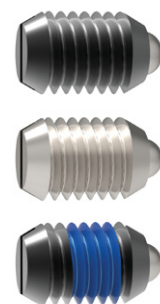
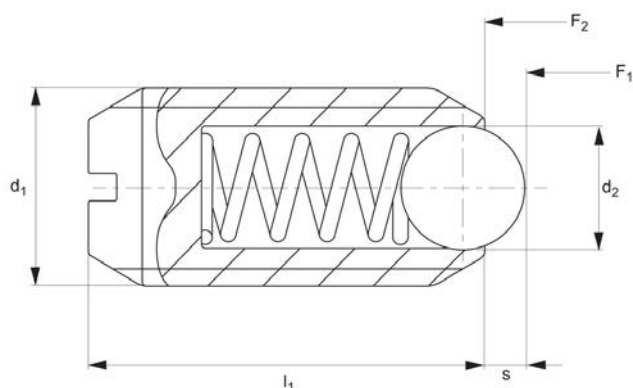




Spring Plungers - IMPERIAL

with ball and slot

Spring Plungers



3B100

SPRING PLUNGERS

Material

Free cutting steel type-

Body: free cutting steel, blackened.

Ball: ball bearing steel 1.3505 (100Cr6) hardened.

Spring: stainless steel.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).

Ball: ball bearing steel, hardened.

Spring: stainless steel.

Technical Notes

To be used as detents or for locating, posi-

tioning, indexing, locking, latching, ejecting, lifting off and other similar push application.

Temperature range for execution without thread up to 482°F.

Thread lock - Polyamide spot coating.

Tips

Light spring load - marked with one line.

Standard spring load - no marking.

Heavy spring load - marked with two lines.

Special types available on request.

Important Notes

Spring loads are statistical average values

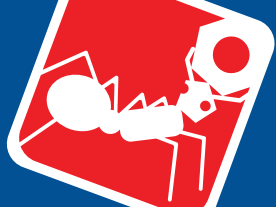
All dimensions are in inches

Thread: 2A-UNC/UNF.

Order No.	Type	Finish	Spring load	d ₁ UNC/UNF	l ₁ ≈	s	d ₂	Spring load f ₁ lb ≈	Spring load f ₂ lb ≈	Weight oz
3B100.W0010	w/o Threadlock	Steel	Light	UNF 10-32	33/64	0.025	3/32	0.9	1.5	0.049
3B100.W0012	w/o Threadlock	Steel	Light	UNC 1/4-20	17/32	0.035	1/8	2.1	4.0	0.074
3B100.W0016	w/o Threadlock	Steel	Light	UNC 5/16-18	37/64	0.040	5/32	2.0	4.6	0.123
3B100.W0018	w/o Threadlock	Steel	Light	UNC 3/8-16	5/8	0.048	3/16	2.5	5.0	0.193
3B100.W0020	w/o Threadlock	Steel	Light	UNC 1/2-13	3/4	0.072	9/32	3.0	6.0	0.397
3B100.W0022	w/o Threadlock	Steel	Light	UNC 5/8-11	63/64	0.096	3/8	4.5	9.0	0.787
3B100.W0031	w/o Threadlock	Steel	Standard	UNF 4-48	3/16	0.020	1/16	0.1	0.5	0.008
3B100.W0032	w/o Threadlock	Steel	Standard	UNC 5-40	1/4	0.020	1/16	0.3	0.8	0.016
3B100.W0033	w/o Threadlock	Steel	Standard	UNC 6-32	5/16	0.023	5/64	0.5	1.0	0.020
3B100.W0035	w/o Threadlock	Steel	Standard	UNF 6-40	5/16	0.023	5/64	0.5	1.0	0.020
3B100.W0036	w/o Threadlock	Steel	Standard	UNC 8-32	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0038	w/o Threadlock	Steel	Standard	UNF 8-36	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0040	w/o Threadlock	Steel	Standard	UNF 10-32	33/64	0.025	3/32	2.0	3.1	0.049
3B100.W0042	w/o Threadlock	Steel	Standard	UNC 1/4-20	17/32	0.035	1/8	3.8	6.8	0.073
3B100.W0046	w/o Threadlock	Steel	Standard	UNC 5/16-18	37/64	0.040	5/32	4.0	8.4	0.123
3B100.W0048	w/o Threadlock	Steel	Standard	UNC 3/8-16	5/8	0.048	3/16	5.0	10.3	0.198
3B100.W0050	w/o Threadlock	Steel	Standard	UNC 1/2-13	3/4	0.072	9/32	6.0	12.0	0.406
3B100.W0052	w/o Threadlock	Steel	Standard	UNC 5/8-11	63/64	0.096	3/8	9.0	18.0	0.811
3B100.W0070	w/o Threadlock	Steel	Heavy	UNF 10-32	33/64	0.025	3/32	3.3	4.8	0.049
3B100.W0072	w/o Threadlock	Steel	Heavy	UNC 1/4-20	17/32	0.035	1/8	5.6	8.6	0.073
3B100.W0076	w/o Threadlock	Steel	Heavy	UNC 5/16-18	37/64	0.040	5/32	6.0	11.1	0.122
3B100.W0078	w/o Threadlock	Steel	Heavy	UNC 3/8-16	5/8	0.048	3/16	7.5	15.1	0.196
3B100.W0080	w/o Threadlock	Steel	Heavy	UNC 1/2-13	3/4	0.072	9/32	6.0	24.0	0.408



