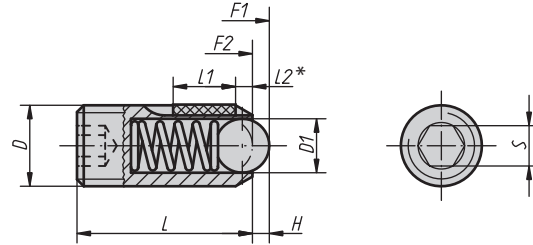
Part # Steel	Part # Stainless	D mm	D1 mm	L mm	H mm	S mm	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03030-03	03035-03	M3	1.5	9	0.5	1.5	.34	.67
03030-04	03035-04	M4	2.5	10	0.8	2	.90	2.25
03030-05	03035-05	M5	3	14	0.9	3	1.35	2.47
03030-06	03035-06	M6	3.5	15	1	3	2.02	2.92
03030-08	03035-08	M8	5	18	1.5	4	3.37	6.74
03030-10	03035-10	M10	6	23	2	5	4.50	7.87
03030-12	03035-12	M12	8	26	2.5	6	6.74	12.36
03030-16	03035-16	M16	10	33	3.5	8	14.61	28.10
03030-20	03035-20	M20	12	43	4.5	10	17.98	35.97
03030-24	03035-24	M24	15	48	5.5	12	20.23	40.46

METRIC - HEAVY END FORCE

Part # Steel	Part # Stainless	D mm	D1 mm	L mm	H mm	S mm	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03030-203	03035-203	M3	1.5	9	0.5	1.5	1.12	1.57
03030-204	03035-204	M4	2.5	10	0.8	2	2.70	4.95
03030-205	03035-205	M5	3	14	0.9	3	4.27	6.74
03030-206	03035-206	M6	3.5	15	1	3	6.29	8.99
03030-208	03035-208	M8	5	18	1.5	4	10.57	16.41
03030-210	03035-210	M10	6	23	2	5	14.84	22.48
03030-212	03035-212	M12	8	26	2.5	6	14.84	26.98
03030-216	03035-216	M16	10	33	3.5	8	20.23	40.46
03030-220	03035-220	M20	12	43	4.5	10	25.85	53.95
03030-224	03035-224	M24	15	48	5.5	12	29.22	60.70

SPRING PLUNGERS

Ball Type with Nylon Locking | Hex End | Steel and Stainless Steel | Inch and Metric



*L2 = Approx. two thread turns.

Ball type plunger with hex end. The Long-Lok nylon locking system prevents loosening from impact or vibrations. The steel version has a steel sleeve, ball and spring. The sleeve has a black oxide finish and the ball is hardened. The stainless version has a stainless sleeve, ball and spring. The stainless sleeves have a natural finish and the ball is hardened.

INCH - STANDARD END FORCE

Part # Steel	Part # Stainless	D	D1	L	+/- .02 L1	H	S	SPRING FORCE	
								F1 Initial Lbs.	F2 Final Lbs.
03031-AJ	03036-AJ	1/4-28	.138 (3.5mm)	.59	.28	.04	1/8	2.02	2.92
03031-A2	03036-A2	1/4-20	.138 (3.5mm)	.59	.28	.04	1/8	2.02	2.92
03031-A3	03036-A3	5/16-18	.197 (5.0mm)	.71	.31	.06	5/32	3.37	6.74
03031-A4	03036-A4	3/8-16	.236 (6.0mm)	.91	.35	.08	3/16	4.50	7.87
03031-A5	03036-A5	1/2-13	.315 (8.0mm)	1.02	.39	.10	7/32	6.74	12.36
03031-A6	03036-A6	5/8-11	.394 (10.0mm)	1.30	.55	.14	5/16	14.61	28.10

INCH - HEAVY END FORCE

Part # Steel	Part # Stainless	D	D1	L	+/- .02 L1	H	S	SPRING FORCE	
								F1 Initial Lbs.	F2 Final Lbs.
03031-2AJ	03036-2AJ	1/4-28	.138 (3.5mm)	.59	.28	.04	1/8	6.29	8.99
03031-2A2	03036-2A2	1/4-20	.138 (3.5mm)	.59	.28	.04	1/8	6.29	8.99
03031-2A3	03036-2A3	5/16-18	.197 (5.0mm)	.71	.31	.06	5/32	10.57	16.41
03031-2A4	03036-2A4	3/8-16	.236 (6.0mm)	.91	.35	.08	3/16	14.84	22.48
03031-2A5	03036-2A5	1/2-13	.315 (8.0mm)	1.02	.39	.10	7/32	14.84	26.98
03031-2A6	03036-2A6	5/8-11	.394 (10.0mm)	1.30	.55	.14	5/16	20.23	40.46

METRIC - STANDARD END FORCE

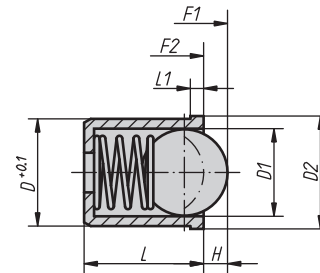
Part # Steel	Part # Stainless	D mm	D1 mm	L mm	+/- .05 L1 mm	H mm	S mm	SPRING FORCE	
								F1 Initial Lbs.	F2 Final Lbs.
03031-03	03036-03	M3	1.5	9	4	0.5	1.5	.34	.67
03031-04	03036-04	M4	2.5	10	5	0.8	2	.90	2.25
03031-05	03036-05	M5	3	14	6	0.9	3	1.35	2.47
03031-06	03036-06	M6	3.5	15	7	1	3	2.02	2.92
03031-08	03036-08	M8	5	18	8	1.5	4	3.37	6.74
03031-10	03036-10	M10	6	23	9	2	5	4.50	7.87
03031-12	03036-12	M12	8	26	10	2.5	6	6.74	12.36
03031-16	03036-16	M16	10	33	14	3.5	8	14.61	28.10

METRIC - HEAVY END FORCE

Part # Steel	Part # Stainless	D mm	D1 mm	L mm	+/- .05 L1 mm	H mm	S mm	SPRING FORCE	
								F1 Initial Lbs.	F2 Final Lbs.
03031-203	03036-203	M3	1.5	9	4	0.5	1.5	1.12	1.57
03031-204	03036-204	M4	2.5	10	5	0.8	2	2.70	4.95
03031-205	03036-205	M5	3	14	6	0.9	3	4.27	6.74
03031-206	03036-206	M6	3.5	15	7	1	3	6.29	8.99
03031-208	03036-208	M8	5	18	8	1.5	4	10.57	16.41
03031-210	03036-210	M10	6	23	9	2	5	14.84	22.48
03031-212	03036-212	M12	8	26	10	2.5	6	14.84	26.98
03031-216	03036-216	M16	10	33	14	3.5	8	20.23	40.46

SPRING PLUNGERS

Ball Style | Plastic Body | Non-Threaded | Metric



Black thermoplastic body with stainless spring. Available with either plastic or stainless steel ball. The stainless steel ball is hardened. Recommended hole tolerance is +0.10 to +0.15.

With Stainless Ball

METRIC

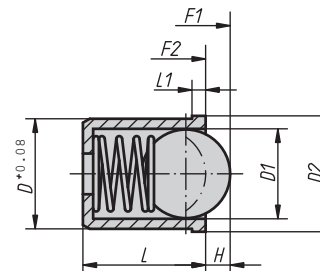
Part #	+0.1 D mm	D1 mm	D2 mm	L mm	L1 mm	H mm	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03071-04	4	3	4.6	5	1	0.7	.67	1.57
03071-05	5	4	5.6	6	1	1	.90	1.57
03071-06	6	5	6.5	7	1	1.5	1.35	2.70
03071-08	8	6.5	8.5	9	1	1.8	1.35	2.70
03071-10	10	8	12	13.5	2.5	2.7	2.25	4.50
03071-12	12	10	14	16	2.5	3.5	3.37	5.62

With Plastic Ball

METRIC

Part #	+0.1 D mm	D1 mm	D2 mm	L mm	L1 mm	H mm	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03071-204	4	3	4.6	5	1	0.9	.67	1.57
03071-205	5	4	5.6	6	1	1.2	.90	1.57
03071-206	6	5	6.5	7	1	1.5	1.35	2.70
03071-208	8	6.5	8.5	9	1	2	1.35	2.70
03071-210	10	8	12	13.5	2.5	2.7	2.25	4.50
03071-212	12	10	14	16	2.5	3.5	3.37	5.62

Ball Style | Stainless Steel Body | Non-Threaded | Metric



Stainless steel body with stainless spring. Available with either plastic or stainless steel ball. The stainless steel ball is hardened. Recommended hole tolerance is +0.08 to +0.13.

With Stainless Ball

METRIC

Part #	+0.08 D mm	D1 mm	D2 mm	L mm	L1 mm	H mm	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03070-04	4	3	4.6	5	1	0.8	.67	1.57
03070-05	5	4	5.6	6	1	1	.90	1.57
03070-06	6	5	6.5	7	1	1.5	1.35	2.70
03070-08	8	6.5	8.5	9	1	1.8	1.35	2.70
03070-10	10	8	12	13.5	2.5	2.7	2.25	4.50
03070-12	12	10	14	16	2.5	3.5	3.37	5.62

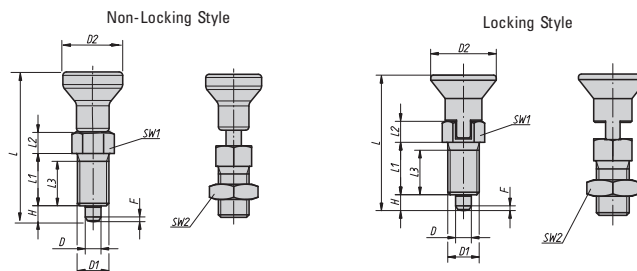
With Plastic Ball

METRIC

Part #	+0.08 D mm	D1 mm	D2 mm	L mm	L1 mm	H mm	SPRING FORCE	
							F1 Initial Lbs.	F2 Final Lbs.
03070-304	4	3	4.6	5	1	0.5	.67	1.57
03070-305	5	4	5.6	6	1	0.6	.90	1.57
03070-306	6	5	6.5	7	1	1.1	1.35	2.70
03070-308	8	6.5	8.5	9	1	1.5	1.35	2.70
03070-310	10	8	12	13.5	2.5	2.3	2.25	4.50
03070-312	12	10	14	16	2.5	3.1	3.37	5.62

HAND RETRACTABLE PLUNGERS

Stainless Pull Knob | Stainless Steel | Metric



These spring loaded hand retractable plungers are used to prevent any change in locking position due to lateral force. Pulling up on the handle retracts the plunger pin into the body. The locking style allows the pin to stay in the retracted position. The handle and plunger pin are made from stainless steel with natural finish. The hardened plunger pin styles have ground and hardened plungers. The non-hardened plunger pin styles have ground plunger pins but they have been left soft for custom modifications. They are available with or without a jam nut.

