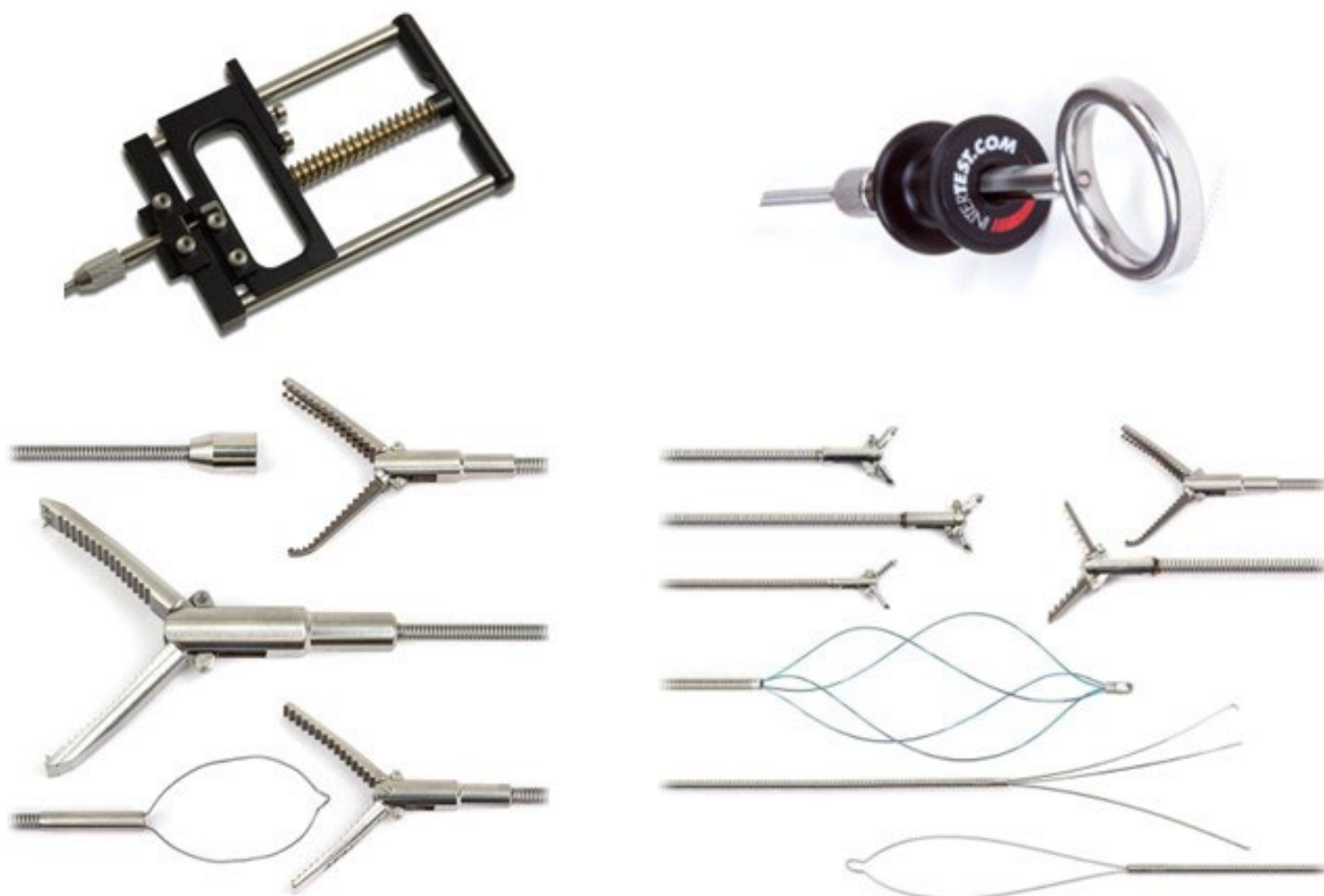




iGrab™ Manual Retrieval Tools



InterTest, Inc. • 303 Route 94 • Columbia, NJ 07832
Released January 2022





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Contact Information

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Introduction:

The iGrab™ Manual Retrieval Tools are critical in Foreign Object Search and Retrieval (FOSAR), Foreign Materials Exclusion (FME), and Foreign Object Debris (FOD) removal operations in power generation service and manufacturing industries. InterTest, Inc.'s retrieval tool brand iGrab™ has tools as small as 1.4 mm diameter to as large as 10mm

The smaller tools, generally 3mm and less are meant to be used in a Working Channel of a Video Probe / Articulating Guide Tube. Larger diameters are meant to be used either by itself or when mounted externally to a Video Probe / Articulating Guide Tube using a "Working Tool Holder"

Working Channel Retrieval Tools (Micro)

