PRODUCT CATALOGUE

GRADWELL OILFIELD

Safety, Excellence & Quality with Integrity

Manufacture, Supply & Services of Oilfield Drilling, Cementing & Completion Equipment

Liner Hanger System | Packer System | Bridge Plugs | Floating Equipment | Centralizers

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DRILLING & CEMENTING EQUIPMENT

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CASING CENTRALIZERS & STOP COLLARS

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DRILLING & CEMENTING EQUIPMENT CASING CENTRALIZERS & STOP COLLARS

HINGED NON WELDED BOW SPRING CENTRALIZER
MODEL : GR-01

GR-01

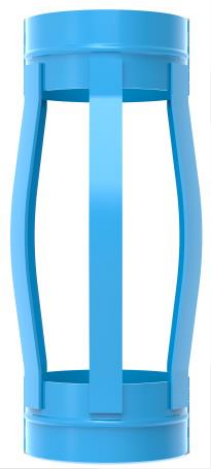
Gradwell - Non Welded Bow Spring Centralizers are designed for vertical, deviated and horizontal well for enhanced restoring force combined with low starting force ensuring good zone isolation. Bow springs are of high quality alloy steel, hot bent to shape using dies and then heat treated under controlled time cycles for consistent tensile strength and spring characteristics for “spring back” action.

Features:

- Extended profile prevents them from hitting against casing collars
- Five standard size Bows can be configured to any hole diameter
- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- These are shipped in half assembled condition for economical in freight and storage costs
- Supplied with stop collar and hinge pin
- Developed to exceeds API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

HINGED WELDED BOW SPRING CENTRALIZER
MODEL: GR-02



GR-02

Gradwell – Welded Bow Spring Centralizers has more Restoring Force as compare to Non Welded Centralizer. The Centralizers have Bow Spring strongly welded to the End Collar under required temperature and condition with extra low Hydrogen coated Electrodes. Integral hinge folded on the inside stay intact even under extreme stress. The End Collars are designed with a Reinforcing Rib stamped into the End Collar to give maximum structural toughness.

Features:

- These are shipped in half assembled condition for economical in freight and storage costs .
- Special Iron Phosphate coating process to prevent from Rust and ensure stocking in the open for a long time.
- Supplied with stop collar and hinge pin.
- Developed to exceeds API 10D standards.

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

SLIP ON WELDED BOW SPRING CENTRALIZER
MODEL: GR-03

GR-03

Gradwell – Slip on welded centralizers are manufactured with solid end rings that can be easily slipped on the casing OD during installation. Slip-on welded centralizers are designed for high restoring force combined with low starting force for centralizing the casing pipe. High performance characteristics are combined with easy field assembly. Bow springs are manufactured of high quality alloy steel, hot bent to shape using dyes and then heat treated under controlled temp and time cycles for consistent spring characteristics to ensure a crack free weld with a minimum amount of distortion and maximum amount of rigidity.

Features:

- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- Supplied with Sipped on set screw stop collar
- Developed to exceeds API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

HINGED NON WELD STAINLESS STEEL BOW SPRING CENTRALIZER MODEL: GR-04

GR-04

Gradwell - Hinged Non Welded Stainless Steel Bow Spring Centralizers are special purpose centralizer, it's used where the chances of corrosion and contamination are present, or it can be use for water well also. It's a 100% stainless Steel Manufacturing along with stainless steel nails Premium quality Bows are made of stainless steel material and hot formed in totally controlled Heat Treatment Plant to achieve the uniform hardness all over and good spring action.

End Collars are designed with self-locking action, which are easy to assemble, time saver and having strong grip. The five standard size Bows can be configured to any hole dia. These Bows with extended profile prevent them from hitting against casing collars. These can be shipped in half assembled condition for economy in shipping and storage costs. These are available in 4 1/2" to 20" sizes. Any special sizes or combination can available on request.

