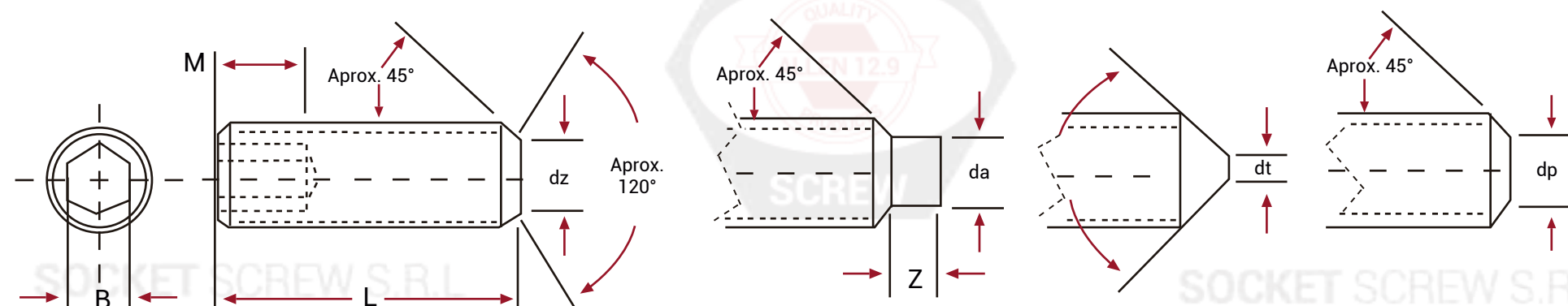


ALLEN CABEZA BAJA CALIDAD 12.9 MÉTRICO

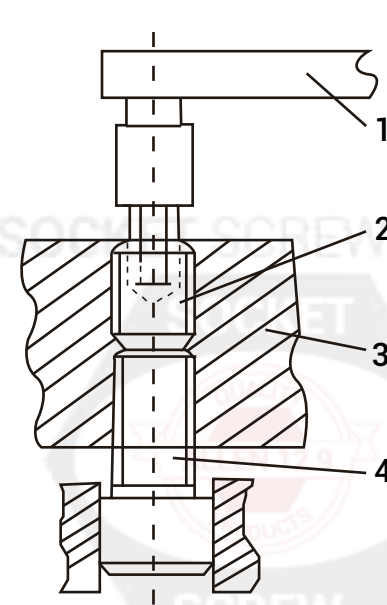


Dimensiones (mm)

Nom Size	M (Flat Point)		M (Cup Point)		M (Cone Point)		M (Dog Point)		Z
	Length	min	Length	min	Length	min	Length	min	
M3	L ≤ 3	1.20	L ≤ 4	1.20	L ≤ 4	1.20	L ≤ 5	1.20	0.75 - 1.00
	L > 3	2.00	L > 4	2.00	L > 4	2.00	L > 5	2.00	1.50 - 1.75
M4	L ≤ 4	1.50	L ≤ 5	1.50	L ≤ 5	1.50	L ≤ 6	1.50	1.00 - 1.25
	L > 4	2.50	L > 5	2.50	L > 5	2.50	L > 6	2.50	2.00 - 2.25
M5	L ≤ 5	2.00	L ≤ 5	2.00	L ≤ 5	2.00	L ≤ 6	2.00	1.25 - 1.50
	L > 5	3.00	L > 5	3.00	L > 5	3.00	L > 6	3.00	2.50 - 2.75
M6	L ≤ 6	2.00	L ≤ 6	2.00	L ≤ 6	2.00	L ≤ 8	2.00	1.50 - 1.75
	L > 6	3.50	L > 6	3.50	L > 6	3.50	L > 8	3.50	3.00 - 3.25
M8	L ≤ 8	3.00	L ≤ 8	3.00	L ≤ 8	3.00	L ≤ 10	3.00	2.00 - 2.25
	L > 8	5.00	L > 8	5.00	L > 8	5.00	L > 10	5.00	4.00 - 4.30
M10	L ≤ 10	4.00	L ≤ 10	4.00	L ≤ 10	4.00	L ≤ 12	4.00	2.50 - 2.75
	L > 10	6.00	L > 10	6.00	L > 10	6.00	L > 12	6.00	5.00 - 5.30
M12	L ≤ 12	4.80	L ≤ 12	4.80	L ≤ 12	4.80	L ≤ 16	4.80	3.00 - 3.25
	L > 12	8.00	L > 12	8.00	L > 12	8.00	L > 16	8.00	6.00 - 6.30
M14	L ≤ 14	5.60	L ≤ 14	5.60	L ≤ 14	5.60	L ≤ 20	5.60	3.50 - 3.80
	L > 14	9.00	L > 14	9.00	L > 14	9.00	L > 20	9.00	7.00 - 7.36
M16	L ≤ 16	6.40	L ≤ 16	6.40	L ≤ 16	6.40	L ≤ 20	6.40	4.00 - 4.30
	L > 16	10.00	L > 16	10.00	L > 16	10.00	L > 20	10.00	8.00 - 8.36
M18	L ≤ 18	7.20	L ≤ 18	7.20	L ≤ 18	7.20	L ≤ 25	7.20	4.50 - 4.80
	L > 18	11.00	L > 18	11.00	L > 18	11.00	L > 25	11.00	9.00 - 9.86
M20	L ≤ 20	8.00	L ≤ 20	8.00	L ≤ 20	8.00	L ≤ 25	8.00	5.00 - 5.30
	L > 20	12.00	L > 20	12.00	L > 20	12.00	L > 25	12.00	10.00 - 10.36