METRIC - NON-LOCKING STYLE - HARDENED PLUNGER PIN

With Jam Nut Part #	Without Jam Nut Part #	-.02/- .04		D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	SW2 mm	FX 30° mm	SPRING FORCE	
		D mm	D mm											F1 Initial Lbs.	F2 Final Lbs.
03089-002004	03089-001004	4		M8x1	18	43	15	6	13	4	10	13	1.0	1.3	2.7
03089-002105	03089-001105	5		M10x1	21	50	17	7	15	5	13	17	1.3	1.1	2.7
03089-002206	03089-001206	6		M12x1.5	25	59	20	8	17	6	14	19	1.8	1.3	3.2
03089-002308	03089-001308	8		M16x1.5	33	77	26	10	23	8	19	24	2.3	3.4	7.9
03089-002410	03089-001410	10		M20x1.5	33	83	28	12	25	10	22	30	2.6	3.4	7.6

METRIC - LOCKING STYLE - HARDENED PLUNGER PIN

With Jam Nut Part #	Without Jam Nut Part #	-.02/- .04		D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	SW2 mm	FX 30° mm	SPRING FORCE	
		D mm	D mm											F1 Initial Lbs.	F2 Final Lbs.
03089-004004	03089-003004	4		M8x1	18	43	15	6	13	4	10	13	1.0	1.3	2.7
03089-004105	03089-003105	5		M10x1	21	50	17	7	15	5	13	17	1.3	1.1	2.7
03089-004206	03089-003206	6		M12x1.5	25	59	20	8	17	6	14	19	1.8	1.3	3.2
03089-004308	03089-003308	8		M16x1.5	33	77	26	10	23	8	19	24	2.3	3.4	7.9
03089-004410	03089-003410	10		M20x1.5	33	83	28	12	25	10	22	30	2.6	3.4	7.6

METRIC - NON-LOCKING - NON-HARDENED PLUNGER PIN

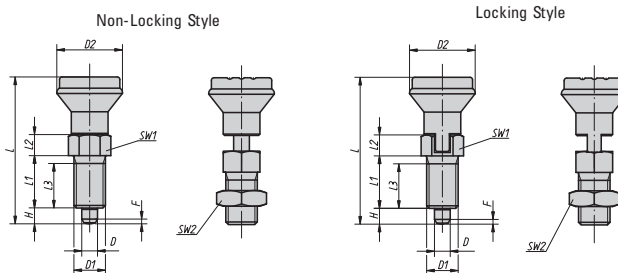
With Jam Nut Part #	Without Jam Nut Part #	-.02/- .04		D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	SW2 mm	FX 30° mm	SPRING FORCE	
		D mm	D mm											F1 Initial Lbs.	F2 Final Lbs.
03089-112004	03089-111004	4		M8x1	18	43	15	6	13	4	10	13	1.0	1.3	2.7
03089-112105	03089-111105	5		M10x1	21	50	17	7	15	5	13	17	1.3	1.1	2.7
03089-112206	03089-111206	6		M12x1.5	25	59	20	8	17	6	14	19	1.8	1.3	3.2
03089-112308	03089-111308	8		M16x1.5	33	77	26	10	23	8	19	24	2.3	3.4	7.9
03089-112410	03089-111410	10		M20x1.5	33	83	28	12	25	10	22	30	2.6	3.4	7.6

METRIC - LOCKING - NON-HARDENED PLUNGER PIN

With Jam Nut Part #	Without Jam Nut Part #	-.02/- .04		D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	SW2 mm	FX 30° mm	SPRING FORCE	
		D mm	D mm											F1 Initial Lbs.	F2 Final Lbs.
03089-114004	03089-113004	4		M8x1	18	43	15	6	13	4	10	13	1.0	1.3	2.7
03089-114105	03089-113105	5		M10x1	21	50	17	7	15	5	13	17	1.3	1.1	2.7
03089-114206	03089-113206	6		M12x1.5	25	59	20	8	17	6	14	19	1.8	1.3	3.2
03089-114308	03089-113308	8		M16x1.5	33	77	26	10	23	8	19	24	2.3	3.4	7.9
03089-114410	03089-113410	10		M20x1.5	33	83	28	12	25	10	22	30	2.6	3.4	7.6

HAND RETRACTABLE PLUNGERS

Novo-Grip Pull Knob | Steel and Stainless | Metric



These spring loaded hand retractable plungers are used to prevent any change in locking position due to lateral force. Pulling up on the handle retracts the plunger pin into the body. The locking style allows the plunger to remain in the retracted position. The body is available in steel with black oxide finish or stainless steel with natural finish. The hardened plunger pin styles have ground and hardened plungers. The non-hardened plunger pin styles have ground plunger pins but they have been left soft for custom modifications. They are available with or without a jam nut. The Novo-Grip knob is made from black plastic.

METRIC - NON-LOCKING STYLE - WITHOUT JAM NUT - HARDENED PLUNGER PIN

Steel Part #	Stainless Part #	-.02/- .04		D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	FX 30° mm	SPRING FORCE	
		D mm	F1 Initial Lbs.										F2 Final Lbs.	
03090-1105	03090-01105	5	M10x1	21	47	17	7	15	5	13	1.3	1.1	2.7	
03090-1206	03090-01206	6	M12x1.5	25	56	20	8	17	6	14	1.8	1.4	3.2	
03090-1308	03090-01308	8	M16x1.5	33	74	26	10	23	8	19	2.3	3.4	7.9	
03090-1410	03090-01410	10	M20x1.5	33	80	28	12	25	10	22	2.8	3.4	7.7	

METRIC - NON-LOCKING STYLE - WITH JAM NUT - HARDENED PLUNGER PIN

Steel Part #	Stainless Part #	-.02/- .04		D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	SW2 mm	FX 30° mm	SPRING FORCE	
		D mm	F1 Initial Lbs.											F2 Final Lbs.	
03090-2105	03090-02105	5	M10x1	21	47	17	7	15	5	13	17	1.3	1.1	2.7	
03090-2206	03090-02206	6	M12x1.5	25	56	20	8	17	6	14	19	1.8	1.4	3.2	
03090-2308	03090-02308	8	M16x1.5	33	74	26	10	23	8	19	24	2.3	3.4	7.9	
03090-2410	03090-02410	10	M20x1.5	33	80	28	12	25	10	22	30	2.8	3.4	7.7	

METRIC - LOCKING STYLE - WITHOUT JAM NUT - HARDENED PLUNGER PIN

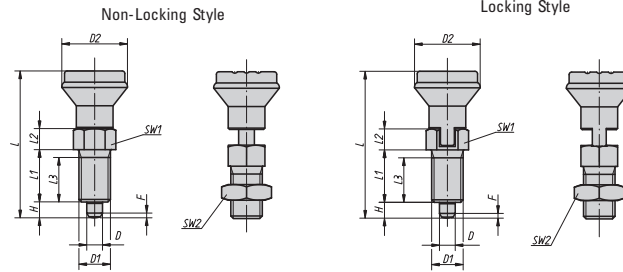
Steel Part #	Stainless Part #	-.02/- .04		D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	FX 30° mm	SPRING FORCE	
		D mm	F1 Initial Lbs.										F2 Final Lbs.	
03090-3105	03090-03105	5	M10x1	21	47	17	7	15	5	13	1.3	1.1	2.7	
03090-3206	03090-03206	6	M12x1.5	25	56	20	8	17	6	14	1.8	1.4	3.2	
03090-3308	03090-03308	8	M16x1.5	33	74	26	10	23	8	19	2.3	3.4	7.9	
03090-3410	03090-03410	10	M20x1.5	33	80	28	12	25	10	22	2.8	3.4	7.7	

METRIC - LOCKING STYLE - WITH JAM NUT - HARDENED PLUNGER PIN

Steel Part #	Stainless Part #	-.02/- .04		D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	SW2 mm	FX 30° mm	SPRING FORCE	
		D mm	F1 Initial Lbs.											F2 Final Lbs.	
03090-4105	03090-04105	5	M10x1	21	47	17	7	15	5	13	17	1.3	1.1	2.7	
03090-4206	03090-04206	6	M12x1.5	25	56	20	8	17	6	14	19	1.8	1.4	3.2	
03090-4308	03090-04308	8	M16x1.5	33	74	26	10	23	8	19	24	2.3	3.4	7.9	
03090-4410	03090-04410	10	M20x1.5	33	80	28	12	25	10	22	30	2.8	3.4	7.7	

HAND RETRACTABLE PLUNGERS

Novo-Grip Pull Knob | Steel and Stainless | Metric (continued)



METRIC - NON-LOCKING STYLE - WITHOUT JAM NUT - NON-HARDENED PLUNGER PIN

Stainless Part #	-.02/-04		D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	FX 30° mm	SPRING FORCE	
	D mm	D1 mm									F1 Initial Lbs.	F2 Final Lbs.
03090-11105	5	M10x1	21	47	17	7	15	5	13	1.3	1.1	2.7
03090-11206	6	M12x1.5	25	56	20	8	17	6	14	1.8	1.4	3.2
03090-11308	8	M16x1.5	33	74	26	10	23	8	19	2.3	3.4	7.9
03090-11410	10	M20x1.5	33	80	28	12	25	10	22	2.8	3.4	7.7

METRIC - NON-LOCKING STYLE - WITH JAM NUT - NON-HARDENED PLUNGER PIN

Stainless Part #	-.02/-04		D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	SW2 mm	FX 30° mm	SPRING FORCE	
	D mm	D1 mm										F1 Initial Lbs.	F2 Final Lbs.
03090-12105	5	M10x1	21	47	17	7	15	5	13	17	1.3	1.1	2.7
03090-12206	6	M12x1.5	25	56	20	8	17	6	14	19	1.8	1.4	3.2
03090-12308	8	M16x1.5	33	74	26	10	23	8	19	24	2.3	3.4	7.9
03090-12410	10	M20x1.5	33	80	28	12	25	10	22	30	2.8	3.4	7.7

METRIC - LOCKING STYLE - WITHOUT JAM NUT - NON-HARDENED PLUNGER PIN

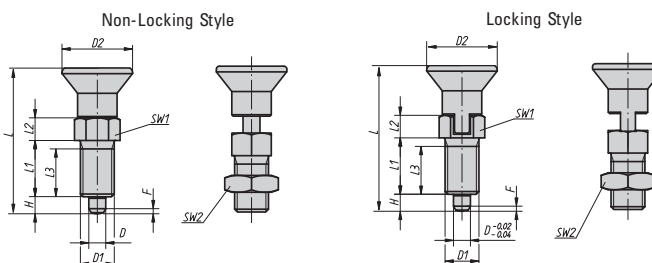
Stainless Part #	-.02/-04		D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	FX 30° mm	SPRING FORCE	
	D mm	D1 mm									F1 Initial Lbs.	F2 Final Lbs.
03090-13105	5	M10x1	21	47	17	7	15	5	13	1.3	1.1	2.7
03090-13206	6	M12x1.5	25	56	20	8	17	6	14	1.8	1.4	3.2
03090-13308	8	M16x1.5	33	74	26	10	23	8	19	2.3	3.4	7.9
03090-13410	10	M20x1.5	33	80	28	12	25	10	22	2.8	3.4	7.7

METRIC - LOCKING STYLE - WITH JAM NUT - NON-HARDENED PLUNGER PIN

Stainless Part #	-.02/-04		D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	SW2 mm	FX 30° mm	SPRING FORCE	
	D mm	D1 mm										F1 Initial Lbs.	F2 Final Lbs.
03090-14105	5	M10x1	21	47	17	7	15	5	13	17	1.3	1.1	2.7
03090-14206	6	M12x1.5	25	56	20	8	17	6	14	19	1.8	1.4	3.2
03090-14308	8	M16x1.5	33	74	26	10	23	8	19	24	2.3	3.4	7.9
03090-14410	10	M20x1.5	33	80	28	12	25	10	22	30	2.8	3.4	7.7

HAND RETRACTABLE PLUNGERS

Plastic Pull Knob | Steel and Stainless | Inch and Metric



These spring loaded hand retractable plungers are used to prevent any change in locking position due to lateral force. Pulling up on the handle retracts the plunger pin into the body. The locking style allows the plunger to remain in the retracted position. The body is available in steel with black oxide finish or stainless steel with natural finish. The hardened plunger pin styles have ground and hardened plungers. The non-hardened plunger pin styles have ground plunger pins but they have been left soft for custom modifications. They are available with or without a jam nut. The knob is made from black thermoplastic.

