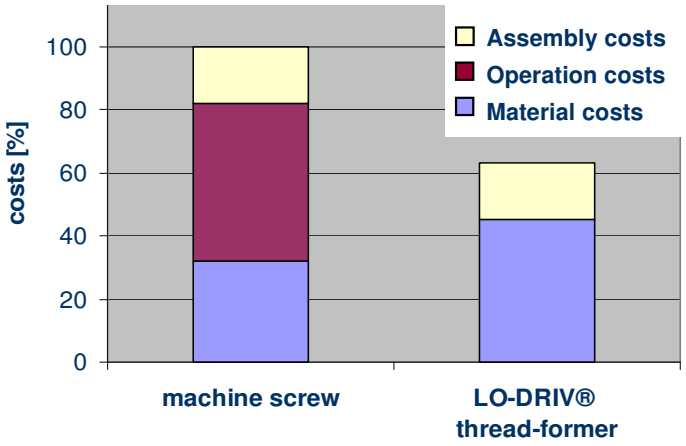
LO-DRIV®

A Superior Thread-Former for Steel

Low In-Place Cost

In-place joint cost savings can be realized through the elimination of all costs associated with the tapping operation, including:

- direct labor (setup, run, and inspection time)
- thread taps, fixtures, and gages
- in-process moving and storage
- cleaning oil and chips from a tapped hole
- required capital
- scrap



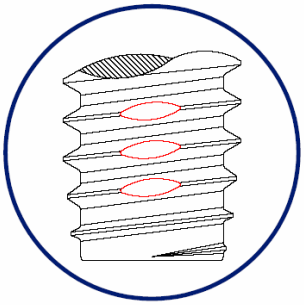
Quality Improvement

Utilizing a LO-DRIV fastener improves supply-chain quality by eliminating secondary tapping operations and all associated quality issues including:

- cross-threading and assembly problems
- oil and chip contamination
- missing or improperly tapped holes

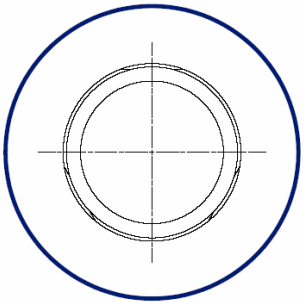
Superior Installation Characteristics

The unique LO-DRIV® screw design incorporates three distinct sections. The first section is an initial sharp crested thread. The second section is a tapered area having numerous thread relief indentations. The third section is a completely round bodied area. The sharp lead thread provides quick starting using a minimum amount of end load force. The tapered relief section allows thread forming at very low torque values. The fully round body provides the highest possible resistance to thread stripping. The combination of these features provides for fast, easy screw installation requiring minimum operator exertion and high reliability against screw failures and all of their associated costs.

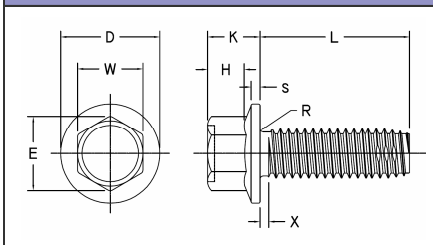
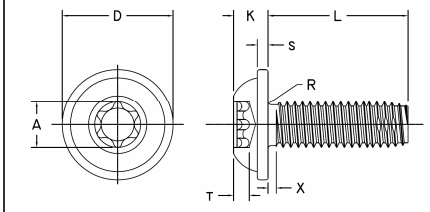


Excellent Joint Stability

The circular cross section maximizes flank engagement compared to trilobular designs, providing high stripping torque, consistent vibration resistance, and superior clamp load. In addition, the large cross sectional area provides increased axial and torsional strength.