Order No.	Type	Finish	Spring load	d ₁ UNC/UNF	l ₁ ≈	s	d ₂	Spring load f ₁ lb ≈	Spring load f ₂ lb ≈	Weight oz
3B100.W0082	w/o Threadlock	Steel	Heavy	UNC 5/8-11	63/64	0.096	3/8	7.0	40.0	0.825
3B100.W0110	w/o Threadlock	Stainless	Light	UNF 10-32	33/64	0.025	3/32	0.9	1.5	0.048
3B100.W0112	w/o Threadlock	Stainless	Light	UNC 1/4-20	17/32	0.035	1/8	2.1	4.0	0.071
3B100.W0116	w/o Threadlock	Stainless	Light	UNC 5/16-18	37/64	0.040	5/32	2.0	4.6	0.123
3B100.W0118	w/o Threadlock	Stainless	Light	UNC 3/8-16	5/8	0.048	3/16	2.5	5.0	0.190
3B100.W0120	w/o Threadlock	Stainless	Light	UNC 1/2-13	3/4	0.072	9/32	3.0	6.0	0.397
3B100.W0122	w/o Threadlock	Stainless	Light	UNC 5/8-11	63/64	0.096	3/8	4.5	9.0	0.790
3B100.W0131	w/o Threadlock	Stainless	Standard	UNF 4-48	3/16	0.020	1/16	0.1	0.5	0.005
3B100.W0132	w/o Threadlock	Stainless	Standard	UNC 5-40	1/4	0.020	1/16	0.3	0.8	0.015
3B100.W0133	w/o Threadlock	Stainless	Standard	UNC 6-32	5/16	0.023	5/64	0.5	1.0	0.018
3B100.W0135	w/o Threadlock	Stainless	Standard	UNF 6-40	5/16	0.023	5/64	0.5	1.0	0.019
3B100.W0136	w/o Threadlock	Stainless	Standard	UNC 8-32	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0138	w/o Threadlock	Stainless	Standard	UNF 8-36	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0140	w/o Threadlock	Stainless	Standard	UNF 10-32	33/64	0.025	3/32	2.0	3.1	0.049
3B100.W0142	w/o Threadlock	Stainless	Standard	UNC 1/4-20	17/32	0.035	1/8	3.8	6.8	0.072
3B100.W0146	w/o Threadlock	Stainless	Standard	UNC 5/16-18	37/64	0.040	5/32	4.0	8.4	0.123
3B100.W0148	w/o Threadlock	Stainless	Standard	UNC 3/8-16	5/8	0.048	3/16	5.0	10.3	0.198
3B100.W0150	w/o Threadlock	Stainless	Standard	UNC 1/2-13	3/4	0.072	9/32	6.0	12.0	0.396
3B100.W0152	w/o Threadlock	Stainless	Standard	UNC 5/8-11	63/64	0.096	3/8	9.0	18.0	0.813
3B100.W0170	w/o Threadlock	Stainless	Heavy	UNF 10-32	33/64	0.025	3/32	3.3	4.8	0.046
3B100.W0172	w/o Threadlock	Stainless	Heavy	UNC 1/4-20	17/32	0.35	1/8	5.6	8.6	0.074
3B100.W0176	w/o Threadlock	Stainless	Heavy	UNC 5/16-18	37/64	0.040	5/32	6.0	11.1	0.123
3B100.W0178	w/o Threadlock	Stainless	Heavy	UNC 3/8-16	5/8	0.048	3/16	7.5	15.1	0.197
3B100.W0180	w/o Threadlock	Stainless	Heavy	UNC 1/2-13	3/4	0.072	9/32	6.0	24.0	0.409
3B100.W0182	w/o Threadlock	Stainless	Heavy	UNC 5/8-11	63/64	0.096	3/8	7.0	40.0	0.825
3B100.W0210	With Threadlock	Steel	Light	UNF 10-32	33/64	0.025	3/32	0.9	1.5	0.049
3B100.W0212	With Threadlock	Steel	Light	UNC 1/4-20	17/32	0.035	1/8	2.1	4.0	0.074
3B100.W0216	With Threadlock	Steel	Light	UNC 5/16-18	37/64	0.040	5/32	2.0	4.6	0.123
3B100.W0218	With Threadlock	Steel	Light	UNC 3/8-16	5/8	0.048	3/16	2.5	5.0	0.193
3B100.W0220	With Threadlock	Steel	Light	UNC 1/2-13	3/4	0.072	9/32	3.0	6.0	0.397
3B100.W0222	With Threadlock	Steel	Light	UNC 5/8-11	63/64	0.096	3/8	4.5	9.0	0.787
3B100.W0231	With Threadlock	Steel	Standard	UNF 4-48	3/16	0.020	1/16	0.1	0.5	0.008
3B100.W0232	With Threadlock	Steel	Standard	UNC 5-40	1/4	0.020	1/16	0.3	0.8	0.016
3B100.W0233	With Threadlock	Steel	Standard	UNC 6-32	5/16	0.023	5/64	0.5	1.0	0.020
3B100.W0235	With Threadlock	Steel	Standard	UNF 6-40	5/16	0.023	5/64	0.5	1.0	0.020
3B100.W0236	With Threadlock	Steel	Standard	UNC 8-32	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0238	With Threadlock	Steel	Standard	UNF 8-36	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0240	With Threadlock	Steel	Standard	UNF 10-32	33/64	0.025	3/32	2.0	3.1	0.049
3B100.W0242	With Threadlock	Steel	Standard	UNC 1/4-20	17/32	0.035	1/8	3.8	6.8	0.073
3B100.W0246	With Threadlock	Steel	Standard	UNC 5/16-18	37/64	0.040	5/32	4.0	8.4	0.123
3B100.W0248	With Threadlock	Steel	Standard	UNC 3/8-16	5/8	0.048	3/16	5.0	10.3	0.198
3B100.W0250	With Threadlock	Steel	Standard	UNC 1/2-13	3/4	0.072	9/32	6.0	12.0	0.406
3B100.W0252	With Threadlock	Steel	Standard	UNC 5/8-11	63/64	0.096	3/8	9.0	18.0	0.811
3B100.W0270	With Threadlock	Steel	Heavy	UNF 10-32	33/64	0.025	3/32	3.3	4.8	0.049
3B100.W0272	With Threadlock	Steel	Heavy	UNC 1/4-20	17/32	0.035	1/8	5.6	8.6	0.073
3B100.W0276	With Threadlock	Steel	Heavy	UNC 5/16-18	37/64	0.040	5/32	6.0	11.1	0.122
3B100.W0278	With Threadlock	Steel	Heavy	UNC 3/8-16	5/8	0.048	3/16	7.5	15.1	0.196
3B100.W0280	With Threadlock	Steel	Heavy	UNC 1/2-13	3/4	0.072	9/32	6.0	24.0	0.408
3B100.W0282	With Threadlock	Steel	Heavy	UNC 5/8-11	63/64	0.096	3/8	7.0	40.0	0.825
3B100.W0310	With Threadlock	Stainless	Light	UNF 10-32	33/64	0.025	3/32	0.9	1.5	0.048
3B100.W0312	With Threadlock	Stainless	Light	UNC 1/4-20	17/32	0.035	1/8	2.1	4.0	0.071
3B100.W0316	With Threadlock	Stainless	Light	UNC 5/16-18	37/64	0.040	5/32	2.0	4.6	0.123
3B100.W0318	With Threadlock	Stainless	Light	UNC 3/8-16	5/8	0.048	3/16	2.5	5.0	0.190
3B100.W0320	With Threadlock	Stainless	Light	UNC 1/2-13	3/4	0.072	9/32	3.0	6.0	0.397
3B100.W0322	With Threadlock	Stainless	Light	UNC 5/8-11	63/64	0.096	3/8	4.5	9.0	0.790
3B100.W0331	With Threadlock	Stainless	Standard	UNF 4-48	3/16	0.020	1/16	0.1	0.5	0.005
3B100.W0332	With Threadlock	Stainless	Standard	UNC 5-40	1/4	0.020	1/16	0.3	0.8	0.015
3B100.W0333	With Threadlock	Stainless	Standard	UNC 6-32	5/16	0.023	5/64	0.5	1.0	0.018
3B100.W0335	With Threadlock	Stainless	Standard	UNF 6-40	5/16	0.023	5/64	0.5	1.0	0.019
3B100.W0336	With Threadlock	Stainless	Standard	UNC 8-32	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0338	With Threadlock	Stainless	Standard	UNF 8-36	11/32	0.025	3/32	0.8	1.3	0.026
3B100.W0340	With Threadlock	Stainless	Standard	UNF 10-32	33/64	0.025	3/32	2.0	3.1	0.035
3B100.W0342	With Threadlock	Stainless	Standard	UNC 1/4-20	17/32	0.035	1/8	3.8	6.8	0.072
3B100.W0346	With Threadlock	Stainless	Standard	UNC 5/16-18	37/64	0.040	5/32	4.0	8.4	0.123
3B100.W0348	With Threadlock	Stainless	Standard	UNC 3/8-16	5/8	0.048	3/16	5.0	10.3	0.198
3B100.W0350	With Threadlock	Stainless	Standard	UNC 1/2-13	3/4	0.072	9/32	6.0	12.0	0.396
3B100.W0352	With Threadlock	Stainless	Standard	UNC 5/8-11	63/64	0.096	3/8	9.0	18.0	0.813