Features:

- Extended profile prevents them from hitting against casing collars
- Five standard size Bows can be configured to any hole diameter
- Special Iron Phosphate coating process to prevent from Rust and ensure stocking in the open for a long time.
- These are shipped in half assembled condition for economical in freight and storage costs
- Supplied with stop collar and hinge pin
- Developed to exceeds API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

SLIP ON WELDED WITH SET SCREW BOW SPRING CENTRALIZER MODEL: GR-62

GR-62

Gradwell - Welded Slip On set crew Bow Spring Centralizers share all the operational and design features of Hinged Welded Centralizers. The key difference is that the End Collars do not have hinges and instead ‘slip’ onto the casing. The collars are specially designed with roll-formed peripheral ridges that provide extra rigidity and can be accompanied by set screws for elimination of Stop Collars.

- The Centralizers are available in a choice of seven standard bow heights for optimal starting and restoring force. All Centralizers undergo a special iron phosphate coating process to prevent corrosion and are then coated with a special polyester powder.
- Gradwell Slip On Welded Bow Spring Centralizers are shipped in assembled condition only.

Features:

- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- Supplied with Sipped on set screw stop collar
- Developed to exceeds API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

HINGED NON WELDED BOW SPRING TURBOLIZER
MODEL: GR-05

GR-05

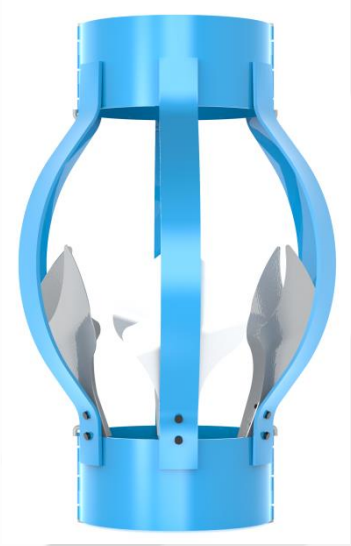
Gradwell – Non Welded Turbolizer has deflector blade fitted on standard bow spring which creates difference from the standard centralizers. These blades or Fins are specially made of Heat Treated spring steel. The metal fins are installed on the Bows, to help induce turbulence in the cement slurry during pumping operation. Spring action of blades makes them flexible, which minimize damage while moving down hole.

Features:

- Device improves the cleaning action of Drilling Fluids. Distribute the cement slurry into Well bore irregularities and minimizes channeling.
- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- These are shipped in half assembled condition for economical in freight and storage costs
- Supplied with stop collar and hinge pin
- Developed to exceeds API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

HINGED WELDED BOW SPRING TURBOLIZER
MODEL: GR-06



GR-06

Gradwell – Welded Turbolizer has deflector blade fitted on standard bow spring which creates difference from the standard centralizers. The End Collars are designed with a reinforcing Rib stamped into the End Collar to give maximum structural toughness Another special characteristic are built in Stop device on leading End Collar. The metal fins are installed on the bows, to help induce turbulence in the cement slurry during pumping operation. Spring action of blades makes them flexible, which minimize damage while moving down hole.

Features:

- Device improves the cleaning action of Drilling Fluids. Distribute the cement slurry into Well bore irregularities and minimizes channeling.
- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- These are shipped in half assembled condition for economical in freight and storage costs
- Supplied with stop collar and hinge pin
- Developed to exceeds API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

SLIP ON WELDED BOW SPRING TURBOLIZER
MODEL: GR-07

GR-07

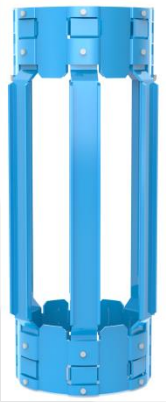
Gradwell – slip on Welded Turbolizer has deflector blade fitted on standard bow spring which creates difference from the standard centralizers. These blades or Fins are specially made of Heat Treated spring steel. The metal fins are installed on the Bows, to help induce turbulence in the cement slurry during pumping operation. Spring action of blades makes them flexible, which minimize damage while moving down hole. Collars are specially designed with roll formed peripheral ridges which provide extra rigidity. Slip On Turbolizers are provided for direct installation on pipe by slipping on stop collar and can be provided with Setscrew for elimination of Stop collar.

Features:

- Device improves the cleaning action of Drilling Fluids. Distribute the cement slurry into Well bore irregularities and minimizes channeling.
- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- Developed to exceeds API 10D standards.

