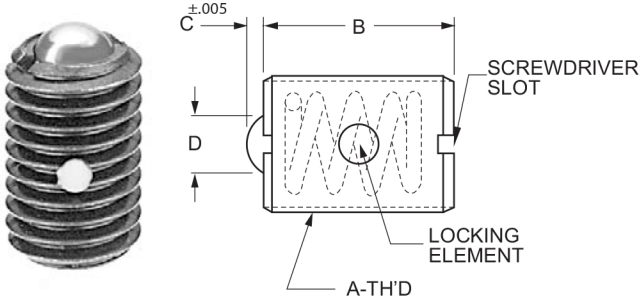


BALL PLUNGERS

Black is for standard end pressure,
Silver is for light end pressure
Gold is for heavy end pressure.

For Metric sizes,

White is for light end pressure,
Green is for medium end pressure
Yellow is for heavy end pressure.



BALL PLUNGERS						
Delrin Ball Nose - With Thread Locking Element						
P/N	COLOR CODE	DIMENSIONS				END PRESSURE (LBS.)
		A	B	C	D	
109-02D	Plain	4-48	.187	.020	.062	1/2
109-04D	Plain	5-40	.250	.020	.062	3/4
109-06D	Plain	6-40	.312	.023	.078	1
109-08D	Plain	8-36	.344	.025	.093	1-1/4
109-09D	Plain	8-32	.344	.025	.093	1-1/4
109-10D	Black	10-32	.513	.025	.093	3
109-12D	Silver	10-32	.513	.025	.093	1-1/2
109-14D	Gold	10-32	.513	.025	.093	5
109-16D	Black	1/4-20	.531	.035	.125	7
109-18D	Silver	1/4-20	.531	.035	.125	4
109-20D	Gold	1/4-20	.531	.035	.125	12
109-22D	Black	5/16-18	.578	.040	.156	9
109-24D	Silver	5/16-18	.578	.040	.156	4-1/2
109-26D	Gold	5/16-18	.578	.040	.156	17
109-28D	Black	3/8-16	.625	.048	.187	10
109-30D	Silver	3/8-16	.625	.048	.187	5
109-32D	Gold	3/8-16	.625	.048	.187	21
109-34D	Black	1/2-13	.750	.072	.281	12
109-36D	Silver	1/2-13	.750	.072	.281	6
109-38D	Gold	1/2-13	.750	.072	.281	30
109-40D	Black	5/8-11	.984	.096	.375	18
109-42D	Silver	5/8-11	.984	.096	.375	9
109-44D	Gold	5/8-11	.984	.096	.375	50

METRIC BALL PLUNGERS						
Stainless Steel Ball Nose - With Thread Locking Element						
P/N	COLOR CODE	DIMENSIONS				END PRESSURE (KG)
		A	B	C	D	
109-50	Green	M4 x 0.70	9.00	0.60	2.36	.50
109-51	White	M5 x 0.80	13.00	0.60	2.36	.70
109-52	Green	M5 x 0.80	13.00	0.60	2.36	1.35
109-53	Yellow	M5 x 0.80	13.00	0.60	2.36	2.25
109-54	White	M6 x 1.00	13.50	0.90	3.20	1.80
109-55	Green	M6 x 1.00	13.50	0.90	3.20	3.15
109-56	Yellow	M6 x 1.00	13.50	0.90	3.20	5.40
109-57	White	M8 x 1.25	15.00	1.00	3.96	2.00
109-58	Green	M8 x 1.25	15.00	1.00	3.96	4.00
109-59	Yellow	M8 x 1.25	15.00	1.00	3.96	7.65
109-60	White	M10 x 1.50	16.00	1.20	4.75	2.25
109-61	Green	M10 x 1.50	16.00	1.20	4.75	4.50
109-62	Yellow	M10 x 1.50	16.00	1.20	4.75	9.50
109-63	White	M12 x 1.75	19.00	2.00	7.14	2.70
109-64	Green	M12 x 1.75	19.00	2.00	7.14	5.40
109-65	Yellow	M12 x 1.75	19.00	2.00	7.14	13.50

