


TAKAMOL

**INNOVATIVE SOLUTIONS
TO THE OIL AND GAS INDUSTRY**

COMPANY PROFILE

**CEMENTING EQUIPMENT
CASING ACCESSORIES
KTH FLANGE
SEAL-BORE SUB**

VERSION 2.0



“TAKAMOL Engineering Industries, LLC., has an on-going quest towards achieving quality and innovation in the design, manufacture and installation of Drilling, Completion and Production Equipment, as well as in providing high quality services to all customers and stakeholders”

ABOUT TAKAMOL

Overview

TAKAMOL is the first Egyptian manufacturer producing high quality casing accessories and cementing equipment registered in Egyptian General Petroleum Corporation "EGPC" vendor list. We are an Egyptian limited company established in 2016 and specialized in Research and Development of products related to the Oil & Gas sector such as float shoes & collars, stab-in shoes & collars, cement plugs, single piece bow and rigid centralizers, downhole drilling subs and artificial lift surface equipment with high quality challenging delivery time.

With our comprehensive range of mission-critical expertise, we deliver precisely what you need when you need it from drilling equipment to custom solutions, subsea technology to production equipment, engineering support to repair services.

Vision

TAKAMOL vision is to:

- Be a premier Egyptian manufacturer of top quality downhole drilling and completion products.
- Be an integrated R&D hub for engineering industries in the MENA area.

Mission

TAKAMOL mission is to:

- Deliver innovated premium products and services to customers with a commitment to be a leader in innovation, engineering and quality.
- Deliver Integration & integrity to our competitors and subcontractors.
- Deliver happiness to our employees and stakeholders.

COMPANY INFORMATION

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Egyptian Manufacturer for Casing Accessories and Cementing Equipment



TAKAMOL Engineering Industries, LLC.

Factory # 301, South West 6A Industrial Area, 10th of Ramadan,
Ash-Sharqia Government, Egypt. (Postal Code: 44916)

Tel: +201066677258 / Fax: +201066677268

www.takamol.com.eg

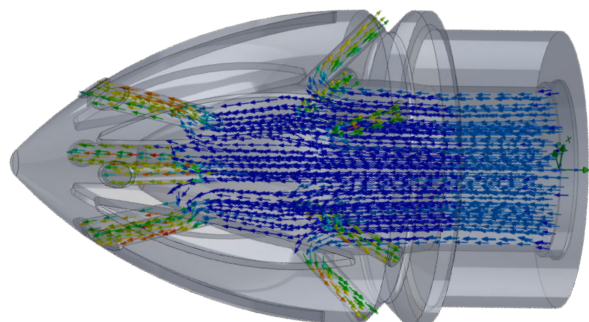
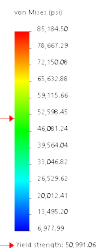
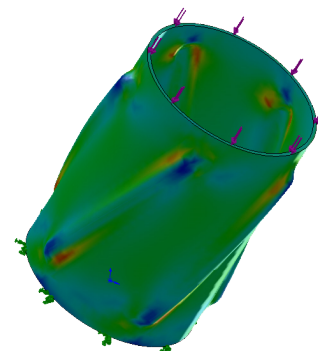
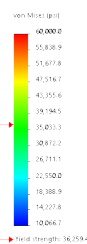
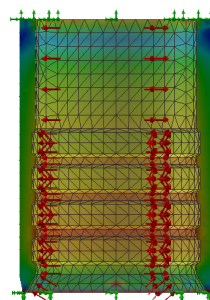
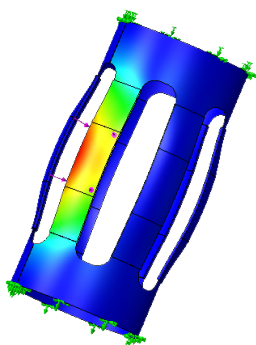
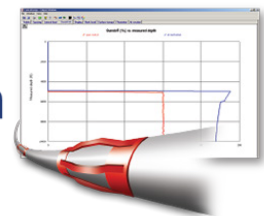
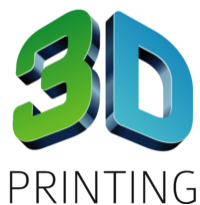


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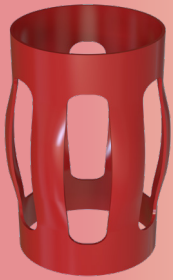
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RESEARCH & DEVELOPMENT (R&D)

Research and development (R&D) are a valuable tool for growing and improving our business. R&D involves researching the market and our customer needs and developing new and improved products and services to fit these needs. Our new and improved products have been developed through R&D by using latest technology and versions of SOLIDWORKS 3D CAD, SIMULATION & FLOW SIMULATION software modules, LOGOPRESS software, 3D laser scanning, 3D printing, CNC prototyping and centralization modeling using CentraDesign software.



