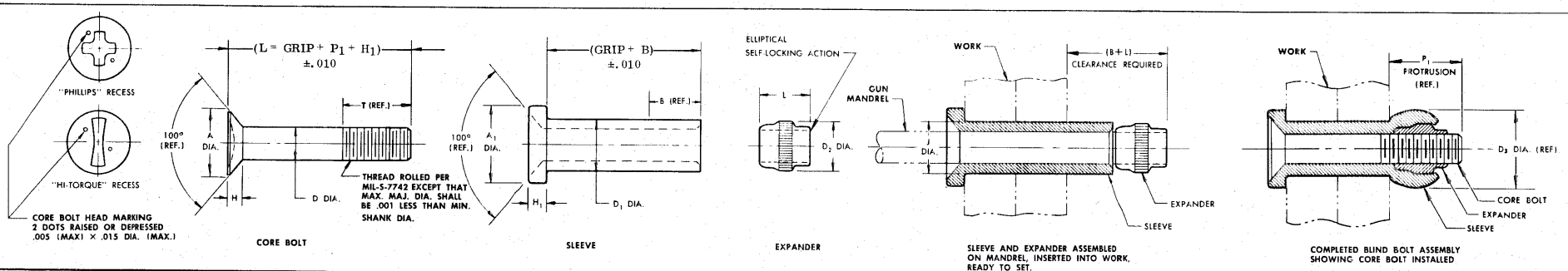
hi-shear CORPORATION
2600 SKYPARK DRIVE
TORRANCE, CALIFORNIA 90509
AREA CODE 213 • 775-3181 • 326-8110



BOLT ASSEMBLY		BB411 CORE BOLT								BB322 SLEEVE								BB346 EXPANDER				SUGGESTED HOLE PREPARATION					PROTRUSION AFTER INSTALLATION	
FIRST DASH NUMBER	NOMINAL DIAMETER	FIRST DASH NUMBER	HEAD STYLE	A	T	D	H	P_1	THREAD	FIRST DASH NUMBER	A_1	B GRIP RANGE 0-¾	B GRIP RANGE 13/16-1 1/16	B GRIP RANGE 1 1/16-1 5/8		D_1	H_1	FIRST DASH NUMBER	D_2	L	THREAD	J HOLE DIA.				CORE BOLT INSTALLATION TORQUE	P_1	D
-5	5/32	-5	PHILLIPS	.2274 .2226	.274	.1120 .1100	.048 .046	.208	4-40UNC-3A	-5	.294 .274	.210	.225			.169 .166	.055 .045	-5	.167	.153	4-40UNC-3B	.173 .170				8/10 IN. LBS.	.208	.210
-6	3/16	-6	PHILLIPS	.2514 .2466	.304	.1240 .1220	.053 .051	.239	5-40UNC-3A	-6	.315 .295	.250	.265	.330		.196 .193	.065 .055	-6	.194	.184	5-40UNC-3B	.201 .197				10/14 IN. LBS.	.239	.253
-8	1/4	-8	PHILLIPS	.3304 .3256	.397	.1650 .1630	.069 .067	.316	8-32UNC-3A	-8	.412 .387	.315	.330	.370		.257 .254	.090 .080	-8	.255	.245	8-32UNC-3B	.264 .258				20/30 IN. LBS.	.316	.335
-10	5/16	-10	HI-TORQUE	.4454 .4406	.498	.2180 .2160	.095 .093	.414	12-28UNF-3A	-10	.530 .500	.380	.400	.420		.338 .335	.110 .100	-10	.328	.307	12-28UNF-3B	.345 .339				50/80 IN. LBS.	.414	.438
-12	3/8	-12	HI-TORQUE	.5066 .5018	.567	.2490 .2470	.108 .106	.485	1/4-28 UNF-3A	-12	.615 .580	.450	.450	.450		.390 .387	.155 .145	-12	.383	.368	1/4-28 UNF-3B	.397 .391				125/150 IN. LBS.	.485	.510
-14	7/16	-14	HI-TORQUE	.6335 .6287	.628	.3110 .3090	.135 .133	.543	5/16-24 UNF-3A	-14	.803 .768	.500	500	.500		.468 .465	.160 .150	-14	.458	.429	5/16-24 UNF-3B	.475 .469				200/220 IN. LBS.	.543	.600
-16	1/2	-16	HI-TORQUE	.7604 .7556	.685	.3740 .3720	.162 .160	.600	3/8-24 UNF-3A	-16	.896 .861	.550	.550	.550		.530 .527	.165 .175	-16	.521	.491	3/8-24 UNF-3B	.539 .531				380/400 IN. LBS.	.600	.662

GENERAL NOTES

BB411 CORE BOLT

1. CONCENTRICITY: Head to "D" diameter within .005 TIR.
2. Complete threads shall begin within two thread pitches maximum. Two thread pitch maximum may consist of incomplete thread and extrusion angle.
3. "H" is dimensioned from maximum "D" diameter.

CODE: First dash number of core bolt indicates sleeve nominal diameter in 32nds. Second dash number indicates grip length (thickness of work) in 16ths.

EXAMPLE: BB411-8-12 = 8-32 Core Bolt for 1/4 nominal diameter sleeve, 3/4 grip length.

BB322 SLEEVE

1. CONCENTRICITY: Hole to "D" diameter within .005 TIR. "D_1" diameter to head within .010 TIR.

CODE: First dash number indicates nominal diameter of sleeve in 32nds. Second dash number indicates grip length (thickness of work) in 16ths.

EXAMPLE: BB322-8-12 = 1/4 nominal diameter sleeve, 3/4 grip length.

BB346 EXPANDER

1. Threads per MIL-S-7742

CODE: Dash number indicates nominal diameter of Blind Bolt Assembly in 32nds.

EXAMPLE: BB346-8 = 8-32 Expander for use with 1/4 nominal diameter Blind Bolt Assembly.

BB402 BOLT ASSEMBLY

CODE: First dash number indicates nominal diameter of Blind Bolt Assembly in 32nds. Second dash number indicates grip length (thickness of work) in 16ths.

EXAMPLE: BB402-8-12
- 12 → 3/4 grip length
- 8 → 1/4 nominal diameter (Blind Bolt Assembly)
- BB402 → Blind Bolt Assembly which includes: BB411 Core Bolt, BB322 Sleeve, and BB346 Expander

	BB411 CORE BOLT	BB322 SLEEVE	BB346 EXPANDER
MATERIAL	Type 17-4PH stainless steel per AMS 5643.	Type 305 stainless steel per QQ-S-763	Type 17-4PH stainless steel per AMS 5643.
HEAT TREAT	120,000 psi shear minimum.		120,000 psi shear minimum.
FINISH		Anneal.	Cadmium plate per QQ-P-416, Type I, Class 3.

U.S. Patents 2,959,999 - 2,677,985. Foreign patents issued and pending: 'HI-TORQUE' Trademark. *Trademark.

TITLE: BLIND BOLT* ASSEMBLY
PROTRUDING HEAD STYLE

DRAWING NUMBER: BB402

DRAWN	DATE	APPROVED	DATE	REVISION	DATE
D.P.S.	7-11-66			1	7-27-66

BB402