Typical Torque Test Fixture

- Torque wrench
- Set screw under test
- Test Block < hardness min 50 HRC, tolerance calcs of the internal thread 5H.
- Backing screw > hardness 450 HV to 570 HV.



Nom. Size	dp	dz	dt max.	da	B	Y (note 3)	Proof Torque NM, min.
M3	1.75 - 2.00	1.15 - 1.40	0.75	1.15 - 2.00	1.520 - 1.580	4	0.90
M4	2.25 - 2.50	1.75 - 2.00	1.00	2.25 - 2.50	2.020 - 2.080	5	2.50
M5	3.20 - 3.50	2.25 - 2.50	1.25	3.20 - 3.50	2.520 - 2.580	6	5.00
M6	3.70 - 4.00	2.75 - 3.00	1.50	3.70 - 4.00	3.020 - 3.080	6	8.50
M8	5.20 - 5.50	4.70 - 5.00	2.00	5.20 - 5.50	4.020 - 4.095	8	20.0
M10	6.61 - 7.00	5.70 - 6.00	2.50	6.64 - 7.00	5.020 - 5.140	10	40.0
M12	8.14 - 8.50	7.64 - 8.00	3.00	8.14 - 8.50	6.020 - 6.140	12	65.0
M14	9.64 - 10.00	8.61 - 9.00	4.00	9.64 - 10.00	6.020 - 6.140	14	65.0
M16	11.57 - 12.00	9.64 - 10.00	4.00	11.57 - 12.00	8.025 - 8.175	16	160
M18	12.57 - 13.00	11.57 - 12.00	5.00	12.57 - 13.00	10.025 - 10.175	18	310
M20	14.57 - 15.00	13.57 - 14.00	5.00	14.57 - 15.00		20	310

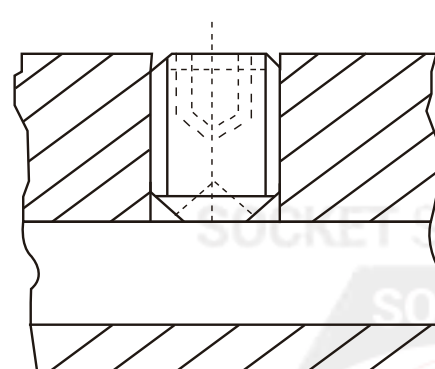
Notes:

- Thread Class Gg for property class 45H.
- Length Tolerance: See Table 2, page 7.
- Cone point angle 120 deg. for these nominal lengths or shorter. 90 dog for longer nominal lengths.
- Working Temperature -50° +300°

