


Shoulder Screws

Technical drawings and 3-D models available for items with this symbol. 

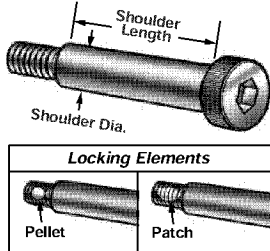
For shoulder screw shims, see page 3152.

About Shoulder Screws

Also called stripper bolts and shoulder bolts, these screws have a cylindrical shoulder under the head to serve as a bearing or spacer. They are used for a variety of applications, including locating parts, retaining components, as guide screws, as axle bolts, as a fulcrum, and as pivots.

We offer **standard** shoulder screws and **precision** shoulder screws. Standard type has a hex socket drive. Precision type has tighter dimensional tolerances than standard shoulder screws and is offered in hex socket, slotted, and Phillips drive.

Standard and Self-Locking Shoulder



These screws have a hex socket drive. Shoulder tolerances: diameter is $-0.002''$ to $-0.004''$; length is $\pm 0.005''$. They meet ANSI/ASME B18.3, Class 3A thread fit.

Type 316 Stainless Steel—Offers excellent corrosion resistance, even better than that of 18-8 stainless steel. Contains molybdenum, which increases corrosion resistance to chlorides and sulfates. May be mildly magnetic. Rockwell hardness: B55. Minimum tensile strength is 70,000 psi. Not rated for shear strength.

18-8 Stainless Steel—Provides excellent corrosion resistance. May be mildly magnetic. Shoulder has a smooth finish. Rockwell hardness: B55. Minimum tensile strength is 70,000 psi. Not rated for shear strength.

Alloy Steel—Made of ASTM A574 alloy steel with a shoulder that is ground to a highly polished finish. Head has a black finish. Rockwell hardness: C32-C43. Minimum tensile strength is 140,000 psi. Shear strength is 84,000 psi.

Self-Locking shoulder screws have a nylon locking element (a pellet in the threads or a patch bonded on the threads) that holds fasteners firmly in place and prevents loosening under vibration. Temperature range for locking elements is -70° to $+250^{\circ}$ F. Screws are reusable.

Type 316 Stainless Steel

Shoulder Lg.	Each*	Shoulder Lg.	Each*	Shoulder Lg.	Each*	Shoulder Lg.	Each*	Shoulder Lg.	Each*
1/8" Shoulder Dia.		3/16" Shoulder Dia.		1/4" Shoulder Dia. (Cont.)		3/8" Shoulder Dia.		1/2" Shoulder Dia. (Cont.)	
Head: Dia. 1/4"; Ht. 1/8"		Head: Dia. 5/16"; Ht. 5/32"		Head: Dia. 3/8"; Ht. 7/32"		Head: Dia. 1/2"; Ht. 1/2"		Head: Dia. 3/4"; Ht. 1/2"	
Thread: 4-40; 5/32" Lg.		Thread: 8-32; 3/16" Lg.		Thread: 10-24; 3/8" Lg.		Thread: 5/16"-18; 1/2" Lg.		Thread: 1/2"-13; 3/4" Lg.	
Hex Key: 5/64"		Hex Key: 3/32"		Hex Key: 1/8"		Hex Key: 3/16"		Hex Key: 5/16"	
1/8"	97345A410 \$2.52	1/8"	97345A410 \$2.52	1/4"	97345A539 \$3.87	1/4"	97345A539 \$3.87	1/2"	97345A707 \$8.77
3/16"	97345A413 2.62	3/16"	97345A413 2.62	3/4"	97345A540 4.16	3/4"	97345A540 4.16	1"	97345A712 9.57
1/4"	97345A416 2.71	1/4"	97345A416 2.71	1"	97345A542 4.45	1"	97345A542 4.45	1 1/4"	97345A714 10.38
5/16"	97345A419 2.79	5/16"	97345A419 2.79	1 1/4"	97345A556 5.17	1 1/4"	97345A556 5.17	1 1/2"	97345A716 11.54
3/8"	97345A422 2.89	3/8"	97345A422 2.89	1 1/2"	97345A561 5.80	1 1/2"	97345A561 5.80	1 3/4"	97345A718 13.97
7/16"	97345A425 3.08	7/16"	97345A425 3.08	1 3/4"	97345A563 8.00	1 3/4"	97345A563 8.00	2"	97345A720 12.81
1/2"	97345A428 3.50	1/2"	97345A428 3.50	2"	97345A565 8.63	2"	97345A565 8.63	2 1/4"	97345A723 15.98
5/32" Shoulder Dia.		1/2" Shoulder Dia.		5/8" Shoulder Dia.		1 1/2" Shoulder Dia.		3/4" Shoulder Dia.	
Head: Dia. 9/32"; Ht. 1/8"		Head: Dia. 1/2"; Ht. 3/16"		Head: Dia. 7/16"; Ht. 7/32"		Head: Dia. 1 1/2"; Ht. 1 1/2"		Head: Dia. 1/2"; Ht. 3/8"	
Thread: 6-32; 3/16" Lg.		Thread: 10-24; 3/8" Lg.		Thread: 10-24; 3/8" Lg.		Thread: 3/8"-16; 5/8" Lg.		Thread: 1/2"-13; 3/4" Lg.	
Hex Key: 3/32"		Hex Key: 1/4"		Hex Key: 5/32"		Hex Key: 1/2"		Hex Key: 5/16"	
1/8"	97345A441 \$2.79	1 1/4"	97345A502 8.64	1/4"	97345A567 \$4.99	1 1/2"	97345A651 9.71	1/2"	97345A743 \$21.63
3/16"	97345A443 2.89	1 1/2"	97345A506 9.80	3/8"	97345A571 4.44	1 3/4"	97345A651 9.71	3/4"	97345A747 22.50
1/4"	97345A446 2.99	1 3/4"	97345A506 9.80	1/2"	97345A578 4.54	2"	97345A656 9.47	1"	97345A754 22.88
5/16"	97345A449 3.18	2"	97345A506 9.80	5/8"	97345A579 4.77	1 1/2"	97345A656 9.47	1 1/4"	97345A758 23.70
3/8"	97345A452 3.37	2 1/4"	97345A506 9.80	1"	97345A583 5.29	3/8"	97345A698 \$9.58	1 1/2"	97345A762 24.53
7/16"	97345A455 3.73	2 1/2"	97345A506 9.80	1 1/4"	97345A588 5.94	1/2"	97345A700 8.54		
1/2"	97345A458 4.20	2 3/4"	97345A506 9.80	1 1/2"	97345A593 6.28	5/8"	97345A703 8.46		
		3"	97345A506 9.80	2"	97345A599 9.92				

