050-392

DATA SHEET

38999 SERIES III TYPE, ARR. 25-26 WITH
SIZE 8 ELECTRO-OPTICAL CONTACT TRANSMITTER AND/OR RECEIVERS
PC TAIL WITH PCB STANDOFFS
OPEN FACE ENVIRONMENTALLY SEALED

REV	DESCRIPTION	DATE	APPROVED
1	Preliminary	02/07/2017	GC/SZ/NH
2	Added CHO-SEAL O-ring and additional dimensions	04/24/2017	GC/SZ/NH
3	Added information to Table II	04/26/2017	GC/SZ/NH
4	Fixed typo CHO-SEAL 1289 to 1298, added assembly instructions	05/15/2017	GC/SZ/NH
5	Added Marking note	12/18/2017	RAS/DJM
6	Added Pictures of product	02/05/2018	RAS/GC
7	General Update	05/18/2018	RAS/GC
8	Updated Outline drawing. PC Tail lengths clarified and missing tolerance note added.	05/31/2018	DJM/RAS
9	Add 050-399 and 0500-3015 contact options. Update the 050-301 Contacts P/Ns. Add FO Inspection & Cleaning Tools	03/11/2019	RAS/GC/YA

050-392 Datasheet

D38999 Series III Type, Arr. 25-26, Active Receptacle Connector Incorporating Glenair Size #8 Opto-Electronic Contacts

MIL-DTL-38999 type Receptacle Connector with Size #8 Opto-Electronic Contacts

Patented size 8 contacts

050-392 series of Active Opto-electronic sealed panel mount connectors offers customers the power to convert from electrical to fiber optic signals within a D38999 connector using Arr. 25-26 IAW prEN 3645-001 to support high speed fiber optic transmissions in harsh environments. The opto-electronic performance parameters of the 050-392 are defined by the performance of the size 8 contacts that are incorporated**. For example, if one incorporates a 4.25Gbps contact into the connector then each of the contacts will be 4.25Gbps capable. The connector electrical interfaces are through PC tails to customer PCBA. The connector is environmentally sealed using a potting compound that protects customer Electronics if the connector is left in an unmated condition.

The fiber optic signal that is generated within the 050-392 active connector is transmitted via fiber optic connector interface to fiber optic cable systems using a standard D38999 plug connector that has been fitted with a 059-0001 adapter.

The 059-0001 adapter converts D38999 size 8 cavities (twinax, coax, or quadrax) into ARINC 801 1.25mm fiber optic connectors. For more information, please refer to 059-0001 sales drawing.

KEY FEATURES/BENEFITS

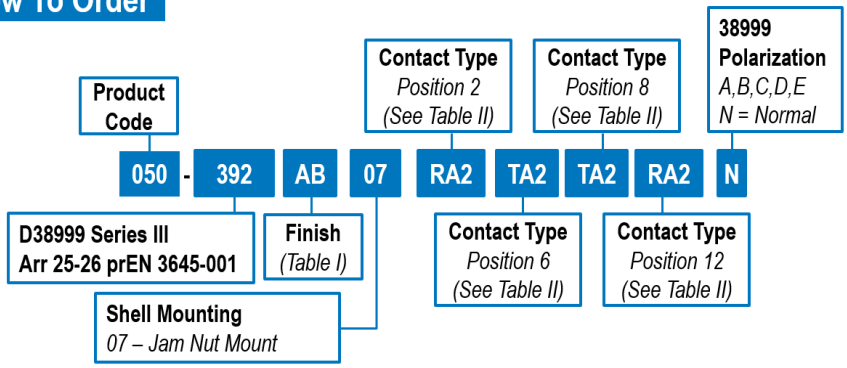
- 25-26 IAW prEN 3645-001
- 050-301 contacts to support ARINC 801 1.25mm fiber optic interconnect,100Mbps to 4.25Gbps per contact
- 059-0001 Adapters available to support converting PLUG D38999 Size #8 cavities into ARINC 801 fiber optic compatible connectors
- 050-307 Active Size #8 contacts to support 2.5mm Fiber Optic contact systems, 100Mbps to 4.25Gbps per contact
- PC tail electrical interfaces
- Connector rear face contains standoffs to allow direct mechanical attachment to PCB
- CHO-SEAL 1298 Conductive EMI/Environmental Seal

