SLEDGEHAMMER
PRODUCT FEATURES-
CENTRALIZERS & STOP COLLARS
HINGED NON-WELDED BOW SPRING CENTRALIZER -SH01

- Available in 4 ½” to 20” sizes. Customized sizes are also available.
- **Application:** Designed for vertical, horizontal and deviated wells where low starting forces as well as high restoring forces are required.
- No vulnerable weak spots.
- Choice of standard bow heights assures optimum starting/restoring force criteria.
- Available in stainless steel also.
- Minimizes differential sticking.
- Can be rotated or reciprocated with the casing.
- Can be shipped in half assembled condition thereby reducing the storage & freight cost.

HINGED NON-WELDED STAINLESS STEEL CENTRALIZER -SS01

- Available in 4 ½” to 20” sizes. Customized sizes are also available.
- **Application:** Designed for reservoir producing Sour gases.
- Works well in vertical, horizontal and deviated wells
- No vulnerable weak spots.
- Choice of standard bow heights assures optimum starting/restoring force criteria.
- Minimizes differential sticking.
- Can be rotated or reciprocated with the casing.
- Can be shipped in half assembled condition thereby reducing the storage & freight cost.

HINGED WELDED BOW SPRING CENTRALIZER -SH02

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Application:** Provides uniform annular clearance and is suited for vertical and slightly deviated applications.
- Minimizes differential sticking.
- Can be rotated or reciprocated with the casing.

SLIP ON WELDED BOW SPRING CENTRALIZER -SH03

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Application:** Used in close tolerance well designs.
- Notched collar design allows for a smaller minimum compressed OD of the bows required in close tolerance applications.
- Slip-on design removes hinge as another way to reduce minimum OD.
- Can be supplied with integral set screws on the collar.
- These are shipped in assembled conditions only.

### SLIP ON WELDED SINGLE PIECE SLEDGE CHAKRA -SH03-C

- Available in 4 ½” to 20” sizes. Customized sizes are also available.
- **Application:** Used in most well applications and geometries for vertical, horizontal ERD, close tolerance, or underreamed well conditions.
- Overall smooth bow profile.
- A robust, ultra-high-strength, one-piece construction centralizer with no weak points, such as hinges or mechanical interlocks.
- Flexible to absorb both axial and radial loading.
- Zero start and running force with exceptional restoring force.
- Low torque and low drag units.

### HINGED NON-WELDED BOW SPRING TURBOLIZER -SH04

- Available in 4 ½” to 20” sizes. Customized sizes are also available.
- **Application:** The turbo fins induce a spiral flow pattern to cement slurry, help remove mud cake and reduces channeling during cementing operations.
- Fins provide additional fluid agitation for cementing benefits in critical zones.
- Can also be installed over the coupling.
- 360º wall coverage for increased load bearing area

### HINGED WELDED BOW SPRING TURBOLIZER -SH05

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Application:** The turbo fins induce a spiral flow pattern to cement slurry, help remove mud cake and reduces channeling during cementing operations.
- Fins provide additional fluid agitation for cementing benefits in critical zones.
- Can also be installed over the coupling.
- 360º wall coverage for increased load bearing area
SLIP ON WELDED BOW SPRING TURBOLIZER -SH06

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Application:** The turbo fins induce a spiral flow pattern to cement slurry, help remove mud cake and reduces channeling during cementing operations.
- Fins provide additional fluid agitation for cementing benefits in critical zones.
- Notched collar design allows for a smaller minimum compressed OD of the bows required in close tolerance applications.
- Slip-on design removes hinge as another way to reduce minimum OD.
- Can also be installed over the coupling.
- 360º wall coverage for increased load bearing area
- Also available with integral stops

WELDED ROTATING CENTRALIZER -SH07

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- High restoring force for optimum standoff
- Low moving force to minimize drag
- Allow free rotation of the pipe for maximum displacement efficiency.
- Over stop collar design minimizes moving forces while reciprocating

HINGED NON WELDED POSITIVE BOW CENTRALIZER -SH08

- Available in 4 ½” to 20” sizes. Customized sizes are also available.
- **Application:** Engineered for use in deviated and horizontal applications and cased hole and liner overlap.
- Rib design allows for optimized fluid flow in the annulus.