18-8 Stainless Steel

Shoulder Lg.	Each*	Shoulder Lg.	Each*	Shoulder Lg.	Each*	Shoulder Lg.	Each*	Shoulder Lg.	Each*
1/4" Shoulder Dia.		5/8" Shoulder Dia. (Cont.)		3/8" Shoulder Dia. (Cont.)		5/8" Shoulder Dia.		3/4" Shoulder Dia. (Cont.)	
Head: Dia. 3/8"; Ht. 3/16"		Head: Dia. 1 1/2"; Ht. 1 1/2"		Head: Dia. 1 1/2"; Ht. 1 1/2"		Head: Dia. 1 1/2"; Ht. 1 1/2"		Head: Dia. 1 1/2"; Ht. 1 1/2"	
Thread: 10-24; 3/8" Lg.		Thread: 1 1/2"-13; 3/4" Lg.		Thread: 1 1/2"-13; 3/4" Lg.		Thread: 1 1/2"-13; 3/4" Lg.		Thread: 1 1/2"-13; 3/4" Lg.	
Hex Key: 1/2"		Hex Key: 3/16"		Hex Key: 1/4"		Hex Key: 5/16"		Hex Key: 1/2"	
1/8"	90298A525 \$2.21	1 1/2"	90298A587 \$3.06	1/2"	90298A641 \$14.54	1 1/2"	90298A790 \$11.81	1"	90298A836 \$19.54
3/16"	90298A530 2.22	1 3/4"	90298A589 3.69	5"	90298A643 16.95	5/8"	90298A791 12.40	1 1/4"	90298A837 20.40
1/4"	90298A534 1.19	2"	90298A591 3.88	6"	90298A645 20.78	3/4"	90298A792 13.09	1 1/2"	90298A839 21.26
5/16"	90298A520 1.26	2 1/4"	90298A592 4.42	1/2" Shoulder Dia.		1"	90298A793 13.09	1 3/4"	90298A841 21.71
3/8"	90298A535 1.25	2 1/2"	90298A593 5.30	Head: Dia. 3/4"; Ht. 5/16"		1 1/4"	90298A794 14.43	2"	90298A843 22.15
1/2"	90298A537 1.27	3"	90298A595 7.15	Thread: 3/8"-16; 5/8" Lg.		1 1/2"	90298A795 15.02	2 1/4"	90298A844 25.10
5/8"	90298A539 1.41	3 1/2"	90298A597 7.82	Hex Key: 1/4"		1 3/4"	90298A796 15.02	2 1/2"	90298A845 24.96
3/4"	90298A540 1.60	4"	90298A599 9.31	3/8" Shoulder Dia.		2"	90298A797 15.02	2 3/4"	90298A846 26.56
1"	90298A542 1.73	Head: Dia. 9/16"; Ht. 1/4"		Head: Dia. 9/16"; Ht. 1/4"		1 1/2"	90298A798 15.62	3"	90298A847 26.29
1 1/4"	90298A544 2.21	Thread: 9/16"-18; 1/2" Lg.		Thread: 9/16"-18; 1/2" Lg.		1 3/4"	90298A800 16.03	3 1/4"	90298A848 28.01
1 1/2"	90298A546 2.67	1/4"	90298A615 \$2.46	Hex Key: 3/16"		2"	90298A802 16.43	3 1/2"	90298A849 28.10
1 3/4"	90298A547 3.11	3/8"	90298A617 2.56	1/2" Shoulder Dia.		2 1/4"	90298A803 17.00	3 3/4"	90298A850 31.42
2"	90298A548 3.26	1/2"	90298A619 2.63	Head: Dia. 1 1/2"; Ht. 1 1/2"		2 1/2"	90298A804 17.64	4"	90298A851 31.01
2 1/4"	90298A549 4.10	5/8"	90298A621 2.83	Thread: 1 1/2"-13; 3/4" Lg.		3"	90298A805 18.14	4 1/4"	90298A852 32.86