INCH - NON-LOCKING STYLE - WITHOUT JAM NUT - HARDENED PLUNGER PIN

Steel Part #	Stainless Part #	-.001/-.002 D	D1	D2	L	L1	L2	L3	H	SW1	FX 30°	SPRING FORCE	
												F1 Initial Lbs.	F2 Final Lbs.
03089-1105AL	03089-01105AL	.197 (5mm)	3/8-24	.83	1.71	.67	.28	.59	.20	.51	.05	1.1	2.7
03089-1206A5	03089-01206A5	.236 (6mm)	1/2-13	.98	2.04	.79	.31	.63	.24	.55	.07	1.4	3.2
03089-1308A6	03089-01308A6	.315 (8mm)	5/8-11	1.30	2.68	1.02	.39	.83	.31	.75	.09	3.4	7.9
03089-1410A7	03089-01410A7	.394 (10mm)	3/4-10	1.30	2.91	1.10	.47	.91	.39	.87	.11	3.4	9.0

INCH - LOCKING STYLE - WITHOUT JAM NUT - HARDENED PLUNGER PIN

Steel Part #	Stainless Part #	-.001/-.002 D	D1	D2	L	L1	L2	L3	H	SW1	SW2	FX 30°	SPRING FORCE	
													F1 Initial Lbs.	F2 Final Lbs.
03089-3105AL	03089-03105AL	.197 (5mm)	3/8-24	.83	1.71	.67	.28	.59	.20	.51	9/16	.05	1.1	2.7
03089-3206A5	03089-03206A5	.236 (6mm)	1/2-13	.98	2.04	.79	.31	.63	.24	.55	3/4	.07	1.4	3.2
03089-3308A6	03089-03308A6	.315 (8mm)	5/8-11	1.30	2.68	1.02	.39	.83	.31	.75	15/16	.09	3.4	7.9
03089-3410A7	03089-03410A7	.394 (10mm)	3/4-10	1.30	2.91	1.10	.47	.91	.39	.87	1-1/8	.11	3.4	9.0

METRIC - NON-LOCKING STYLE - WITHOUT JAM NUT - HARDENED PLUNGER PIN

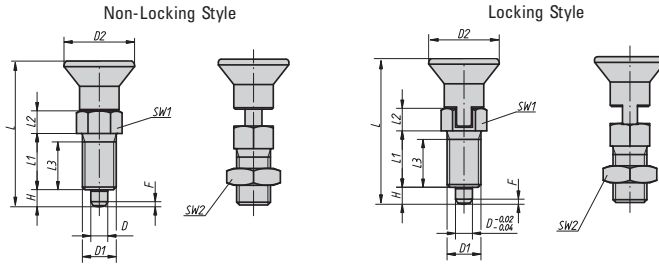
Steel Part #	Stainless Part #	-.02/-.04 D mm	D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	FX 30° mm	SPRING FORCE	
												F1 Initial Lbs.	F2 Final Lbs.
03089-1903	03089-01903	3	M6x0.75	14	31.5	12	5	10	3.5	8	0.8	1.0	2.5
03089-1004	03089-01004	4	M8x1	18	38.5	15	6	13	4	10	1	1.4	2.7
03089-1105	03089-01105	5	M10x1	21	43.5	17	7	15	5	13	1.3	1.1	2.7
03089-1206	03089-01206	6	M12x1.5	25	51.7	20	8	17	6	14	1.8	1.4	3.2
03089-1308	03089-01308	8	M16x1.5	33	68	26	10	23	8	19	2.3	3.4	7.9
03089-1410	03089-01410	10	M20x1.5	33	74	28	12	25	10	22	2.8	3.4	7.7
03089-1412	03089-01412	12	M20x1.5	33	78	28	14	25	12	22	2.8	3.4	8.8
03089-1516	03089-01516	16	M24x2	40	96	32	18	28	16	27	3.2	4.5	10.4

METRIC - NON-LOCKING STYLE - WITH JAM NUT - HARDENED PLUNGER PIN

Steel Part #	Stainless Part #	-.02/-.04 D mm	D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	SW2 mm	FX 30° mm	SPRING FORCE	
													F1 Initial Lbs.	F2 Final Lbs.
03089-2903	03089-02903	3	M6x0.75	14	31.5	12	5	10	3.5	8	10	0.8	1.0	2.5
03089-2004	03089-02004	4	M8x1	18	38.5	15	6	13	4	10	13	1	1.4	2.7
03089-2105	03089-02105	5	M10x1	21	43.5	17	7	15	5	13	17	1.3	1.1	2.7
03089-2206	03089-02206	6	M12x1.5	25	51.7	20	8	17	6	14	19	1.8	1.4	3.2
03089-2308	03089-02308	8	M16x1.5	33	68	26	10	23	8	19	24	2.3	3.4	7.9
03089-2410	03089-02410	10	M20x1.5	33	74	28	12	25	10	22	30	2.8	3.4	7.7
03089-2412	03089-02412	12	M20x1.5	33	78	28	14	25	12	22	30	2.8	3.4	8.8
03089-2516	03089-02516	16	M24x2	40	96	32	18	28	16	27	36	3.2	4.5	10.4

HAND RETRACTABLE PLUNGERS

Plastic Pull Knob | Steel and Stainless | Inch and Metric (continued)



METRIC - LOCKING - HARDENED PLUNGER PIN WITHOUT JAM NUT

Steel Part #	Stainless Part #	D mm	D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	FX 30° mm	SPRING FORCE	
												F1 Initial Lbs.	F2 Final Lbs.
03089-3903	03089-03903	3	M6x0.75	14	31.5	12	5	10	3.5	8	0.8	1.0	2.5
03089-3004	03089-03004	4	M8x1	18	38.5	15	6	13	4	10	1	1.4	2.7
03089-3105	03089-03105	5	M10x1	21	43.5	17	7	15	5	13	1.3	1.1	2.7
03089-3206	03089-03206	6	M12x1.5	25	51.7	20	8	17	6	14	1.8	1.4	3.2
03089-3308	03089-03308	8	M16x1.5	33	68	26	10	23	8	19	2.3	3.4	7.9
03089-3410	03089-03410	10	M20x1.5	33	74	28	12	25	10	22	2.8	3.4	7.7
03089-3412	03089-03412	12	M20x1.5	33	78	28	14	25	12	22	2.8	3.4	8.8
03089-3516	03089-03516	16	M24x2	40	96	32	18	28	16	27	3.2	4.5	10.4

METRIC - LOCKING - HARDENED PLUNGER PIN WITH JAM NUT

Steel Part #	Stainless Part #	D mm	D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	SW2 mm	FX 30° mm	SPRING FORCE	
													F1 Initial Lbs.	F2 Final Lbs.
03089-4903	03089-04903	3	M6x0.75	14	31.5	12	5	10	3.5	8	10	0.8	1.0	2.5
03089-4004	03089-04004	4	M8x1	18	38.5	15	6	13	4	10	13	1	1.4	2.7
03089-4105	03089-04105	5	M10x1	21	43.5	17	7	15	5	13	17	1.3	1.1	2.7
03089-4206	03089-04206	6	M12x1.5	25	51.7	20	8	17	6	14	19	1.8	1.4	3.2
03089-4308	03089-04308	8	M16x1.5	33	68	26	10	23	8	19	24	2.3	3.4	7.9
03089-4410	03089-04410	10	M20x1.5	33	74	28	12	25	10	22	30	2.8	3.4	7.7
03089-4412	03089-04412	12	M20x1.5	33	78	28	14	25	12	22	30	2.8	3.4	8.8
03089-4516	03089-04516	16	M24x2	40	96	32	18	28	16	27	36	3.2	4.5	10.4

METRIC - NON-LOCKING - NON-HARDENED PLUNGER PIN WITHOUT JAM NUT

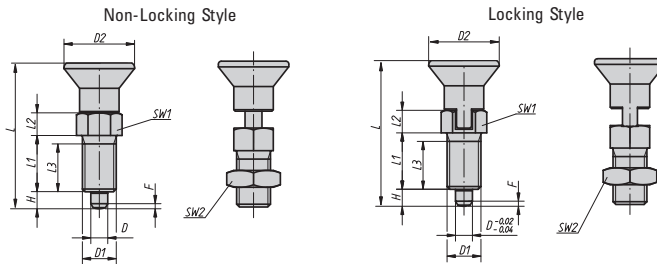
Stainless Part #	D mm	D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	FX 30° mm	SPRING FORCE	
											F1 Initial Lbs.	F2 Final Lbs.
03089-11903	3	M6x0.75	14	31.5	12	5	10	3.5	8	0.8	1.0	2.5
03089-11004	4	M8x1	18	38.5	15	6	13	4	10	1	1.4	2.7
03089-11105	5	M10x1	21	43.5	17	7	15	5	13	1.3	1.1	2.7
03089-11206	6	M12x1.5	25	51.7	20	8	17	6	14	1.8	1.4	3.2
03089-11308	8	M16x1.5	33	68	26	10	23	8	19	2.3	3.4	7.9
03089-11410	10	M20x1.5	33	74	28	12	25	10	22	2.8	3.4	7.7
03089-11412	12	M20x1.5	33	78	28	14	25	12	22	2.8	3.4	8.8
03089-11516	16	M24x2	40	96	32	18	28	16	27	3.2	4.5	10.4