HINGED NON WELDED SEMI RIGID CENTRALIZER -SH09

- Available in 4 ½” to 20” sizes. Customized sizes are also available.
- **Application:** Designed for use in deviated applications where low running forces and higher restoring forces are vital to casing running operations.
- Spring characteristics facilitate movement through tight spots & doglegs.
- Can also be installed over the coupling.
**HINGED WELDED SEMI RIGID CENTRALIZER - SH10**

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Application:** Ideal for highly deviated applications.
- Provides higher restoring force while minimizing starting and running forces as compared to the standard bow spring.
- Spring characteristics facilitate movement through tight spots & doglegs.
- Can also be installed over the coupling.

**SLIP ON WELDED SEMI RIGID CENTRALIZER - SH11**

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Application:** Ideal for highly deviated applications.
- Provides higher restoring force while minimizing starting and running forces as compared to the standard bow spring.
- Notched collar design allows for a smaller minimum compressed OD of the bows required in close tolerance applications.
- Slip-on design eliminates hinge as another way to reduce minimum OD.
- Spring characteristics facilitate movement through tight spots & doglegs.
- Can also be installed over the coupling.

**SLIP ON WELDED POSITIVE SPIROLIZER - SH12**

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Application:** Recommended for horizontal and extended reach wells where higher strength is required or when rotation is required to install casing.
- Boat shaped spiral fins minimize drag forces while running pipe.
- No blade overlap to prevent bulldozing cuttings.
- Available in left, right, or straight vane orientation.
- Available with set screws.

**SLIP ON WELDED HEAVY DUTY POSITIVE SPIROLIZER - SH13**

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Application:** Recommended for horizontal and extended reach wells where higher strength is required or when rotation is required to install casing.
- Hydrodynamic shapes of spiral fins allow optimal mud displacement and minimal pressure drop across the Centralizer.
- In addition, they are particularly strong with high wear resistance.
- No blade overlap to prevent bulldozing cuttings.
- Available in left, right, or straight vane orientation.
- Available with set screws.

**SLIP ON WELDED HEAVY DUTY STRAIGHT BOW SPIRALIZER – SH14**

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Application:** Designed especially for highly deviated and horizontal wells.
- The fins are designed to provide low coefficient of friction to reduce drag forces while running the pipe.
- Aids in preventing differential sticking.

**SLIP ON WELDED CEMENT BASKET – SH15**

- Available in 4 ½” to 30” sizes. Customized sizes are also available.
- **Application:** Typically run above weak formations requiring protection from the pressure exerted by the cement column.
- Design helps support the hydrostatic column of fluid.
- Also Available in Hinged Type.

**CANVAS CEMENT BASKET – SH15-CCB**

- Available in 4 ½” to 30” sizes. Customized sizes are also available.
- **Application:** Typically run above weak formations requiring protection from the pressure exerted by the cement column.
- Also used in Stage cementing or in cementing the annulus from the surface.
- Design helps support the hydrostatic column of fluid.
- Also Available in Hinged Type.

**SLIP ON STAND OFF BAND – SOB02**

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Application**: Effective for close tolerance & liner applications.
- The angled fins provide increased turbulent flow
- Suitable for reciprocation and rotation during cementing.

**WELDED SPIRAL VANE SOLID RIGID CENTRALIZER FIXED – DSW03**

- Available in 27/8” to 30” sizes. Customized sizes are also available.
- **Application**: Recommended for horizontal and extended reach wells
- Rows of set screws on the outer periphery of the Centralizer in order to restrict rotation.
- Can work either as a fixed centralizer or as a rotating centralizer (detaching set screws and positioning with Stop Collars).
- All Centralizers are pre-treated and are painted or coated with polyester powder.