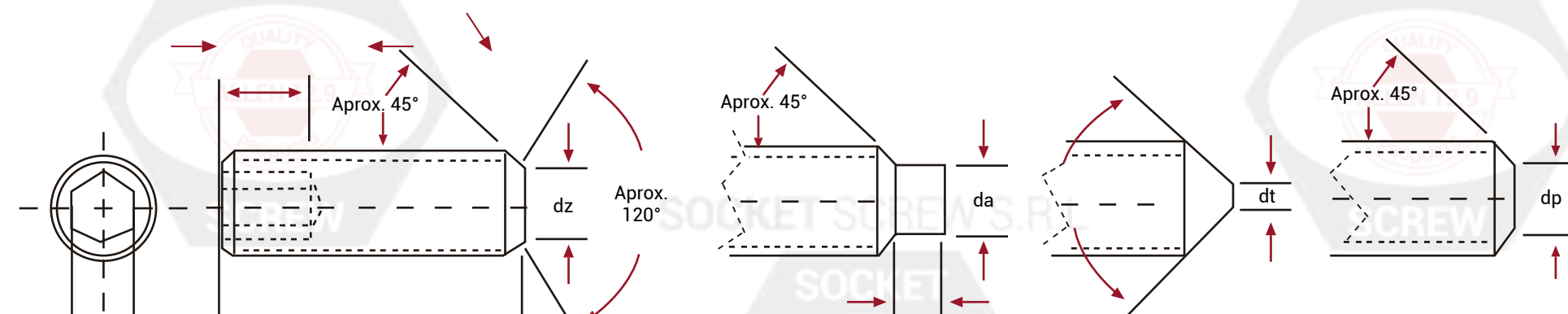
Mechanical Properties	
Property Class	45 H
Hardness (HRC)	45 - 53
Descarburization and Carburization	E=3/4H1

Typical Application Fixture

Socket set screws are designed to be used where permanent or adjustable locations of components on shafts is required. There are numerous end point designs to fit many applications.



ALLEN CABEZA BAJA CALIDAD 12.9 PULGADA

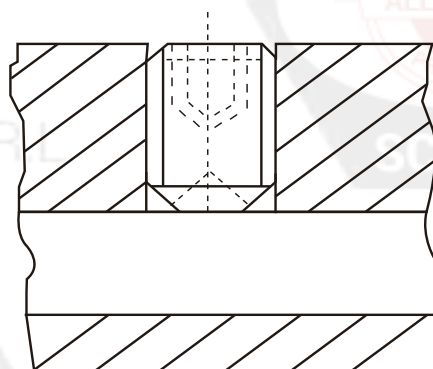


Dimensiones (inch)

Nom Size	M (Cup & Flat Point)		M (Cone Point)		M (Dog Point)		Z
	Length	min	Length	min	Length	min	
#0	L ≥ 0.13	0.050	L ≥ 0.13	0.050	L ≥ 0.13	0.050	0.013 - 0.017
#1	L ≥ 0.13	0.060	L ≥ 0.19	0.060	L ≥ 0.13	0.060	0.017 - 0.021
#2	L ≥ 0.13	0.060	L ≥ 0.19	0.060	L ≥ 0.19	0.060	0.020 - 0.024
#3	L ≥ 0.19	0.070	L ≥ 0.19	0.070	L ≥ 0.19	0.070	0.023 - 0.027
#4	L ≥ 0.19	0.070	L ≥ 0.19	0.070	L ≥ 0.19	0.070	0.026 - 0.030
#5	L ≥ 0.19	0.080	L ≥ 0.19	0.080	L ≥ 0.19	0.080	0.027 - 0.033
#6	L ≥ 0.19	0.080	L ≥ 0.25	0.080	L ≥ 0.19	0.080	0.032 - 0.038
#8	L ≥ 0.19	0.090	L ≥ 0.25	0.090	L ≥ 0.25	0.090	0.037 - 0.043
#10	L ≥ 0.19	0.100	L ≥ 0.25	0.100	L ≥ 0.25	0.100	0.041 - 0.049
1/4	L ≥ 0.25	0.125	L ≥ 0.31	0.125	L ≥ 0.31	0.125	0.059 - 0.067
5/16	L ≥ 0.31	0.156	L ≥ 0.44	0.156	L ≥ 0.38	0.156	0.074 - 0.082
3/8	L ≥ 0.38	0.188	L ≥ 0.44	0.188	L ≥ 0.44	0.188	0.089 - 0.099
7/16	L ≥ 0.44	0.219	L ≥ 0.63	0.219	L ≥ 0.50	0.219	0.104 - 0.114
1/2	L ≥ 0.50	0.250	L ≥ 0.63	0.250	L ≥ 0.63	0.250	0.120 - 0.130
5/8	L ≥ 0.63	0.312	L ≥ 0.88	0.312	L ≥ 0.88	0.312	0.148 - 0.164
3/4	L ≥ 0.75	0.375	L ≥ 1.00	0.375	L ≥ 1.00	0.375	0.180 - 0.196
7/8	L ≥ 0.88	0.500	L ≥ 1.00	0.500	L ≥ 1.00	0.500	0.211 - 0.227
1"	L ≥ 1.00	0.562	L ≥ 1.25	0.562	L ≥ 1.25	0.562	0.240 - 0.260