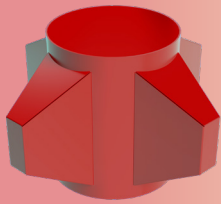
PRODUCTS



**BOW CENTRALIZER
(CENTRINO)**



**RIGID CENTRALIZER
(TAK-LIZER)**



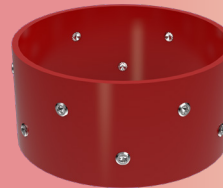
**RISER/CONDUCTOR
CENTRALIZER**



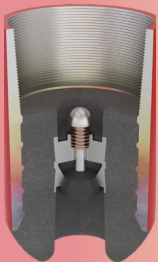
CEMENT BASKET



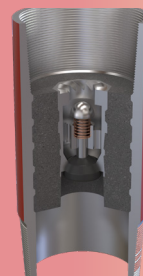
**STOP COLLARS
(TAK-STOP)**



**STOP COLLARS
(TAK-STOP HD)**



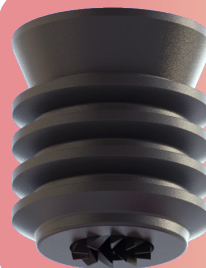
FLOAT SHOE



FLOAT COLLAR



INNER-STRING



CEMENTING PLUGS

PRODUCTS

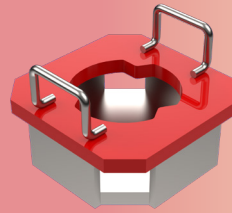
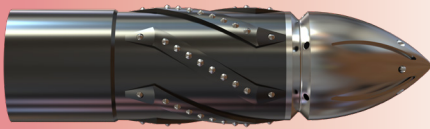


**OCTG DOPE
(TAK-DOPE)**

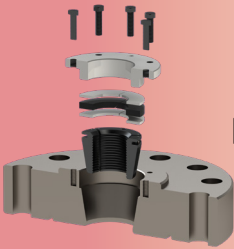


**THREAD LOCK
(TAK-LOK)**

**REAMER SHOE
(AVENGER)**

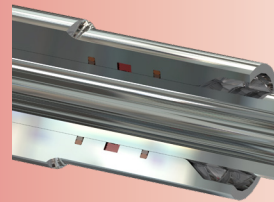


BIT BREAKER



**TUBING
HANGING FLANGE
(KTH Flange)**

SEAL-BORE SUB



Description

CENTRINO is a single piece, slip-on, bow spring centralizer, manufactured from high strength spring steel. This unique centralizer is designed to centralize casing in vertical, deviated and horizontal wells where high stand-off and excellent cementing build-up around casing is required.

Features

- Slip-on single piece Design.
- The blades are mechanically extruded providing additional strength without compromising the yield capability of the blades.
- Zero running & starting forces.
- Provides a bearing surface for lower drag forces, which requires less rotational torque than conventional centralizers, enhancing rotation and running efficiency.
- Suitable for the most demanding well conditions, enabling its use in any well.
- The round smooth shape of the blades allows optimal mud displacement during the cementing process, minimizing pressure drop and local turbulences across the centralizer.
- CENTRINO has passed comprehensive research and development studies and designed to exceed API 10D requirements.
- Large "flow-by area" combined with high "stand-off" minimizes equivalent circulating density concerns, enhancing operational efficiency and cement distribution.



Options

- Available Sizes range from 4 1/2" to 13 3/8".
- Recommended to be run with our (TAK-STOP) slip-on stop collar hinged with set-screws.
- Centralizer placement / T&D analysis available.

Description

TAK-LIZER is a single piece slip-on rigid stamped centralizer with with spiral or straight blades. This unique centralizer is designed to centralize casing in vertical, deviated and horizontal wells where positive stand-off in high axial and side loads are existing.

Features

- Slip-on single piece Design.
- The blades are mechanically stamped providing additional strength without compromising the yield capability of the blades.
- Zero running & starting forces.
- Provides a bearing surface for lower drag forces, which requires less rotational torque than conventional centralizers, enhancing rotation and running efficiency.
- Suitable for the less demanding well conditions, enabling its use in conventional wells.
- The round smooth shape of the blades allows optimal mud displacement during the cementing process, minimizing pressure drop and local turbulences across the centralizer.
- 17 deg. spiral blades for better hole cleaning and cementing enhancement.
- Large "flow-by area" combined with optimum "stand-off" minimizes equivalent circulating density concerns, enhancing operational efficiency and cement distribution.



Options

- Available Sizes range from 4 1/2" to 13 3/8".
- Available in spiral or straight blades.
- Available in different types of material such as carbon steel, stainless steel or Aluminum.
- Recommended to be run with our (TAK-STOP) slip-on stop collar hinged with set-screws.
- Centralizer placement / T&D analysis available.