Part Number	Description	Diameter	Length
EM90107	iGrab 1.4 mm Micro Snare FOD Retrieval Tool	1.4 mm (0.05")	10 ft (3.05m)
EM90110	iGrab 1.4 mm, 2.3 mm, & 3 mm Micro Alligator FOD Retrieval Tools	1.4 mm (0.05")	10 ft (3.05m)
EM90271	iGrab 1.4 mm x 10 ft Micro Snare FOD Retrieval Tool	1.4 mm (0.05")	10 ft (3.05m)
EM17641	iGrab FOD 1.4 mm x 2 meter Micro Three Prong Gripper Retrieval Tool	1.4 mm (0.05")	2 m
EM17638	iGrab FOD 1.4 mm x 2 meter Micro Snare Retrieval Tool	1.4 mm (0.05")	2 m
EM17637	iGrab FOD 1.4 mm x 2 meter Micro Alligator Retrieval Tool	1.4 mm (0.05")	2 m
EM90271	iGrab 1.4 mm Micro Snare FOD Retrieval Tool	1.4 mm (0.05")	20 ft (6.10m)
EM90272	iGrab 1.4 mm, 2.3 mm, & 3 mm Micro Alligator FOD Retrieval Tools	1.4 mm (0.05")	20 ft (6.10m)
EM19459	iGrab 1.4 mm Micro Three Prong Gripper FOD Retrieval Tools	1.4mm (0.05")	10 ft (3.05m)
EM16851	iGrab 1.4 mm Micro Three Prong Gripper FOD Retrieval Tools	1.4mm (0.05")	20 ft (6.10m)
EM16682	iShot® iGrab Manual FOSAR Alligator Retrieval Tool, 1.8mm x 20 ft	1.8 mm (0.07")	20 ft (6.10m)
EM17720	iGrab 1.8 mm and 2.4 mm Micro Cup Forceps FOD Retrieval Tools	1.8 mm (0.07")	3.28 ft (1m)
EM17717	iGrab 1.8 mm, 2.4 mm, and 3 mm Micro Long Tooth FOD Retrieval Tools	1.8 mm (0.07")	3.94 ft (1.2m)
EM17719	iGrab 1.4 mm, 2.3 mm, & 3 mm Micro Alligator FOD Retrieval Tools	2.3 mm (0.09")	7.5 ft (2.3m)
EM41264	iGrab 1.8 mm and 2.4 mm Micro Cup Forceps FOD Retrieval Tools	2.4 mm (0.094")	10 ft (3.05m)
EM14710	iGrab FOD 2.4 mm x 10 ft Micro Three Prong Gripper Retrieval Tool	2.4 mm (0.094")	10 ft (3.05m)
EM17639	iGrab FOD 2.4 mm x 2 meter Micro Cup Forceps Retrieval Tool	2.4 mm (0.094")	2 m
EM17640	iGrab FOD 2.4 mm x 2 meter Micro Toothed Clam Retrieval Tool	2.4 mm (0.094")	2 m
EM10660	iGrab 1.8 mm and 2.4 mm Micro Cup Forceps FOD Retrieval Tools	2.4 mm (0.094")	20 ft (6.10m)
EM16679	iGrab 2.4 mm Micro Rat Tooth FOD Retrieval Tools	2.4mm (0.094")	10 ft (3.05m)
EM16677	iGrab 2.4 mm Micro Toothed Clam FOD Retrieval Tools	2.4mm (0.094")	10 ft (3.05m)
EM16680	iGrab 2.4 mm Micro Rat Tooth FOD Retrieval Tools	2.4mm (0.094")	20 ft (6.10m)
EM16678	iGrab 2.4 mm Micro Toothed Clam FOD Retrieval Tools	2.4mm (0.094")	20 ft (6.10m)
EM17718	iGrab 1.8 mm, 2.4 mm, and 3 mm Micro Long Tooth FOD Retrieval Tools	2.4mm (0.094")	7.5 ft (2.3m)
EM17632	iGrab 2.8 mm Micro Fork & Tine FOD Retrieval Tools	2.8 mm	10 ft (3.05m)
EM17633	iGrab 2.8 mm Micro Fork & Tine FOD Retrieval Tools	2.8 mm	20 ft (6.10m)
EM17619	iGrab FOSAR 3mm x 1.5M Micro Alligator Retrieval Tool	3 mm (0.12")	1.5m
EM90136	iGrab 1.4 mm, 2.3 mm, & 3 mm Micro Alligator FOD Retrieval Tools	3 mm (0.12")	10 ft (3.05m)
EM16675	iGrab 1.8 mm, 2.4 mm, and 3 mm Micro Long Tooth FOD Retrieval Tools	3 mm (0.12")	10 ft (3.05m)
EM16674	iGrab 1.4 mm, 2.3 mm, & 3 mm Micro Alligator FOD Retrieval Tools	3 mm (0.12")	20 ft (6.10m)
EM16676	iGrab 1.8 mm, 2.4 mm, and 3 mm Micro Long Tooth FOD Retrieval Tools	3 mm (0.12")	20 ft (6.10m)
EM17618	iGrab FOD 3.3 mm x 1.5 mter Micro Long Tooth Retrieval Tool	3.3 mm	1.5m
EM17400	iGrab Micro Manual FOD Retrieval Tool Kits - 8 Piece Sets	Various	10 ft (3.05m)
EM17401	iGrab Micro Manual FOD Retrieval Tool Kits - 8 Piece Sets	Various	20 ft (6.10m)

Figure 1 Micro Tool Part Numbers

Note:

Micro Retrieval Tools uses a small plunger


Figure 2 Micro Tool Plunger



Manual Retrieval Tools (> 3mm)

