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INFORMATION



## Retrieval Tools Kit - Tools for Foreign Object Retrieval

Plan for the unexpected. Be ready for foreign object removal jobs.

Whether in combination with the VUMAN® industrial Borescope or other remote visual equipment, these retrieval tools are at the cutting edge of FOSAR (Foreign Object Search and Retrieval) technology. Good FME (Foreign Material Exclusion) programs minimize FOD (Foreign Object Debris) but problems still occur and often at the worst moment... FOD can be almost anything, from a lost fastener to a dropped mobile phone. When FOD shows up results can be destructive, dangerous and massively expensive. viZaar® retrieval tools can turn an emergency into a retrieval triumph. Having a viZaar® Retrieval Tools Kit on-hand during inspection procedures

and maintenance overhaul outages should be standard operating procedure for all professional and responsible inspectors.

viZaar® Industrial Imaging is a manufacturer of high performance RVI (Remote Visual Inspection) equipment. In Germany, viZaar® also provides 24/7 industrial inspection and retrieval services. Like many viZaar® products, the design of these retrieval tools is based on real-world experience gained during countless hours spent in-field. viZaar® offers a large number of retrieval tools and for convenience these tools have been bundled into practical kits.



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### INVIZ® GR 8 - Motorized Retrieval Tool

The INVIZ® GR 8 is a small water tight motorized grabber retrieval tool. It is designed to retrieve small to medium sized objects. It also has the strength to grab and bear the weight of larger objects. The INVIZ® GR 8 is tough enough to fasten on to a hard hat and hold it during a vertical retrieval. The INVIZ® GR 8 distal head is interchangeable. The INVIZ® GR 8 can be used with a Mouse Tooth style grabber or a T-Rex style grabber.



### INVIZ® GR 16 - Motorized Retrieval Tool

The INVIZ® GR 16 is the workhorse of motorized retrieval tools. Medium size and larger objects can be retrieved with the INVIZ® GR 16. The INVIZ® GR 16 distal head is interchangeable which means it can be used with an Alligator style grabber or a Three Finger grabber.

The viZaar® push rod quick connection system integrates seamlessly with the INVIZ® GR 16 to assist accurate positioning. The flexible push rods used in this system are available in a selection of different lengths and three grades of stiffness.

### Push Rod Quick Connection System

The push rod quick connection system includes a versatile assortment of rods, joints and tools which can be assembled in many different configurations to support the most demanding remote visual retrieval jobs. The 10mm (0.394 in) standard connectors are practical and easy to use.

In addition to the previously mentioned specialized items, the Retrieval Tools Kit includes a range of common everyday items that could be purchased at a hardware store, but might not be immediately available on-site during the next FOD retrieval crisis. Having common hand tools like pliers, screwdrivers and Allen/hex keys and indispensable consumable items like cable ties / tie wraps, fishing line and tape immediately available will save time and support efficient retrievals.

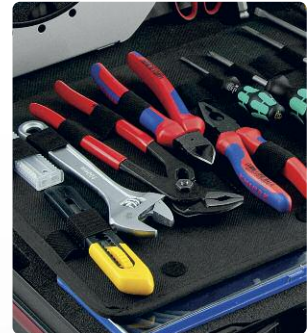
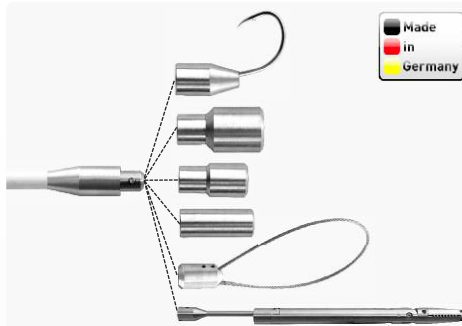
Over the years viZaar® has designed and built a number of unique retrieval tools including long pneumatically articulated tools. We welcome inquiries for tools that are beyond the scope of what is shown here. Please contact us for further information.

INVIZ® GR 8	
Working diameter (jaws closed)	8.4 mm (0.331 in)
Core push rod diameter	4.5 mm (0.177 in)
Standard working lengths	10 m (32.8 ft.), 15 m (49.2 ft.), 20 m (65.6 ft.) and 30 m (98.4 ft.)
Push rod	Glass-fiber reinforced plastic
Construction	Single push rod with integrated power and no external connectors or vulnerable snag points
DC power	9V Lithium battery (PP3)

Mouse Tooth Grabber	
Working diameter (jaws closed)	8.4 mm (0.331 in)
Distal head length	108 mm (4.25 in)
Jaw range	70°
Maximum grab size	12.5 mm (0.492 in) - space required to open jaws to maximum 16.8 mm (0.661 in)

T-Rex Grabber	
Working diameter (jaws closed)	8.4 mm (0.331 in)
Distal head length	125 mm (4.92 in)
Jaw range	70°
Maximum grab size	28 mm (1.10 in) - space required to open jaws to maximum 32 mm (1.26 in)

INVIZ® GR 16	
Working diameter (jaws closed)	16 mm (0.630 in)
Distal head length	206 mm (8.11 in)
Jaw range	160°
Maximum grab size	77 mm (3.03 in) - space required to open jaws to maximum 84 mm (3.31 in)
Standard working lengths	15 m (49.2 ft.), custom lengths available up to 30 m (98.4 ft.)
DC power	Two 9V Lithium batteries (PP3)



### Multi-position Stainless Steel Wire Snare



The stainless steel wire snare is a strong tool which can be used to retrieve larger objects or objects that are stuck in place. The 2.5 mm (0.010 in) diameter wire allows considerable force to be employed once an object has been snared. The snare also works well when objects cannot be grabbed or are non-magnetic. Elbow connectors can be used to help position the snare.

### Hook Tool



This simple tool is ideal for retrieving objects like cleaning cloths, rubber washers and work gloves. The standard connector allows the hook tool to be quickly attached to any of the rods and joints in the quick connection system.

### Retrieval Magnets



The push rod quick connection system includes three different size magnets to facilitate retrieval of magnetic objects such as screws, nuts and bolts, swarf and beverage cans.



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