APPLICATIONS

Harsh Environment such as:

- Airborne, Tactical, Railway, Industrial, Oil and Gas and Shipboard applications
- Ethernet, Fast Ethernet, Gigabit Ethernet, AFDX, 1x/2x/4x Fiber Channel, DVI, HDMI, SFDP, Serial Rapid I/O (sRIO) and other high speed communication all over Multimode Fiber

How To Order



** Note: For electrical ratings and specifications, please refer to 050-301, 050-367, 050-399, or 0500-3015 datasheets

Notes:

- This connector is designed to meet applicable dimensional, environmental, and performance characteristics of D38999 Series III per appropriate material class
- For opto-electric performance specifications see applicable size 8 contact datasheets available on the Glenair Website
  - 050-301
  - 050-307
  - 050-367
- This connector mates with standard MIL-DTL-38999/26 plug connector.
  - *Glenair Plug PN 233-217-G6#25-26BN*
  - *Electrical mating contacts, refer to 850-001*
- For 050-301 and 050-367 cleaning tools and instructions, see GCLT-H125 in Glenair Fiber Optic Catalog
- For 050-307 cleaning tools and instructions, see GCLT-HC250 in Glenair Fiber Optic Catalog
- Receptacle and plug cavity adapter contact removal tool: M81969/14-12
  Plug optical contact insertion/removal tool: M81969/14-03

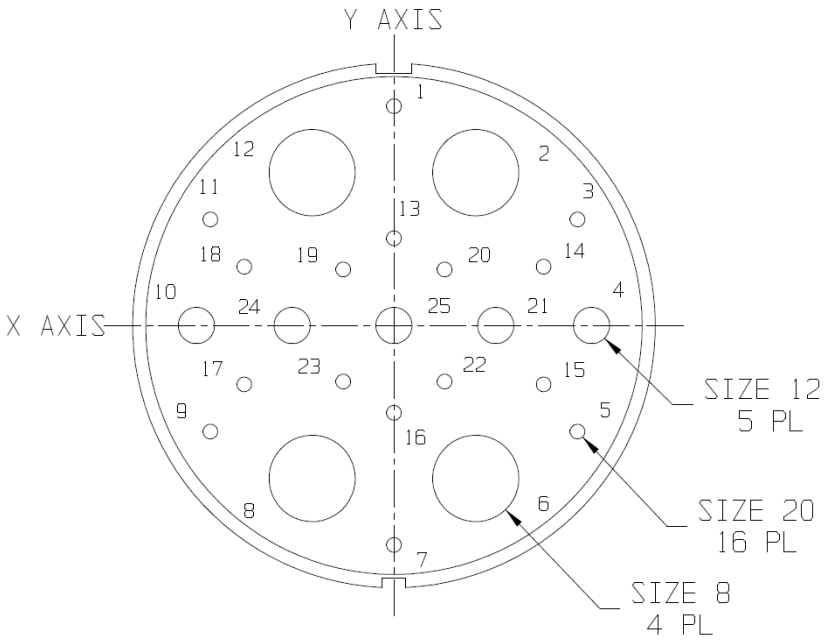
Table I: Material And Finish

SYM	Material	Finish Description
M	Aluminum	Electroless Nickel
MT		Nickel – PTFE
NF		Cadmium, Olive Drab
ZR		Zinc Ni, Black (Tri-Valent CR)
MA		Electroless Nickel Plate, Matte
Z1	Stainless Steel	Passivate
ZL		Electro-Deposited Nickel
AB	Marine Bronze	No Plating