Part Number	Description	Diameter	Length
EM10630	iGrab 6 mm Fork & Tine Manual FOD Retrieval Tools	6 mm	15 ft (4.57m)
EM10635	iGrab 6 mm Gripping Plier Manual FOD Retrieval Tools	6 mm	15 ft (4.57m)
EM10637	iGrab 6 mm Sampling Cup Forceps Manual FOD Retrieval Tools	6 mm	15 ft (4.57m)
EM10638	iGrab 6 mm Sampling Cup Forceps Manual FOD Retrieval Tools	6 mm	25 ft (7.62m)
EM10642	iGrab 4 mm and 8 mm Magnet Manual FOD Retrieval Tools	8 mm (0.315")	15 ft (4.57m)
EM10650	iGrab 8 mm and 10 mm Viper Manual FOD Retrieval Tools	10 mm (0.4")	15 ft (4.57m)
EM10651	iGrab 8 mm and 10 mm Viper Manual FOD Retrieval Tools	10 mm (0.4")	25 ft (7.62m)
EM12630	iGrab 8 mm and 10 mm Viper Manual FOD Retrieval Tools	8 mm (0.315")	11.5 feet (3.5m)
EM12634	iGrab 8 mm and 10 mm Viper Manual FOD Retrieval Tools	8 mm (0.315")	25 ft (7.62m)
EM13894	iGrab 6 mm Fork & Tine Manual FOD Retrieval Tools	6 mm	11.5 feet (3.5m)
EM13895	iGrab 8 mm and 10 mm Viper Manual FOD Retrieval Tools	10 mm (0.4")	11.5 feet (3.5m)
EM16122	iGrab 6 mm Gripping Plier Manual FOD Retrieval Tools	6 mm	25 ft (7.62m)
EM16316	iGrab 8 mm and 10 mm Viper Manual FOD Retrieval Tools	8 mm (0.315")	50 ft (15m)
EM16672	iGrab 4 mm Snare Manual FOD Retrieval Tools	4 mm (0.157")	11.5 feet (3.5m)
EM16673	iGrab 4 mm Snare Manual FOD Retrieval Tools	4 mm (0.157")	25 ft (7.62m)
EM16847	IGRAB MAGNET R TOOL, 4MM x 25FT	4 mm (0.157")	25 ft (7.62m)
EM17693	iGrab 8 mm and 10 mm Viper Manual FOD Retrieval Tools	10 mm (0.4")	50 ft (15m)
EM17694	iGrab 4 mm Snare Manual FOD Retrieval Tools	4 mm (0.157")	50 ft (15m)
EM18002	IGRAB MAGNET R TOOL, 4MM x 11.5FT	4 mm (0.157")	11.5 feet (3.5m)
EM19211	iGrab 6 mm Fork & Tine Manual FOD Retrieval Tools	6 mm	50 ft (15m)
EM19212	iGrab 6 mm Gripping Plier Manual FOD Retrieval Tools	6 mm	50 ft (15m)
EM19213	iGrab 6 mm Sampling Cup Forceps Manual FOD Retrieval Tools	6 mm	50 ft (15m)
EM19214	IGRAB MAGNET R TOOL, 8MM x 50FT	8 mm (0.315")	50 ft (15m)
EM19386	iGrab 4 mm Three Prong Gripper Manual FOD Retrieval Tools	4 mm (0.157")	11.5 ft (3.5 meters)
EM19387	iGrab 4 mm Three Prong Gripper Manual FOD Retrieval Tools	4 mm (0.157")	15 ft (4.57 meters)
EM19388	iGrab 4 mm Three Prong Gripper Manual FOD Retrieval Tools	4 mm (0.157")	25 ft (7.62 meters)
EM19389	iGrab 4 mm Three Prong Gripper Manual FOD Retrieval Tools	4 mm (0.157")	33ft (10.05 meters)
EM19390	iGrab 4 mm Three Prong Gripper Manual FOD Retrieval Tools	4 mm (0.157")	40ft (12.19 meters)
EM19391	iGrab 4 mm Three Prong Gripper Manual FOD Retrieval Tools	4 mm (0.157")	50ft (15.24 meters)
EM19391	iGrab 4 mm Three Prong Gripper Manual FOD Retrieval Tools	4 mm (0.157")	50ft (15.24 meters)
EM19409	iGrab Manual FOD Retrieval Tool Kits - 5 Piece Sets	Various	50 ft (15m)
EM19412	iGrab 6 mm Sampling Cup Forceps Manual FOD Retrieval Tools	6 mm	33 ft (10m)
EM19413	iGrab 6 mm Sampling Cup Forceps Manual FOD Retrieval Tools	6 mm	40 ft (12m)
EM19417	iGrab 6 mm Fork & Tine Manual FOD Retrieval Tools	6 mm	33 ft (10m)
EM19418	iGrab 6 mm Fork & Tine Manual FOD Retrieval Tools	6 mm	40 ft (12m)
EM19422	IGRAB MAGNET R TOOL, 8MM x 33FT	8 mm (0.315")	33 ft (10m)
EM19423	IGRAB MAGNET R TOOL, 8MM x 40FT	8 mm (0.315")	40 ft (12m)
EM19427	iGrab 4 mm Snare Manual FOD Retrieval Tools	4 mm (0.157")	33 ft (10m)
EM19428	iGrab 4 mm Snare Manual FOD Retrieval Tools	4 mm (0.157")	40 ft (12m)
EM19432	iGrab 8 mm and 10 mm Viper Manual FOD Retrieval Tools	8 mm (0.315")	33 ft (10m)
EM19433	iGrab 8 mm and 10 mm Viper Manual FOD Retrieval Tools	8 mm (0.315")	40 ft (12m)
EM19437	iGrab 8 mm and 10 mm Viper Manual FOD Retrieval Tools	10 mm (0.4")	33 ft (10m)
EM19438	iGrab 8 mm and 10 mm Viper Manual FOD Retrieval Tools	10 mm (0.4")	40 ft (12m)
EM19442	iGrab 6 mm Gripping Plier Manual FOD Retrieval Tools	6 mm	33 ft (10m)
EM19443	iGrab 6 mm Gripping Plier Manual FOD Retrieval Tools	6 mm	40 ft (12m)
EM19447	iGrab Manual FOD Retrieval Tool Kits - 5 Piece Sets	Various	33 ft (10m)
EM19448	iGrab Manual FOD Retrieval Tool Kits - 5 Piece Sets	Various	40 ft (12m)
EM19538	IGRAB MAGNET R TOOL, 4MM x 15FT	4 mm (0.157")	15 ft (4.57m)
EM19539	IGRAB MAGNET R TOOL, 4MM x 33FT	4 mm (0.157")	33 ft (10m)
EM19540	IGRAB MAGNET R TOOL, 4MM x 40FT	4 mm (0.157")	40 ft (12m)
EM19541	IGRAB MAGNET R TOOL, 4MM x 50FT	4 mm (0.157")	50 ft (15m)
EM41263	IGRAB MAGNET R TOOL, 8MM x 11.5FT	8 mm (0.315")	11.5 feet (3.5m)
EM41265	iGrab 6 mm Sampling Cup Forceps Manual FOD Retrieval Tools	6 mm	11.5 feet (3.5m)
EM41266	iGrab 6 mm Gripping Plier Manual FOD Retrieval Tools	6 mm	11.5 feet (3.5m)
EM41286	iGrab Manual FOD Retrieval Tool Kits - 5 Piece Sets	Various	11.5 feet (3.5m)
EM41287	iGrab Manual FOD Retrieval Tool Kits - 5 Piece Sets	Various	15 ft (4.57m)
EM41288	iGrab Manual FOD Retrieval Tool Kits - 5 Piece Sets	Various	25 ft (7.62m)
EM43127	iGrab Locking Manual Retrieval Tool Handle	NA	NA
EM68993	iGrab Manual Retrieval Tool Canvas Case	NA	NA
EM90137	IGRAB MAGNET R TOOL, 8MM x 25FT	8 mm (0.315")	25 ft (7.62m)
EM90140	iGrab 6 mm Fork & Tine Manual FOD Retrieval Tools	6 mm	25 ft (7.62m)
EM90273	iGrab 4 mm Snare Manual FOD Retrieval Tools	4 mm (0.157")	15 ft (4.57m)
EM90274	iGrab 8 mm and 10 mm Viper Manual FOD Retrieval Tools	8 mm (0.315")	15 ft (4.57m)