**STRAIGHT VANE ALUMINUM RIGID CENTRALIZER – DAV02**

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Applications**: Primary cementing jobs and for deviated and horizontal wells, liner overlaps and shoe joints.
- Proven effective in durability to shock, impacts and corrosion.
- Product is fabricated in a softer material than wellhead equipment to avoid damage to the wellhead when running through

**STRAIGHT VANE ALUMINUM RIGID CENTRALIZER FIXED – DAV03**

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Applications**: Proven Efficiency in durability to shock, impacts and corrosion.
- Product is fabricated in a softer material than wellhead equipment to avoid damage to the wellhead when running through
- Can work either as a fixed centralizer or as a rotating centralizer (detaching set screws and positioning with Stop Collars).
- Reduces frictional drag.

**ALUMINUM SPIRAL VANE SOLID RIGID CENTRALIZER – DAS02**

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
Applications: For deviated/ horizontal wells & for reservoir producing sour (H2S) gases.

The extra length of the fins gives maximum centralization, high standoff and increases annular turbulence while the angle further enhances turbulence and removal of debris from around the casing.

Fluid agitation / solid spiral vanes break up gel pockets thereby reducing viscosity and improving displacement of drilling fluids during cementing.

High abrasion/corrosion resistance.

ALUMINUM SPIRAL VANE RIGID CENTRALIZER FIXED – DAS03

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- Applications: Proven durability in responding to shock, impacts and corrosion.
- Fluid agitation / solid spiral vanes break up gel pockets thereby reducing viscosity and improving displacement of drilling fluids during cementing.
- High abrasion/corrosion resistance.
- Product is fabricated in a softer material than wellhead equipment to avoid damage to the wellhead when running through
- Can work either as a fixed centralizer or as a rotating centralizer (detaching set screws and positioning with Stop Collars).
- Spiral Fins induces extra turbulence that helps in better cementing.

STEEL SPIRAL VANE SOLID RIGID CENTRALIZER – DSS02

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- Applications: For deviated/ horizontal wells & for reservoir producing sour (H2S) gases.
- Fluid agitation / solid spiral vanes break up gel pockets thereby reducing viscosity and improving displacement of drilling fluids during cementing.
- High abrasion/corrosion resistance.

ZINC SPIRAL VANE SOLID RIGID CENTRALIZER – DZS02

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- Applications: For deviated and horizontal wells ensuring optimal flow.
- The angled blade reduces drag and the gentle flow from the body to the height of the vane eliminates scraping or dragging into the formation.
- The product is shock resistant and exhibits high tensile and yield strength.
- Fabricated from high quality zinc, it is also resistant to corrosion.

**STEEL TWIN BLADE ROTATING CENTRALIZER—DSR.02**

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Application:** For running casing in unusually irregular well bore, for guiding the casing & providing the maximum flexibility to the well bore.
- Remove debris with an angled blade
- Maximum strength and hardness
- Maximum wear and abrasion resistance
- 40 percent less drag than bow spring centralizers
- Easier to pass through tight spots
- Low Friction Factor
- Eliminate cement/mud contamination

**THERMO PLASTIC SPIRAL CENTRALIZER—SH56**

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Application:** Developed specially for horizontal and extended reach wells.
- Low coefficient of friction centralizer made from a thermoset polymer.
- Up to 50% lower coefficient of friction over steel centralizers.
- Increased length compared to common types of centralizers with no blade overlap to prevent bulldozing cuttings.
- Available in right or straight vane orientation.
- These Thermoplastic Centralizers withstand high well bore temperatures of up to 230 degrees Celsius

**ALUMINUM ROTATING SPIRAL VANE SOLID CENTRALIZER—DAR.02**

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Application:** For unusually irregular well bores, for guiding the casing and providing the maximum flexibility for the casing string.
- These Centralizers have tapered vanes that considerably reduce drag during running into the casing or well bore. The angle of the vanes creates a radial fluid motion when the fluid is pumped.
- Reduces channeling and provides enhanced clean up and cement placement properties.
LOW TORQUE ROLLER CENTRALIZER - DZRD01