METRIC - NON-LOCKING - NON-HARDENED PLUNGER PIN WITH JAM NUT

Stainless Part #	D mm	D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	SW2 mm	FX 30° mm	SPRING FORCE	
												F1 Initial Lbs.	F2 Final Lbs.
03089-12903	3	M6x0.75	14	31.5	12	5	10	3.5	8	10	0.8	1.0	2.5
03089-12004	4	M8x1	18	38.5	15	6	13	4	10	13	1	1.4	2.7
03089-12105	5	M10x1	21	43.5	17	7	15	5	13	17	1.3	1.1	2.7
03089-12206	6	M12x1.5	25	51.7	20	8	17	6	14	19	1.8	1.4	3.2
03089-12308	8	M16x1.5	33	68	26	10	23	8	19	24	2.3	3.4	7.9
03089-12410	10	M20x1.5	33	74	28	12	25	10	22	30	2.8	3.4	7.7
03089-12412	12	M20x1.5	33	78	28	14	25	12	22	30	2.8	3.4	8.8
03089-12516	16	M24x2	40	96	32	18	28	16	27	36	3.2	4.5	10.4

HAND RETRACTABLE PLUNGERS

Plastic Pull Knob | Steel and Stainless | Inch and Metric (continued)



METRIC - LOCKING - NON-HARDENED PLUNGER PIN WITHOUT JAM NUT

Stainless Part #	-.02/-04		D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	FX 30° mm	SPRING FORCE	
	D mm	D1 mm									F1 Initial Lbs.	F2 Final Lbs.
03089-13903	3	M6x0.75	14	31.5	12	5	10	3.5	8	0.8	1.0	2.5
03089-13004	4	M8x1	18	38.5	15	6	13	4	10	1	1.4	2.7
03089-13105	5	M10x1	21	43.5	17	7	15	5	13	1.3	1.1	2.7
03089-13206	6	M12x1.5	25	51.7	20	8	17	6	14	1.8	1.4	3.2
03089-13308	8	M16x1.5	33	68	26	10	23	8	19	2.3	3.4	7.9
03089-13410	10	M20x1.5	33	74	28	12	25	10	22	2.8	3.4	7.7
03089-13412	12	M20x1.5	33	78	28	14	25	12	22	2.8	3.4	8.8
03089-13516	16	M24x2	40	96	32	18	28	16	27	3.2	4.5	10.4

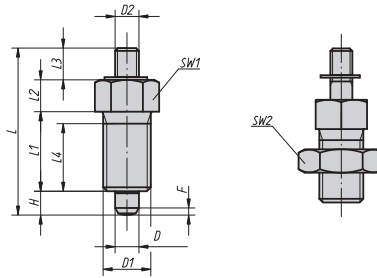
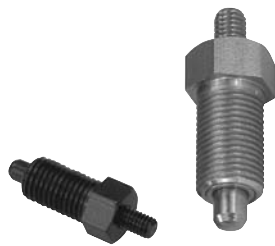
METRIC - LOCKING - NON-HARDENED PLUNGER PIN WITH JAM NUT

Stainless Part #	-.02/-04		D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	SW1 mm	SW2 mm	FX 30° mm	SPRING FORCE	
	D mm	D1 mm										F1 Initial Lbs.	F2 Final Lbs.
03089-14903	3	M6x0.75	14	31.5	12	5	10	3.5	8	10	0.8	1.0	2.5
03089-14004	4	M8x1	18	38.5	15	6	13	4	10	13	1	1.4	2.7
03089-14105	5	M10x1	21	43.5	17	7	15	5	13	17	1.3	1.1	2.7
03089-14206	6	M12x1.5	25	51.7	20	8	17	6	14	19	1.8	1.4	3.2
03089-14308	8	M16x1.5	33	68	26	10	23	8	19	24	2.3	3.4	7.9
03089-14410	10	M20x1.5	33	74	28	12	25	10	22	30	2.8	3.4	7.7
03089-14412	12	M20x1.5	33	78	28	14	25	12	22	30	2.8	3.4	8.8
03089-14516	16	M24x2	40	96	32	18	28	16	27	36	3.2	4.5	10.4



HAND RETRACTABLE PLUNGERS

Threaded End | Steel and Stainless | Inch and Metric



These spring loaded hand retractable plungers are used to prevent any change in locking position due to lateral force. Pulling up on the threaded end retracts the plunger pin into the body. The handle end is threaded for users to attach their own grip or for use with air cylinders, cables, etc. The body is available in steel with black oxide finish or stainless steel with natural finish. The hardened plunger pin styles have ground and hardened plungers. The non-hardened plunger pin styles have ground plunger pins but they have been left soft for custom modifications.

INCH - WITHOUT JAM NUT - HARDENED PLUNGER PIN

Steel Part #	Stainless Part #	-.001/-002 D	D1	D2	L	L1	L2	L3	L4	H	SW1	FX 30°	SPRING FORCE	
													F1 Initial Lbs.	F2 Final Lbs.
03092-1105AL	03092-01105AL	.197 (5mm)	3/8-24	M4	1.46	.67	.28	.31	.59	.20	.51	.05	1.1	2.7
03092-1206A5	03092-01206A5	.236 (6mm)	1/2-13	M6	1.65	.79	.31	.31	.67	.24	.55	.07	1.4	3.2
03092-1308A6	03092-01308A6	.315 (8mm)	5/8-11	M8	2.20	1.02	.39	.47	.91	.31	.75	.09	3.4	7.9
03092-1410A7	03092-01410A7	.394 (10mm)	3/4-10	M8	2.44	1.10	.47	.47	.98	.39	.87	.11	3.4	7.7

METRIC - WITHOUT JAM NUT - HARDENED PLUNGER PIN

Steel Part #	Stainless Part #	-.02/-04 D mm	D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	L4 mm	H mm	SW1 mm	FX 30° mm	SPRING FORCE	
													F1 Initial Lbs.	F2 Final Lbs.
03092-1004	03092-01004	4	M8x1	M3	32	15	6	7	13	4	10	1	1.4	2.7
03092-1105	03092-01105	5	M10x1	M4	37	17	7	8	15	5	13	1.3	1.1	2.7
03092-1206	03092-01206	6	M12x1.5	M6	42	20	8	8	17	6	14	1.8	1.4	3.2
03092-1308	03092-01308	8	M16x1.5	M8	56	26	10	12	23	8	19	2.3	3.4	7.9
03092-1410	03092-01410	10	M20x1.5	M8	62	28	12	12	25	10	22	2.8	3.4	7.7

METRIC - WITH JAM NUT - HARDENED PLUNGER PIN

Steel Part #	Stainless Part #	-.02/-04 D mm	D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	L4 mm	H mm	SW1 mm	SW2 mm	FX 30° mm	SPRING FORCE	
														F1 Initial Lbs.	F2 Final Lbs.
03092-2004	03092-02004	4	M8x1	M3	32	15	6	7	13	4	10	13	1	1.4	2.7
03092-2105	03092-02105	5	M10x1	M4	37	17	7	8	15	5	13	17	1.3	1.1	2.7
03092-2206	03092-02206	6	M12x1.5	M6	42	20	8	8	17	6	14	19	1.8	1.4	3.2
03092-2308	03092-02308	8	M16x1.5	M8	56	26	10	12	23	8	19	24	2.3	3.4	7.9
03092-2410	03092-02410	10	M20x1.5	M8	62	28	12	12	25	10	22	30	2.8	3.4	7.7

METRIC - WITHOUT JAM NUT - NON-HARDENED PLUNGER PIN

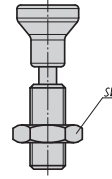
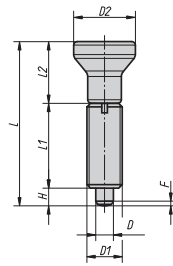
Stainless Part #	-.02/-04 D mm	D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	L4 mm	H mm	SW1 mm	FX 30° mm	SPRING FORCE	
												F1 Initial Lbs.	F2 Final Lbs.
03092-11004	4	M8x1	M3	32	15	6	7	13	4	10	1	1.4	2.7
03092-11105	5	M10x1	M4	37	17	7	8	15	5	13	1.3	1.1	2.7
03092-11206	6	M12x1.5	M6	42	20	8	8	17	6	14	1.8	1.4	3.2
03092-11308	8	M16x1.5	M8	56	26	10	12	23	8	19	2.3	3.4	7.9
03092-11410	10	M20x1.5	M8	62	28	12	12	25	10	22	2.8	3.4	7.7

METRIC - WITH JAM NUT - NON-HARDENED PLUNGER PIN

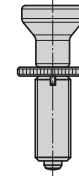
Stainless Part #	-.02/-04 D mm	D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	L4 mm	H mm	SW1 mm	SW2 mm	FX 30° mm	SPRING FORCE	
													F1 Initial Lbs.	F2 Final Lbs.
03092-12004	4	M8x1	M3	32	15	6	7	13	4	10	13	1	1.4	2.7
03092-12105	5	M10x1	M4	37	17	7	8	15	5	13	17	1.3	1.1	2.7
03092-12206	6	M12x1.5	M6	42	20	8	8	17	6	14	19	1.8	1.4	3.2
03092-12308	8	M16x1.5	M8	56	26	10	12	23	8	19	24	2.3	3.4	7.9
03092-12410	10	M20x1.5	M8	62	28	12	12	25	10	22	30	2.8	3.4	7.7

HAND RETRACTABLE PLUNGERS

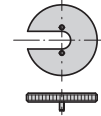
Stainless Pull Knob without Collar | Stainless Steel | Metric



Plunger with Screw-in Washer



Screw-in Washer



These spring loaded hand retractable plungers are used to prevent any change in locking position due to lateral force. Pulling up on the handle retracts the plunger pin into the body. The handle and plunger pin are made from stainless steel with natural finish. The hardened plunger pin styles have ground and hardened plungers. The non-hardened plunger pin styles have ground plunger pins but they have been left soft for custom modifications. They are available with or without a jam nut. Screw-in washers are available to easily install the plungers.