RISER/CONDUCTOR CENTRALIZER

Description

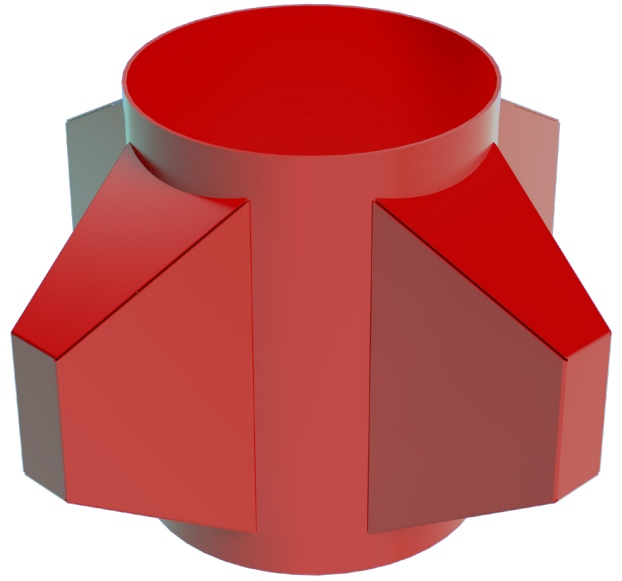
A heavy duty rigid welded centralizer used to centralize riser or casing inside conductors.

Features

- Heavy duty rigid centralizer with high resorting force against side walls.
- Rigid centralizer ensure minimum stand-off in high side loads without compromising the centralization.
- Manufactured from enforced sheet metal makes the centralizer easy to handle.

Options

- Sizes available—9 5/8" to 30".
- Available in stainless steel or carbon steel material.
- Tailored matrix of set screws to fit to different applications and fix the centralizer in place or could be combined with stop collar instead.



CEMENT BASKET

Description

Cement baskets are used to protect weak formations from hydrostatic pressure generated by weight of the cement column. Usually installed on casing, or liner strings above the weak formation to isolate cement in the annulus and can be used in single or multistage cementing operations

Features

- High strength–steel construction for durability.
- Bows are hardened and tempered for maximum strength and uniformity.
- Its overlapping metal fins provide flexibility and fluid passage while maintaining optimum support characteristics.
- Minimizes cement slurry contamination.
- Cased-hole or open-hole applications.
- Easy to install.
- Can be rotated and reciprocated.
- Can be used in place of an external casing packer for stage cementing applications.

Options

- Sizes available—5" to 13 3/8".
- Available in stainless steel or carbon steel material.
- Tailored matrix of fins to fit to different applications.
- Available in slip-on with two stop collars installation.



Description

TAK-STOP slip-on set screw stop collar is designed to be the optimum solution for holding normal axial forces generated from running slip-on solid & bow centralizers.

Features

- Stainless Steel set screws HT&Q.
- Knurled Tip set screws minimize the risk of screws to loose because of vibration.
- Single piece robust design and interlok welded ends.
- High holding force increases steadily with number of screws installed within the stop collar and its distribution.



Options

- Sizes available—2 3/8 to 13 3/8".
- Available in stainless steel or carbon steel material.
- Tailored matrix of set screws to fit to different applications.



Description

TAK-STOP HD slip-on set screw stop collar is designed to hold abnormal axial forces generated from running tight tolerance bow centralizers.

Features

- Stainless Steel set screws HT&Q.
- Knurled Tip set screws minimize the risk of screws to loose because of vibration.
- Single piece robust design and interlok welded ends.
- High holding force increases steadily with number of screws installed within the stop collar and its distribution.



Options

- Sizes available—2 3/8 to 13 3/8".
- Available in stainless steel or carbon steel material.
- tailored matrix of set screws to fit to different applications.



FLOAT SHOE



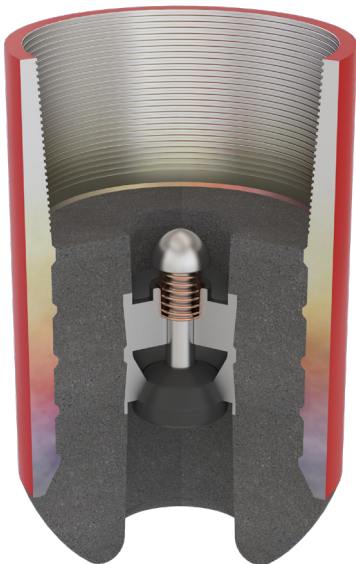
Description

Premium float shoe with different valve combination and noses used to guide casing through wellbore to the total depth.