Figure 3 Manual Retrieval Tool(s) Part Numbers

Retrieval Tool Types

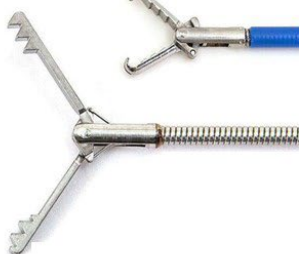
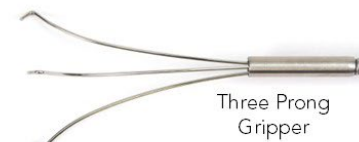


Figure 4 Manual Retrieval Tool Images)

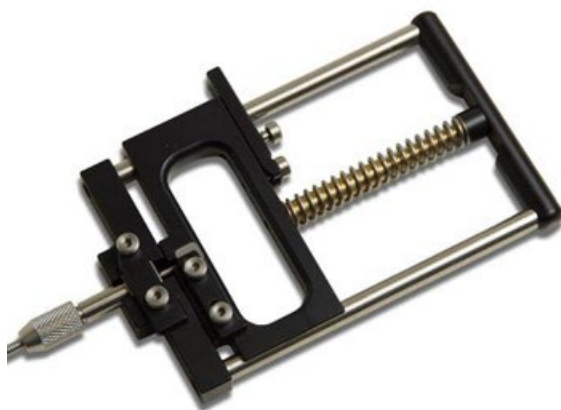
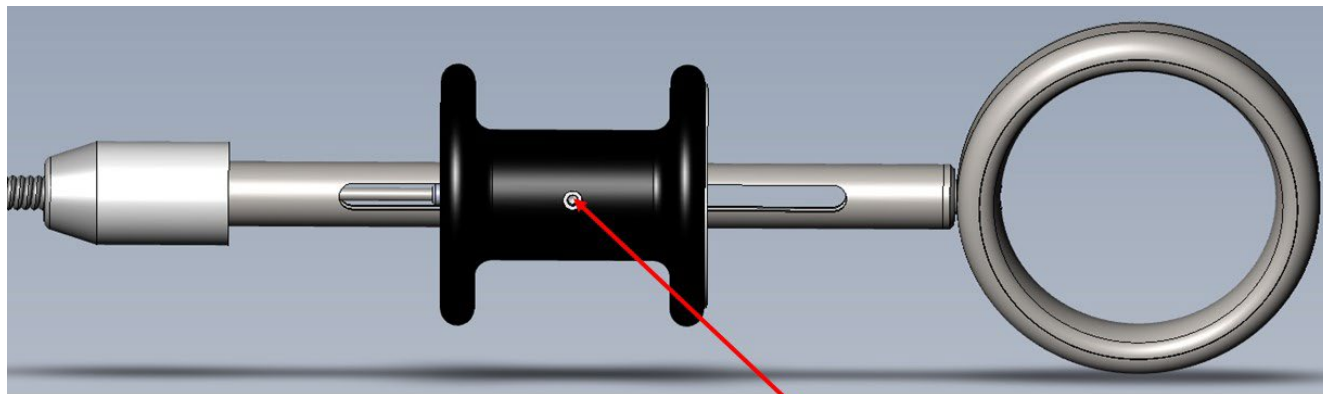


Figure 5 Tool Handles

Tool Handle Instructions

Plunger Tool Handles

- a. Tension must be relieved from the cables prior to coiling / storage
 - b. Tooling cables should be laid out straight & tension adjusted prior to use.
- 1) Remove Screw, Item # 2, from Plunger Handle See Figure 6 & Figure 7
 - 2) Loosen tension adjuster, Item # 5 Figure 7