LO-DRIV® Fastener Standards

	External thread diameter			2.5	3.0	3.5	4.0	5.0	6.0	8.0	10.0	12.0
	Thread pitch			0.45	0.50	0.60	0.70	0.80	1.00	1.25	1.50	1.75
	Thread run-out	X	max.	0.45	0.50	0.60	0.70	0.80	1.00	1.25	1.50	1.75
Indented Hex Flange Head												
	Flange diameter	D	max.	5.40	6.40	7.50	8.50	10.60	12.80	16.80	21.00	24.80
			min.	5.00	5.90	6.90	7.80	9.80	11.80	15.50	19.30	23.30
	Width across flats	W	max.	3.20	4.00	5.00	5.50	7.00	8.00	10.00	13.00	15.00
			min.	3.04	3.84	4.82	5.32	6.78	7.78	9.78	12.72	14.72
	Width across corners	E	min.	3.39	4.27	5.36	5.92	7.55	8.66	10.89	14.16	16.38
	Head height	K	max.	2.70	3.20	3.80	4.30	5.40	6.70	8.60	10.70	13.70
	Hex height	H	min.	1.60	1.90	2.40	2.80	3.50	4.20	5.60	7.00	8.40
	Flange edge thickness	s	min.	0.30	0.40	0.50	0.60	0.70	1.00	1.20	1.40	1.80
	Radius	R	min.	0.10	0.10	0.10	0.20	0.20	0.30	0.40	0.40	0.40
Torx Plus Round Washer Head												
	Washer diameter	D	max.	6.00	7.50	9.00	10.00	11.50	14.50	19.00	on request	
			min.	5.52	6.92	8.42	9.42	10.80	13.80	18.16		
	Head height	K	max.	2.12	2.37	2.62	3.02	3.55	4.55	5.85		
			min.	1.88	2.13	2.38	2.78	3.25	4.25	5.55		
	Washer thickness	s	max.	0.70	0.80	0.90	1.10	1.30	1.70	2.10		
			min.	0.50	0.60	0.70	0.90	1.10	1.50	1.90		
	Radius	R	min.	0.10	0.10	0.10	0.20	0.20	0.30	0.40		
	Torx Plus size			8IP	10IP	15IP	20IP	25IP	30IP	40IP		
	Recess width	A	ref.	2.40	2.80	3.35	3.95	4.50	5.60	6.75		
	Recess penetration depth	t	max.	1.10	1.30	1.40	1.65	1.85	2.30	3.10		
			min.	0.90	1.00	1.10	1.30	1.50	1.90	2.60		

Material:
Case Hardened (up to M6): 1022 or 10B21 steel,
RC 28-38 core hardness, RC 45 min. case hardness
Through Hardened: 4037 steel,
RC 28-38, tip induction hardened to RC 45 min

Plating:
Zinc, bake, and trivalent chromate with wax dip

Different materials and platings, and special designs available upon request

Joint Design

Thread Engagement Guidelines	
Application	**Percent Thread Engagement**
Powdered Metal	50-65
Cast Iron	50-65
Cold Rolled Steel	65-70
Thin Sheet Metal	80-95
Punch Extrusion	85-90

Optimum hole sizes and tightening torques for specific applications can be determined through experimentation in the ATF Applications Lab

Hole Sizes (mm)									
Percent Thread Engagement	**2.5**	**3.0**	**3.5**	**4.0**	**5.0**	**6.0**	**8.0**	**10.0**	**12.0**
50	2.35	2.84	3.31	3.77	4.74	5.68	7.59	9.51	11.43
55	2.34	2.82	3.29	3.75	4.71	5.64	7.55	9.46	11.37
60	2.33	2.81	3.27	3.73	4.69	5.61	7.51	9.42	11.32
65	2.31	2.79	3.25	3.70	4.66	5.58	7.47	9.37	11.26
70	2.30	2.77	3.23	3.68	4.64	5.55	7.43	9.32	11.20
75	2.28	2.76	3.21	3.66	4.61	5.51	7.39	9.27	11.15
80	2.27	2.74	3.19	3.64	4.58	5.48	7.35	9.22	11.09
85	2.25	2.72	3.17	3.61	4.56	5.45	7.31	9.17	11.03
90	2.24	2.71	3.15	3.59	4.53	5.42	7.27	9.12	10.98
95	2.22	2.69	3.13	3.57	4.51	5.38	7.23	9.07	10.92

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