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Application:** Designed to run in deviated or horizontal sections and are effective in reducing friction.
- When casing equipped with Roller Centralizer runs into a deviated or horizontal hole, the sliding friction between the casing and the borehole is converted into rolling friction.
- Lessen Impact force.
- Small roller contact area reduces differential sticking
- Rollers provide exceptional wear resistance
- Torque-reducing performance improves the cementsheath
- High quality construction materials improve high-pressure/ high-temperature capabilities

LOW DRAG ROLLER CENTRALIZER - DZRD02

- Available in 4 1/2” - 13 3/8” sizes. Customized sizes are also available.
- **Application:** A mechanical friction-reduction solution designed for extended-reach wells, where HSE requirements ban the use of oil based and pseudo-oil based mud.
- It reduces torque, drag, casing wear, tool-joint wear and differential sticking while also improving directional control, ROP and hole cleaning.
- In Low Drag Roller Centralizers all rollers are arranged in horizontal direction. This arrangement is effective in significantly reducing the dragging force. This means that the liner can be rotated and passed through anticipated ledges, tight spots, shale formation and doglegs.

CENTRALIZER SUB - SH49

- Available in 3 ½” to 20” sizes. Customized sizes are also available.
- **Applications:** Running casing inside previous casing or openhole sections with extremely close annular clearances or where standard tolerances Centralizers are restricted due to Stop Collars not being capable of withstanding drag and fit limitations.
- Bow Springs can be supplied in almost any casing size, grade or thread and for use in the most challenging wellbore configurations.
- Bows expand to provide excellent casing centralization in openhole or under reamed sections.
- Allows for improved mud removal and cement placement through casing rotation.
### Hinged Spiral Nail Stop Collar – SC01
- Available in 4 ½" to 20" sizes. Customized sizes are also available.
- Utilizes spiral locking pins which, when driven in firmly, lock the collar into position around the casing.
- Sizes less than 13-3/8” use two spiral locking nails.
- Sizes 13-3/8” and greater use four spiral locking nails.
- Holding force tested as per API Recommended Practice 10D-2.

### Hinged Bolted Stop Collar – SC02
- Available in 4 ½” to 20” sizes. Customized sizes are also available.
- Bolt lock mechanism allows for quick and easy installation over casing.
- Holding force tested as per API Recommended Practice 10D-2.
- Must have adequate annular clearance because of Positive OD.
- Can be used in cased and openhole environments.
- Used with most hinged bow centralizers.
- Not recommended for cement baskets and closetolerance applications.
- Minimum hole size—recommended minimum clearance between casing and annular clearance is 1 1/2 in.

### Hinged Set Screw Stop Collar – SC03
- Available in 4 ½” to 20” sizes. Customized sizes are also available.
- Designed to be latched on to the casing with set screws providing additional holding force.
- Can be used in cased and openhole environments.
- Used with most hinged bow centralizers.
- Not recommended for cement baskets and closetolerance applications.
- Minimum hole size—recommended minimum clearance between casing and annular clearance is 1 ¾ in.

### Slip on Set Screw Stop Collar – SC04
- Available in 4 ½” to 20” sizes. Customized sizes are also available.
- Installed with set screws.
- Designed for use where higher holding forces are required.
- Easy installation that can be achieved using an 1/4” Allen wrench.
- Used most with Slip on centralizers.
- Available options include stainless steel set screws, full stainless steel design, slim hole set screws.
- Holding force tested as per API Recommended Practice 10D-2.
SLIP ON SET SCREW STAINLESS STEEL STOP COLLAR – SC05

- Available in 4 ½” to 20” sizes. Customized sizes are also available.
- Installed with set screws.
- Highly recommended for reservoir producing sour gases (H2S).
- Designed for use where higher holding forces are required.
- Easy installation that can be achieved using a 1/4” Allen wrench.
- Used mostly with Slip on centralizers.
- Available options include stainless steel set screws, full stainless steel design, slim hole set screws.
- Holding force tested as per API Recommended Practice 10D-2

SLIP ON SET SCREW DUCTILE IRON STOP COLLAR – SC06

- Available in 4 ½” to 20” sizes. Customized sizes are also available.
- Used where high axial loads are expected.
- Exhibits good impact and fatigue capabilities.
- It also works well in installations of different cement baskets and different types of Centralizers.