Table II: Contact Type				
Contact Type	**Contact Option**	**Contact P/N**	**Description**	**Contact Type Description**
A (Multimode 50/125 & 62.5/125)	1	050-301-01-T	1.25 Gbps Transmitter	050-301 series opto-electronic size #8 contact, 100Mbps – 5.00Gbps, 850nm VCSEL Transmitter or PIN/TIA Receiver, 1.25mm LuxCis optical interface that mates with ARINC 801 terminus**
		050-301-01-R	1.25 Gbps Receiver	
	2	050-301-02-T	2.50 Gbps Transmitter	
		050-301-02-R	2.50 Gbps Receiver	
	3	050-301-03-T	3.20 Gbps Transmitter	
		050-301-03-R	3.20 Gbps Receiver	
	4	050-301-04-T	4.25 Gbps Transmitter	
		050-301-04-R	4.25 Gbps Receiver	
	5	050-301-05-T	5.00 Gbps Transmitter	
		050-301-05-R	5.00 Gbps Receiver	
C (Multimode 50/125 & 62.5/125)	1	050-367-1-T	HD-SDI Transmitter	050-367 series opto-electronic size 8 contact, HD-SDI and 3G-SDI, 1.25mm LuxCis optical interface that mates with ARINC 801 terminus
		050-367-1-R	HD-SDI Receiver	
	2	050-367-T	3G-SDI Transmitter	
		050-367-R	3G-SDI Receiver	
D (Multimode 50/125 & 62.5/125)	1	050-399-01-TX	DC to 1 Mbps TX	050-399 series opto-electronic size 8 contact, DC to 1 Mbps, 1.25mm LuxCis optical interface that mates with ARINC 801 terminus
		050-399-01-RX	DC to 1 Mbps RX	
E (Multimode 50/125 & 62.5/125)	1	0500-3015-01-TX	DC to 50 Mbps TX	050-399 series opto-electronic size 8 contact, DC to 50 Mbps, 1.25mm LuxCis optical interface that mates with ARINC 801 terminus
		0500-3015-01-RX	DC to 50 Mbps RX	
X	X	N/A	No Contact, Empty	

Insert Arrangements

Table V: Contact Locations and Sizes

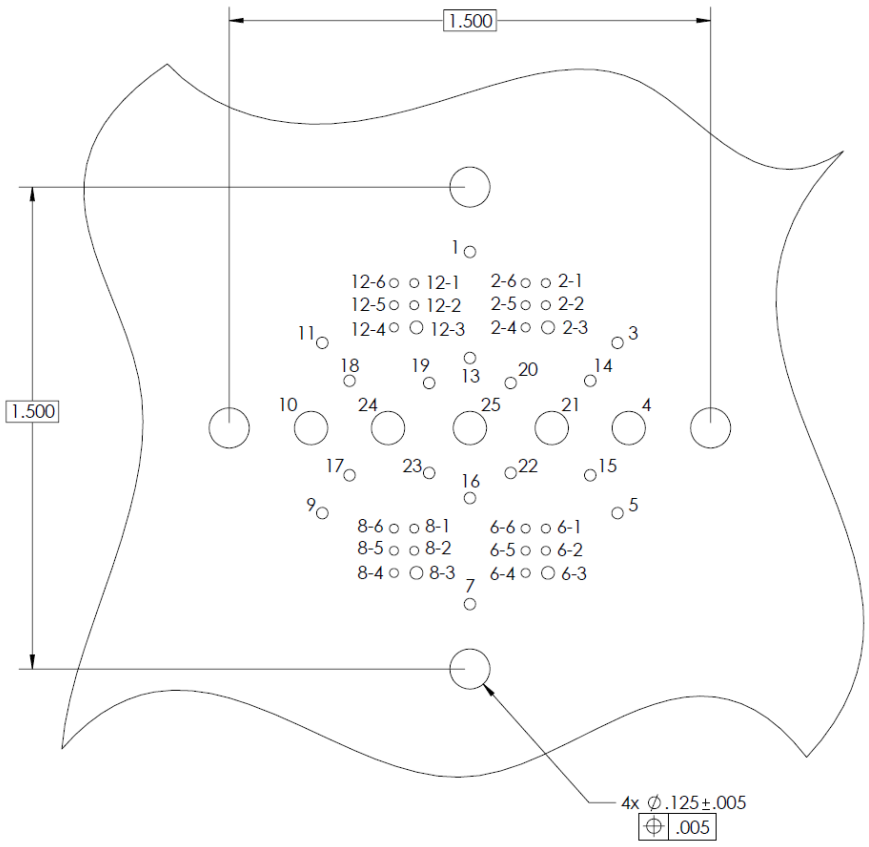


Arr. 25-26
IAW prEN 3645-001
Connector Pin Face
Shown

Arrangement 25-26			
Recommended PCB Layout			
Contact Position ID	Master Pin Position		Contact Size
	X Position	Y Position	
1	.000	+.548	20
2	+.205	+.382	8
3	+.460	+.265	20
4	+.495	.000	12
5	+.460	-.265	20
6	+.205	-.382	8
7	.000	-.548	20
8	-.205	-.382	8
9	-.460	-.265	20
10	-.495	.000	12
11	-.460	+.265	20
12	-.205	+.382	8
13	.000	+.218	20
14	+.375	+.147	20
15	+.375	-.147	20
16	.000	-.218	20
17	-.375	-.147	20
18	-.375	+.147	20
19	-.127	+.140	20
20	+.127	+.140	20
21	+.255	.000	12
22	+.127	-.140	20
23	-.127	-.140	20
24	-.255	.000	12
25	.000	.000	12