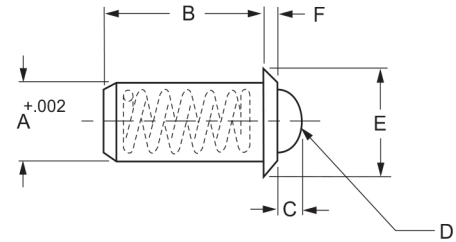
METRIC BALL PLUNGERS						
Delrin Ball Nose - With Thread Locking Element						
P/N	COLOR CODE	DIMENSIONS				END PRESSURE (KG)
		A	B	C	D	
109-50D	Green	M4 x 0.70	9.00	0.60	2.36	.50
109-51D	White	M5 x 0.80	13.00	0.60	2.36	.70
109-52D	Green	M5 x 0.80	13.00	0.60	2.36	1.35
109-53D	Yellow	M5 x 0.80	13.00	0.60	2.36	2.25
109-54D	White	M6 x 1.00	13.50	0.90	3.20	1.80
109-55D	Green	M6 x 1.00	13.50	0.90	3.20	3.15
109-56D	Yellow	M6 x 1.00	13.50	0.90	3.20	5.40
109-57D	White	M8 x 1.25	15.00	1.00	3.96	2.00
109-58D	Green	M8 x 1.25	15.00	1.00	3.96	4.00
109-59D	Yellow	M8 x 1.25	15.00	1.00	3.96	7.65
109-60D	White	M10 x 1.50	16.00	1.20	4.75	2.25
109-61D	Green	M10 x 1.50	16.00	1.20	4.75	4.50
109-62D	Yellow	M10 x 1.50	16.00	1.20	4.75	9.50
109-63D	White	M12 x 1.75	19.00	2.00	7.14	2.70
109-64D	Green	M12 x 1.75	19.00	2.00	7.14	5.40
109-65D	Yellow	M12 x 1.75	19.00	2.00	7.14	13.50

BALL PLUNGERS

STAINLESS STEEL BALL PLUNGERS						
Stainless Steel Ball Nose - With Thread Locking Element						
P/N	COLOR CODE	DIMENSIONS				END PRESSURE (LBS.)
		A	B	C	D	
110-05	Plain	4-48	.187	.020	.062	1/2
110-10	Plain	5-40	.250	.020	.062	3/4
110-15	Plain	6-40	.312	.023	.078	1
110-20	Plain	8-36	.344	.025	.093	1-1/4
110-22	Plain	8-32	.344	.025	.093	1-1/4
110-24	Black	10-32	.513	.025	.093	3
110-25	Silver	10-32	.513	.025	.093	1-1/2
110-26	Gold	10-32	.513	.025	.093	5
110-29	Black	1/4-20	.531	.035	.125	7
110-30	Silver	1/4-20	.531	.035	.125	4
110-31	Gold	1/4-20	.531	.035	.125	12
110-34	Black	5/16-18	.578	.040	.156	9
110-35	Silver	5/16-18	.578	.040	.156	4-1/2
110-36	Gold	5/16-18	.578	.040	.156	17
110-39	Black	3/8-16	.625	.048	.187	10
110-40	Silver	3/8-16	.625	.048	.187	5
110-41	Gold	3/8-16	.625	.048	.187	21
110-44	Black	1/2-13	.750	.072	.281	12
110-45	Silver	1/2-13	.750	.072	.281	6
110-46	Gold	1/2-13	.750	.072	.281	30
110-49	Black	5/8-11	.984	.096	.375	18
110-50	Silver	5/8-11	.984	.096	.375	9
110-51	Gold	5/8-11	.984	.096	.375	50

STAINLESS STEEL BALL PLUNGERS						
Delrin Ball Nose - With Thread Locking Element						
P/N	COLOR CODE	DIMENSIONS				END PRESSURE (LBS.)
		A	B	C	D	
110-05D	Plain	4-48	.187	.020	.062	1/2
110-10D	Plain	5-40	.250	.020	.062	3/4
110-15D	Plain	6-40	.312	.023	.078	1
110-20D	Plain	8-36	.344	.025	.093	1-1/4
110-22D	Plain	8-32	.344	.025	.093	1-1/4
110-24D	Black	10-32	.513	.025	.093	3
110-25D	Silver	10-32	.513	.025	.093	1-1/2
110-26D	Gold	10-32	.513	.025	.093	5
110-29D	Black	1/4-20	.531	.035	.125	7
110-30D	Silver	1/4-20	.531	.035	.125	4
110-31D	Gold	1/4-20	.531	.035	.125	12
110-34D	Black	5/16-18	.578	.040	.156	9
110-35D	Silver	5/16-18	.578	.040	.156	4-1/2
110-36D	Gold	5/16-18	.578	.040	.156	17
110-39D	Black	3/8-16	.625	.048	.187	10
110-40D	Silver	3/8-16	.625	.048	.187	5
110-41D	Gold	3/8-16	.625	.048	.187	21
110-44D	Black	1/2-13	.750	.072	.281	12
110-45D	Silver	1/2-13	.750	.072	.281	6
110-46D	Gold	1/2-13	.750	.072	.281	30
110-49D	Black	5/8-11	.984	.096	.375	18
110-50D	Silver	5/8-11	.984	.096	.375	9
110-51D	Gold	5/8-11	.984	.096	.375	50

This is an economical ball plunger ideal for easy installation for use in wood, soft plastic or aluminum. Press Fit Ball Plungers can be used when a threaded ball plunger is impractical or when threaded adjustments are not required for detent.