.035" Allen Key Note: Older tools use a slotted screw

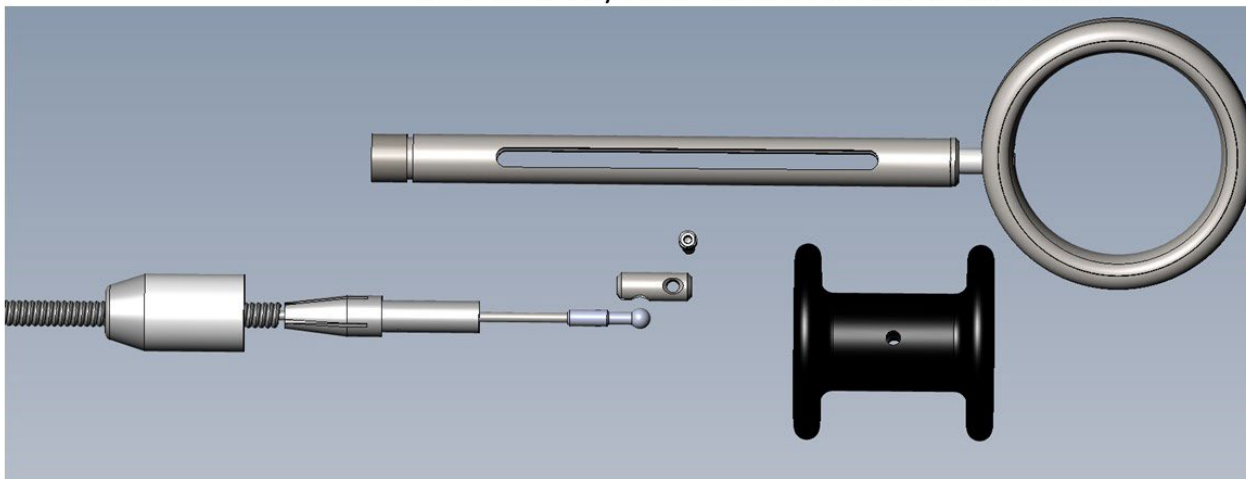


Figure 6 Plunger Handle

- 3) Reassemble the plunger with the tool laid out straight
- 4) Adjust Tension, Item 5. As needed. See Figure 7

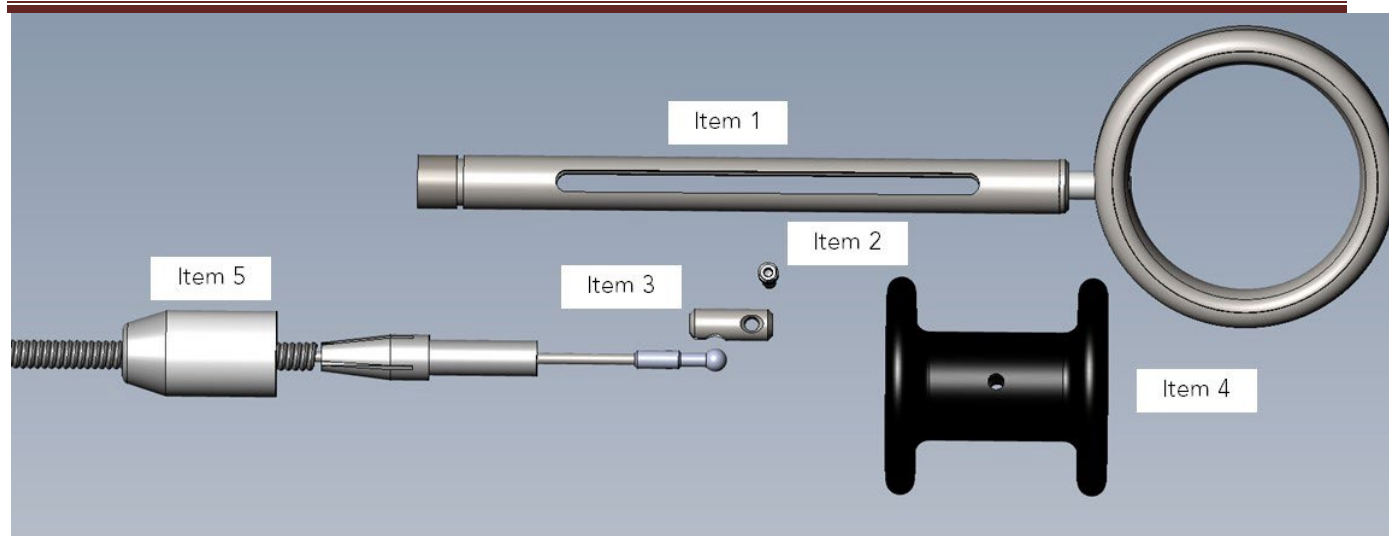


Figure 7 Labeled Plunger Item Numbers

Locking Tool Handle

- a. Tension must be relieved from the cables prior to coiling / storage
 - b. Tooling cables should be laid out straight & tension adjusted prior to use.
- 1) Rotate Locking Bar, & push Slide Lock up Handle See Figure 8
 - 2) Remove Cable Anchor from Cable Ball End See Figure 9
 - 3) Reassemble the Locking Handle with the tool laid out straight
 - 4) Adjust Tension as needed See Figure 10
 - 5) Squeeze handle & lift up on locking bar to hold tool in place See Figure 11