METRIC - HARDENED PLUNGER PIN

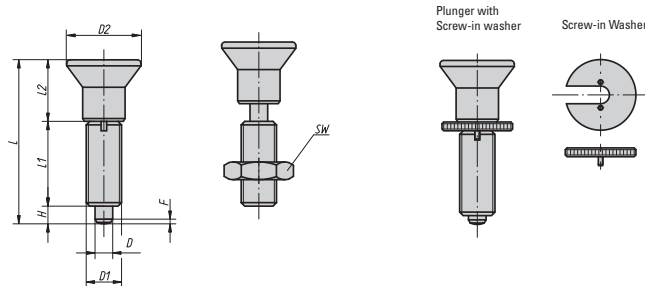
With Jam Nut Part #	Without Jam Nut Part #	-.02/-04		D2 mm	L mm	L1 mm	L2 mm	H mm	SW mm	FX 30° mm	SPRING FORCE		Screw-in Washer Part #
		D mm	D1 mm								F1 Initial Lbs.	F2 Final Lbs.	
03093-002004	03093-001004	4	M8x1	18	43	21	18	4	13	1	1.4	2.7	03094-90
03093-002105	03093-001105	5	M10X1	21	50	24	21	5	17	1.3	1.1	2.7	03094-91
03093-002206	03093-001206	6	M12x1.5	25	59	28	25	6	19	1.8	1.4	3.2	03094-92
03093-002308	03093-001308	8	M16x1.5	33	77	36	33	8	24	2.3	3.4	7.9	03094-93
03093-002410	03093-001410	10	M20x1.5	33	83	40	33	10	30	2.6	3.4	7.7	03094-94

METRIC - NON-HARDENED PLUNGER PIN

With Jam Nut Part #	Without Jam Nut Part #	-.02/-04		D2 mm	L mm	L1 mm	L2 mm	H mm	SW mm	FX 30° mm	SPRING FORCE		Screw-in Washer Part #
		D mm	D1 mm								F1 Initial Lbs.	F2 Final Lbs.	
03093-112004	03093-111004	4	M8x1	18	43	21	18	4	13	1	1.4	2.7	03094-90
03093-112105	03093-111105	5	M10X1	21	50	24	21	5	17	1.3	1.1	2.7	03094-91
03093-112206	03093-111206	6	M12x1.5	25	59	28	25	6	19	1.8	1.4	3.2	03094-92
03093-112308	03093-111308	8	M16x1.5	33	77	36	33	8	24	2.3	3.4	7.9	03094-93
03093-112410	03093-111410	10	M20x1.5	33	83	40	33	10	30	2.6	3.4	7.7	03094-94

HAND RETRACTABLE PLUNGERS

Plastic Pull Knob without Collar | Steel and Stainless | Metric



These spring loaded hand retractable plungers are used to prevent any change in locking position due to lateral force. Pulling up on the handle retracts the plunger pin into the body. The body is available in steel with black oxide finish or stainless steel with natural finish. The hardened plunger pin styles have ground and hardened plungers. The non-hardened plunger pin styles have ground plunger pins but they have been left soft for custom modifications. They are available with or without a jam nut. Screw-in washers are available to easily install the plungers. The knob is made from black thermoplastic.

METRIC - WITHOUT JAM NUT - HARDENED PLUNGER PIN

Steel Part #	Stainless Part #	-.02/-04		D2 mm	L mm	L1 mm	L2 mm	H mm	FX 30° mm	SPRING FORCE		Screw Washer Part #
		D mm	D1 mm							F1 Initial Lbs.	F2 Final Lbs.	
03093-1004	03093-01004	4	M8x1	18	38.5	21	13.5	4	1.3	1.4	2.7	03094-90
03093-1105	03093-01105	5	M10x1	21	43.5	24	14.5	5	1.3	1.1	2.7	03094-91
03093-1206	03093-01206	6	M12x1.5	25	51.7	28	17.7	6	1.8	1.4	3.2	03094-92
03093-1308	03093-01308	8	M16x1.5	33	68	36	24	8	2.3	3.4	7.9	03094-93
03093-1410	03093-01410	10	M20x1.5	33	74	40	24	10	2.8	3.4	7.7	03094-94
03093-1412	03093-01412	12	M20x1.5	33	78	42	24	12	2.8	3.4	8.8	03094-94
03093-1516	03093-01516	16	M24x2	40	96	50	30	16	3.2	4.5	10.4	03094-95

METRIC - WITH JAM NUT - HARDENED PLUNGER PIN

Steel Part #	Stainless Part #	-.02/-04		D2 mm	L mm	L1 mm	L2 mm	H mm	SW mm	FX 30° mm	SPRING FORCE		Screw Washer Part #
		D mm	D1 mm								F1 Initial Lbs.	F2 Final Lbs.	
03093-2004	03093-02004	4	M8x1	18	38.5	21	13.5	4	13	1.3	1.4	2.7	03094-90
03093-2105	03093-02105	5	M10x1	21	43.5	24	14.5	5	17	1.3	1.1	2.7	03094-91
03093-2206	03093-02206	6	M12x1.5	25	51.7	28	17.7	6	19	1.8	1.4	3.2	03094-92
03093-2308	03093-02308	8	M16x1.5	33	68	36	24	8	24	2.3	3.4	7.9	03094-93
03093-2410	03093-02410	10	M20x1.5	33	74	40	24	10	30	2.8	3.4	7.7	03094-94
03093-2412	03093-02412	12	M20x1.5	33	78	42	24	12	30	2.8	3.4	8.8	03094-94
03093-2516	03093-02516	16	M24x2	40	96	50	30	16	36	3.2	4.5	10.4	03094-95

METRIC - WITHOUT JAM NUT - NON-HARDENED PLUNGER PIN

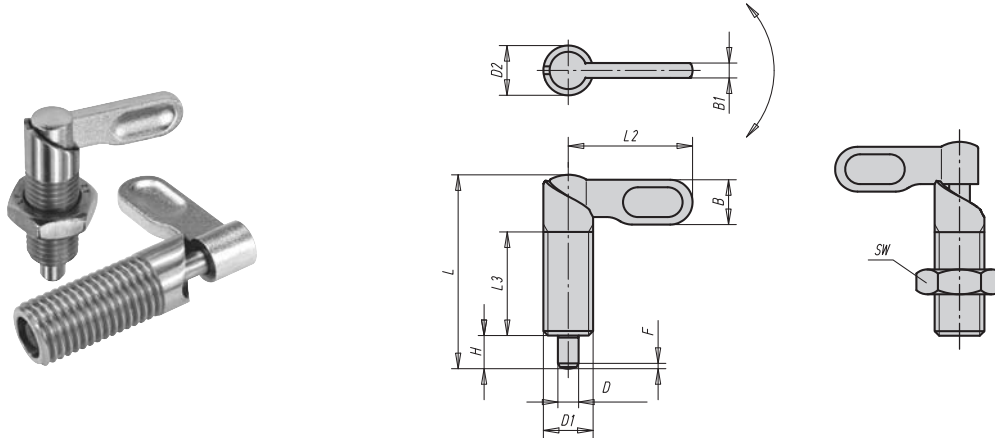
Stainless Part #	-.02/-04		D2 mm	L mm	L1 mm	L2 mm	H mm	FX 30° mm	SPRING FORCE		Screw Washer Part #
	D mm	D1 mm							F1 Initial Lbs.	F2 Final Lbs.	
03093-11004	4	M8x1	18	38.5	21	13.5	4	1.3	1.4	2.7	03094-90
03093-11105	5	M10x1	21	43.5	24	14.5	5	1.3	1.1	2.7	03094-91
03093-11206	6	M12x1.5	25	51.7	28	17.7	6	1.8	1.4	3.2	03094-92
03093-11308	8	M16x1.5	33	68	36	24	8	2.3	3.4	7.9	03094-93
03093-11410	10	M20x1.5	33	74	40	24	10	2.8	3.4	7.7	03094-94
03093-11412	12	M20x1.5	33	78	42	24	12	2.8	3.4	8.8	03094-94
03093-11516	16	M24x2	40	96	50	30	16	3.2	4.5	10.4	03094-95

METRIC - WITH JAM NUT - NON-HARDENED PLUNGER PIN

Stainless Part #	-.02/-04		D2 mm	L mm	L1 mm	L2 mm	H mm	SW mm	FX 30° mm	SPRING FORCE		Screw Washer Part #
	D mm	D1 mm								F1 Initial Lbs.	F2 Final Lbs.	
03093-12004	4	M8x1	18	38.5	21	13.5	4	13	1.3	1.4	2.7	03094-90
03093-12105	5	M10x1	21	43.5	24	14.5	5	17	1.3	1.1	2.7	03094-91
03093-12206	6	M12x1.5	25	51.7	28	17.7	6	19	1.8	1.4	3.2	03094-92
03093-12308	8	M16x1.5	33	68	36	24	8	24	2.3	3.4	7.9	03094-93
03093-12410	10	M20x1.5	33	74	40	24	10	30	2.8	3.4	7.7	03094-94
03093-12412	12	M20x1.5	33	78	42	24	12	30	2.8	3.4	8.8	03094-94
03093-12516	16	M24x2	40	96	50	30	16	36	3.2	4.5	10.4	03094-95

HAND RETRACTABLE PLUNGERS

Cam Action | Steel and Stainless | Inch and Metric



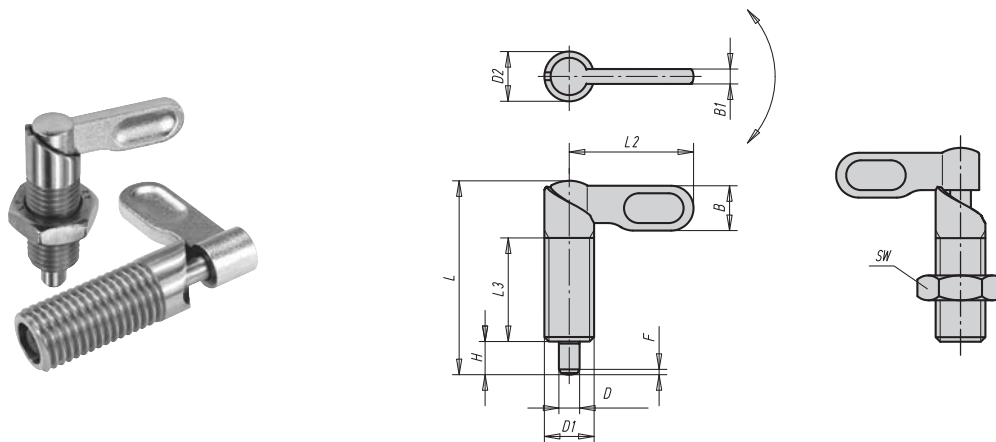
These hand retractable plungers are used for positioning, locating and fastening, without the use of tools, in a wide range of applications. As the handle is turned 180 degrees on the cam of the body, the plunger is retracted into the housing. There is a groove on the top of the cam that locks the plunger into the retracted position. They are available in steel or stainless steel. The steel style has a ground and hardened plunger with a black oxide finish and a powder coated handle. The stainless style has a ground and non-hardened plunger with a natural finish. They are available with or without a jam nut.