Spring Plungers - IMPERIAL

with ball and slot

Spring Plungers

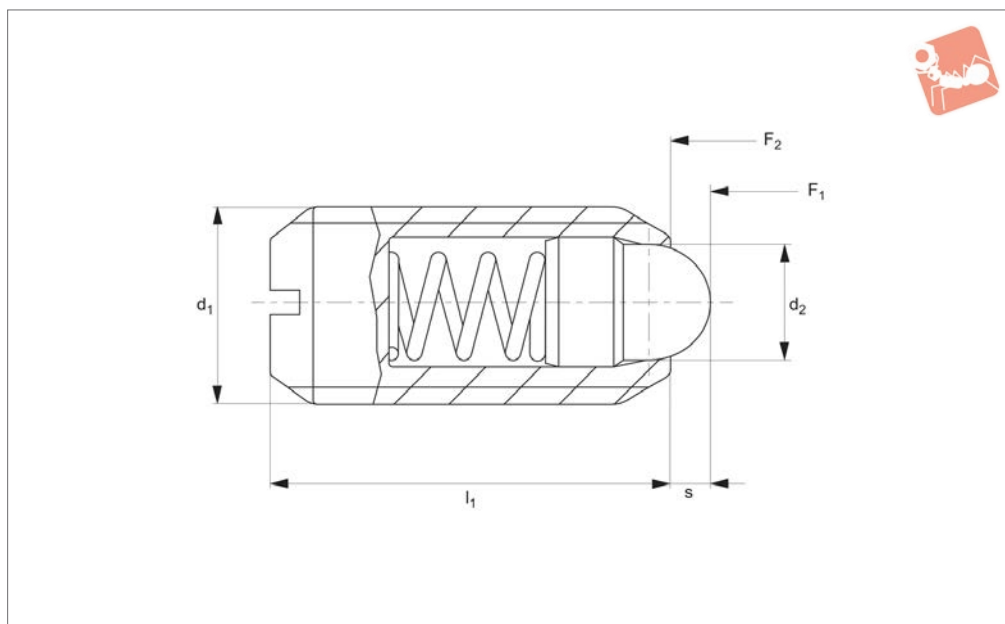


Order No.	Type	Finish	Spring load	d ₁ UNC/UNF	l ₁ ≈	s	d ₂	Spring load f ₁ lb ≈	Spring load f ₂ lb ≈	Weight oz
3B100.W0370	With Threadlock	Stainless	Heavy	UNF 10-32	33/64	0.025	3/32	3.3	4.8	0.046
3B100.W0372	With Threadlock	Stainless	Heavy	UNC 1/4-20	17/32	0.35	1/8	5.6	8.6	0.074
3B100.W0376	With Threadlock	Stainless	Heavy	UNC 5/16-18	37/64	0.040	5/32	6.0	11.1	0.123
3B100.W0378	With Threadlock	Stainless	Heavy	UNC 3/8-16	5/8	0.048	3/16	7.5	15.1	0.197
3B100.W0380	With Threadlock	Stainless	Heavy	UNC 1/2-13	3/4	0.072	9/32	6.0	24.0	0.409
3B100.W0382	With Threadlock	Stainless	Heavy	UNC 5/8-11	63/64	0.096	3/8	7.0	40.0	0.825

SPRING PLUNGERS



3B150



Material

Free cutting steel type-

Body: free cutting steel, blackened.

Pin: free cutting steel, hardened.

Spring: stainless steel.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303).

Spring: stainless steel.

Technical Notes

To be used as detents or for locating, posi-

tioning, indexing, locking, latching, ejecting, lifting off and other similar push application.

Temperature range for execution without thread up to 482°F.

Thread lock - Polyamide spot coating.