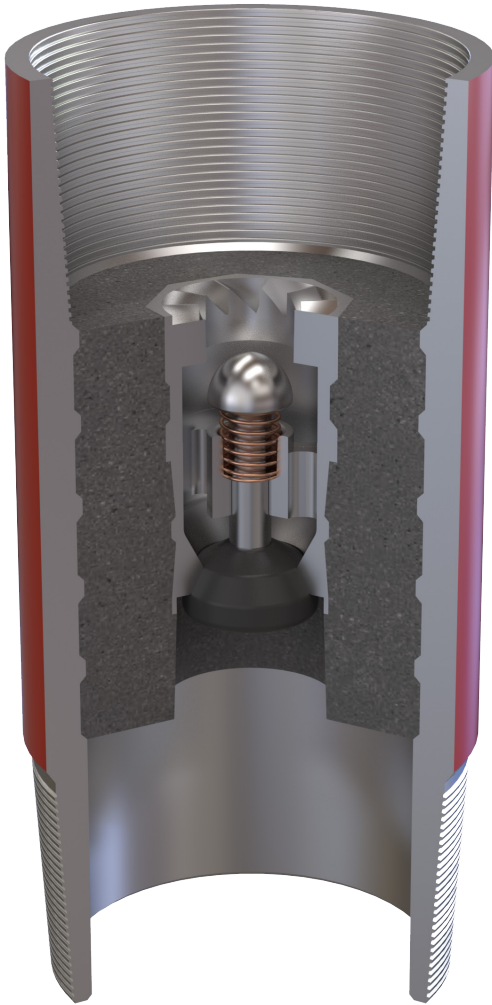
Quality manufacturing methods enable TAKAMOL to guarantee that every tool produced complies with API specifications, Q1 and ISO Quality Management Systems.

Features

- Patent valve (True-Guard) fabricated from PDC drillable advanced material.
- The poppet float valve design ensures positive sealing in vertical, horizontal and deviated wells allows for maximum circulation rates with less wear.
- All parts used in float equipment are PDC drillable.
- Patent valve fabricated from PDC drillable advanced material such as Aluminum, engineered polymer, VITON rubber seal and phosphor-Bronze. The valve design allows for maximum circulation rates with less wear.
- The Concrete poured in float equipment has dual expansion agent with advanced micro concrete mixture to ensure high pressure seal around both the valve and pipe containing only PDC drillable material.
- All of our Cementing Equipment are compatible with common mud types (WBM-OBM-SBM) including high contents of LCM.
- All of our float shoes steel pipes has inside and outside guide bevel to minimize the drag and the risk of being engaged with ledges; and ensure smooth RIH and POOH of BHA after drill-out.



FLOAT COLLAR



Description

Premium float collar with different valve combination and profile used to guide casing through wellbore to the total depth.

Quality manufacturing methods enable TAKAMOL to guarantee that every tool produced complies with API specifications, Q1 and ISO Quality Management Systems.

Features

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 - The Concrete poured in float equipment has dual expansion agent with advanced micro concrete mixture to ensure high pressure seal around both the valve and pipe containing only PDC drillable material.
 - All of our Cementing Equipment are compatible with common mud types (WBM-OBM-SBM) including high contents of LCM.
- The Anti Rotating inserts in both float collar and cement plugs are “geared” type CNC machined and fabricated from engineered polymer and Aluminum alloy to ensure fast drill-out time and high holding force.

INNER-STRING



Description

When large diameter pipe is cemented, tubing or drillpipe is commonly used as an inner string to place the cement. This procedure reduces the cementing time and the volume of cement required to bump the plug.

The technique uses stab-in float shoes, stab-in guide shoes, or stab-in float collar, with sealing adaptors (stab-in Stinger) attached to small-diameter pipe.

TAKAMOL offer tag-in system for the inner string float equipment in size range from 9 5/8" to 36".

Features

- The stab-in stinger has 4 sealing elements with pressure seal up to 3000 psi and temperature up to 300 deg. F.
- Stinger manufactured from heat-treated 42Cr alloy and CNC machines and grinded to maximize the reliability of sealing.
- The stinger is phosphate and epoxy coated for heavy duty long term operations.

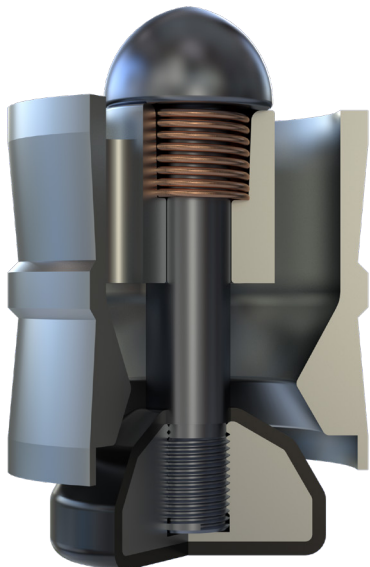
Options

- Available in single or double valve rating IIB as per API 10F.
- Available in cement or Aluminum nose,
- Available in API or butt weld end connections.