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

HINGED NON WELDED POSITIVE BOW CENTRALIZER
MODEL: GR-08



GR-08

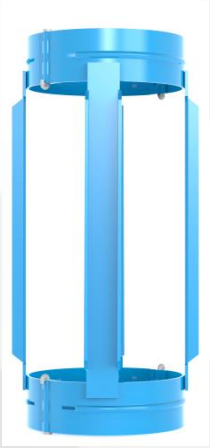
Gradwell – Non welded positive Centralizers are uniquely designed with flat bottom U profile of different depths. The Centralizers significantly reduce frictional drag while being used in deviated holes. They provide almost 100% Stand Off when run inside a cased hole. They are supplied 1/4" or 6 mm less than the inside diameter of the hole size in which Centralizer is to be run. This design eliminates weak (brittle) spots passage. The flat U profile is fitted in self-locking retaining lips for firm and positive hold.

Features:

- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- These are shipped in half assembled condition for economical in freight and storage costs .
- Supplied with stop collar and hinge pin
- Developed to exceeds API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

HINGED WELDED POSITIVE BOW CENTRALIZER
MODEL: GR-09



GR-09

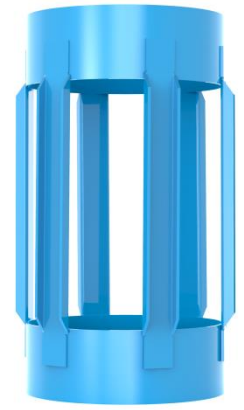
Gradwell – Hinged welded positive bow centralizers have strongly welded to the end collar under required temperature and condition with extra low hydrogen coated electrodes. Operational and general design features are the same as non-welded positive bow centralizer

Features:

- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- These are shipped in half assembled condition for economical in freight and storage costs
- Supplied with stop collar and hinge pin
- Developed to exceeds API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

SLIP ON WELDED POSITIVE BOW CENTRALIZER
MODEL: GR-10



GR-10

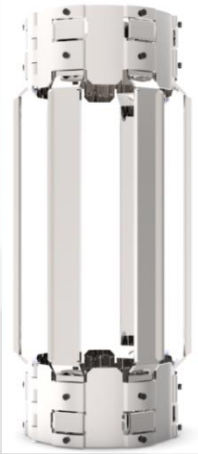
Gradwell - Slip-On Positive Bow Centralizer are manufactured with solid end rings that can be easily slipped on the casing OD during Installation. Centralizers bow have strongly welded to the end Collar under required temperature and Condition with extra low hydrogen coated electrodes. Operational and Design features is the same welded positive bow centralizer.

Features:

- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- Supplied with slip on stop
- Developed to exceeds API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

HINGED NON WELDED STAINLESS STEEL POSITIVE BOW CENTRALIZER MODEL: GR-11



GR-11

Gradwell– Stainless Steel centralizers are special purpose centralizers it's used where the chances of corrosion and contamination are present, or it can be used for water well also. It's a 100% stainless Steel Manufacturing along with stainless steel nails Premium Quality Bows are made of stainless steel material and hot formed in totally controlled Heat Treatment Plant are uniquely designed with flat bottom U profile of different depths. The Centralizers significantly reduce frictional drag while being used in deviated holes. They provide almost 100% Stand Off when run inside a cased hole. They are supplied 1/4" or 6 mm less than the inside diameter of the hole size in which Centralizer is to be run. This design eliminates weak (brittle) spots passage. The flat U profile is fitted in self-locking retaining lips for firm and positive hold.

Features:

- These are shipped in half assembled condition for economical in freight and storage costs
- Supplied with stop collar and hinge pin
- Developed to exceeds API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

SINGLE PIECE BOW SPRING CENTRALIZER
MODEL: GR-12

GR-12

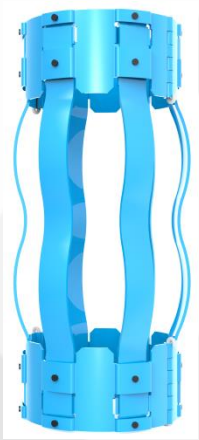
Gradwell–Single Piece Welded Bow Spring Centralizer is integrated steel flexible Centralizer used to centralizer casing during the cementing stage of oil wells. Single Piece Centralizers is designed for tight tolerance applications. It performs very well in open hole as well as in cased hole.