Tips

Standard spring load = no marking

Heavy spring load = marked with two lines

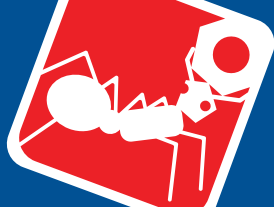
Special types available on request.

Important Notes

Spring loads are statistical average values
All dimensions are in inches

Thread: 2A-UNC/UNF.

Order No.	Material	Finish	Spring load	d ₁ UNC/UNF	l ₁ ≈	s	d ₂	Spring load f ₁ lb ≈	Spring load f ₂ lb ≈	Weight oz
3B150.W0033	Steel	w/o Threadlock	Standard	UNC 6-32	3/8	0.063	0.046	0.5	1.5	0.021
3B150.W0036	Steel	w/o Threadlock	Standard	UNC 8-32	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0038	Steel	w/o Threadlock	Standard	UNF 8-36	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0040	Steel	w/o Threadlock	Standard	UNF 10-32	15/32	0.065	0.093	1.0	2.5	0.042
3B150.W0042	Steel	w/o Threadlock	Standard	UNC 1/4-20	17/32	0.078	0.119	1.1	3.5	0.074
3B150.W0046	Steel	w/o Threadlock	Standard	UNC 5/16-18	37/64	0.084	0.135	1.0	4.0	0.123
3B150.W0048	Steel	w/o Threadlock	Standard	UNC 3/8-16	5/8	0.110	0.186	1.5	4.5	0.187
3B150.W0050	Steel	w/o Threadlock	Standard	UNC 1/2-13	3/4	0.151	0.248	1.8	5.5	0.377
3B150.W0052	Steel	w/o Threadlock	Standard	UNC 5/8-11	1 1/16	0.215	0.310	2.0	8.5	0.885
3B150.W0063	Steel	w/o Threadlock	Heavy	UNC 6-32	3/8	0.063	0.046	0.5	2.5	0.018
3B150.W0066	Steel	w/o Threadlock	Heavy	UNC 8-32	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0068	Steel	w/o Threadlock	Heavy	UNF 8-36	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0070	Steel	w/o Threadlock	Heavy	UNF 10-32	15/32	0.065	0.093	2.6	6.3	0.042
3B150.W0072	Steel	w/o Threadlock	Heavy	UNC 1/4-20	17/32	0.078	0.119	3.0	9.7	0.074
3B150.W0076	Steel	w/o Threadlock	Heavy	UNC 5/16-18	37/64	0.084	0.135	3.8	13.0	0.123
3B150.W0078	Steel	w/o Threadlock	Heavy	UNC 3/8-16	5/8	0.110	0.186	4.5	16.0	0.190
3B150.W0080	Steel	w/o Threadlock	Heavy	UNC 1/2-13	3/4	0.151	0.248	5.0	22.4	0.384
3B150.W0082	Steel	w/o Threadlock	Heavy	UNC 5/8-11	1 1/16	0.215	0.310	7.0	43.5	0.907
3B150.W0133	Stainless	w/o Threadlock	Standard	UNC 6-32	3/8	0.063	0.046	0.5	1.5	0.021
3B150.W0136	Stainless	w/o Threadlock	Standard	UNC 8-32	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0138	Stainless	w/o Threadlock	Standard	UNF 8-36	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0140	Stainless	w/o Threadlock	Standard	UNF 10-32	15/32	0.065	0.093	1.0	2.5	0.042
3B150.W0142	Stainless	w/o Threadlock	Standard	UNC 1/4-20	17/32	0.078	0.119	1.1	3.5	0.074
3B150.W0146	Stainless	w/o Threadlock	Standard	UNC 5/16-18	37/64	0.084	0.135	1.0	4.0	0.123