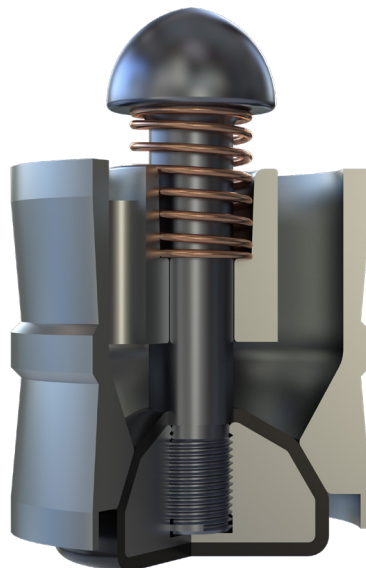


TRUE-GUARD™ VALVE

**VALVE IN
OPEN POSITION**



**VALVE IN
CLOSED POSITION**



VALVE SIZE	4"	2.5"
MINIMUM TFA THROUGH VALVE	4 sq.in	2.5 sq.in
MAXIMUM FLOW RATE	10 bbl/min	6 bbl/min
VALVE BODY MATERIAL	ALUMINUM 6061-T6	ALUMINUM 6061-T6
PLUNGER MATERIAL	ALUMINUM 6061-T6	ALUMINUM 6061-T6
PLUNGER SEAL MATERIAL	RUBBER VITON/FKM	RUBBER VITON/FKM
SPRING	PHOSPHOR BRONZE	PHOSPHOR BRONZE
PRESSURE REQUIRED TO UNSEAT PLUNGER	30 psi	30 psi
TEMPERATURE RATING	400 deg. F.	400 deg. F.
BACK PRESSURE	5000 psi	5000 psi
FLOW RATING AS PER API RP 10F	III	III
TEMPERATURE RATING AS PER API 10F	C	C

CEMENTING PLUGS

Description

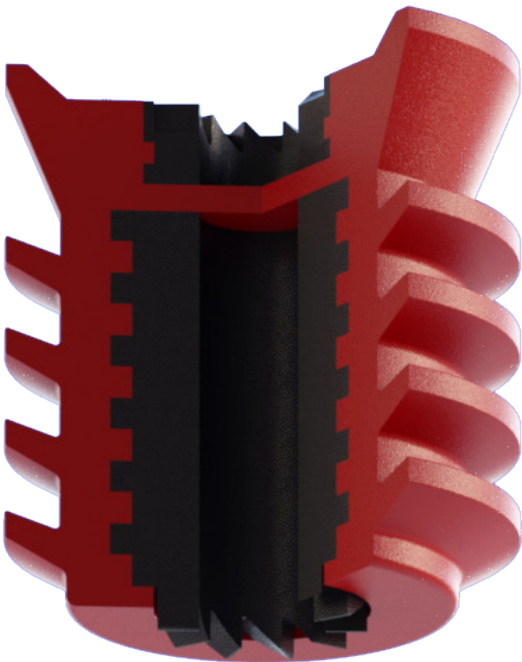
TAKAMOL Cementing Plugs are designed to provide positive wiping action. They are supplied with engineered polymer cores as standard, but machined Aluminum cores & Poly-Urethane Cores are available as an option.

Features

- High wiping efficiency generated through 5 wiper fins.
- Enforced polymer core to withstand high pressure and temperature.
- Controlled rubber hardness and toughness to ensure easy drill-out.
- The most reliable non-rotating geared profile, CNC machined and tightly designed to ensure positive sealing while pumping down the plug.
- Top plug is manufactured in black coded color whereas the bottom plug has red color code for easy identification while running in hole.

Features

- Available in Natural rubber, SBR, NBR and Poly-Urethane for normal applications.
- Available in HNBR or Silicon for HTHP applications.
- Cores are available in high hardness Poly-Urethane, Engineered Polymers or machined Aluminum.
- Available in Regular and/or non-rotating profile.
- Available sizes from 7" to 13 5/8" casing all weight range.



Description

TAKAMOL OCTG Metal Free thread compound (TAK-DOPE) was developed as a metal-free alternative to API Modified. Our metal free dope exceeds all performance specifications described in API specification 5CT and set forth in API Recommended Practice 5A3.

This environmentally safe thread compound doesn't contain any lead, zinc, aluminum, copper or other metallic additives which could contaminate a drill site.

APPLICATIONS

For use as a thread sealant and lubricant for interference-threaded connections on line pipe, tubing and casing, not recommended for rotary shoulder connections and not designed to be used as a storage compound.