CABLE WALL CLEANER – SC07

- Available in 4 ½” to 20” sizes. Customized sizes are also available.
- Removes excess wall filter cake which helps to improve cement bond.
- Hinged design for ease of installation.
- Also available with slip on design

WIRE SCRATCHER – SC08

- Available in 4 ½” to 20” sizes. Customized sizes are also available.
- Removes excessive wall cake and improve the cement bond between the casing and porous formations while reinforcing the cement column.
- The hinged design makes them easy to install.
- For running in the hole, a series of scratchers is mounted on the casing string. The inclined external bristles abrade the wellbore during running and reciprocation.
CEMENTING PLUGS & REAMER SHOE
CEMENTING PLUGS – SH16

- Available in 3 ½” to 30” sizes. Customized sizes are also available.
- The body consists of phenolic inserts, which allows the drill bit to fracture the phenolic mould rather than tearing the rubber, thus reducing the drill out time.
- No metal Parts are used and so all are PDC drillable

CEMENTING PLUGS NON ROTATING – SH17

- Available in 3 ½” to 30” sizes. Customized sizes are also available.
- These are designed to decrease the drill out time.
- A feature of this particular cementing plug is the reinforced locking teeth that are built into the plugs. These lock together between the plugs and the float equipment to eliminate rotation of the plug during drill out.
- No metal Parts are used and so all are PDC drillable

SELF LOCKING (ANTI ROTATION) CEMENTING PLUGS – SH26

- Available in 3 ½” to 30” sizes. Customized sizes are also available.
- An improvised design for Non rotating type cementing plug
- Anti rotational feature eliminates rotation during drilling & save drill out time.
- No metal Parts are used and so all are PDC drillable

COMBINATION CEMENTING PLUG – SH27

- Available in 3 ½” to 30” sizes. Customized sizes are also available.
- Used in combination casing strings where two or more different casing or tubing strings must be wiped by the cementing plugs during the displacement of fluids.
- They are provided with different sizes of rubber fins which help in wiping the casing walls as well as assisting in displacing the cement in one step.
- The plugs are made of graded rubber and are completely PDC drillable.

CONVENTIONAL ALUMINUM INSERT CEMENTING PLUGS – SH16 AL

- Available in 16” to 30” sizes. Customized sizes are also available
- These are manufactured from graded rubber fused onto a core of Aluminum. Three self-centering cups with wiping elements are bolted onto the Aluminum core.
- Differential pressure across the plug forces both wipers and cups firmly against the casing wall to create a firm wiping action throughout the length of the casing string. The all-aluminum core resists distortion from pressure in a deep well and gives support to long columns. The top plug can be used when a dual plug system is not required.
- All plugs are PDC drillable and the operating range of temperature for the aluminum core is up to 200 degrees Fahrenheit

**REAMER SHOE SINGLE/DOUBLE VALVE – SH18-RS/SH18-RS-DV**

- Available in 4 1/2” to 30” sizes. Customized sizes are also available
- **Application:** Designed for problematic wells where reciprocation and/or rotation of the casing are anticipated to ream the hole and land the casing to total depth (TD).
- It effectively negotiates around ledges, swelling shale, mud cake build-up on porous formations, or sand bridges occurring in the wellbore.
- Standard features include aluminum eccentric nose with integral down jets, and side ports.
- Blades are available with or without tungsten carbide cutting structure.
- Available in both II-B & III-C Category
FLOAT SHOES & COLLAR
CONVENTIONAL FLOAT SHOE & COLLAR – SH18/SH19

- Available in 4 1/2” to 30” sizes. Customized sizes are also available.
- **Applications:** In all applications ranging from close tolerance liners to full casing strings.
- Easy drill out with conventional PDC or Tri-Cone bits.
- Standard float shoe is provided with round cement nose to deflect offledges or obstructions.
- Customizable options including nose types, ports/jets, and ball deflector.
- Available in both II-B & IIIC product category.
- Can be supplied either in Single Valve or in Double valve.

