

# PRODUCT CATALOGUE

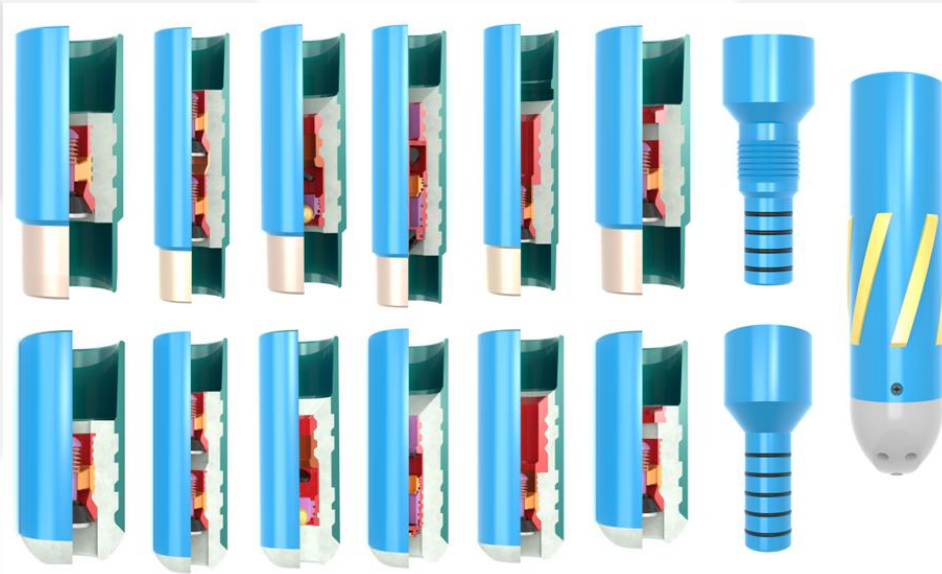


*Safety, Excellence & Quality with Integrity*

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

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

# PRIMARY CEMENTING EQUIPMENT - FLOAT SHOE & FLOAT COLLAR

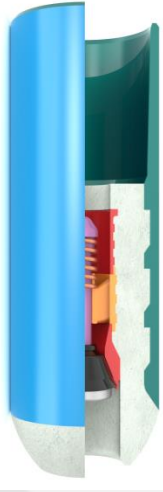


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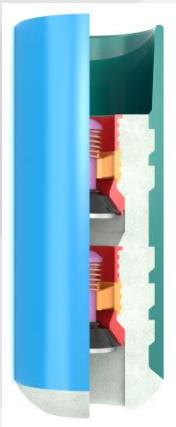
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## CONVENTIONAL SINGLE & DOUBLE VALVE FLOAT SHOE MODEL : GR-CFS-1 & GR-CFS-2



**GR-CFS-1**



**GR-CFS-2**

Float Shoe is a cylindrical steel section with a rounded nose which guides the casing toward the that is attached to the bottom of the casing string towards the

centre of the hole. It contains a check valve to permit fluid to pass downward but not upward through the casing.

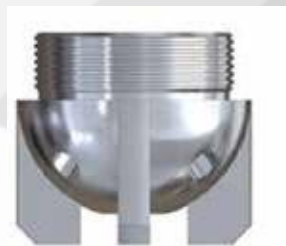
### Features:

- Fast Drill Out.
- Internal Parts are PDC drillable.
- Float Shoe is available in all API grade material.
- Float shoe can be furnished in API threads as well as in Premium threads.
- Jet port/Nose configuration is available upon request. Gradwell offers Side Jet Ports, Down Jet Ports and Up Jet Ports.
- Valve is tested as per API RP 10F Category III C.
- Float Shoe is available in Single and Double valve Configuration.
- Maximum Back Pressure rating: 5000 psi @400°F.
- Tubing Float Shoe for high pressure up to 10000 PSI.
- Float Shoe is available in different type of nose as per the application.
- Chip breaker features are in all type of aluminum nose as well as Phenolic nose.

### Types of Nose :



**Bullet Nose**



**Spade Nose**



**Eccentric Nose**

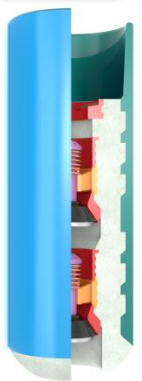


**Phenolic Nose**

**NON-ROTATING SINGLE & DOUBLE VALVE FLOAT SHOE**  
**MODEL : GR-NRFS-1 & GR-NRFS-2**



GR-NRFS-1



GR-NRFS-2



Non Rotating profile

Non-rotating Float shoe attaches to the end of the casing string and they are use to stop slurry from flowing back. Float Shoe serves as the backbone of casing equipment used during primary cementing operations. It guides the casing to total depth and prevents contaminated mud from entering the casing. Also it provides a landing point for casing wiper plugs, reinforces the lower end of the casing string, and ensures greater accuracy of cement slurry displacement. Non-rotating insert helps to engage the connecting plugs in it and locks the rotation when PDC drill bit is used.