Spring Plungers - IMPERIAL

with round-ended pin and slot - stainless steel or

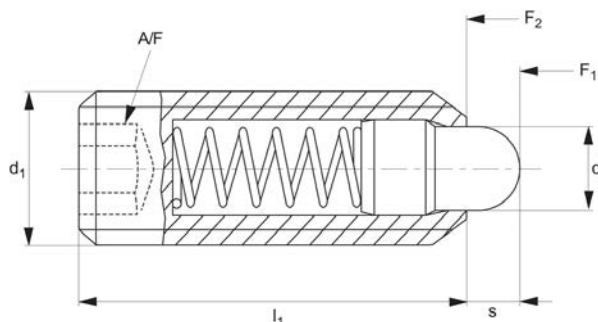
Spring Plungers



Order No.	Material	Finish	Spring load	d ₁ UNC/UNF	l ₁ ≈	s	d ₂	Spring load f ₁ lb ≈	Spring load f ₂ lb ≈	Weight oz
3B150.W0148	Stainless	w/o Threadlock	Standard	UNC 3/8-16	5/8	0.110	0.186	1.5	4.5	0.190
3B150.W0150	Stainless	w/o Threadlock	Standard	UNC 1/2-13	3/4	0.151	0.248	1.8	5.5	0.388
3B150.W0152	Stainless	w/o Threadlock	Standard	UNC 5/8-11	1 1/16	0.215	0.310	2.0	8.5	0.892
3B150.W0163	Stainless	w/o Threadlock	Heavy	UNC 6-32	3/8	0.063	0.046	0.5	2.5	0.014
3B150.W0166	Stainless	w/o Threadlock	Heavy	UNC 8-32	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0168	Stainless	w/o Threadlock	Heavy	UNF 8-36	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0170	Stainless	w/o Threadlock	Heavy	UNF 10-32	15/32	0.065	0.093	2.6	6.3	0.042
3B150.W0172	Stainless	w/o Threadlock	Heavy	UNC 1/4-20	17/32	0.078	0.119	3.0	9.7	0.071
3B150.W0176	Stainless	w/o Threadlock	Heavy	UNC 5/16-18	37/64	0.084	0.135	3.8	13.0	0.123
3B150.W0178	Stainless	w/o Threadlock	Heavy	UNC 3/8-16	5/8	0.110	0.186	4.5	16.0	0.194
3B150.W0180	Stainless	w/o Threadlock	Heavy	UNC 1/2-13	3/4	0.151	0.248	5.0	22.4	0.399
3B150.W0182	Stainless	w/o Threadlock	Heavy	UNC 5/8-11	1 1/16	0.215	0.310	7.0	43.5	0.914
3B150.W0233	Steel	With Threadlock	Standard	UNC 6-32	3/8	0.063	0.046	0.5	1.5	0.021
3B150.W0236	Steel	With Threadlock	Standard	UNC 8-32	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0238	Steel	With Threadlock	Standard	UNF 8-36	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0240	Steel	With Threadlock	Standard	UNF 10-32	15/32	0.065	0.093	1.0	2.5	0.042
3B150.W0242	Steel	With Threadlock	Standard	UNC 1/4-20	17/32	0.078	0.119	1.1	3.5	0.074
3B150.W0246	Steel	With Threadlock	Standard	UNC 5/16-18	37/64	0.084	0.135	1.0	4.0	0.123
3B150.W0248	Steel	With Threadlock	Standard	UNC 3/8-16	5/8	0.110	0.186	1.5	4.5	0.187
3B150.W0250	Steel	With Threadlock	Standard	UNC 1/2-13	3/4	0.151	0.248	1.8	5.5	0.377
3B150.W0252	Steel	With Threadlock	Standard	UNC 5/8-11	1 1/16	0.215	0.310	2.0	8.5	0.885
3B150.W0263	Steel	With Threadlock	Heavy	UNC 6-32	3/8	0.063	0.046	0.5	2.5	0.018
3B150.W0266	Steel	With Threadlock	Heavy	UNC 8-32	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0268	Steel	With Threadlock	Heavy	UNF 8-36	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0270	Steel	With Threadlock	Heavy	UNF 10-32	15/32	0.065	0.093	2.6	6.3	0.042
3B150.W0272	Steel	With Threadlock	Heavy	UNC 1/4-20	17/32	0.078	0.119	3.0	9.7	0.074
3B150.W0276	Steel	With Threadlock	Heavy	UNC 5/16-18	37/64	0.084	0.135	3.8	13.0	0.123
3B150.W0278	Steel	With Threadlock	Heavy	UNC 3/8-16	5/8	0.110	0.186	4.5	16.0	0.190
3B150.W0280	Steel	With Threadlock	Heavy	UNC 1/2-13	3/4	0.151	0.248	5.0	22.4	0.384
3B150.W0282	Steel	With Threadlock	Heavy	UNC 5/8-11	1 1/16	0.215	0.310	7.0	43.5	0.907
3B150.W0333	Stainless	With Threadlock	Standard	UNC 6-32	3/8	0.063	0.046	0.5	1.5	0.021
3B150.W0336	Stainless	With Threadlock	Standard	UNC 8-32	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0338	Stainless	With Threadlock	Standard	UNF 8-36	7/16	0.052	0.070	0.8	1.5	0.032
3B150.W0340	Stainless	With Threadlock	Standard	UNF 10-32	15/32	0.065	0.093	1.0	2.5	0.042
3B150.W0342	Stainless	With Threadlock	Standard	UNC 1/4-20	17/32	0.078	0.119	1.1	3.5	0.074
3B150.W0346	Stainless	With Threadlock	Standard	UNC 5/16-18	37/64	0.084	0.135	1.0	4.0	0.123
3B150.W0348	Stainless	With Threadlock	Standard	UNC 3/8-16	5/8	0.110	0.186	1.5	4.5	0.190
3B150.W0350	Stainless	With Threadlock	Standard	UNC 1/2-13	3/4	0.151	0.248	1.8	5.5	0.388
3B150.W0352	Stainless	With Threadlock	Standard	UNC 5/8-11	1 1/16	0.215	0.310	2.0	8.5	0.892
3B150.W0363	Stainless	With Threadlock	Heavy	UNC 6-32	3/8	0.063	0.046	0.5	2.5	0.014
3B150.W0366	Stainless	With Threadlock	Heavy	UNC 8-32	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0368	Stainless	With Threadlock	Heavy	UNF 8-36	7/16	0.052	0.070	1.8	4.6	0.032
3B150.W0370	Stainless	With Threadlock	Heavy	UNF 10-32	15/32	0.065	0.093	2.6	6.3	0.042
3B150.W0372	Stainless	With Threadlock	Heavy	UNC 1/4-20	17/32	0.078	0.119	3.0	9.7	0.071
3B150.W0376	Stainless	With Threadlock	Heavy	UNC 5/16-18	37/64	0.084	0.135	3.8	13.0	0.123
3B150.W0378	Stainless	With Threadlock	Heavy	UNC 3/8-16	5/8	0.110	0.186	4.5	16.0	0.194
3B150.W0380	Stainless	With Threadlock	Heavy	UNC 1/2-13	3/4	0.151	0.248	5.0	22.4	0.399
3B150.W0382	Stainless	With Threadlock	Heavy	UNC 5/8-11	1 1/16	0.215	0.310	7.0	43.5	0.914



3B200



Material

Free cutting steel type-

Body: free cutting steel, blackened.

Pin: free cutting steel, hardened, blackened.

Spring: stainless steel.

Stainless steel type-

Body: stainless steel 1.4305 (AISI 303).

Pin: stainless steel 1.4305 (AISI 303).

Spring: stainless steel.

Technical Notes

To be used as detents or for locating, positioning, indexing, locking, latching, ejecting, lifting off and other similar push application.

Temperature range for execution without thread up to 482°F.

Thread lock - Polyamide spot coating.

Tips

Standard spring load = no marking

Heavy spring load = marked with two lines

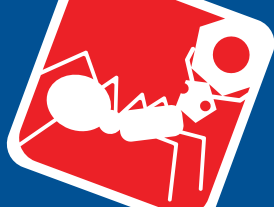
Important Notes

Spring loads are statistical average values

All dimensions are in inches

Thread: 2A-UNC/UNF.