Appearance	Black, smooth
NLGI	1
Base Grease	Lithium Complex
Base Oil	Mineral oil
Solids Content	Graphite, minerals
Specific Gravity	1.2
Density (lb/gal)	10.1
Dropping Point (ASTM D566)	500°F (260°C)
Flash Point	430°F (221°C)
Temperature Range	0°F to 500°F (-18°C to 260°C)
Four-Ball EP Weld Point (ASTM D2596)	525 kgf
Friction Factor (Relative to API Modified)	1.0
Brushable To	0°F (-18°C)
Sulfur Content	<0.3%

Description

TAKAMOL TAK-LOK™ provides a complete two-component epoxy system that includes base resin, catalyst and applicator. It is designed for use on all threaded joints and is especially applicable on drill casings and other pipe where the effective prevention of joint-loosening and casing backing-off is required.

APPLICATIONS

TAKAMOL TAK-LOK™ is recommended for use on casing, shoes, couplings, and collars; eliminating the need for gas/arc welding. Threadlock Kit offers a distinct advantage over welding in that threaded connections may be broken out by heating to 550°F (288°C). This product is also excellent for any application requiring a strong, permanent bond that has high vibration resistance.

USE

The catalyst is emptied into the can containing the base epoxy resin, where the two thoroughly mixed. The applicator is used to completely cover the male threads with the mixture and the joint is then coupled. Complete cure for both occurs in 24 hours. The cure time can be reduced by elevating the temperature up to 250°F (121°C).



	Catalyst	Resin
Appearance	Liquid	Gray paste
NLGI	-	0-1
Penetration (ASTM D217)	-	330-365
Viscosity	400 cSt at 25°C	-
Specific gravity	1	1.4
Density (lb/gal)	8.0	11.7
Flash point	>200°F (93°C)	250°F (121°C)
Temperature range	40°F to 450°F (4°C to 230°C)	
Pot life, 8 oz kit	~40 min at 25°C	
Full cure	2 days at 25°C	
Break partial cure	2800 psi at 4 hours	
Break full cure	4000 psi	
Friction factor (API 7A1)	1.2	

THE AVENGER™

Description

The AVENGER™ reamer shoe is an intelligent product designed to aid the running of casing, liners and screens application in severe hole conditions and where the client has concerns over potential difficult wellbore conditions such as swelling shales, ledges, crooked holes and tight spots.

TAKAMOL's reamer shoe type "THE AVENGER™" is commonly used in well bore conditions when reciprocating of casing is enough to keep the hole in guage while running in hole.

Features

Integral clockwise blades with 360° cutting structure gurantee full reaming of the hole with or without rotation and minimize the torque and drag generated while reaming.

- Pointed Aluminum nose with 6 jet ports down and another 6 jet ports up with easy drill-out feature lead the casing through ledges and crooked hole.
- Integrated with our IIC or 10K category TRUE-GUARD valve.
- Slick body design helps reduce ECD.
- Supplied threaded or with universal blank cover most common threads.

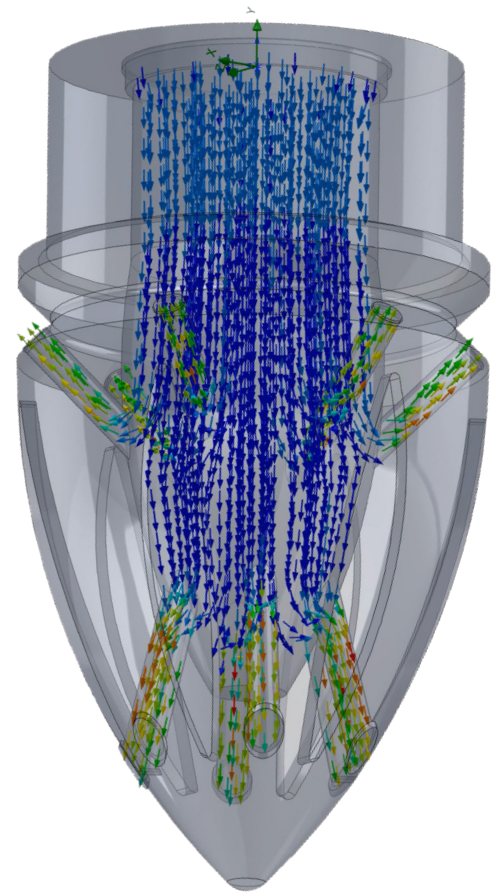
THE INNOVATED POINTED NOSE

Description

Revolutionary pointed aluminum nose with jetting ports increase the reliability of the reamer shoe and minimize the risk of being engaged with ledges and tight spots.