**Features:**

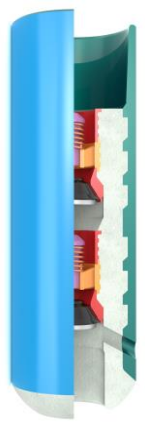
- PDC Drillable.
- Inverted Poppet valve has greater strength.
- Can withstand high temperatures & pressure.
- Non-Metallic parts prevent damage to PDC Drill Bit.
- Controlled buoyancy- regulated by filling casing cum surface.

Note: It is available in Single & Double Valve design.

**SINGLE & DOUBLE VALVE FLOAT SHOE WITH DOWN JET PORTS**  
**MODEL : GR-DJFS-1 & GR-DJFS-2**



GR-DJFS-1



GR-DJFS-2

This design ensures positive sealing in vertical, deviated & horizontal well. They have a back-pressure valve that prevents fluids from entering the casing while the pipe is lowered into hole and prevents cement from flowing back into the casing after displacement, while enabling circulation down through casing. Double Valve helps maximum protection against back flow of cement. There are three down-jet ports located below float valve in side of the float shoe shell to help to increase cement bonding strength due to swirl effect by cementing.

Sometimes, it provides landing point for cementing plugs when Collar is not used.

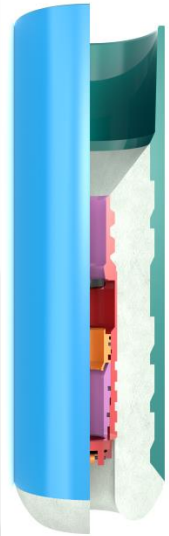
It is available with Down-jet, Up-jet & Side-jet ports as well.

**Features:**

- Down-jet ports increase bonding strength of cement.
- Provide passage of fluid with added assurance that flow will not be interrupted when casing resets at bottom.
- Easy PDC drillable.
- Cost effective.
- Maximum protection against back flow of cement.

Note: It is available in Single & Double Valve design.

**DIFFERENTIAL FILL-UP FLOAT SHOE  
MODEL : GR-DFS**



GR-DFS

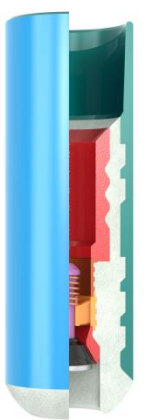
Differential fill-up Float Shoe allows 90% casing fill-up during run-in, reducing surge pressures caused by the piston effect of running in restricted I.D. Use of differential shoe provides additional buoyancy by allowing only 81% casing fill-up further enhancing works efficiency.

Circulating can be established at any time while running in. Dropping a ball converts the differential valve to a regular back-pressure valve. When collar and shoe are run together, dropping one ball converts both units. After allowing sufficient time for ball to reach the equipment conversion can be achieved by applying approximately 600-800 psi of pump pressure (adjustable).

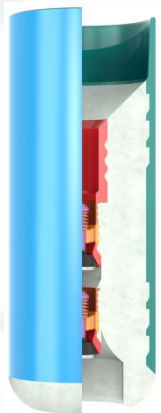
**Features:**

- 90% casing fill-up during run in.
- Reduce surge pressure.

**STAB IN SINGLE & DOUBLE VALVE FLOAT SHOE  
MODEL : GR-SIFS-1 & GR-SIFS-2**



GR-SIFS-1



GR-SIFS-2

Gradwell Stab-in Float Shoes are provided with features where the drill pipe is stabbed directly into the float shoe. Stab in float shoe resists high temperature, good sealing and drill ability, convenient connection. This kind of shoe is used for inner string cementing operations. Stab-in cementing is an improved method for cementing large diameter casing. It improves displacement accuracy, and cement volume and net rig time. Gradwell provide Single as well as with Double Valve Stab-in Float Shoe..

**Features:**

- Reduced cement volume, rig time for cementing operations.
- Use of Drill Pipe Dart instead of large dia. cementing plugs.
- Cementing pressure confined to Drill pipe as in squeeze cementing jobs.

Note: It is available in Single & Double Valve design.

## STAB IN LATCH FLOAT SHOE MODEL : GR-SILFS-1



GR-SILFS-1

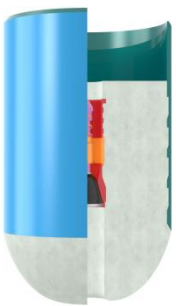
These Float Shoes are provided with latch in profile & allow the drill pipe to be stabbed directly into the float shoe. These float shoe resists high temperature, good sealing and drill ability, convenient connection. This kind of shoe is used for inner string cementing operations. Stab-in cementing is an improved method for cementing large diameter casing. It improves displacement accuracy, and cement volume and net rig time. Gradwell provide Single as well as with Double Valve Stab-in Latch Float Shoe..