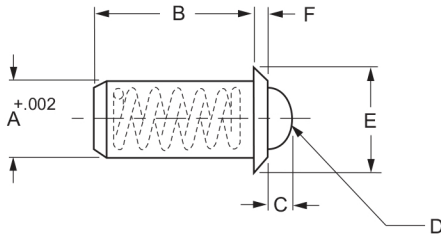
PRESS FIT BALL PLUNGERS								
Stainless Steel Nose - Light End Pressure - White End Color - Black Oxide Finish								
P/N	DIMENSIONS						END PRESSURE (LBS.)	
	A	B	C	D	E	F	STARTING COMP.	FULLY COMP.
110-59A	.125	.252	.035	.093	.187	.032	0.5	1.0
110-60	.188	.405	.058	.156	.250	.035	1.0	2.5
110-61	.250	.481	.070	.187	.312	.044	1.5	3.5
110-61A	.312	.643	.090	.250	.375	.045	2.0	5.0
110-62	.375	.785	.110	.312	.500	.078	2.5	7.0
110-63	.500	1.130	.161	.437	.688	.088	4.0	9.0

STAINLESS STEEL PRESS FIT BALL PLUNGERS								
Stainless Steel Nose - Light End Pressure - White End Color								
P/N	DIMENSIONS						END PRESSURE (LBS.)	
	A	B	C	D	E	F	STARTING COMP.	FULLY COMP.
110-59AS	.125	.252	.035	.093	.187	.032	0.5	1.0
110-60S	.188	.405	.058	.156	.250	.035	1.0	2.5
110-61S	.250	.481	.070	.187	.312	.044	1.5	3.5
110-61AS	.312	.643	.090	.250	.375	.045	2.0	5.0
110-62S	.375	.785	.110	.312	.500	.078	2.5	7.0
110-63S	.500	1.130	.161	.437	.688	.088	4.00	9.0

PRESS FIT BALL PLUNGERS								
White Delrin Nose - Light End Pressure - White End Color - Black Oxide Finish								
P/N	DIMENSIONS						END PRESSURE (LBS.)	
	A	B	C	D	E	F	STARTING COMP.	FULLY COMP.
110-74	.125	.252	.035	.093	.187	.032	0.5	1.0
110-76	.188	.405	.058	.156	.250	.035	1.0	2.5
110-76	.250	.481	.070	.187	.312	.044	1.5	3.5
110-76A	.312	.643	.090	.250	.375	.045	2.0	5.0
110-77	.375	.785	.110	.312	.500	.078	2.5	7.0
110-78	.500	1.130	.161	.437	.688	.088	4.0	9.0

STAINLESS STEEL PRESS FIT BALL PLUNGERS								
White Delrin Nose - Light End Pressure - White End Color								
P/N	DIMENSIONS						END PRESSURE (LBS.)	
	A	B	C	D	E	F	STARTING COMP.	FULLY COMP.
110-74S	.125	.252	.035	.093	.187	.032	0.5	1.0
110-76S	.188	.405	.058	.156	.250	.035	1.0	2.5
110-76S	.250	.481	.070	.187	.312	.044	1.5	3.5
110-76AS	.312	.643	.090	.250	.375	.045	2.0	5.0
110-77S	.375	.785	.110	.312	.500	.078	2.5	7.0
110-78S	.500	1.130	.161	.437	.688	.088	4.0	9.0

BALL PLUNGERS



PRESS FIT BALL PLUNGERS Stainless Steel Nose - Medium End Pressure No End Color - Black Oxide Finish								
P/N	DIMENSIONS						END PRESSURE (LBS.)	
	A	B	C	D	E	F	STARTING COMP.	FULLY COMP.
110-63A	.125	.252	.035	.093	.187	.032	0.75	2.5
110-64	.188	.405	.058	.156	.250	.035	2.00	5.0
110-65	.250	.481	.070	.187	.312	.044	3.00	7.0
110-65A	.312	.643	.090	.250	.375	.045	4.00	1.00
110-66	.375	.785	.110	.312	.500	.078	5.00	14.0
110-67	.500	1.130	.161	.437	.688	.088	8.00	18.0