Features

- Pointed aluminum nose with 360° up and down jetting ports guarantee full reaming of the hole with or without rotation and minimize the torque and drag generated while reaming.
- Enhanced removal of debris stuck at blades structure and increase reaming efficiency.
- High static load holding.
- Lotus structure enhance drillout time for the nose.
- Simulated jetting flow up and down help keep the casing at center away from side walls.



THE AVENEGR™

AVAILABLE OPTIONS

Nose Types

Aluminum Bullet Nose, Aluminum Pointed Nose & Aluminum Eccentric Nose.



Steel Grades Types and Weight Range

We keep stock of common API 5-CT steel pipes grades (K-55, L-80 and P-110) for conventional sizes (5", 7", 9 5/8", 13 3/8", 18 5/8" & 20") and for all weight range. We also keep in stock AISI 4140 & 4145 mechanical pipes for special Casing mechanical specs requirements.

Connection Type

- API & most common premium connections are available.
- Blank for specific premium connections is available.
- Universal blank for the most common premium & API connections is available.

Number of Valves and API Category

- Single or Double valve is available.
- IIIC API 10F category for all sizes & 10K valve is available for size 7" and smaller.

Ports Types

Side ports, Down-jets, up-jets are available.

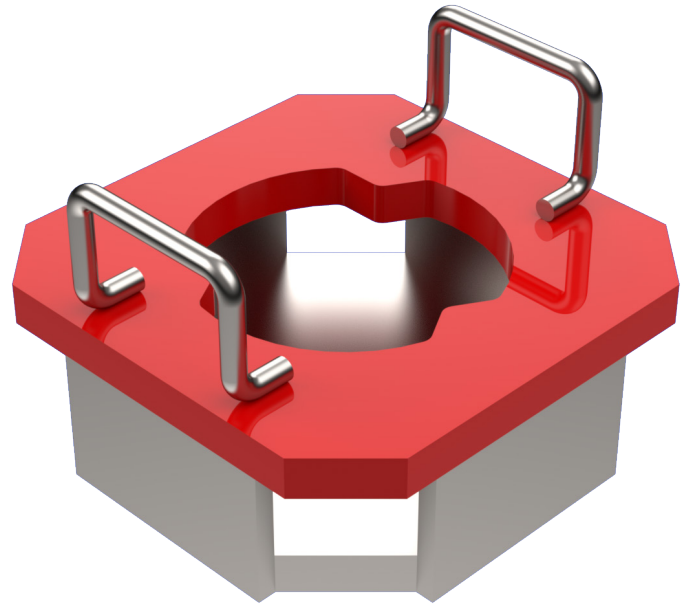
BIT BREAKER

Description

Bit Breakers for different bits that fits in a rotary table for holding, unscrew or breakout the bit from drill stem, fitted with two/four handles for lifting.

Features

- High strength materials make the breaker can bear high torque.
- Advanced welding techniques for the assembled parts help minimizing failuers.
- Simple structure without separated or moved parts prevent falling into holes while operating.
- Zinc coating protect the body against chemical attack and weathering.



Options

- Sizes available—4 1/8 to 36" for TCR bits and 6" to 12 1/4" PDC bits.
- Available for TCR or PDC bits
- Two or four handles available.

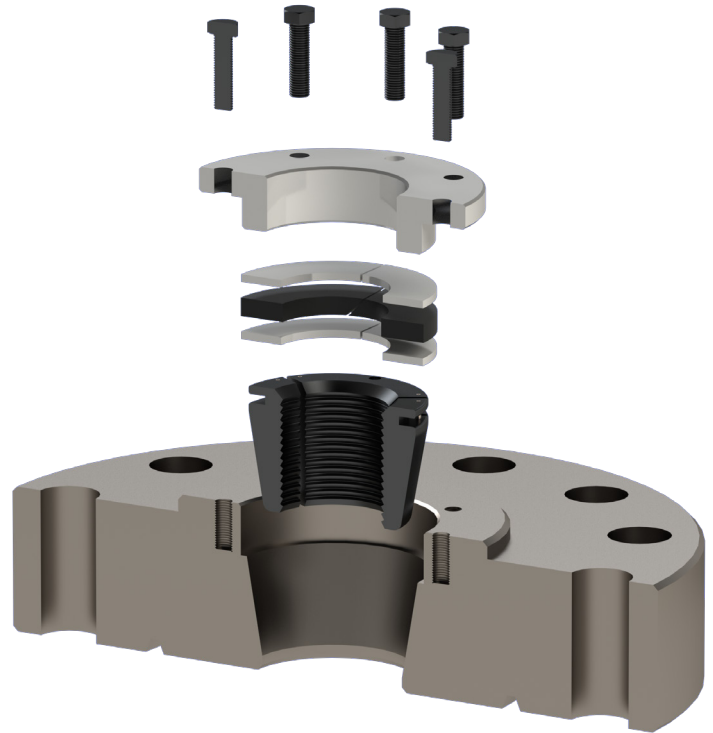
KTH FLANGE

Description

KTH flanges combined with Stripper Rubbers or Wraparounds provide a convenient way of suspending tubing in tension along with a tubing anchor on wells utilizing artificial lift. Tubing is easily adjusted up or down to accommodate formation depth and fluid levels.