Recommended PCB Layout

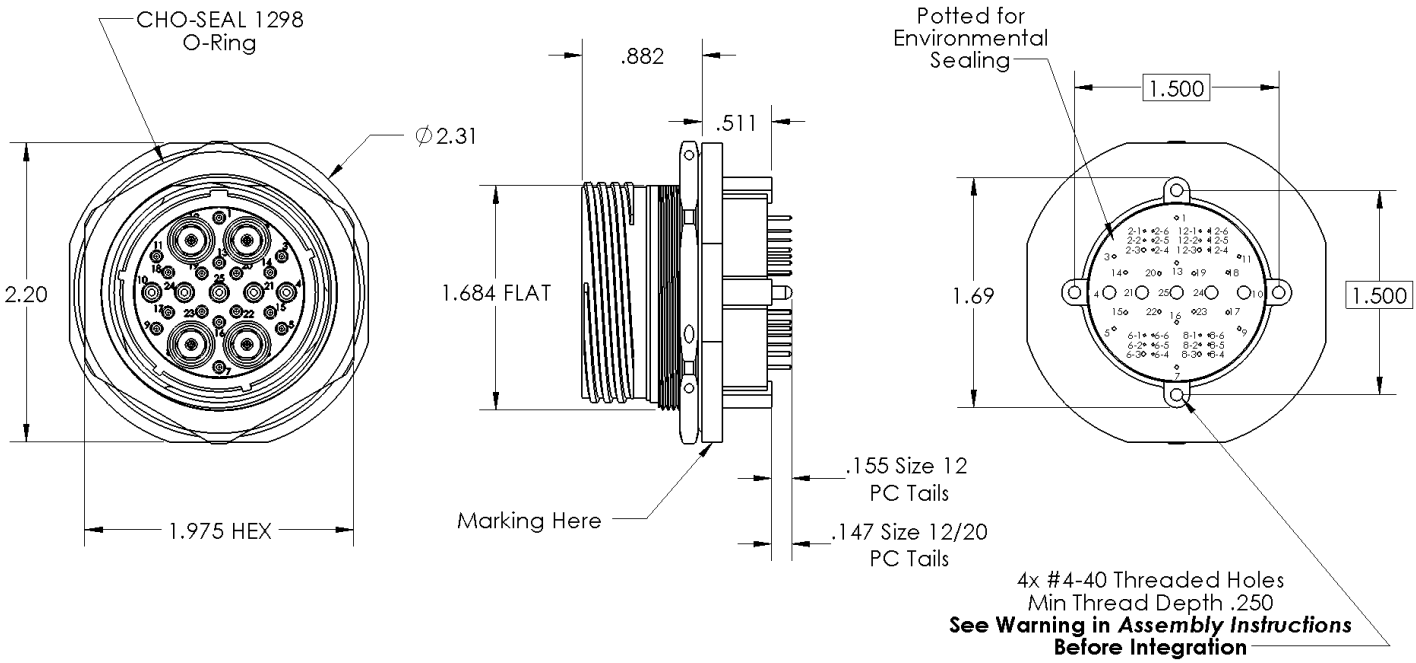
Table VI: Recommended PCB Hole Locations and Sizes