Order No.	Material	Finish	Spring load	d ₁ UNC/UNF	l ₁ ≈	s	d ₂	A/F	Spring load f ₁ lb ≈	Spring load f ₂ lb ≈	Weight oz
3B200.W0033	Steel	w/o Threadlock	Std.	UNC 6-32	17/32	0.063	0.046	1/16	0.5	1.5	0.025
3B200.W0036	Steel	With Threadlock	Std.	UNC 8-32	5/8	0.094	0.070	5/64	0.8	2.3	0.042
3B200.W0040	Steel	w/o Threadlock	Std.	UNF 10-32	3/4	0.125	0.093	3/32	1.4	2.7	0.063
3B200.W0042	Steel	With Threadlock	Std.	UNC 1/4-20	1	0.188	0.119	1/8	1.0	4.0	0.134
3B200.W0044	Steel	w/o Threadlock	Std.	UNF 1/4-28	1	0.188	0.119	1/8	1.0	4.0	0.145
3B200.W0046	Steel	With Threadlock	Std.	UNC 5/16-18	1	0.188	0.135	5/32	1.5	4.5	0.205
3B200.W0048	Steel	w/o Threadlock	Std.	UNC 3/8-16	1 1/8	0.188	0.186	3/16	2.7	7.2	0.335
3B200.W0050	Steel	With Threadlock	Std.	UNC 1/2-13	1 1/4	0.250	0.248	1/4	2.7	9.3	0.656
3B200.W0052	Steel	w/o Threadlock	Std.	UNC 5/8-11	1 1/2	0.313	0.310	5/16	3.5	10.6	1.242
3B200.W0053	Steel	With Threadlock	Std.	UNC 3/4-10	1 3/4	0.313	0.374	3/8	5.5	14.5	2.152
3B200.W0054	Steel	w/o Threadlock	Std.	UNC 1-8	2 13/32	0.500	0.499	3/8	4.0	31.0	5.443
3B200.W0063	Steel	With Threadlock	Heavy	UNC 6-32	17/32	0.063	0.046	1/16	1.5	3.4	0.026
3B200.W0066	Steel	w/o Threadlock	Heavy	UNC 8-32	5/8	0.094	0.070	5/64	2.6	6.6	0.042
3B200.W0070	Steel	With Threadlock	Heavy	UNF 10-32	3/4	0.125	0.093	3/32	3.2	9.0	0.067
3B200.W0072	Steel	w/o Threadlock	Heavy	UNC 1/4-20	1	0.188	0.119	1/8	3.1	10.1	0.134
3B200.W0074	Steel	With Threadlock	Heavy	UNF 1/4-28	1	0.188	0.119	1/8	3.1	10.1	0.145
3B200.W0076	Steel	w/o Threadlock	Heavy	UNC 5/16-18	1	0.188	0.135	5/32	3.0	15.0	0.207
3B200.W0078	Steel	With Threadlock	Heavy	UNC 3/8-16	1 1/8	0.188	0.186	3/16	5.5	12.7	0.335
3B200.W0080	Steel	w/o Threadlock	Heavy	UNC 1/2-13	1 1/4	0.250	0.248	1/4	6.6	16.0	0.649
3B200.W0082	Steel	With Threadlock	Heavy	UNC 5/8-11	1 1/2	0.313	0.310	5/16	10.5	22.2	1.245
3B200.W0083	Steel	w/o Threadlock	Heavy	UNC 3/4-10	1 3/4	0.313	0.374	3/8	6.7	33.0	2.187
3B200.W0084	Steel	With Threadlock	Heavy	UNC 1-8	2 13/32	0.500	0.499	3/8	16.0	60.0	5.538
3B200.W0133	Stainless	w/o Threadlock	Std.	UNC 6-32	17/32	0.063	0.046	1/16	0.5	1.5	0.018
3B200.W0136	Stainless	With Threadlock	Std.	UNC 8-32	5/8	0.094	0.070	5/64	0.8	2.3	0.039
3B200.W0140	Stainless	w/o Threadlock	Std.	UNF 10-32	3/4	0.125	0.093	3/32	1.4	2.7	0.063
3B200.W0142	Stainless	With Threadlock	Std.	UNC 1/4-20	1	0.188	0.119	1/8	1.0	4.0	0.131