INCH - WITHOUT JAM NUT

Steel Part #	Stainless Part #	-.001/- .002 D	D1	D2	L	L2	L3	B	B1	H	FX 30°	SPRING FORCE	
												F1 Initial Lbs.	F2 Final Lbs.
03099-0604A4	03099-10404A4	.157 (4mm)	3/8-16	.39	1.50	.98	.79	.35	.12	.24	.04	1.8	3.2
03099-0605A4	03099-10405A4	.197 (5mm)	3/8-16	.39	1.50	.98	.79	.35	.12	.24	.05	1.8	3.2
03099-0606A4	03099-10406A4	.236 (6mm)	3/8-16	.39	1.50	.98	.79	.35	.12	.24	.07	1.8	3.2
03099-0604AL	03099-10404AL	.157 (4mm)	3/8-24	.39	1.50	.98	.79	.35	.12	.24	.04	1.8	3.2
03099-0605AL	03099-10405AL	.197 (5mm)	3/8-24	.39	1.50	.98	.79	.35	.12	.24	.05	1.8	3.2
03099-0606AL	03099-10406AL	.236 (6mm)	3/8-24	.39	1.50	.98	.79	.35	.12	.24	.07	1.8	3.2
03099-0605A5	03099-10405A5	.197 (5mm)	1/2-13	.47	1.84	1.18	.98	.43	.14	.31	.05	1.8	3.4
03099-0606A5	03099-10406A5	.236 (6mm)	1/2-13	.47	1.84	1.18	.98	.43	.14	.31	.07	1.8	3.4
03099-0608A5	03099-10408A5	.315 (8mm)	1/2-13	.47	1.84	1.18	.98	.43	.14	.31	.09	1.8	3.4
03099-0605AM	03099-10405AM	.197 (5mm)	1/2-20	.47	1.84	1.18	.98	.43	.14	.31	.05	1.8	3.4
03099-0606AM	03099-10406AM	.236 (6mm)	1/2-20	.47	1.84	1.18	.98	.43	.14	.31	.07	1.8	3.4
03099-0608AM	03099-10408AM	.315 (8mm)	1/2-20	.63	2.38	1.57	1.26	.57	.19	.39	.09	3.4	7.9
03099-0606A6	03099-10406A6	.236 (6mm)	5/8-11	.63	2.38	1.57	1.26	.57	.19	.39	.07	3.4	7.9
03099-0608A6	03099-10408A6	.315 (8mm)	5/8-11	.63	2.38	1.57	1.26	.57	.19	.39	.09	3.4	7.9
03099-0610A6	03099-10410A6	.394 (10mm)	5/8-11	.63	2.38	1.57	1.26	.57	.19	.39	.11	3.4	7.9
03099-0606AN	03099-10406AN	.236 (6mm)	5/8-18	.63	2.38	1.57	1.26	.57	.19	.39	.07	3.4	7.9
03099-0608AN	03099-10408AN	.315 (8mm)	5/8-18	.47	1.84	1.18	.98	.43	.14	.31	.09	1.8	3.4
03099-0610AN	03099-10410AN	.394 (10mm)	5/8-18	.63	2.38	1.57	1.26	.57	.19	.39	.11	3.4	7.9
03099-0608A7	03099-10408A7	.315 (8mm)	3/4-10	.79	2.76	1.97	1.38	.71	.24	.47	.09	4.5	13.5
03099-0610A7	03099-10410A7	.394 (10mm)	3/4-10	.79	2.76	1.97	1.38	.71	.24	.47	.11	4.5	13.5
03099-0612A7	03099-10412A7	.472 (12mm)	3/4-10	.79	2.76	1.97	1.38	.71	.24	.47	.12	4.5	13.5
03099-0608A0	03099-10408A0	.315 (8mm)	3/4-16	.79	2.76	1.97	1.38	.71	.24	.47	.09	4.5	13.5
03099-0610A0	03099-10410A0	.394 (10mm)	3/4-16	.79	2.76	1.97	1.38	.71	.24	.47	.11	4.5	13.5
03099-0612A0	03099-10412A0	.472 (12mm)	3/4-16	.79	2.76	1.97	1.38	.71	.24	.47	.12	4.5	13.5

HAND RETRACTABLE PLUNGERS

Cam Action | Steel and Stainless | Inch and Metric (continued)

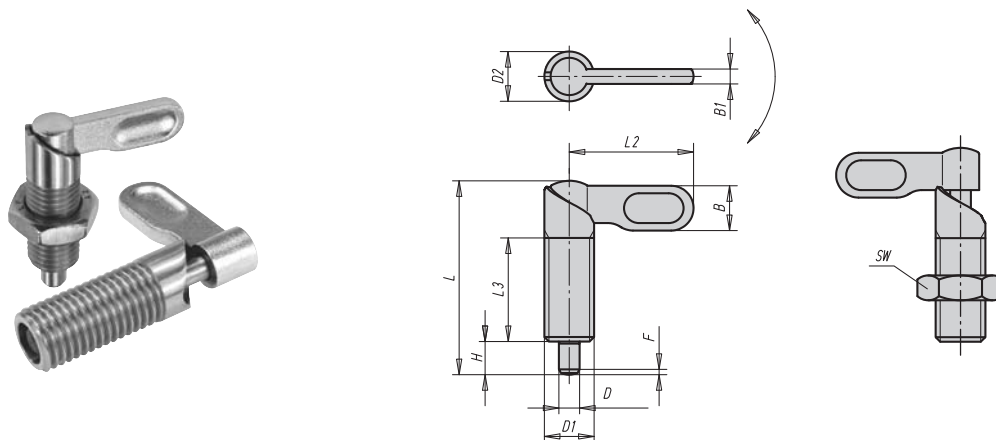


INCH - WITH JAM NUT

Steel Part #	Stainless Part #	-.001/- .002 D	D1	D2	L	L2	L3	B	B1	H	SW	FX 30°	SPRING FORCE	
													F1 Initial Lbs.	F2 Final Lbs.
03099-0704A4	03099-10504A4	.157 (4mm)	3/8-16	.39	1.50	.98	.79	.35	.12	.24	9/16	.04	1.8	3.2
03099-0705A4	03099-10505A4	.197 (5mm)	3/8-16	.39	1.50	.98	.79	.35	.12	.24	9/16	.05	1.8	3.2
03099-0706A4	03099-10506A4	.236 (6mm)	3/8-16	.39	1.50	.98	.79	.35	.12	.24	9/16	.07	1.8	3.2
03099-0704AL	03099-10504AL	.157 (4mm)	3/8-24	.39	1.50	.98	.79	.35	.12	.24	9/16	.04	1.8	3.2
03099-0705AL	03099-10505AL	.197 (5mm)	3/8-24	.39	1.50	.98	.79	.35	.12	.24	9/16	.05	1.8	3.2
03099-0706AL	03099-10506AL	.236 (6mm)	3/8-24	.39	1.50	.98	.79	.35	.12	.24	9/16	.07	1.8	3.2
03099-0705A5	03099-10505A5	.197 (5mm)	1/2-13	.47	1.84	1.18	.98	.43	.14	.31	3/4	.05	1.8	3.4
03099-0706A5	03099-10506A5	.236 (6mm)	1/2-13	.47	1.84	1.18	.98	.43	.14	.31	3/4	.07	1.8	3.4
03099-0708A5	03099-10508A5	.315 (8mm)	1/2-13	.47	1.84	1.18	.98	.43	.14	.31	3/4	.09	1.8	3.4
03099-0705AM	03099-10505AM	.197 (5mm)	1/2-20	.47	1.84	1.18	.98	.43	.14	.31	3/4	.05	1.8	3.4
03099-0706AM	03099-10506AM	.236 (6mm)	1/2-20	.47	1.84	1.18	.98	.43	.14	.31	3/4	.07	1.8	3.4
03099-0708AM	03099-10508AM	.315 (8mm)	1/2-20	.63	2.38	1.57	1.26	.57	.19	.39	15/16	.09	3.4	7.9
03099-0706A6	03099-10506A6	.236 (6mm)	5/8-11	.63	2.38	1.57	1.26	.57	.19	.39	15/16	.07	3.4	7.9
03099-0708A6	03099-10508A6	.315 (8mm)	5/8-11	.63	2.38	1.57	1.26	.57	.19	.39	15/16	.09	3.4	7.9
03099-0710A6	03099-10510A6	.394 (10mm)	5/8-11	.63	2.38	1.57	1.26	.57	.19	.39	15/16	.11	3.4	7.9
03099-0706AN	03099-10506AN	.236 (6mm)	5/8-18	.63	2.38	1.57	1.26	.57	.19	.39	15/16	.07	3.4	7.9
03099-0708AN	03099-10508AN	.315 (8mm)	5/8-18	.47	1.84	1.18	.98	.43	.14	.31	15/16	.09	1.8	3.4
03099-0710AN	03099-10510AN	.394 (10mm)	5/8-18	.63	2.38	1.57	1.26	.57	.19	.39	1"-1/8	.11	3.4	7.9
03099-0708A7	03099-10508A7	.315 (8mm)	3/4-10	.79	2.76	1.97	1.38	.71	.24	.47	1"-1/8	.09	4.5	13.5
03099-0710A7	03099-10510A7	.394 (10mm)	3/4-10	.79	2.76	1.97	1.38	.71	.24	.47	1"-1/8	.11	4.5	13.5
03099-0712A7	03099-10512A7	.472 (12mm)	3/4-10	.79	2.76	1.97	1.38	.71	.24	.47	1"-1/8	.12	4.5	13.5
03099-0708A0	03099-10508A0	.315 (8mm)	3/4-16	.79	2.76	1.97	1.38	.71	.24	.47	1"-1/8	.09	4.5	13.5
03099-0710A0	03099-10510A0	.394 (10mm)	3/4-16	.79	2.76	1.97	1.38	.71	.24	.47	1"-1/8	.11	4.5	13.5
03099-0712A0	03099-10512A0	.472 (12mm)	3/4-16	.79	2.76	1.97	1.38	.71	.24	.47	1"-1/8	.12	4.5	13.5

HAND RETRACTABLE PLUNGERS

Cam Action | Steel and Stainless | Inch and Metric (continued)