STAB IN TYPE FLOAT SHOE & COLLAR – SH18-SI / SH19-SI

- Available in 9 5/8” to 36” sizes. Customized sizes are also available.
- **Application:** Utilized for most inner string cementing applications.
- Recommended where reciprocation of the casing is not required during circulation.
- Recommended for use with Latch-Down Drill Pipe Wiper Plug.
- PDC drillable.
- Available in both II-B & IIIC product category.
- Can be supplied either in Single Valve or in Double valve.

STAB IN LATCH IN TYPE FLOAT SHOE & COLLAR – SH18-SIL / SH19-SIL

- Available in 9 5/8” to 36” sizes. Customized sizes are also available.
- **Application:** Recommended where reciprocation of the casing is required.
- Receptacle has ratcheting left hand threads to lock the stinger into the float equipment.
- Drill pipe and stinger can be easily backed out of the float equipment receptacle when cement job is complete.
- Recommended for use with Latch-Down Drill Pipe Wiper Plug.
- PDC drillable.
- Available in both II-B & IIIC product category.
- Can be supplied either in Single Valve or in Double valve.

AUTO FILL TYPE FLOAT SHOE & COLLAR – SH18-AF / SH19-AF

- Available in 5 1/2” to 20” sizes. Customized sizes are also available.
- **Application:** Single flapper valve design.
- Valve is run in hole in fully open condition, allowing the casing to completely fill.
Converting to conventional one-way check valve by dropping a ball and pressuring up to release the flapper.

Until the conversion ball has been dropped, the casing can be circulated at any time without affecting the fill-up operation.

Conversion pressure for the valve once the ball is dropped is **600 – 1,000 psi**.

Available in both API II-B & API III-C category.

PDC and Tri-Cone drillable.

**DIFFERENTIAL FILL, FLOAT SHOE & COLLAR – SH35 / SH36**

- Available in 5 1/2" to 20" sizes. Customized sizes are also available.
- **Application**: Operation of the valve is controlled by the differential pressure across the valve assembly.
- Converted to conventional one-way check valve by dropping a ball and pressuring up to release the upper flapper and lock the lower sleeve.
- Until the conversion ball has been dropped, the casing can be circulated at any time without affecting the fill-up operation.
- Conversion pressure for the valve once the ball is dropped is **600 – 1,000 psi**.
- Available in both API II-B & API III-C category.
- PDC and Tri-Cone drillable.

**UP JET/SIDE JET/DOWN JET FLOAT SHOE/COLLAR – SH18/19 –UJ/SJ/DJ**

- Available in 3 ½" to 20" sizes. Customized sizes are also available.
- These are provided with drilled angled holes which ensure even distribution of fluid with added assurance that circulation of fluid is not interrupted when casing becomes plugged during running or is rested on bottom. Enhancement of fluid turbulence helps in preventing channeling near the shoe thus aiding in hole cleaning.
- They are available with single valve as well as with double valve, and in conventional and non-rotating profile.