Example Board

Arrangement 25-26				
Contact Pos. ID	Master Pin Pos		Pin Size	Rec. Drill Size
	X Pos	Y Pos		
1	.000	+.548	Ø.026	Ø.036
2-1	+.237	+.451	Ø.017	Ø.028
2-2	+.237	+.382	Ø.017	Ø.028
2-3	+.244	+.313	Ø.030	Ø.040
2-4	+.174	+.313	Ø.017	Ø.028
2-5	+.174	+.382	Ø.017	Ø.028
2-6	+.174	+.451	Ø.017	Ø.028
3	+.460	+.265	Ø.026	Ø.036
4	+.495	.000	Ø.094	Ø.104
5	+.460	-.265	Ø.026	Ø.036
6-1	+.237	-.313	Ø.017	Ø.028
6-2	+.237	-.382	Ø.017	Ø.028
6-3	+.244	-.451	Ø.030	Ø.040
6-4	+.174	-.451	Ø.017	Ø.028
6-5	+.174	-.382	Ø.017	Ø.028
6-6	+.174	-.313	Ø.017	Ø.028
7	.000	-.548	Ø.026	Ø.036
8-1	-.174	-.313	Ø.017	Ø.028
8-2	-.174	-.382	Ø.017	Ø.028
8-3	-.167	-.451	Ø.030	Ø.040
8-4	-.237	-.451	Ø.017	Ø.028
8-5	-.237	-.382	Ø.017	Ø.028
8-6	-.237	-.313	Ø.017	Ø.028
9	-.460	-.265	Ø.026	Ø.036
10	-.495	.000	Ø.094	Ø.104
11	-.460	+.265	Ø.026	Ø.036
12-1	-.174	+.451	Ø.017	Ø.028
12-2	-.174	+.382	Ø.017	Ø.028
12-3	-.167	+.313	Ø.030	Ø.040
12-4	-.237	+.313	Ø.017	Ø.028
12-5	-.237	+.382	Ø.017	Ø.028
12-6	-.237	+.451	Ø.017	Ø.028
13	.000	+.218	Ø.026	Ø.036
14	+.375	+.147	Ø.026	Ø.036
15	+.375	-.147	Ø.026	Ø.036
16	.000	-.218	Ø.026	Ø.036
17	-.375	-.147	Ø.026	Ø.036
18	-.375	+.147	Ø.026	Ø.036
19	-.127	+.140	Ø.026	Ø.036
20	+.127	+.140	Ø.026	Ø.036
21	+.255	.000	Ø.094	Ø.104
22	+.127	-.140	Ø.026	Ø.036
23	-.127	-.140	Ø.026	Ø.036
24	-.255	.000	Ø.094	Ø.104
25	.000	.000	Ø.094	Ø.104