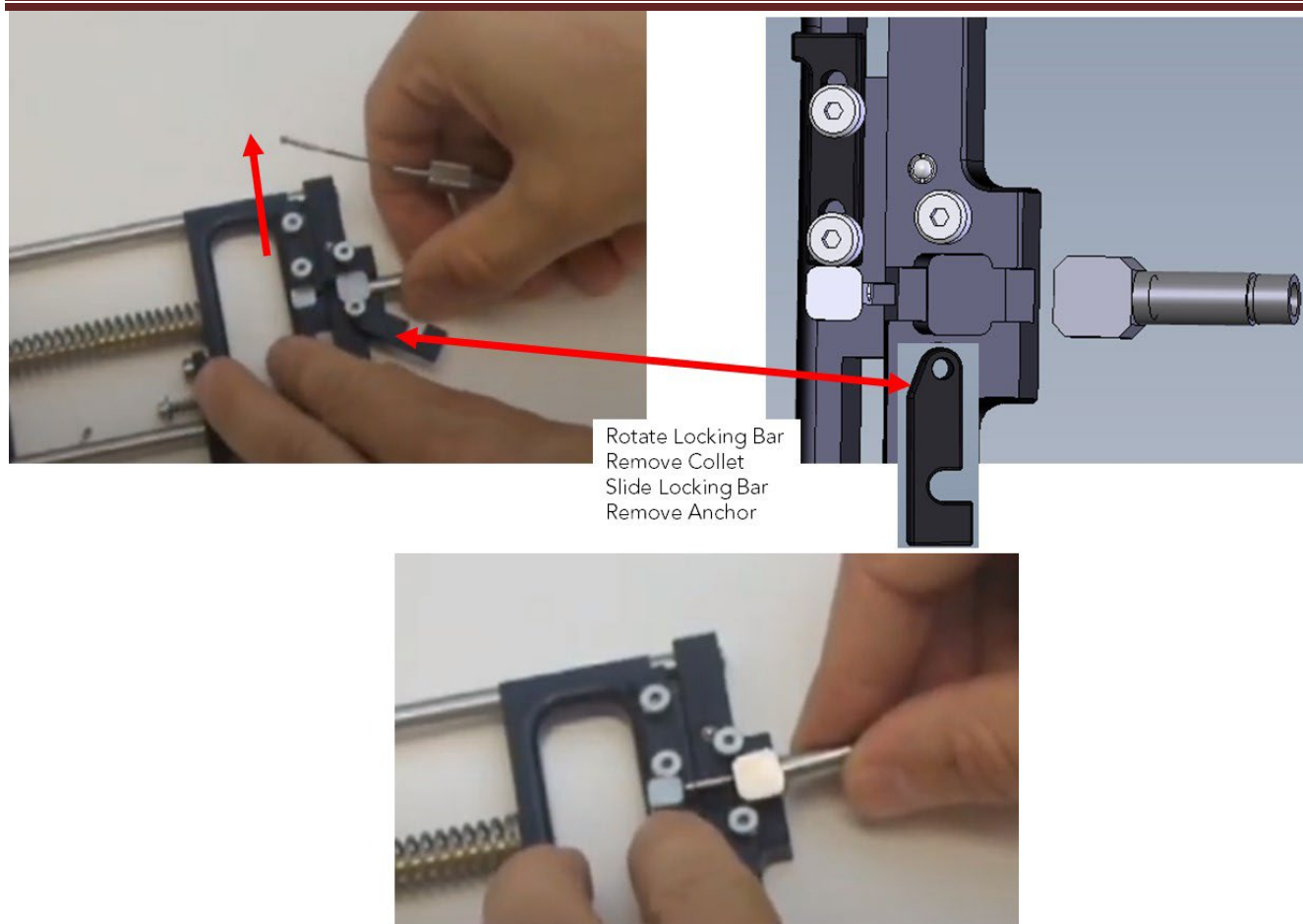


Figure 8 Locking Handle

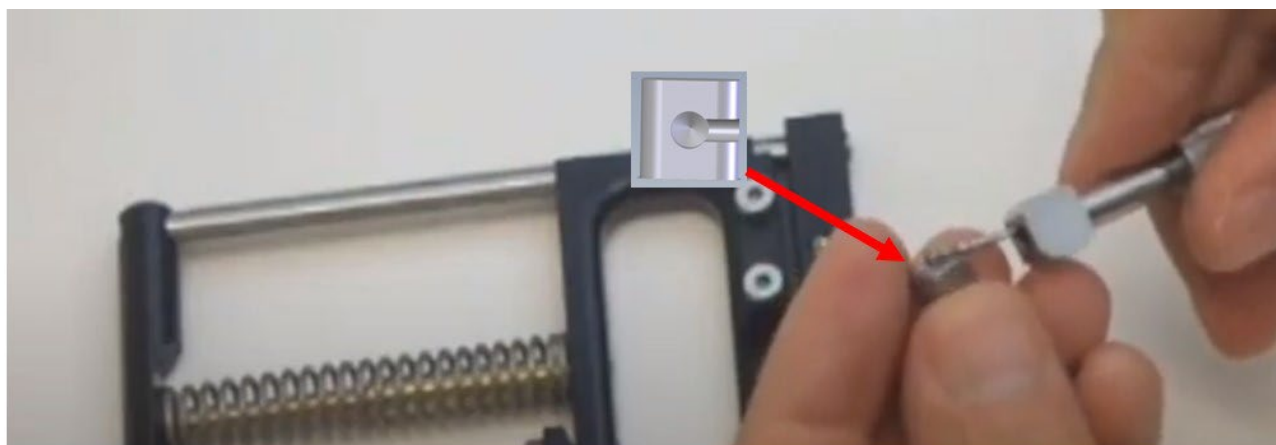


Figure 9 Locking Handle Cable Anchor

