

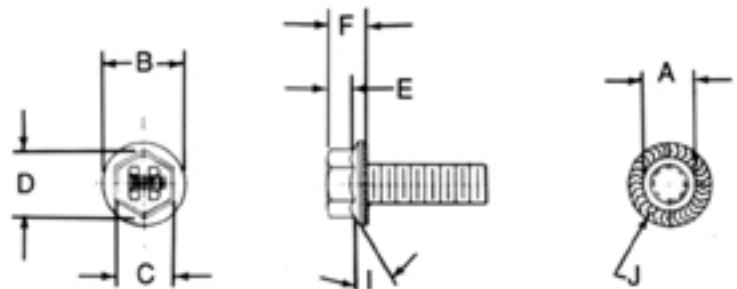
# Flange Hill-Lock® Screws

Hill-Lock® fasteners were engineered for applications where greater holding power is a requirement.

The patented chevron shaped teeth were designed for versatility and almost universal application.

The Hill-Lock® will seat and lock itself on painted greasy, oily, irregular, smooth, or flat surfaces.

Flange Hill-Lock® screws are manufactured with a high wrenching height to promote high-speed driving assemblies and automated production.



	Screw Size		10	12	1/4	5/16	3/8	7/16	1/2	5/8
A	Tooth I.D.	Min.	.301	.319	.382	.455	.547	.620	.693	.931
		Max.	.305	.323	.386	.461	.553	.626	.699	.933
B	Flange Diameter	Min.	.440	.500	.545	.660	.790	.900	1.020	1.280
		Max.	.460	.520	.565	.680	.810	.930	1.070	1.330
C	Across Flats	Min.	.305	.305	.367	.489	.551	.612	.736	.922
		Max.	.312	.312	.375	.500	.562	.625	.750	.9375
D	Across Corners	Min.	.340	.340	.409	.548	.618	.685	.825	1.034
E	Hex Height	Min.	.110	.140	.150	.190	.250	.300	.340	.420
F	Head Height	Min.	.180	.220	.240	.280	.360	.420	.470	.580
		Max.	.200	.240	.260	.300	.390	.460	.510	.620
I	Angle	15°/30°								
J	Teeth Number		20	22	25	30	36	41	46	60
L	Lengths Produced	Min.	5/16"	5/16"	5/16"	3/8"	1/2"	3/4"	3/4"	1"
		Max.	1-1/2"	1-1/2"	4-1/2"	4-1/2"	5"	5"	5"	5"

# This is the Hill-Lock®... With a "Little Bit Extra"

## Flange Hill-Lock® Screw Physicals



Wearability [Surface Hardness]	R15N-76/86
Core Hardness	Rc 25/34
Tensile Strength	120,000 P.S.I. min.

Hill-Lock® screws were designed for optimum versatility in application. This makes them suitable for most applications where locking fasteners are used.

They are also used on many applications where bearing surface conditions are less than ideal (rusty, dirty, heavy paint) because of the wiping, cleaning action of the teeth.

To promote proper installation, we recommend a seating load of 64,000 minimum to 85,000 maximum PSI, see Chart I.

We advise that torque tension values be determined for each specific application.

Chart II shows Torque Tension values for zinc plated Hill-Lock® screws based on the formula:  $T(\text{torque}) = KDP$  with K being 0.22 allowing for zinc electroplating, D being the nominal diameter of the screw, and P the minimum bolt tensile load expressed in pounds.\*\*

### CHART I — SEATING LOAD

Fastener Size	Stress Area in Square In.	64,000 P.S.I. * Loads in Lbs.	85,000 P.S.I. * Loads in Lbs.
10-24	0.0175	1100	1500
10-32	0.0200	1250	1700
12-24	0.0242	1550	2050
12-28	0.0258	1650	2200
1/4-20	0.0318	2050	2700
1/4-28	0.0364	2350	3100
5/16-18	0.0524	3350	4450
5/16-24	0.0580	3700	4950
3/8-16	0.0775	4950	6600
3/8-24	0.0878	5600	7450
7/16-14	0.1063	6800	9050
7/16-20	0.1187	7600	10,100
1/2-13	0.1419	9100	12,050
1/2-20	0.1599	10,250	13,600
5/8-11	0.2260	14,450	19,200
5/8-18	0.2560	16,400	21,750

\* Loads are computed by multiplying the P.S.I. equivalent loads by the tensile stress area of the thread.

### CHART II — TORQUE TENSION

Fastener Size	Stress Area in Square In.	Torque Ft. Lbs.	64,000 P.S.I. Loads in Lbs.
10-24	0.0175	4	1100
10-32	0.0200	4	1250
12-24	0.0242	6	1550
12-28	0.0258	7	1650
1/4-20	0.0318	9	2050
1/4-28	0.0364	11	2350
5/16-18	0.0524	19	3350
5/16-24	0.0580	21	3700
3/8-16	0.0775	34	4950
3/8-24	0.0878	39	5600
7/16-14	0.1063	54	6800
7/16-20	0.1187	61	7600
1/2-13	0.1419	83	9100
1/2-20	0.1599	94	10,250
5/8-11	0.2260	166	14,450
5/8-18	0.2560	189	16,400

\*\* Based on the Industrial Fasteners Institute 6th Edition "Fastener Standards", pages M62 thru M65