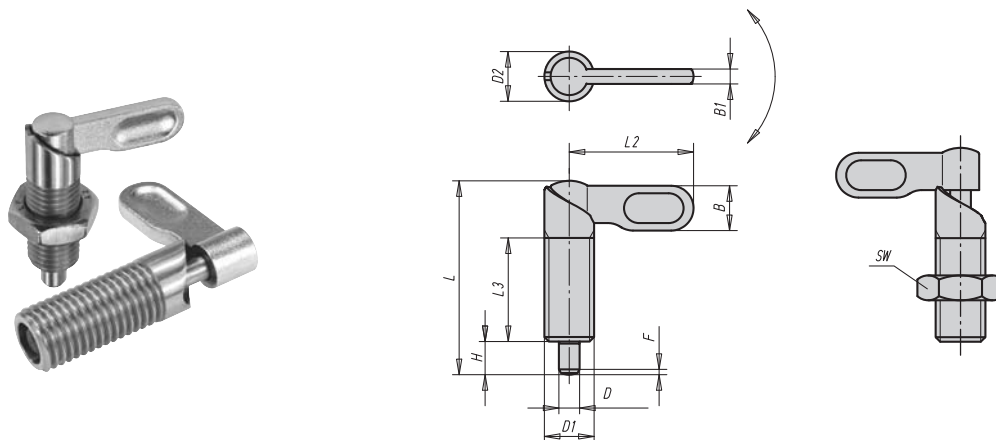


METRIC - WITHOUT JAM NUT

Steel Part #	Stainless Part #	-.02/-.04 D mm	D1 mm	D2 mm	L mm	L2 mm	L3 mm	B mm	B1 mm	H mm	FX 30° mm	SPRING FORCE	
												Initial Lbs.	Final Lbs.
03099-060410	03099-1040410	4	M10x1.5	10	38	25	20	9	3	6	1	1.8	3.2
03099-060510	03099-1040510	5	M10x1.5	10	38	25	20	9	3	6	1.3	1.8	3.2
03099-060610	03099-1040610	6	M10x1.5	10	38	25	20	9	3	6	1.8	1.8	3.2
03099-0604101	03099-10404101	4	M10x1	10	38	25	20	9	3	6	1	1.8	3.2
03099-0605101	03099-10405101	5	M10x1	10	38	25	20	9	3	6	1.3	1.8	3.2
03099-0606101	03099-10406101	6	M10x1	10	38	25	20	9	3	6	1.8	1.8	3.2
03099-060512	03099-1040512	5	M12x1.75	12	46.8	30	25	10.8	3.6	8	1.3	1.8	3.4
03099-060612	03099-1040612	6	M12x1.75	12	46.8	30	25	10.8	3.6	8	1.8	1.8	3.4
03099-060812	03099-1040812	8	M12x1.75	12	46.8	30	25	10.8	3.6	8	2.3	1.8	3.4
03099-0605121	03099-10405121	5	M12x1.5	12	46.8	30	25	10.8	3.6	8	1.3	1.8	3.4
03099-0606121	03099-10406121	6	M12x1.5	12	46.8	30	25	10.8	3.6	8	1.8	1.8	3.4
03099-0608121	03099-10408121	8	M12x1.5	12	46.8	30	25	10.8	3.6	8	2.3	3.4	7.9
03099-060616	03099-1040616	6	M16x2	16	60.4	40	32	14.4	4.8	10	1.8	3.4	7.9
03099-060816	03099-1040816	8	M16x2	16	60.4	40	32	14.4	4.8	10	2.3	3.4	7.9
03099-061016	03099-1041016	10	M16x2	16	60.4	40	32	14.4	4.8	10	2.8	3.4	7.9
03099-0606161	03099-10406161	6	M16x1.5	16	60.4	40	32	14.4	4.8	10	1.8	3.4	7.9
03099-0608161	03099-10408161	8	M16x1.5	16	46.8	30	25	10.8	3.6	10	2.3	1.8	3.4
03099-0610161	03099-10410161	10	M16x1.5	16	60.4	40	32	14.4	4.8	10	2.8	3.4	7.9
03099-060820	03099-1040820	8	M20x2.5	20	70	50	35	18	6	12	2.3	4.5	13.5
03099-061020	03099-1041020	10	M20x2.5	20	70	50	35	18	6	12	2.8	4.5	13.5
03099-061220	03099-1041220	12	M20x2.5	20	70	50	35	18	6	12	3	4.5	13.5
03099-0608201	03099-10408201	8	M20x1.5	20	70	50	35	18	6	12	2.3	4.5	13.5
03099-0610201	03099-10410201	10	M20x1.5	20	70	50	35	18	6	12	2.8	4.5	13.5
03099-0612201	03099-10412201	12	M20x1.5	20	70	50	35	18	6	12	3	4.5	13.5

HAND RETRACTABLE PLUNGERS

Cam Action | Steel and Stainless | Inch and Metric (continued)

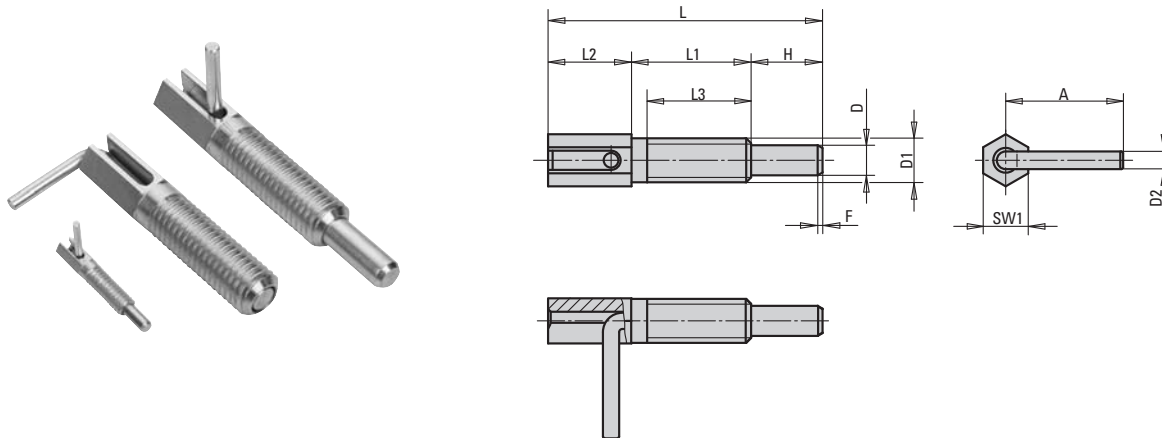


METRIC - WITH JAM NUT

Steel Part #	Stainless Part #	-.02/-.04 D mm	D1 mm	D2 mm	L mm	L2 mm	L3 mm	B mm	B1 mm	H mm	SW mm	FX 30° mm	SPRING FORCE	
													F1 Initial Lbs.	F2 Final Lbs.
03099-070410	03099-1050410	4	M10x1.5	10	38	25	20	9	3	6	17	1	1.8	3.2
03099-070510	03099-1050510	5	M10x1.5	10	38	25	20	9	3	6	17	1.3	1.8	3.2
03099-070610	03099-1050610	6	M10x1.5	10	38	25	20	9	3	6	17	1.8	1.8	3.2
03099-0704101	03099-10504101	4	M10x1	10	38	25	20	9	3	6	17	1	1.8	3.2
03099-0705101	03099-10505101	5	M10x1	10	38	25	20	9	3	6	17	1.3	1.8	3.2
03099-0706101	03099-10506101	6	M10x1	10	38	25	20	9	3	6	17	1.8	1.8	3.2
03099-070512	03099-1050512	5	M12x1.75	12	46.8	30	25	10.8	3.6	8	19	1.3	1.8	3.4
03099-070612	03099-1050612	6	M12x1.75	12	46.8	30	25	10.8	3.6	8	19	1.8	1.8	3.4
03099-070812	03099-1050812	8	M12x1.75	12	46.8	30	25	10.8	3.6	8	19	2.3	1.8	3.4
03099-0705121	03099-10505121	5	M12x1.5	12	46.8	30	25	10.8	3.6	8	19	1.3	1.8	3.4
03099-0706121	03099-10506121	6	M12x1.5	12	46.8	30	25	10.8	3.6	8	19	1.8	1.8	3.4
03099-0708121	03099-10508121	8	M12x1.5	12	46.8	30	25	10.8	3.6	8	19	2.3	3.4	7.9
03099-070616	03099-1050616	6	M16x2	16	60.4	40	32	14.4	4.8	10	24	1.8	3.4	7.9
03099-070816	03099-1050816	8	M16x2	16	60.4	40	32	14.4	4.8	10	24	2.3	3.4	7.9
03099-071016	03099-1051016	10	M16x2	16	60.4	40	32	14.4	4.8	10	24	2.8	3.4	7.9
03099-0706161	03099-10506161	6	M16x1.5	16	60.4	40	32	14.4	4.8	10	24	1.8	3.4	7.9
03099-0708161	03099-10508161	8	M16x1.5	16	46.8	30	25	10.8	3.6	10	24	2.3	1.8	3.4
03099-0710161	03099-10510161	10	M16x1.5	16	60.4	40	32	14.4	4.8	10	24	2.8	3.4	7.9
03099-070820	03099-1050820	8	M20x2.5	20	70	50	35	18	6	12	30	2.3	4.5	13.5
03099-071020	03099-1051020	10	M20x2.5	20	70	50	35	18	6	12	30	2.8	4.5	13.5
03099-071220	03099-1051220	12	M20x2.5	20	70	50	35	18	6	12	30	3	4.5	13.5
03099-0708201	03099-10508201	8	M20x1.5	20	70	50	35	18	6	12	30	2.3	4.5	13.5
03099-0710201	03099-10510201	10	M20x1.5	20	70	50	35	18	6	12	30	2.8	4.5	13.5
03099-0712201	03099-10512201	12	M20x1.5	20	70	50	35	18	6	12	30	3	4.5	13.5

HAND RETRACTABLE PLUNGERS

L Handle | Steel | Inch and Metric



These spring loaded hand retractable plungers are used to prevent any change in locking position due to lateral force. Pulling up on the L handle retracts the plunger pin into the body. By turning the handle while in the retracted position, the plunger can be locked in the retracted position. The body and plunger are made from alloy steel with blue chromate finish.

INCH

Part #	+/- .001 D	D1	D2	L	L1	L2	L3	H	A	SW1	FX 30°	SPRING FORCE		Max Torque Ft/Lbs.
												F1 Initial Lbs.	F2 Final Lbs.	
03091-11CWA2	.157 (4mm)	1/4-20	.09	1.63	.79	.47	.67	.37	.61	.24	.03	.7	2.3	1.2
03091-12CMA4	.236 (6mm)	3/8-16	.14	2.56	1.32	.69	1.18	.55	.90	.39	.04	.9	3.6	7.4
03091-13CNA5	.315 (8mm)	1/2-13	.19	2.87	1.25	.87	1.10	.75	1.23	.47	.05	.9	5.0	9.6
03091-14COA6	.394 (10mm)	5/8-11	.19	4.04	1.99	1.06	1.75	.98	1.29	.63	.06	.9	5.2	31.1

METRIC

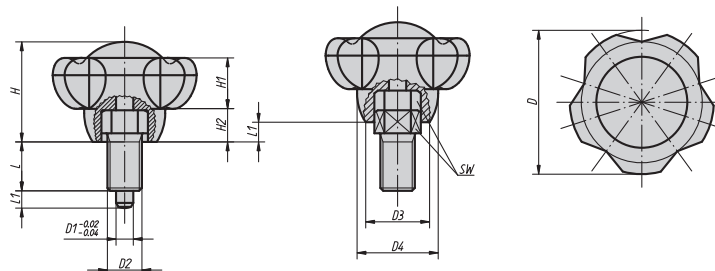
Part #	+ .01/- .03 D mm	D1 mm	D2 mm	L mm	L1 mm	L2 mm	L3 mm	H mm	A mm	SW1 mm	FX30° mm	SPRING FORCE		Max Torque Ft/Lbs.
												F1 Initial Lbs.	F2 Final Lbs.	
03091-1104	4	M6	2.3	41.5	20	12	17	9.5	15.5	6	.7	.7	2.3	1.2
03091-1206	6	M10	3.5	65	33.5	17.5	30	14	22.9	10	1.1	.9	3.6	7.4
03091-1308	8	M12	4.7	73	31.8	22.2	28	19	31.2	12	1.3	.9	5.0	9.6
03091-1410	10	M16	4.7	102.5	50.5	27	44.5	25	32.7	16	1.6	.9	5.2	31.1

HAND RETRACTABLE PLUNGERS

Thermoplastic Palm Grip Handle | Inch and Metric



NOVO-GRIP by



These spring loaded hand retractable plungers allow you to quickly retract and engage the plunger for locating, fastening and quick change operations. Pulling on the handle of the plunger assembly retracts the plunger into the housing. Releasing the handle allows the spring loaded plunger to extend. The handle is made from grey thermoplastic. The locking pin and threaded bolt have a black oxide finish. The locking pin is hardened and ground. They are available in dark grey, light grey, traffic red and bright yellow. See www.fixtureworks.net for colors.