STAINLESS STEEL PRESS FIT BALL PLUNGERS Stainless Steel Nose - Medium End Pressure No End Color								
P/N	DIMENSIONS						END PRESSURE (LBS.)	
	A	B	C	D	E	F	STARTING COMP.	FULLY COMP.
110-63AS	.125	.252	.035	.093	.187	.032	0.75	2.5
110-64S	.188	.405	.058	.156	.250	.035	2.00	5.0
110-65S	.250	.481	.070	.187	.312	.044	3.00	7.0
110-65AS	.312	.643	.090	.250	.375	.045	4.00	1.00
110-66S	.375	.785	.110	.312	.500	.078	5.00	14.0
110-67S	.500	1.130	.161	.437	.688	.088	8.00	18.0

PRESS FIT BALL PLUNGERS White Delrin Nose - Medium End Pressure No End Color - Black Oxide Finish								
P/N	DIMENSIONS						END PRESSURE (LBS.)	
	A	B	C	D	E	F	STARTING COMP.	FULLY COMP.
110-69	.125	.252	.035	.093	.187	.032	0.75	2.5
110-70	.188	.405	.058	.156	.250	.035	2.00	5.0
110-71	.250	.481	.070	.187	.312	.044	3.00	7.0
110-71A	.312	.643	.090	.250	.375	.045	4.00	1.00
110-72	.375	.785	.110	.312	.500	.078	5.00	14.0
110-73	.500	1.130	.161	.437	.688	.088	8.00	18.0

STAINLESS STEEL PRESS FIT BALL PLUNGERS White Delrin Nose - Medium End Pressure No End Color								
P/N	DIMENSIONS						END PRESSURE (LBS.)	
	A	B	C	D	E	F	STARTING COMP.	FULLY COMP.
110-69S	.125	.252	.035	.093	.187	.032	0.75	2.5
110-70S	.188	.405	.058	.156	.250	.035	2.00	5.0
110-71S	.250	.481	.070	.187	.312	.044	3.00	7.0
110-71AS	.312	.643	.090	.250	.375	.045	4.00	10.0
110-72S	.375	.785	.110	.312	.500	.078	5.00	14.0
110-73S	.500	1.130	.161	.437	.688	.088	8.00	18.0

PRESS FIT BALL PLUNGERS Stainless Steel Nose - Heavy End Pressure Yellow End Color - Black Oxide Finish								
P/N	DIMENSIONS						END PRESSURE (LBS.)	
	A	B	C	D	E	F	STARTING COMP.	FULLY COMP.
110-54	.125	.252	.035	.093	.187	.032	2	5
110-55	.188	.405	.058	.156	.250	.035	4	10
110-56	.250	.481	.070	.187	.312	.044	6	13
110-56A	.312	.643	.090	.250	.375	.045	8	16
110-57	.375	.785	.110	.312	.500	.078	10	18
110-58	.500	1.130	.161	.437	.688	.088	12	23

STAINLESS STEEL PRESS FIT BALL PLUNGERS Stainless Steel Nose - Heavy End Pressure - Yellow End Color								
P/N	DIMENSIONS						END PRESSURE (LBS.)	
	A	B	C	D	E	F	STARTING COMP.	FULLY COMP.
110-54S	.125	.252	.035	.093	.178	.032	2	5
110-55S	.188	.405	.058	.156	.250	.035	4	10
110-56S	.250	.481	.070	.187	.312	.044	6	13
110-56AS	.312	.643	.090	.250	.375	.045	8	16
110-57S	.375	.785	.110	.312	.500	.078	10	18
110-58S	.500	1.130	.161	.437	.688	.088	12	23

PRESS FIT BALL PLUNGERS White Delrin Nose - Heavy End Pressure Yellow End Color - Black Oxide Finish								
P/N	DIMENSIONS						END PRESSURE (LBS.)	
	A	B	C	D	E	F	STARTING COMP.	FULLY COMP.
110-84	.125	.252	.035	.093	.178	.032	2	5
110-85	.188	.405	.058	.156	.250	.035	4	10
110-86	.250	.481	.070	.187	.312	.044	6	13
110-86A	.312	.643	.090	.250	.375	.045	8	16
110-87	.375	.785	.110	.312	.500	.078	10	18
110-88	.500	1.130	.161	.437	.688	.088	12	23