Features:

- Used in vertical, deviated and horizontal wells
- Low start and running forces
- Flexible and High restoring force
- Developed to have good stand-off
- Developed to meet or exceed API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

HINGED NON WELDED SEMI RIGID BOW SPRING CENTRALIZER MODEL: GR-13



GR-13

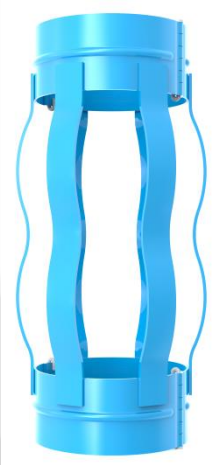
Gradwell –Semi Rigid Centralizers are designed to pass through tight spots and doglegs. This device ensures high efficiency in casing jobs on Deviated and Horizontal wells. This Design makes these Centralizers act as a rigid centralizer under high side loads. The construction is with Hinges and a Non Welded Bow.

Features:

- It has high Restoring force and high Stand Off with low Running Force.
- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- These are shipped in half assembled condition for economical in freight and storage costs
- Supplied with stop collar and hinge pin
- Developed to exceeds API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

HINGED WELDED SEMI RIGID BOW SPRING CENTRALIZER MODEL: GR-14



GR-14

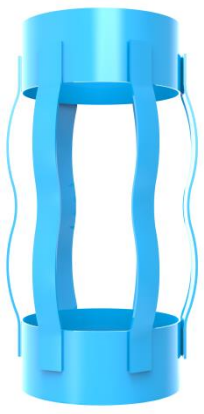
Gradwell – Hinged Welded Semi Rigid Centralizer ensures high efficiency in casing. Welded Centralizer has more Restoring Force as compare to Non Weld Centralizer. The Centralizers have double crested Bow Spring strongly welded to the End Collar under required temperature and condition with extra low Hydrogen coated Electrodes, which assures ultimate strength and uniformity in every weld. Integral hinge folded on the inside stay intact even under extreme stress. The End Collars are designed with a reinforcing Rib stamped into the End Collar to give maximum structural toughness.

Features:

- It has high Restoring force and high Stand Off with low Running Force
- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- These are shipped in half assembled condition for economical in freight and storage costs
- Supplied with stop collar and hinge pin
- Developed to exceeds API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

SLIP ON WELDED SEMI RIGID BOW SPRING CENTRALIZER
MODEL: GR-15



GR-15

Gradwell – Slip On Welded Semi-Rigid Centralizers share many of the same design and operational features as Hinged Welded Centralizers. They can be directly installed onto pipe and are provided with set screw style Stop Collars to increase the holding force. The Collars are innovatively designed with roll formed peripheral ridges that provide extra rigidity. The Centralizers are available in a variety of Bows configured from a choice of four standard Bow heights.

Features:

- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- Developed to exceeds API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

HINGED WELDED CEMENT BASKET
MODEL: GR-17

GR-17

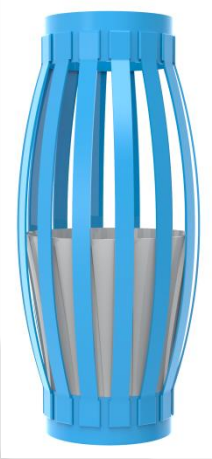
Gradwell – Hinged Welded Cement Basket is designed with Flexible Bow Springs, heat-treated under controlled conditions for maximum strength and uniformity are welded to slip-on collars and overlapping metal fins for flexibility and strength to support long columns of cement during primary cementing operations it is easily installed by sliding it over the pin end of a casing joint, prior to make-up of the joint.

Features:

- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- Its design allows cement to flow in an upward direction, yet helps to prevent it from falling downward.
- Developed to exceeds API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

SLIP ON CEMENT BASKET
MODEL: GR-18



GR-18

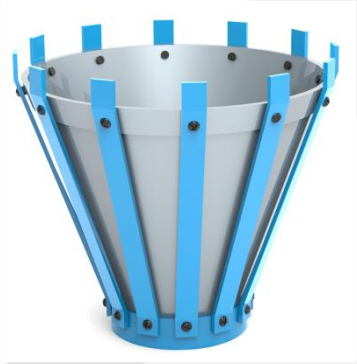
Gradwell– Hinged Welded Cement Basket is designed with Flexible Bow Springs, heat-treated under controlled conditions for maximum strength. The circulation is not restricted whenever in the process of running casing, during lifting and lowering or in the half way.