2 1/2"	90298A550 4.85	3/4"	90298A622 2.93	Hex Key: 1/2"		3 1/4"	90298A806 19.25	4 1/2"	90298A853 32.77
2 3/4"	90298A551 6.00	1"	90298A624 3.16	3/4" Shoulder Dia.		3 1/2"	90298A807 20.09	4 3/4"	90298A854 34.67
3"	90298A552 6.12	1 1/4"	90298A626 3.61	Head: Dia. 1 1/2"; Ht. 1 1/2"		3 3/4"	90298A808 20.02	5"	90298A855 35.25
5/16" Shoulder Dia.		1 1/2"	90298A628 3.74	Thread: 1 1/2"-13; 3/4" Lg.		4"	90298A809 21.08	5 1/2"	90298A856 37.77
Head: Dia. 7/16"; Ht. 7/32"		1 3/4"	90298A630 3.98	Hex Key: 5/8"		4 1/4"	90298A810 21.36	6"	90298A859 38.07
Thread: 1/4"-20; 7/16" Lg.		2"	90298A632 4.31	1" Shoulder Dia.		4 1/2"	90298A812 22.76	Head: Dia. 1 1/2"; Ht. 5/8"	
Hex Key: 1/2"		2 1/4"	90298A633 5.18	Head: Dia. 1"; Ht. 1/2"		4 3/4"	90298A813 24.48	Thread: 3/4"-10; 1" Lg.	
1/4"	90298A574 \$1.83	2 1/2"	90298A634 5.24	Thread: 5/8"-11; 7/8" Lg.		5"	90298A814 25.64	Hex Key: 1/2"	
3/16"	90298A576 2.06	2 3/4"	90298A635 5.42	3/4" Shoulder Dia.		5 1/2"	90298A815 28.10	Hex Key: 1/2"	
1/2"	90298A578 2.09	3"	90298A636 5.78	Head: Dia. 1"; Ht. 1/2"		6"	90298A817 32.43	Hex Key: 1/2"	
5/8"	90298A580 2.16	3 1/4"	90298A637 6.14	Thread: 5/8"-11; 7/8" Lg.		1"	90298A870 \$35.43	Hex Key: 1/2"	
3/4"	90298A581 2.26	3 1/2"	90298A638 7.09	Hex Key: 3/8"		1 1/2"	90298A872 37.63	Hex Key: 1/2"	
1"	90298A583 2.40	3 3/4"	90298A639 9.27	Hex Key: 1/2"		1 3/4"	90298A874 39.84	Hex Key: 1/2"	
1 1/4"	90298A585 2.65	4"	90298A640 10.46	Hex Key: 5/8"		2"	90298A875 42.89	Hex Key: 1/2"	
				1 1/2" Shoulder Dia.		2 1/2"	90298A877 47.27	Hex Key: 1/2"	
				Head: Dia. 1 1/2"; Ht. 1 1/2"		3"	90298A879 51.66	Hex Key: 1/2"	
				Thread: 1 1/2"-13; 3/4" Lg.		3 1/2"	90298A881 57.14	Hex Key: 1/2"	
				Hex Key: 1/2"		4"	90298A883 59.33	Hex Key: 1/2"	
				2" Shoulder Dia.		5"	90298A885 61.52	Hex Key: 1/2"	
				Head: Dia. 1 1/2"; Ht. 1 1/2"		5 1/2"	90298A885 61.52	Hex Key: 1/2"	
				Thread: 1 1/2"-13; 3/4" Lg.		6"	90298A887 63.71	Hex Key: 1/2"	
				Hex Key: 1/2"				Hex Key: 1/2"	

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* Prices are 15% lower when you buy in multiples of five.