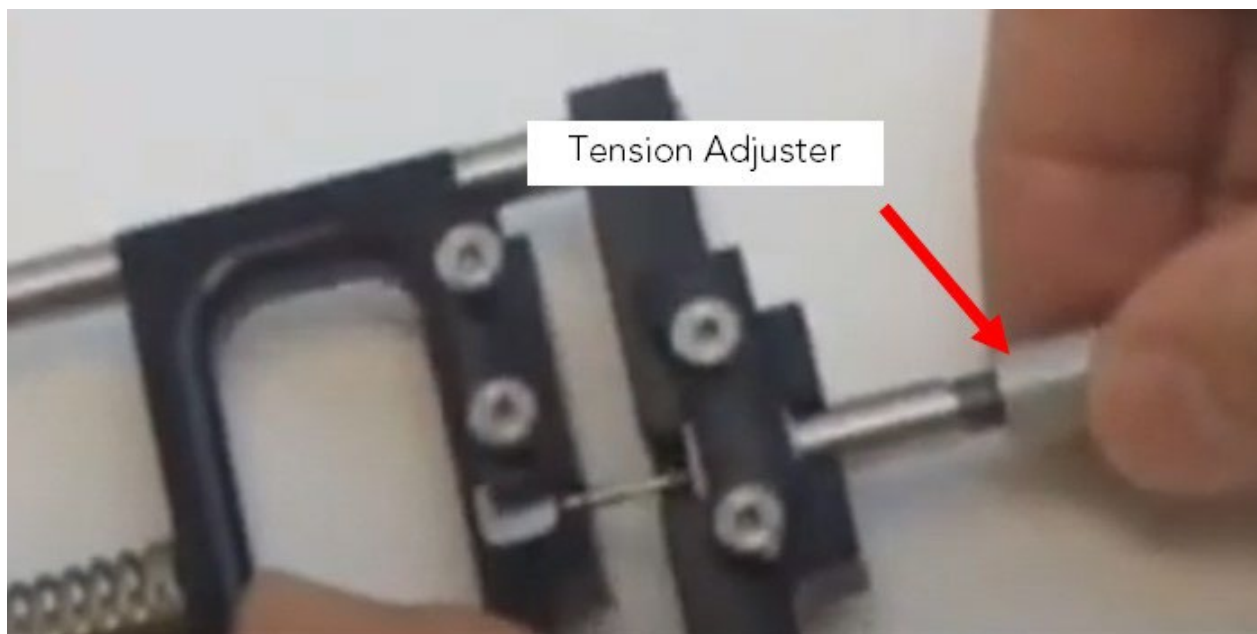


Figure 10 Tension Adjustment

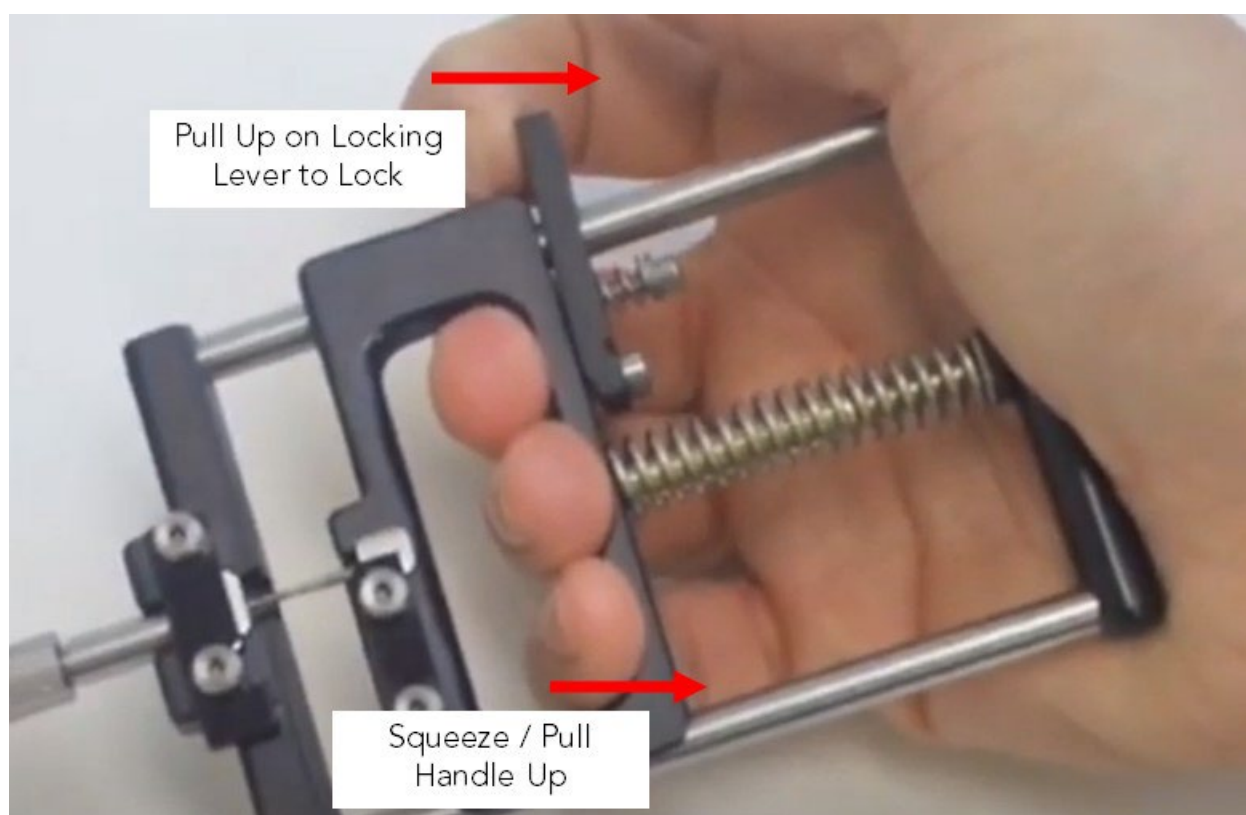


Figure 11 Locking Handle Use

Cautions and warnings.