Features:

- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- Can be used with relevant small casing
- Its design allows cement to flow in an upward direction, yet helps to prevent it from falling downward.
- Developed to exceeds API 10D standards

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

OPEN TOP CEMENT BASKET
MODEL: GR-19



GR-19

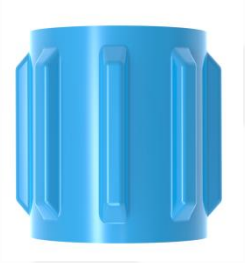
Gradwell – Open Top Cement Baskets consists of heavy duty liners concentrated to staves and fabricated using high strength, flexible steel bows that are mounted on the steel slip-on end collar. The baskets are not duplicated and occasionally allow traveling the length of the joint to allow pipe movement. The cement basket has better ability to adapt to the bore hole and can accommodate larger than nominal hole sizes.

Features:

- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- Its design allows cement to flow in an upward direction, yet helps to prevent it from falling downward.
- Developed to exceeds API 10D standards

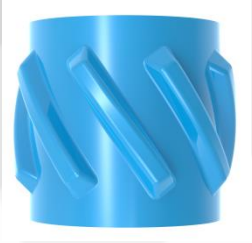
Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

STAND OFF BAND (STRAIGHT , R IGHT & L EFT)
MODEL: GR-20 , GR-21, & GR-22



GR-20

GR-21



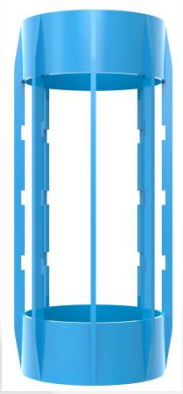
GR-22

Gradwell – Slip On Stand Off Band rigid centralizer is designed. To provide a positive stand off the for both cased and open Holes. The angled fins provide increased turbulent flow. These Slip On Stand Band is require where close tolerance between the casing and the hole is being encountered. Mainly it's designed for the liner applications.

Design of the stand off band allow for reciprocation and rotation during cementing and can be installed between Set Screw Stop Collar these Stand Off Band undergo a special Phosphate coating process to prevent from Rust then coated with special Polyester Powder. These are available in sizes ranging from 4 1/2'' to 20''

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

CONDUCTOR PIPE CENTRALIZER
MODEL: GR-23



GR-23

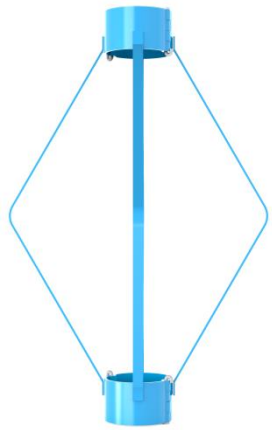
Gradwell – Conductor pipe centralizers provide the right features for getting a good primary cementing job with maximum casing and wellbore standoff. Conductor pipe centralizers are constructed of two-piece high strength corrosion resistant. Conductor Pipe centralizers provide ultimate drag and torque reduction with maximum fluid bypass with low friction factor. Conductor pipe centralizers with stand high wellbore temperatures while providing maximum horizontal standoff.

Features:

- Special zinc Phosphate and powder coating process to prevent from Rust and ensure stocking in the open for a long time.
- Low friction factor
- Developed to exceeds API 10D standards.

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

DRILL PIPE WELDED CENTRALIZERS
Model : GR-24



GR-24

Gradwell – Drill Pipe Centralizer Runs freely into difficult well-bores while providing excellent standoff. The Bows of these Centralizers are heat treated in special furnace which gives it a peculiar ‘bow spring’ action. The Heat Treated bows enable these centralizers to provide best centralization as well as help in faster running of casing. In this type of Centralizers, the End Collars have hinges which makes it in two halves. The longer bow profile allows centralizers to be pulled into restrictions and into larger under reamed open hole.

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

SPIRAL VANE SOLID RIGID CENTRALIZER
MODEL: GR-26 (Aluminium)-L GR-32 (Steel)-L GR-38 (Zinc)-L GR-44 (Thermoplastic)-L

Gradwell - Spiral Vane solid rigid centralizer provide the right feature for getting a good primary cementing job with maximum wellbore standoff with suitable functionality. Straight vane solid rigid centralizers provide ultimate drag and torque reduction with maximum fluid by pass. Available in different material grades.