STAINLESS STEEL PRESS FIT BALL PLUNGERS White Delrin Nose - Heavy End Pressure Yellow End Color								
P/N	DIMENSIONS						END PRESSURE (LBS.)	
	A	B	C	D	E	F	STARTING COMP.	FULLY COMP.
110-84S	.125	.252	.035	.093	.187	.032	2	5
110-85S	.188	.405	.058	.156	.250	.035	4	10
110-86S	.250	.481	.070	.187	.312	.044	6	13
110-86AS	.312	.643	.090	.250	.375	.045	8	16
110-87S	.375	.785	.110	.312	.500	.078	10	18
110-88S	.500	1.130	.161	.437	.688	.088	12	23

SPRING & BALL PLUNGERS

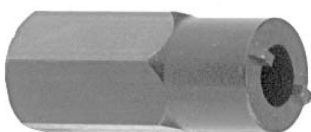
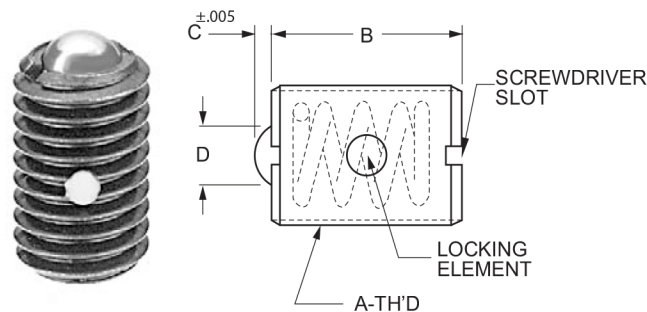
Plunger Wrenches makes it easy to install or remove spring or ball plungers. They also prevent possible spring damage that can result when a screwdriver is used on the plunger end.



SPRING AND BALL PLUNGERS	
P/N	PLUNGER SIZE
108-10	#8
108-15	#10
108-20	1/4
108-25	5/16
108-30	3/8
108-35	1/2
108-40	5/8
108-45	3/4
108-50	1

Ball Plungers are used for many locating applications in dies, jigs, fixtures and other tooling. They are also used in indexing automatic feed devices, for gear shifters, as locators in progressive dies, in torque-limiting clutches, for positioning levers, in gauges anywhere you need controlled end pressure. They are also used with detents where predetermined positioning is required. Ball plungers are furnished in three end pressures and are color-coded for easy identification. For Standard Measurements, **Black** is for standard end pressure, **Silver** is for light end pressure and **Gold** is for heavy end pressure. For Metric sizes, **White** is for light end pressure, **Green** is for medium end pressure and **Yellow** is for heavy end pressure.

Special Ball Plungers are made to your specifications will be priced upon request.



SPRING AND BALL PLUNGERS	
P/N	PLUNGER SIZE
108-75	#6
108-76	#8 and M4
108-77	#10 and M5
108-78	1/4 and M6
108-79	5/16 and M8
108-80	3/8 and M10
108-81	1/2 and M12
108-82	5/8
108-83	3/4
108-84	1

SPRING PLUNGERS						
Stainless Steel Ball Nose - With Thread Locking Element						
P/N	COLOR CODE	DIMENSIONS				END PRESSURE (LBS.)
		A	B	C	D	
109-02	Plain	4-48	.187	.020	.062	1/2
109-04	Plain	5-40	.250	.020	.062	3/4
109-06	Plain	6-40	.312	.023	.078	1
109-08	Plain	8-36	.344	.025	.093	1-1/4
109-09	Plain	8-32	.344	.025	.093	1-1/4
109-10	Black	10-32	.513	.025	.093	3
109-12	Silver	10-32	.513	.025	.093	1-1/2
109-14	Gold	10-32	.513	.025	.093	5
109-16	Black	1/4-20	.531	.035	.125	7
109-18	Silver	1/4-20	.531	.035	.125	4
109-20	Gold	1/4-20	.531	.035	.125	12
109-22	Black	5/16-18	.578	.040	.156	9
109-24	Silver	5/16-18	.578	.040	.156	4-1/2
109-26	Gold	5/16-18	.578	.040	.156	17
109-28	Black	3/8-16	.625	.048	.187	10
109-30	Silver	3/8-16	.625	.048	.187	5
109-32	Gold	3/8-16	.625	.048	.187	21
109-34	Black	1/2-13	.750	.072	.281	12
109-36	Silver	1/2-13	.750	.072	.281	6
109-38	Gold	1/2-13	.750	.072	.281	30
109-40	Black	5/8-11	.984	.096	.375	18
109-42	Silver	5/8-11	.984	.096	.375	9
109-44	Gold	5/8-11	.984	.096	.375	50