Features

- Flange Body: Forged Alloy Steel with 60-75Ksi strength.
- Upper and Lower packing support: Carbon Steel.
- Rubber Seal: Nitrile (Shore Hardness 70).
- Slips: NiCrMo Case Hardening Alloy Steel with surface hardness 58-62 HRC.
- Hold Down Flange: Carbon Steel.
- Screws: Alloy Steel hexagon head bolt screw grade 10.9.



Tubing Hanging Flange (KTH Flange)
Dimensions Chart

Flange Size	Pressure	Tubing Size	P/N	A	B	C	D	E	F	G	Ring Gasket	Bolt Size
11"	5000	3 1/2"	KTH-1100-5000-0312	6.25"	5.25"	4.688"	5"	12.75"	19"	23"	R-54	(12pcs) 1 7/8" X 14"
11"	5000	2 7/8"	KTH-1100-5000-0278	6.25"	5.25"	4.688"	4 1/8"	12.75"	19"	23"	R-54	(12pcs) 1 7/8" X 14"
11"	3000	3 1/2"	KTH-1100-3000-0312	6.25"	5.25"	3.063"	5"	12.75"	18.5"	21.5"	R-53	(16pcs) 1 3/8" X 9 3/4"
11"	3000	2 7/8"	KTH-1100-3000-0278	6.25"	5.25"	3.063"	4 1/8"	12.75"	18.5"	21.5"	R-53	(16pcs) 1 3/8" X 9 3/4"
7 1/16"	5000	3 1/2"	KTH-7116-5000-0312	6.25"	5.25"	3.625"	5"	8.313"	12.5"	15.5"	R-46	(12pcs) 1 3/8" X 11"
7 1/16"	5000	2 7/8"	KTH-7116-5000-0278	6.25"	5.25"	3.625"	4 1/8"	8.313"	12.5"	15.5"	R-46	(12pcs) 1 3/8" X 11"
7 1/16"	3000	3 1/2"	KTH-7116-3000-0312	6.25"	5.25"	2.5"	5"	8.313"	12.5"	15"	R-45	(12 pcs) 1 1/8" X 8 1/4"
7 1/16"	3000	2 7/8"	KTH-7116-3000-0278	6.25"	5.25"	2.5"	4 1/8"	8.313"	12.5"	15"	R-45	(12 pcs) 1 1/8" X 8 1/4"

SEAL-BORE SUB

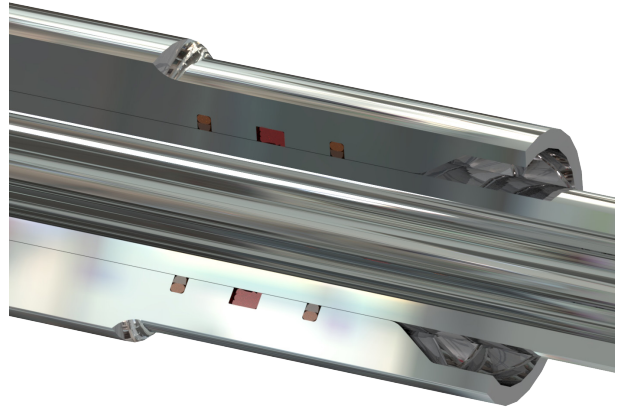
Description

The Seal-Bore sub is a simple short tubing sub with integral GO/NO-GO made from the same casing material and the same connection with elastomer Sealing pack inside for the polished stinger used on the inner string.

This sub can be placed at the bottom of the screen assembly. This ensures treatment fluids are pumped all the way to the end or bottom of the production screens to promote complete screen covering with gravel.

The stinger is a simple polished tubing section with an integral NO-GO to provide wash-pipe isolation to enable wash-down and protect screens from mud solids plugging.

The standard length can be adapted to suit the application with shifting tool interface and based on expected tubing movement etc.



Application

- Completion operation
- Gravel pack operation

Benefits

- Customizable and reliable
- Sealing Pressure up to 6000 psi
- working temperature up to 350 deg. F.
- sealing length up to 472"
- screen size from 4.5" to 9 5/8"
- Downward/Upward movement speed up to 12 m/minute





Contact

EGYPT

TAKAMOL HQ & FACTORY

Factory # 301, 6A South West Industrial Area, 10th of Ramadan, Ash Sharqya

Tel: +20 10 66677258

Fax: +20 10 66677268

Email: info@takamol.com.eg

website: www.takamol.com.eg

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