FIGURE 1 – OUTLINE DRAWING

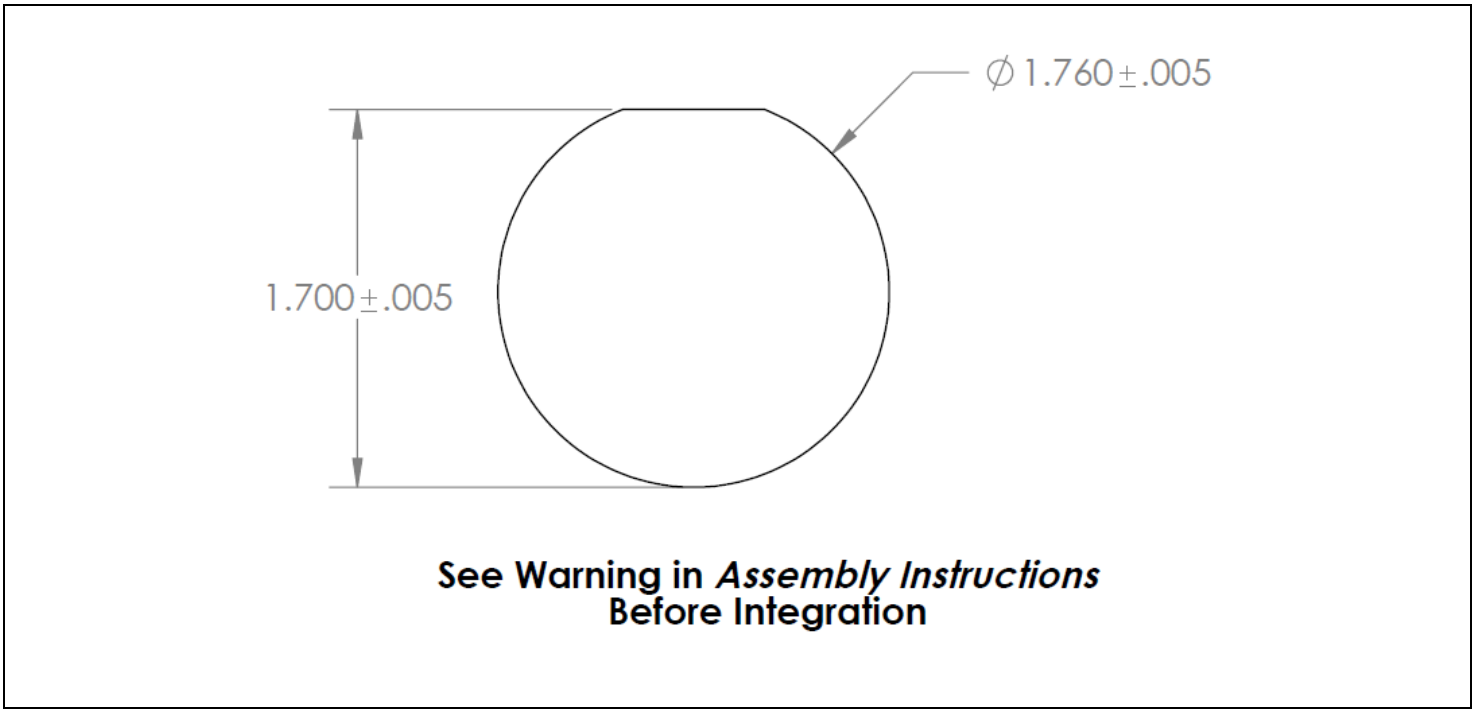


Dimensional Tolerances Unless specified otherwise:
0.x ± 0.1"
0.xx ± 0.03"
0.xxx ± 0.015"

Marking:

Assembly is identified with Manufacture's Name, Cage Code, Date Code, Part Number and Serial Number in approximate location shown

FIGURE 2 – RECOMMENDED PANEL CUTOUT



Assembly Instructions

Due to the tolerances in D-hole panel cutouts and jam nut connectors, the connector will tilt during the installation of the jam nut. In order to ensure that no damage is done to the PCBA, the following steps must be taken in the order described:

1. The PCBA must be fastened to the connector via the four #4-40 standoffs.
2. After the PCBA is securely fastened to the connector, PC tails may be soldered.
3. When installing jam nut connector into the panel, the PCBA requires full float. The PCBA must not be fastened to any other part of the panel and only fastened via 4 standoffs to the connector (step 1).
4. Once the jam nut is torqued to 120/130 in-lbs the PCBA may be secured at other locations.

If the steps above are not followed, stresses may be introduced at the PC tails and cause damage to the board or connector.

Recommended Inspection & Cleaning Tools/Kits

The following recommendations are suggested for this product:

- **GBS-1001 Inspection Kit which includes GIT-003 tip for ARINC 801 fiber contacts.**
- **GCLT-H200 or GCLT-HA125 cleaning tool for ARINC 801 system.**

GBS1001 Inspection Probe with USB Adapter and Fiber Chek 2 Software

How To Order

GBS1001

Basic Part Number Includes:
- *Inspection probe with USB adapter*
- *Fiber Chek 2 Software*

Comes with
(installed on the probe):
GIT-003 Universal 1.25mm patch cord

The GBS1001 is the only inspection probe today with a high resolution, all digital sensor and USB2 video stream which delivers high-resolution uncompressed images directly to your personal computer.

GBS1001 Specifications	
Weight	.11 Kg / .25 lb
Resolution	Better than 1.5 Microns
Cable	Integrated USB 2.0 coil cable 2.5' relaxed, 10.5' fully extended
Certification	CE
Warranty	1 year

Fiber Chek Software
Fiber Optic Analysis Program

Fiber Chek is an integrated hardware/software package engineered with the single purpose of critically and consistently grading fiber end-faces. Works hand in hand with the Quick Capture Analog Probe for visual inspection, taking pictures and testing fibers.

- Automatic debris and defect detection, including fine scratches
- Measures epoxy ring for out-of-tolerance conditions
- Inspection results, including image data, can be printed or archived
- Utilizes industry standards or user defined threshold settings

Recommended Inspection & Cleaning Tools/Kits – (Continued)

Dry action cleaning tool for ARINC 801 systems

Dry action cleaning tool for ARINC 801 test adapters

- **A simple push motion engages tool**
- **Audible click when tool is fully engaged**
- **Durable — over 525 engagements per tool**
- **Crush resistant to over 250N**
- **Impact resistant to survive drops over 1.5M**