Features:

- High axial load strength
- Construction provides superior toughness
- Spiral blades allow passage through unexpected under gauge open hole
- Units can be run between casing and less demanding wells

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

SPIRAL RIGHT VANE SOLID RIGID CENTRALIZER
MODEL: GR-27 (Aluminium)-R GR-33 (Steel)-R GR-39 (Zinc)-R GR-45 (Thermoplastic)-R GR-47 (Welded)

Gradwell - Spiral Vane solid rigid centralizer provide the right feature for getting a good primary cementing job with maximum wellbore standoff with suitable functionality. Straight vane solid rigid centralizers provide ultimate drag and torque reduction with maximum fluid by pass. Available in different material grades.

Features:

- High axial load strength
- Construction provides superior toughness
- Spiral blades allow passage through unexpected under gauge open hole
- Units can be run between casing and less demanding wells

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

STRAIGHT VANE SOLID RIGID CENTRALIZER
MODEL: GR-25 (Aluminium) GR-31 (Steel) GR-37 (Zinc) GR-43 (Thermoplastic) GR-46 (Welded)

Gradwell - Straight Vane solid rigid centralizer provide the right feature for getting a good primary cementing job with maximum wellbore standoff with suitable functionality. Straight vane solid rigid centralizers provide ultimate drag and torque reduction with maximum fluid by pass. Available in different material grades.

Features:

- High axial load strength
- Construction provides superior toughness
- Spiral blades allow passage through unexpected under gauge open hole
- Units can be run between casing and less demanding wells

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

SPIRAL VANE SET SCREW SOLID RIGID CENTRALIZER
MODEL: GR-29 (Aluminium)-L GR-35 (Steel)-L GR-41 (Zinc)-L

Gradwell - Spiral Vane set screw solid rigid centralizer provide the right feature for getting a good primary cementing job with maximum wellbore standoff with suitable functionality. Spiral vane Set screw solid rigid centralizers provide ultimate drag and torque reduction with maximum fluid by pass. The vortex motion generated by the spiral vanes helps to increase the fluid velocity with reduced flow area

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

SPIRAL RIGHT VANE SET SCREW SOLID RIGID CENTRALIZER
MODEL: GR-30 (Aluminium)-R GR-36 (Steel)-R
GR-42 (Zinc)-R

Gradwell - Spiral Vane set screw solid rigid centralizer provide the right feature for getting a good primary cementing job with maximum wellbore standoff with suitable functionality. Spiral vane Set screw solid rigid centralizers provide ultimate drag and torque reduction with maximum fluid by pass. The vortex motion generated by the spiral vanes helps to increase the fluid velocity with reduced flow area

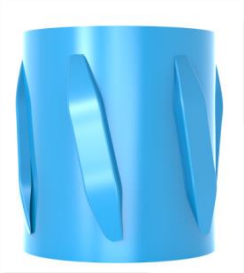
Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

STRAIGHT VANE SET SCREW SOLID RIGID CENTRALIZER
MODEL: GR-28 (Aluminium) GR-34 (Steel)
GR-40 (Zinc)

Gradwell - Straight Vane set screw solid rigid centralizer provide the right feature for getting a good primary cementing job with maximum wellbore standoff with suitable functionality. Straight vane Set screw solid rigid centralizers provide ultimate drag and torque reduction with maximum fluid by pass.

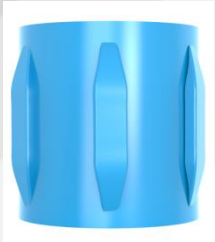
Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

HEAVY DUTY SPIRALIZER (L , R , S)
MODEL: GR-48 , GR-49 & GR-50



GR-48

GR-49



GR-50

Gradwell - Heavy Duty Welded Spiralizer is designed for high deviated horizontal well where casing centralization is the main consideration. The spiralizer system is made of steel, giving it a toughness advantage over other materials and alloys in different style, but normally straight or curved vane is used. Its ensures positive stand-off, maximum flow, maximum well bore stabilization, maximum holding strength, decreased drag. Both spiral and straight fin designs minimize drag forces while running pipe. The fins glide smoothly on the low side of horizontal boreholes. It can be made to float between casing stop collars or be secured to the casing OD, if it is required to rotate the casing while cementing. Due to inclined or spiral fins they help to create turbulence in the fluid which removes any wellbores debris or mud cake deposited and helps in smooth running in of the casing string.

