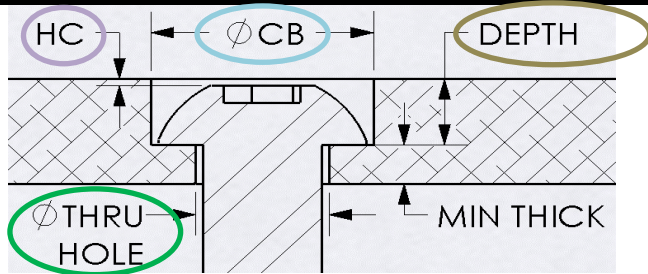


Standard Douglas CounterBore Holes



Standard: DMI Inch (includes head clearance)




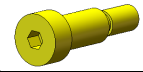
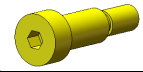
Fit: Normal

Options: Head clearance




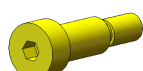
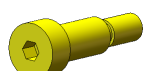
DEPTH is 2pl +/- .03 Unless it is with .020" of MIN THICK then it is 3pl +/- .010

.12

.123 (Document)

English (in)		Std Clearance ØThru Hole	Min Thick (in) (Ref dim)		Approx. Clamping/ Holding Force Grade	SHCS 		HHCS 		BHSCS 		SKT SHD BOLT 	ØThru Hole 	
Size	Head Clearance		Alum or SS	Steel		ØCB	Depth	ØCB	Depth	ØCB	Depth	ØCB	Depth	Depth
#2	0.031	0.102	0.030	0.025	220	0.188	0.117							
#4	0.031	0.128	0.045	0.030	380	0.219	0.143			0.250	0.090			
#6	0.031	0.170	0.045	0.030	580	0.281	0.169			0.297	0.104			
#8	0.031	0.196	0.055	0.035	900	0.313	0.195			0.344	0.118			
#10	0.031	0.220	0.060	0.040	1120	0.375	0.221			0.391	0.132			
1/4	0.031	0.281	0.085	0.050	2020	0.438	0.281	0.750	0.219	0.469	0.163	0.406		
5/16	0.031	0.344	0.110	0.065	3340	0.531	0.344	0.813	0.266	0.578	0.197	0.469		
3/8	0.031	0.406	0.135	0.080	4940	0.625	0.406	0.875	0.299	0.688	0.230	0.594		
1/2	0.031	0.531	0.185	0.105	9050	0.813	0.531	1.125	0.395	0.906	0.296	0.781		
5/8	0.031	0.656	0.230	0.135	14400	1.000	0.656	1.375	0.475	1.031	0.362	0.906		
3/4	0.031	0.781	0.285	0.160	21300	1.188	0.781	1.625	0.555			1.031		
1	0.031	1.031	0.380	0.210	38600	1.625	1.031	2.250	0.731			1.344		
1 1/4	0.031	1.281	0.485	0.260	53800	2.000	1.281	2.813	0.907					

There is no std for Depth and Thru hole, these are design intent specific, remember to account for positional tolerance on thru hole tolerance

Metric (mm)		Std Clearance ØThru Hole	Min Thick (mm) (Ref dim)		Approx. Clamping/ Holding Force (lbs) Grade 5	SHCS 		HHCS 		BHSCS 		SKT SHD BOLT 	ØThru Hole 	
Size	Head Clearance		Alum or SS	Steel		ØCB	Depth	ØCB	Depth	ØCB	Depth	ØCB	Depth	Depth
M3	0.800	3.400	1.050	0.700	480	6.500	3.800			6.700	2.450			
M4	0.800	4.500	1.298	0.800	800	8.000	4.800			8.600	3.000	9.000		
M5	0.800	5.500	1.700	1.050	1360	10.000	5.800	15.000	4.380	10.500	3.550	11.000		
M6	0.800	6.600	2.000	1.200	1900	11.000	6.800	17.000	5.180	11.500	4.100	12.000		
M8	0.800	9.000	2.800	1.652	3500	15.000	8.800	22.000	6.480	15.000	5.200	15.000		
M10	0.800	11.000	3.450	2.000	5600	18.000	10.800	28.000	7.650	18.500	6.300	18.000		
M12	0.800	13.500	4.550	2.600	8200	20.000	12.800	30.000	8.750	22.000	7.400	20.000		
M16	0.800	17.500	6.200	3.550	15300	26.000	16.800	36.000	11.550	29.000	9.600	26.000		
M20	0.800	22.000	7.700	4.350	23900	33.000	20.800	44.000	14.200			33.000		
M24	0.800	26.000	9.200	5.200	34400	40.000	24.800	58.000	16.700					
M30	0.800	33.000	11.650	6.550	52500	50.000	30.800	67.000	20.550					

There is no std for Depth and Thru hole, these are design intent specific, remember to account for positional tolerance on thru hole tolerance

Notes:

The Min Material Thickness is the minimum thickness required in that material so that the part will have the same strength as a Grade 5 bolt
 All values are reference only not a requirement, if strength is critical separate calculations must be done for the exact material grade and fastener type utilized
 SS fasteners are similar to Grade 2, reduce loads by 30-40%. SHCS, FHSCS, BHSCS (non-SS) are significantly (25-35%) stronger than HHCS
 Any thru hole that has less than 1/32 clearance must have a positional tolerance tighter than the std +/- .010 or holes may not align