INCH

Part #	D	^{-001/-002} D1	D2	D3	D4	H	H1	H2	L	L1	SW
03190-1105AL*	1.97	.197 (5mm)	3/8-24	.87	1.11	1.37	.70	.45	.51	.20	.51
03190-1206A5*	1.97	.236 (6mm)	1/2-13	.87	1.11	1.37	.70	.45	.67	.24	.55
03190-1308A6*	2.48	.315 (8mm)	5/8-11	1.10	1.40	1.73	.89	.57	.87	.31	.75
03190-1410A7*	2.48	.394 (10mm)	3/4-10	1.10	1.40	1.73	.89	.57	.94	.39	.87

* Add the desired cap color to the end of the part number. No color code is required for dark grey. Light Grey = 5, Traffic Red = 6, Bright Yellow = 7

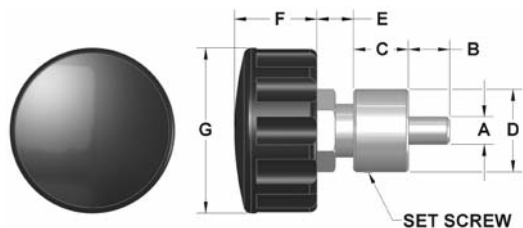
METRIC

Part #	D mm	^{-02/-04} D1 mm	D2 mm	D3 mm	D4 mm	H mm	H1 mm	H2 mm	L mm	L1 mm	SW mm
03190-1105*	50	5	M10 X 1	22.2	28.2	34.8	17.8	11.5	13	5	13
03190-1206*	50	6	M12 X 1.5	22.2	28.2	34.8	17.8	11.5	17	6	14
03190-1308*	63	8	M16 X 1.5	28	35.5	44	22.5	14.5	22	8	19
03190-1410*	63	10	M20 X 1.5	28	35.5	44	22.5	14.5	24	10	22

* Add the desired cap color to the end of the part number. No color code is required for dark grey. Light Grey = 5, Traffic Red = 6, Bright Yellow = 7

Fairlane

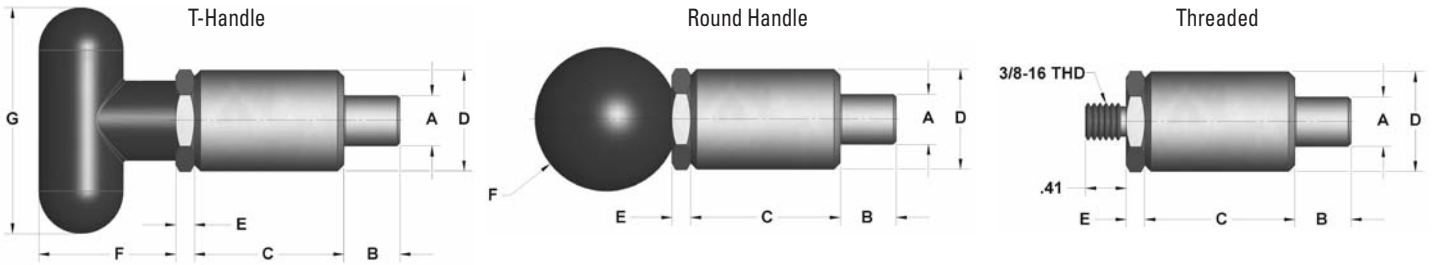
ADJUSTABLE CLAMPING PINS



These spring loaded adjustable clamping pins allow for quick clamping and release. Once the pin is engaged, turning the knob allows the pin to tighten down on the work piece or further extend the plunger in the locating hole. Because it can be quickly adjusted, it is ideal for applications where there is variance in the part being held. Pulling up on the handle retracts the plunger fully into the housing. The set screw on the housing allows you to lock the plunger at a set depth for repeated operations and prevents the mechanism from coming out of the housing. Plunger is made from 1038 steel providing a tensile strength of 90 to 95 KSI. These can be heat treated for greater strength as specials. The housing is made from 12L15 steel for welding to fixture. The plunger and hex are zinc plated.

Part #	A	B	C	D	E	F	G	Adjustment
CP-C25P	1/4	9/16	3/4	1-1/8	1/2	1-1/8	2-1/4	5/8
CP-C100P	3/8	9/16	3/4	1-1/8	1/2	1-1/8	2-1/4	5/8
CP-C200P	1/2	9/16	3/4	1-1/8	1/2	1-1/8	2-1/4	5/8

PULL PINS



These spring loaded pull pins allow you to quickly retract and engage the plunger for locating, fastening and quick change operations. They consist of two parts which include a housing (barrel) and a plunger assembly. The plunger assembly screws into the housing. The housing is designed to be welded into place for strength. Pulling on the handle of the plunger assembly retracts the plunger into the housing. Releasing the handle allows the spring loaded plunger to extend. The lockout style allows you to pull and rotate the handle 1/4 turn to hold the plunger in the retracted position. The style without handles feature a 3/8-16 threaded end so the user can add a different handle or other method of actuation. The zinc plated steel plunger assemblies are made from C1038 steel on all sizes except the 5/8 which is made from 12L15 steel. The steel housing is made from 12L15 steel for welding to the fixture and is not plated. The aluminum housings are made from 6061-T6. The stainless steel models (plunger assembly and housing) are made from 303 stainless steel. Pull up force is approximately 5 lbs. Handles are made from black plastic.

T-HANDLE - NON-LOCKING

Steel Plunger Steel Housing Part #	Steel Plunger Alum Housing Part #	SS Plunger SS Housing Part #	+0.002 -.004 A	B	C	+0.000 -.005 D	E	F	G
CP-K25T	CP-K25TAL	—	1/4	9/16	1-1/2	1.000	3/16	1-7/16	2-1/4
CP-K100T	CP-K100TAL	CP-K100TSS	3/8	9/16	1-1/2	1.000	3/16	1-7/16	2-1/4
CP-K200T	CP-K200TAL	CP-K200TSS	1/2	9/16	1-1/2	1.000	3/16	1-7/16	2-1/4
CP-K320T	CP-K320TAL	CP-K320TSS	1/2	9/16	2-1/4	1.000	3/16	1-7/16	2-1/4
CP-K420T	CP-K420TAL	—	5/8	9/16	2-1/4	1.000	3/16	1-7/16	2-1/4

T-HANDLE - WITH LOCKOUT

Steel Plunger Steel Housing Part #	Steel Plunger Alum Housing Part #	SS Plunger SS Housing Part #	+0.002 -.004 A	B	C	+0.000 -.005 D	E	F	G
CP-K25TLO	CP-K25TLOAL	—	1/4	9/16	1-1/2	1.000	3/16	1-7/16	2-1/4
CP-K100TLO	CP-K100TLOAL	CP-K100TLOSS	3/8	9/16	1-1/2	1.000	3/16	1-7/16	2-1/4
CP-K200TLO	CP-K200TLOAL	CP-K200TLOSS	1/2	9/16	1-1/2	1.000	3/16	1-7/16	2-1/4
CP-K320TLO	CP-K320TLOAL	CP-K320TLOSS	1/2	9/16	2-1/4	1.000	3/16	1-7/16	2-1/4
CP-K420TLO	CP-K420TLOAL	—	5/8	9/16	2-1/4	1.000	3/16	1-7/16	2-1/4

ROUND HANDLE - NON-LOCKING

Steel Plunger Steel Housing Part #	Steel Plunger Alum Housing Part #	SS Plunger SS Housing Part #	+0.002 -.004 A	B	C	+0.000 -.005 D	E	F
CP-K25R	CP-K25RAL	—	1/4	9/16	1-1/2	1.000	3/16	1-3/8
CP-K100R	CP-K100RAL	CP-K100RSS	3/8	9/16	1-1/2	1.000	3/16	1-3/8
CP-K200R	CP-K200RAL	CP-K200RSS	1/2	9/16	1-1/2	1.000	3/16	1-3/8
CP-K320R	CP-K320RAL	CP-K320RSS	1/2	9/16	2-1/4	1.000	3/16	1-3/8
CP-K420R	CP-K420RAL	—	5/8	9/16	2-1/4	1.000	3/16	1-3/8

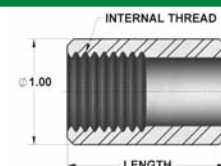
ROUND HANDLE - WITH LOCKOUT

Steel Plunger Steel Housing Part #	Steel Plunger Alum Housing Part #	SS Plunger SS Housing Part #	+0.002 -.004 A	B	C	+0.000 -.005 D	E	F
CP-K25RLO	CP-K25RLOAL	—	1/4	9/16	1-1/2	1.000	3/16	1-3/8
CP-K100RLO	CP-K100RLOAL	CP-K100RLOSS	3/8	9/16	1-1/2	1.000	3/16	1-3/8
CP-K200RLO	CP-K200RLOAL	CP-K200RLOSS	1/2	9/16	1-1/2	1.000	3/16	1-3/8
CP-K320RLO	CP-K320RLOAL	CP-K320RLOSS	1/2	9/16	2-1/4	1.000	3/16	1-3/8
CP-K420RLO	CP-K420RLOAL	—	5/8	9/16	2-1/4	1.000	3/16	1-3/8

THREADED END - NON-LOCKING

Steel Plunger Steel Housing Part #	Steel Plunger Alum Housing Part #	SS Plunger SS Housing Part #	+0.002 -.004 A	B	C	+0.000 -.005 D	E
CP-K25NK	CP-K25NKAL	—	1/4	9/16	1-1/2	1.000	3/16
CP-K100NK	CP-K100NKAL	CP-K100NKSS	3/8	9/16	1-1/2	1.000	3/16
CP-K200NK	CP-K200NKAL	CP-K200NKSS	1/2	9/16	1-1/2	1.000	3/16
CP-K320NK	CP-K320NKAL	CP-K320NKSS	1/2	9/16	2-1/4	1.000	3/16
CP-K420NK	CP-K420NKAL	—	5/8	9/16	2-1/4	1.000	3/16

HOUSINGS ONLY



Steel Housing Part #	Alum Housing Part #	SS Housing Part #	Internal Thread	Length
CP-K102-BO	CP-K102AL-BO	CP-K102SS-BO	3/4-10	1-1/2
CP-K102L-BO	CP-K102LAL-BO	CP-K102LSS-BO	3/4-10	2-1/4