Features:

- It helps for proper distribution of cement around the casing during the cementing.
- It also help to reduce the friction for inserting the casing in wellbore.
- It helps to improve strength of cement bond by evenly distributing the cement

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

SLIP ON HEAVY DUTY SPIRALIZER (L,R & S)
MODEL: GR-51

GR-51

GR-52

GR-53

Gradwell - Slip on Welded Spiralizer provide low coefficient of friction to reduce drag forces while running in pipe thus optimizing mud displacement and minimizing pressure drop across the Centralizer. In this the bow springs hardly welded to the end collars on suitable temperature with proper correct grade electrode. While giving maximum standoff these blades create vortex flow to optimize mud displacement. They are available with straight vane or spiral vane type options which resist high side loads. They are capable of providing maximum stand-off.

Features:

- It help for proper distribution of cement around the casing during the cementing.
- It also help to reduce the friction for inserting the casing in wellbore.
- It helps to improve strength of cement bond by evenly distributing the cement

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

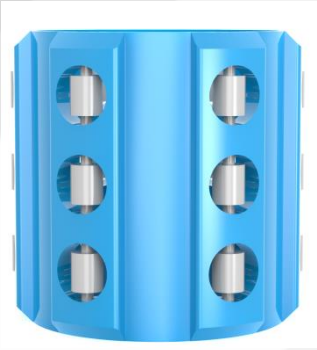
ROLLER LD TYPE CENTRALIZER
MODEL: GR-55

GR-55

Gradwell - Roller Centralizer is a complete mechanical friction-reduction solution designed for extended-reach wells. 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 Centralizer, all rollers are arranged in horizontal direction. This kind of arrangement of rollers efficiently reduces dragging force.

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

ROLLER LT TYPE CENTRALIZER
MODEL: GR-56



GR-56

Gradwell - Roller Centralizer is a complete mechanical friction-reduction solution designed for extended-reach wells. 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 Centralizer, all rollers are arranged in vertical direction. This kind of arrangement of rollers efficiently reduces dragging force.

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

CROSS COUPLING PROTECTOR
MODEL : GR-CCP

GR-CCP

Gradwell manufactures the Cross Coupling Cable Protectors (Casted) to protect and support ESP cable, control lines and injection lines in the well bore for wells completed with artificial lift.

Features:

- The protector is designed and tested to support a minimum of 100 ft. of ESP cable and control/ injection line across the coupling without cable slippage and crimping.
- The protector is designed to effectively withstand high axial and rotational forces experienced while performing completion operations.
- The protector is designed to withstand axial load of 30 tons and lateral load of 20 tons without slipping on the production tubing.
- The protector is of one-piece design/assembly with captivated cap screw and pre-engaged bolts to eliminate potential for detachment of bolts from the main protector body.
- No loose parts to fall out during or after installation.
- The protector comes with an interlock feature as a standard which protects the bolts from shear stress.
- The protector is designed to have a low profile collar that gives increased clearance within casing and thus allows more standoff protection over cable.
- he protector is designed to have contoured profiles to deflect away impacts encountered while running the production string down-hole.
- All components used in the construction of the cable protector conform to NACE specifications MR-01-75 (latest edition) for sour service applications.
- All protectors are fully retrievable and reusable after minor refurbishment and replacement of few parts.

SIZE (In.)	ESP Cable Type	Control Line Size (In.)	Thread Connection
2-7/8	Flat or Round	1/4, 3/8	API/Premium
3-1/2	Flat or Round	1/4, 3/8	API/Premium
4-1/2	Flat or Round	1/4, 3/8	API/Premium

HINGED SPIRAL NAIL STOP COLLAR
MODEL: GR-57

GR-57

Gradwell - Hinged Spiral Nail types has internal grooves onto which the specially designed Spiral nail fasten onto the casing pipe. Collars are hinged at two places 180 degrees apart and one spiral nail in each half is driven between collar and the casing. It can be latched on the casing pipe without having to be slipped on. These are most effective where low annular clearance is encountered.