Spring Plungers - IMPERIAL

with round-ended pin and hex. socket - stainless

Spring Plungers



Order No.	Material	Finish	Spring load	d ₁ UNC/UNF	l ₁ ≈	s	d ₂	A/F	Spring load f ₁ lb ≈	Spring load f ₂ lb ≈	Weight oz
3B200.W0144	Stainless	w/o Threadlock	Std.	UNF 1/4-28	1	0.188	0.119	1/8	1.0	4.0	0.141
3B200.W0146	Stainless	With Threadlock	Std.	UNC 5/16-18	1	0.188	0.135	5/32	1.5	4.5	0.208
3B200.W0148	Stainless	w/o Threadlock	Std.	UNC 3/8-16	1 1/8	0.188	0.186	3/16	2.7	7.2	0.328
3B200.W0150	Stainless	With Threadlock	Std.	UNC 1/2-13	1 1/4	0.250	0.248	1/4	2.7	9.3	0.653
3B200.W0152	Stainless	w/o Threadlock	Std.	UNC 5/8-11	1 1/2	0.313	0.310	5/16	3.5	10.6	1.242
3B200.W0153	Stainless	With Threadlock	Std.	UNC 3/4-10	1 3/4	0.313	0.374	3/8	5.5	14.5	2.180
3B200.W0154	Stainless	w/o Threadlock	Std.	UNC 1-8	2 13/32	0.500	0.499	3/8	4.0	31.0	5.474
3B200.W0163	Stainless	With Threadlock	Heavy	UNC 6-32	17/32	0.063	0.046	1/16	1.5	3.4	0.025
3B200.W0166	Stainless	w/o Threadlock	Heavy	UNC 8-32	5/8	0.094	0.070	5/64	2.6	6.6	0.042
3B200.W0170	Stainless	With Threadlock	Heavy	UNF 10-32	3/4	0.125	0.093	3/32	3.2	9.0	0.063
3B200.W0172	Stainless	w/o Threadlock	Heavy	UNC 1/4-20	1	0.188	0.119	1/8	3.1	10.1	0.131
3B200.W0174	Stainless	With Threadlock	Heavy	UNF 1/4-28	1	0.188	0.119	1/8	3.1	10.1	0.145
3B200.W0176	Stainless	w/o Threadlock	Heavy	UNC 5/16-18	1	0.188	0.135	5/32	3.0	15.0	0.212
3B200.W0178	Stainless	With Threadlock	Heavy	UNC 3/8-16	1 1/8	0.188	0.186	3/16	5.5	12.7	0.339
3B200.W0180	Stainless	w/o Threadlock	Heavy	UNC 1/2-13	1 1/4	0.250	0.248	1/4	6.6	16.0	0.653
3B200.W0182	Stainless	With Threadlock	Heavy	UNC 5/8-11	1 1/2	0.313	0.310	5/16	10.5	22.2	1.252
3B200.W0183	Stainless	w/o Threadlock	Heavy	UNC 3/4-10	1 3/4	0.313	0.374	3/8	6.7	33.0	2.198
3B200.W0184	Stainless	With Threadlock	Heavy	UNC 1-8	2 13/32	0.500	0.499	3/8	16.0	60.0	5.524
3B200.W0233	Steel	w/o Threadlock	Std.	UNC 6-32	17/32	0.063	0.046	1/16	0.5	1.5	0.025
3B200.W0236	Steel	With Threadlock	Std.	UNC 8-32	5/8	0.094	0.070	5/64	0.8	2.3	0.042
3B200.W0240	Steel	w/o Threadlock	Std.	UNF 10-32	3/4	0.125	0.093	3/32	1.4	2.7	0.063
3B200.W0242	Steel	With Threadlock	Std.	UNC 1/4-20	1	0.188	0.119	1/8	1.0	4.0	0.134
3B200.W0244	Steel	w/o Threadlock	Std.	UNF 1/4-28	1	0.188	0.119	1/8	1.0	4.0	0.145
3B200.W0246	Steel	With Threadlock	Std.	UNC 5/16-18	1	0.188	0.135	5/32	1.5	4.5	0.205
3B200.W0248	Steel	w/o Threadlock	Std.	UNC 3/8-16	1 1/8	0.188	0.186	3/16	2.7	7.2	0.335
3B200.W0250	Steel	With Threadlock	Std.	UNC 1/2-13	1 1/4	0.250	0.248	1/4	2.7	9.3	0.656
3B200.W0252	Steel	w/o Threadlock	Std.	UNC 5/8-11	1 1/2	0.313	0.310	5/16	3.5	10.6	1.242
3B200.W0253	Steel	With Threadlock	Std.	UNC 3/4-10	1 3/4	0.313	0.374	3/8	5.5	14.5	2.152
3B200.W0254	Steel	w/o Threadlock	Std.	UNC 1-8	2 13/32	0.500	0.499	3/8	4.0	31.0	5.443
3B200.W0263	Steel	With Threadlock	Heavy	UNC 6-32	17/32	0.063	0.046	1/16	1.5	3.4	0.026
3B200.W0266	Steel	w/o Threadlock	Heavy	UNC 8-32	5/8	0.094	0.070	5/64	2.6	6.6	0.042
3B200.W0270	Steel	With Threadlock	Heavy	UNF 10-32	3/4	0.125	0.093	3/32	3.2	9.0	0.067
3B200.W0272	Steel	w/o Threadlock	Heavy	UNC 1/4-20	1	0.188	0.119	1/8	3.1	10.1	0.134
3B200.W0274	Steel	With Threadlock	Heavy	UNF 1/4-28	1	0.188	0.119	1/8	3.1	10.1	0.145
3B200.W0276	Steel	w/o Threadlock	Heavy	UNC 5/16-18	1	0.188	0.135	5/32	3.0	15.0	0.207
3B200.W0278	Steel	With Threadlock	Heavy	UNC 3/8-16	1 1/8	0.188	0.186	3/16	5.5	12.7	0.335
3B200.W0280	Steel	w/o Threadlock	Heavy	UNC 1/2-13	1 1/4	0.250	0.248	1/4	6.6	16.0	0.649
3B200.W0282	Steel	With Threadlock	Heavy	UNC 5/8-11	1 1/2	0.313	0.310	5/16	10.5	22.2	1.245
3B200.W0283	Steel	w/o Threadlock	Heavy	UNC 3/4-10	1 3/4	0.313	0.374	3/8	6.7	33.0	2.187
3B200.W0284	Steel	With Threadlock	Heavy	UNC 1-8	2 13/32	0.500	0.499	3/8	16.0	60.0	5.538
3B200.W0333	Stainless	w/o Threadlock	Std.	UNC 6-32	17/32	0.063	0.046	1/16	0.5	1.5	0.018
3B200.W0336	Stainless	With Threadlock	Std.	UNC 8-32	5/8	0.094	0.070	5/64	0.8	2.3	0.039
3B200.W0340	Stainless	w/o Threadlock	Std.	UNF 10-32	3/4	0.125	0.093	3/32	1.4	2.7	0.063
3B200.W0342	Stainless	With Threadlock	Std.	UNC 1/4-20	1	0.188	0.119	1/8	1.0	4.0	0.131
3B200.W0344	Stainless	w/o Threadlock	Std.	UNF 1/4-28	1	0.188	0.119	1/8	1.0	4.0	0.141
3B200.W0346	Stainless	With Threadlock	Std.	UNC 5/16-18	1	0.188	0.135	5/32	1.5	4.5	0.208
3B200.W0348	Stainless	w/o Threadlock	Std.	UNC 3/8-16	1 1/8	0.188	0.186	3/16	2.7	7.2	0.328
3B200.W0350	Stainless	With Threadlock	Std.	UNC 1/2-13	1 1/4	0.250	0.248	1/4	2.7	9.3	0.653
3B200.W0352	Stainless	w/o Threadlock	Std.	UNC 5/8-11	1 1/2	0.313	0.310	5/16	3.5	10.6	1.242
3B200.W0353	Stainless	With Threadlock	Std.	UNC 3/4-10	1 3/4	0.313	0.374	3/8	5.5	14.5	2.180
3B200.W0354	Stainless	w/o Threadlock	Std.	UNC 1-8	2 13/32	0.500	0.499	3/8	4.0	31.0	5.474
3B200.W0363	Stainless	With Threadlock	Heavy	UNC 6-32	17/32	0.063	0.046	1/16	1.5	3.4	0.025
3B200.W0366	Stainless	w/o Threadlock	Heavy	UNC 8-32	5/8	0.094	0.070	5/64	2.6	6.6	0.042
3B200.W0370	Stainless	With Threadlock	Heavy	UNF 10-32	3/4	0.125	0.093	3/32	3.2	9.0	0.063
3B200.W0372	Stainless	w/o Threadlock	Heavy	UNC 1/4-20	1	0.188	0.119	1/8	3.1	10.1	0.131
3B200.W0374	Stainless	With Threadlock	Heavy	UNF 1/4-28	1	0.188	0.119	1/8	3.1	10.1	0.145
3B200.W0376	Stainless	w/o Threadlock	Heavy	UNC 5/16-18	1	0.188	0.135	5/32	3.0	15.0	0.212
3B200.W0378	Stainless	With Threadlock	Heavy	UNC 3/8-16	1 1/8	0.188	0.186	3/16	5.5	12.7	0.339
3B200.W0380	Stainless	w/o Threadlock	Heavy	UNC 1/2-13	1 1/4	0.250	0.248	1/4	6.6	16.0	0.653
3B200.W0382	Stainless	With Threadlock	Heavy	UNC 5/8-11	1 1/2	0.313	0.310	5/16	10.5	22.2	1.252
3B200.W0383	Stainless	w/o Threadlock	Heavy	UNC 3/4-10	1 3/4	0.313	0.374	3/8	6.7	33.0	2.198
3B200.W0384	Stainless	With Threadlock	Heavy	UNC 1-8	2 13/32	0.500	0.499	3/8	16.0	60.0	5.524