Safety Precautions

This manual covers the iGrab™ Manual Retrieval Tools, its functions, and use. It also covers precautions to be taken to ensure safe operation. Please read this manual thoroughly before operating the equipment. By doing so, you will become familiar with the equipment's capabilities and better understand its functions. Save manual for future reference.

Follow all warnings and instructions in the manual and marked on the equipment.

Operational, General Safety Considerations and Precautions

Always observe the guidelines and precautions that follow.

There are no user-serviceable parts inside the motorized retrieval tool. Refer all service to the InterTest Customer Service and Support Group.







IMPORTANT: To ensure operator safety, read and understand this manual before using the system.

To avoid injury, read and understand the associated documentation of support components prior to operation. Direct any questions about equipment operation to InterTest Customer Service and Support Group at 908-496-8008 or via email to service@intertest.com.

Cautionary Symbols and Symbol Terminology

Table A describes the various symbols that may be included in this manual and mounted on the equipment. The severity level of a potential hazard varies. Refer to for hazard level descriptions.

Table A — Manual and Equipment Safety Symbols

Symbols	Definitions
	WARNING/CAUTION: Risk of electric shock.
	WARNING/CAUTION: Refer to instruction manual.
	WARNING/CAUTION: Avoid exposure to water and liquids.
	WARNING/CAUTION: Avoid eye and skin exposure to UVA Light.

Warnings

Stop operation immediately when any abnormality or defect occurs. Use during an abnormal condition; such as emitting smoke, burning odors, after damage from dropping, invasion of foreign objects, et contact InterTest Inc.



Do not use in proximity to energized electrical equipment

Disclaimers

InterTest Inc. disclaims any responsibility and shall be held harmless for any damages or losses incurred by the user with the use of this product. Including the following:

1. Fire, earthquake or any other Act of God. Acts by third parties; misuse by the user, whether intentional or accidental; use under conditions outside of noted operating range.
2. Malfunction or non-function resulting in indirect, additional or consequential damage including but not limited to loss of expected income and suspension of business activities.
3. Use not in compliance with this manual's instructions.
4. Malfunctions resulting from misconnection.
5. Unauthorized repairs or modifications.
6. Notwithstanding the foregoing, InterTest's liabilities shall not exceed the purchase price of the product.

Warranty

InterTest, Inc. guarantees products manufactured by InterTest, Inc. to be free from defects in materials and workmanship for a period of one (1) year, from the date of original purchase. All other products not manufactured by InterTest, Inc. will carry the OEM's limited warranty, which will be passed to the purchaser through and supported by InterTest, Inc. InterTest, Inc.'s obligation under this limited warranty shall be confined to the repair or exchange of any part, or parts thereof, that prove defective under normal use and service for which the product was intended or designed.

This limited warranty covers products that upon our examination are deemed to be defective. This limited warranty is in lieu of all other warranties, express or implied, including the warranties of merchantability and fitness for use. We neither assume, nor authorize any other person to assume for us, any other liabilities in connection with the sale of InterTest, Inc. equipment. This warranty does not apply to any equipment that has been subject to accident, negligence, alteration, abuse, unauthorized repair, improper storage, or other misuse. This limited warranty applies only to the original purchaser and cannot be assigned or transferred to any third party without express written consent from InterTest, Inc. This limited warranty does not apply to consumable items, expendable items or normal wear and tear, nor does it apply to failure due to radiation, overheating and / or below freezing temperatures.

InterTest, Inc. assumes no responsibility, either expressed or implied, regarding the improper usage of this equipment or interpretation of test data derived from the use of this equipment. InterTest, Inc.'s responsibility and obligations, in all cases, are limited strictly to the repair and/or replacement costs outlined above.

The laws of the State of New Jersey shall govern this warranty.



Note: In the event the equipment cannot be returned to InterTest, Inc. The customer agrees to pay all travel and living expenses incurred to have an InterTest, Inc. representative evaluate, assess or affect a warranty repair in the field.

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Care & Maintenance

Returns for Repair or Service

In the event the product needs repair, send it to the Service Department at the main office in Columbia, NJ. An RMA (Return Material Authorization Number) must be issued prior to the unit being returned. **Call InterTest, Inc. at (908) 294-8008 to obtain an RMA Number** from customer service. Shipments returned without an RMA will have an administrative fee applied to the transaction.

Provide the product number, serial number and a brief description of the problem or damage when obtaining an RMA number

Return Evaluation Procedure

Once a return is received by InterTest, Inc. it will be evaluated. The fee for any repair evaluation not sent in under warranty is \$55 (USD credited against cost of repair). This cost is in addition to any other charges required. Prior to any repairs being completed, a repair evaluation will be issued and payment arranged. Payment via credit card is preferred and will expedite the repair process.

Once payment is arranged, the authorization to repair the product is given. Completed repairs will ship back to the customer using the pre-arranged shipping methods.

For Service of this product:

InterTest, Inc.

303 State Route 94

Columbia, NJ 07832

1-800-535-3626

+1 908 496 8008

<http://www.intertest.com>

NOTES:

[illegible]