**UP JET/SIDE JET/DOWN JET FLOAT SHOE/COLLAR – SH18/19 –UJ/SJ/DJ**

- Available in 3 ½" to 20" sizes. Customized sizes are also available.
- Nose type includes: Conventional; Non-rotating; Auto fill-up; Stab-in; and Differential fill up etc.
- The specific conditions of the well determine which Shoe or Nose is used.
- The Nose is used to prevent the float valve from being damaged by debris while running in the hole.
- Noses are manufactured in a variety of different materials such as cement, polyamide plastic and aluminum.
STAGE CEMENTING TOOLS, LANDING COLLAR & THREAD COMPOUND
MECHANICAL STAGE CEMENTING TOOLS – SH30

- Available in 4 ½” to 20” sizes. Customized sizes are also available
- It allows cementing of casing string in two stages. These tools set the standard for reliability, cost effectiveness, and ease of use with outstanding built-in features and quality.
- The compact, simple design minimizes the number of moving parts and makes the tools easy to handle.
- Only recommended where deviation of the hole above the tool is 25° or less.
- PDC drillable aluminum seats and plugs.

HYDRAULIC STAGE CEMENTING TOOLS – SH32

- Available in 4 ½” to 20” sizes. Customized sizes are also available
- SledgeHammer's Hydraulic Stage Cementing Tool is durable and reliable and meets the challenges of cementing holes at any angle with a hydraulically opened port system.
- Designed for maximum flexibility in user operations,
- The hydraulic feature allows the tool to operate in highly deviated or horizontal wells.
- In addition it can be used to reduce hydrostatic pressure on weak formations to prevent lost circulation during cementing.
- Consistent shifting pressure.
- Can adjust the hydraulic opening pressure by removing externally installed shear screws in the field.
- PDC drillable aluminum seats and plugs.

HYDRAULIC LANDING COLLAR – SH52

- Available in 4 ½” to 7 5/8” sizes.
- Design with special features to help simplify or accelerate drill out thus saving time.
- The Landing Collars assemblies and plugs latch in place and have anti-rotational profiles that are compatible with PDC drill bits to provide operational flexibility.
- The threaded aluminum tube is cemented in the body, minimizing aluminum content.
- Threads and metallurgies are available as required.

API MODIFIED HIGH PRESSURE THREAD COMPOUND – SHLUB A

- Excellent lubrication qualities to prevent galling and wear of threads.
- Manufactured to API BUL 5A3 requirements.
- Brushable over a wide temperature range.
- Leak prevention to 10,000 psi.
- Not recommended for rotary shoulder connections.
- Available as a lead-free option.

**Sledge Lok II Thread Lock – SHlok-A**

- Used for bonding most threaded substrates, including all metals, wood, composites, rubber to metal, rubber to cement, rubber to wood, and rubber to composites.
- Can also be used as adhesive metal filler.
- Kit is provided in pre-measured amounts of resin paste and liquid activator.
- Sledge Lok II has high performance rates in locking threaded connections tightly and permanently and ensuring optimal operations.
CEMENT RETAINER/
BRIDGE PLUGS & CEMENT
HEAD
CEMENTING HEAD – SH62

- Available in 4 ½” to 20” sizes.
- The cementing heads are available for working pressure from 3000Psi to 5000Psi.
- Design includes fully detachable cementing manifold, quick release retainer bar & gland seals for positive sealing of indicative wires.
- Plug valves & other fittings supplied along with cementing head are rated to same working pressure as the cementing head itself.
- Are hydraulically tested prior to shipment.

CEMENT RETAINER – SH44

- Available in Sizes 5 ½” to 13 3/8”.
- Constructed of drillable gray cast-iron.
- It can also be set on tubing / drill pipe/coil tubing using Hydraulic Setting Tool.
- Opposing slips are carburized wicker type One-piece slips located above and below the rubber packing elements. The slips keep the cement retainer securely set in high hardness alloy grade casings including P-110.
- Standard packing element is Nitrile (70 Duro) optional packing systems of Viton or Aflas are available on special order.
- Fast Drill Out.

BRIDGE PLUG – SH40

- Available in Sizes 5 ½” to 13 3/8”.
- Constructed of drillable gray cast-iron.
- It can also be set on tubing / drill pipe/coil tubing using Hydraulic Setting Tool.
- It incorporates the seal element lock to allow faster, safer run-in.
- Its material is also subject to the same stringent specifications and quality control procedures as cement retainer, providing improved drillability & higher pressure ratings.