The spiral nail gives a firm grip to the stop collar and when tested as per API 10D-2 Specifications they provide high holding force.

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

HINGED BOLTED STOP COLLAR
MODEL: GR-58

GR-58

Gradwell - Hinged Bolted types has cross bolt locking system with one go locking for easy installation. This is a single piece collar and the set crews are provided on the outer circle of the periphery which is meant for installing and is directly installed on the pipe by slipping on the casing without any hassle. It is fabricated using ductile iron therefore it has a good impact and fatigue capability. These kinds of collars are used in place where high axial loads are expected.

The bolt lock gives a firm grip to the stop collar and when tested as per API 10D-2 Specifications they provide high holding force.

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

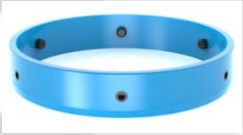
HINGED SET SCREW STOP COLLAR
MODEL: GR-59

GR-59

Gradwell - Hinged Set Screw are made up of two pieces and hinged at the two ends making it 180 degrees apart. The gripping force is applied by one of the row of Set screw which tightens the collar to the casing firmly. They can be fastened on to the casing pipe and much easy to install. They are most effective in conditions where there is low annual clearance. The screw lock gives a firm grip to the stop collar and when tested as per API 10D-2 Specifications they provide high holding force.

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

SLIP ON SET SCREW STOP COLLAR
MODEL: GR-60



GR-60

Gradwell - Slip on Set Screw Stop Collar is of one-piece high strength corrosion resistant alloy collar and the gripping force is applied by one row of Set Screws. The outside ends of these collar are generally tapered to a degree which helps to hold the centralizer and avoid the ends to hit the Bows or Vanes when the centralizers are placed over them.

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

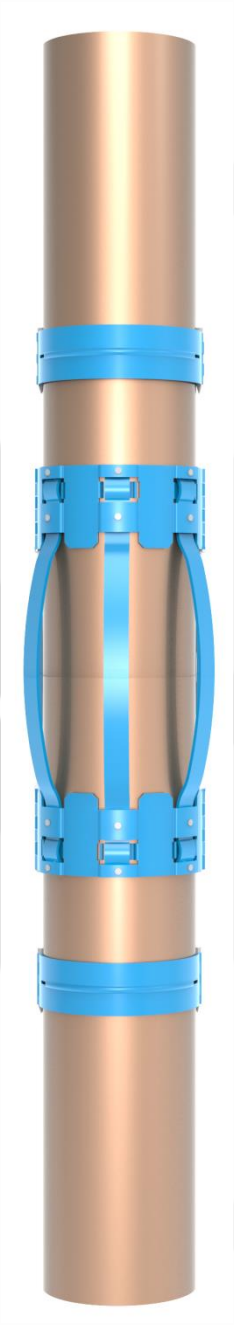
SLIP ON SET SCREW STOP COLLAR SINGLE SIDE BEVELLED
MODEL: GR-61

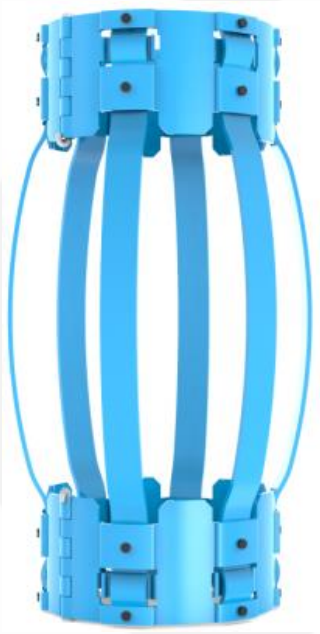
GR-61

Gradwell - Slip on Set Screw Stop Collar single side beveled is of one-piece high strength corrosion resistant alloy collar and the gripping force is applied by one row of Set Screws. The outside ends of these collar are generally tapered to a degree which helps to hold the centralizer and avoid the ends to hit the Bows or Vanes when the centralizers are placed over them.

Note : Available in 4 1/2" to 20 " sizes. Any special sizes or combination can be made available on request.

CASING CENTRALIZERS & STOP COLLARS





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