Typical Application Fixture

Socket set screws are designed to be used where permanent or adjustable locations of components on shafts is required. There are numerous end point designs to fit many applications.



Mechanical Properties	
Property Class	45 H
Hardness (HRC)	45 - 53
Descarburization and Carburization	E=3/4H1

Table 1 Length Tolerance

Nom. Length	Tolerance on Length
Up to 0.63, incl	± 0.01
Over 0.63 to 2.00, incl	± 0.02
Over 2.00 to 6.00, incl	± 0.03
Over 6.00	± 0.06

Nom. Size	dp	dz	dt max.	da	B nom	Y (note 3)	Proof Torque (in 1b) min.
#0	0.027 - 0.033	0.027 - 0.033	0.0060	0.037 - 0.040	0.028	0.09	1.1
	0.033 - 0.040	0.033 - 0.040	0.0073	0.045 - 0.049	0.035	0.09	2.1
#2	0.039 - 0.047	0.039 - 0.047	0.0086	0.053 - 0.057	0.035	0.13	2.1
	0.045 - 0.054	0.045 - 0.054	0.0099	0.062 - 0.066	0.050	0.13	6.0
#4	0.051 - 0.061	0.051 - 0.061	0.0112	0.070 - 0.075	0.50	0.19	6.0
	0.057 - 0.067	0.057 - 0.067	0.0125	0.078 - 0.083	1/16	0.062	11
#6	0.064 - 0.074	0.064 - 0.074	0.0138	0.087 - 0.092	1/16	0.062	11
	0.076 - 0.087	0.076 - 0.087	0.0164	0.103 - 0.109	5/64	0.075	23
#10	0.088 - 0.102	0.088 - 0.102	0.0190	0.120 - 0.127	3/32	0.094	40
	0.118 - 0.132	0.118 - 0.132	0.0250	0.149 - 0.156	1/8	0.125	94
5/16	0.156 - 0.172	0.156 - 0.172	0.0312	0.195 - 0.203	5/32	0.156	183
	0.194 - 0.212	0.194 - 0.212	0.0375	0.241 - 0.250	3/16	0.188	317
7/16	0.232 - 0.252	0.232 - 0.252	0.0437	0.287 - 0.297	7/32	0.219	502
	0.270 - 0.291	0.270 - 0.291	0.0500	0.334 - 0.344	1/4	0.250	750
5/8	0.347 - 0.371	0.347 - 0.371	0.0625	0.456 - 0.469	5/16	0.312	1460
	0.425 - 0.450	0.425 - 0.450	0.0750	0.549 - 0.563	3/8	0.625	2520
7/8	0.502 - 0.530	0.502 - 0.530	0.0875	0.642 - 0.656	1/2	0.750	5750
	0.579 - 0.609	0.579 - 0.609	0.1000	0.734 - 0.750	9/16	0.750	8000

Typical Torque Test Fixture

- Torque wrench.
- Set screw under test.
- Test Block: hardness min 50 HRC, tolerance class of the internal thread 2B.
- Backing screw: hardness 450 HV to 570 HV.