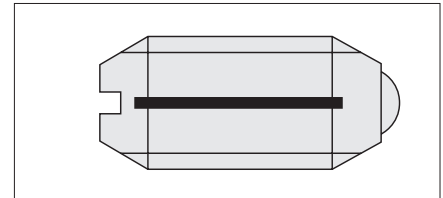


Wixroyd have applied their extensive experience and expertise in spring plunger design and production to offer a range of imperial plungers.

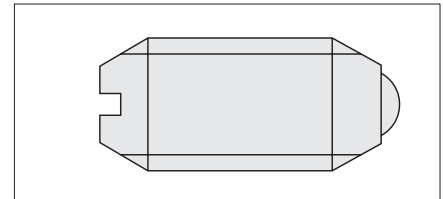
At Last – Imperial Version Spring Plungers Stocked in the UK!

Spring Loads

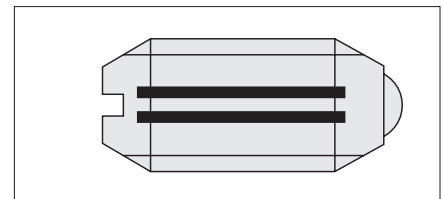
Three available spring pressure models.



Light spring load = marked with one line.



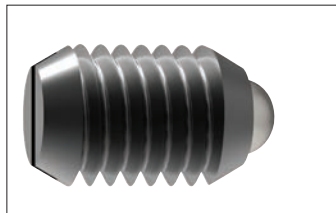
Standard spring load = no marking.



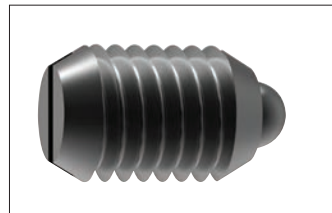
Heavy spring load = marked with two lines.

Thread Details

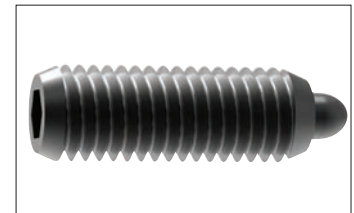
2A-UNC/UNF: sizes 4-48 to 5/8-11.



3B100 Imperial plunger with ball and slot.



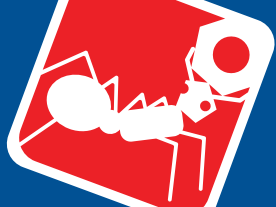
3B150 Imperial plunger with pin and slot.



3B200 Imperial plunger with pin and hex socket.

Conversion table: Metric/Imperial values

	To convert from	To	Use conversion factor
Lengths	Inch (in)	Millimeter (mm)	in x 25,4 = mm
	Millimeter (mm)	Inch (in)	mm x 0,03937 = in
Weight/force	Ounces (oz)	Gram (g)	oz x 28 = g
	Gram (g)	Ounces (oz)	g x 0,035 = oz
	Pounds (lbs)	Kilogram (Kg)	lbs x 0,4536 = Kg
	Kilogram (Kg)	Pounds (lbs)	Kg x 2,205 = lbs
	Kilogram (Kg)	Newton (N)	Kg x 9,81 = N
	Newton (N)	Kilogram (Kg)	N/ 9,81 = Kg
Temperature	Degree fahrenheit (°F)	Degree centigrade (°C)	(°F-32) x 5/9 = °C
	Degree centigrade (°C)	Degree fahrenheit (°F)	°C x 9/5 + 32 = °F
Torque	Foot-pounds (ft-lbs)	Newton-meter (Nm)	ft/lbs x 1,35 = Nm
	Newton-meter (Nm)	Foot-pounds (ft-lbs)	Nm x 0,74 = ft/lbs



We recommend a cutting speed of between 10 and 20m/min.

Therefore typical value for chamfers of varying diameter are as follows.

Diameter	RPM range
10 mm	320 to 640 rpm
15 mm	210 to 420 rpm
20 mm	160 to 320 rpm
30 mm	110 to 220 rpm
40 mm	80 to 160 rpm
50 mm	55 to 110 rpm

We do however recommend you use the following formula to check the most suitable rpm used.

$$\text{Rpm} = (\text{cutting speed} \times 1000) / (\text{diameter} \times 3.14)$$

Blade cutting angle	0°	14°	20°	25°
Suitable for material	Brass, bronze, cast iron, stainless steel	Steel, special bronze, perspex	Soft steel, copper, AU 4G, plastic, stainless steel	Aluminium, soft iron, sheet metal

Important Note:

We recommend the chamfering tool is lubricated with cutting fluid or soluble oil to ensure the long life of the cutting blade edge, and to reduce wear of the pilot cone.

We offer blades with a variety of cutting angles to best suit the material in which a chamfer is required.

Typically a blade cutting angle of 14° suits most applications; please refer to table above.

Recommended Cutting Speed

Typical rpm for varying chamfer diameters, when using cutting speed of between 10 and 20 m/min.