### Features:

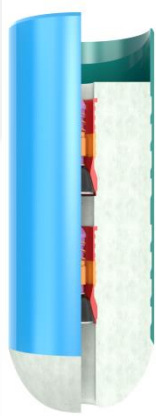
- Receptacle has ratcheting left hand threads to lock the stringer into the float equipment.
- Drill pipe and stringer can be easily pulled out of the float equipment when cement job is completed.
- Recommended when reciprocation of the casing is required.
- Stab-in Latch-in Stinger required.
- PDC drillable.

Note: It is available in Single & Double Valve design.

## BUTT WELD SINGLE & DOUBLE VALVE FLOAT SHOE MODEL : GR-BWFS-1 & GR-BWFS-2



GR-BWFS-1



GR-BWFS-2

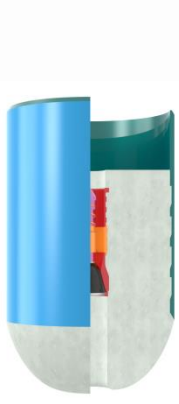
In Butt-Weld type of cement float shoe the casing collar O.D matches with the casing O.D and upper end is only beveled, not recessed for directly welding to the casing pipe.

### Features:

- Hold back flow pressure of cement.
- Operator-controlled buoyancy-regulated by filling casing at surface.
- Bottom round nose of the shoe helps for easy entry of the string into the hole.
- They are mostly run with float collars and must perform the primary function of guiding the casing to total depth while also serving as the primary valve when the cementation displacement is completed.

Note: It is available in Single & Double Valve design.

## SLIP ON CEMENT SINGLE & DOUBLE VALVE FLOAT SHOE MODEL : GR-SOFS-1 & GR-SOFS-2



GR-SOFS-1



GR-SOFS-2

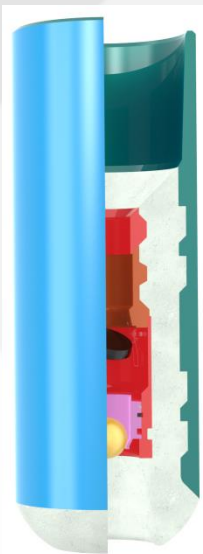
In Slip on type of cement float shoe the casing collar O.D matches with the casing O.D and upper end is only beveled, not recessed for directly welding to the casing pipe.

### Features:

- Hold back flow pressure of cement.
- PDC Drillable.
- Provide casing buoyancy during running & act as internal bop during running and casing cementing.

Note: It is available in Single & Double Valve design.

## AUTO FILL FLOAT SHOE MODEL : GR-AFFS



GR-AFFS

Differential fill-up Float Shoe allows 90% casing fill-up during run-in, reducing surge pressures caused by the piston effect of running in restricted I.D. Use of differential shoe provides additional buoyancy by allowing only 81% casing fill-up further enhancing works efficiency.

Circulating can be established at any time while running in. Dropping a ball converts the differential valve to a regular back-pressure valve. When collar and shoe are run together, dropping one ball converts both units. After allowing sufficient time for ball to reach the equipment conversion can be achieved by applying approximately 600-800 psi of pump pressure (adjustable).

### Features:

- 90% casing fill-up during run in.
- Reduce surge pressure.



## SINGLE & DOUBLE VALVE REAMER SHOE MODEL : GR-RS-1 & GR-RS-2

Reamer Shoe is a cylindrical steel section with an eccentric nose which guides the casing toward the that is attached to the bottom of the casing string towards the centre of the hole.

It contains a check valve to permit fluid to pass downward but not upward through the casing. Reamer shoe is the single and double valve available.

### Features:

- Carbide spiral vanes and diamond shapes structure provides full-bore coverage in rotating and reciprocating applications, which provides easy passage to total depth.
- The eccentric nose can climb ledges and negotiate other well bore obstructions while the cutting structure reams out tight spots.
- Reamer shoe enables both rotating and reciprocating reaming action while running casing and liners.
- Flow ports provide full-bore coverage while rotating and reaming, and they prevent channeling while cement is pumped.

- All internal parts and standard aluminum alloy nose are PDC drillable.
- Reamer Shoe is available in all API grade material.
- Reamer shoe can be furnished in API threads as well as in Premium threads.
- Reamer Shoe is available in Single and Double valve Configuration.
- Maximum Back Pressure rating: 5000 psi @400°F.
- Reamer shoe is available in welded design as well as single piece design.



GR-RS-1



GR-RS-2

## CONVENTIONAL SINGLE & DOUBLE VALVE FLOAT COLLAR MODEL : GR-CFC-1 & GR-CFC-2

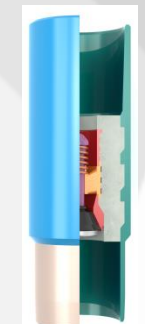
Float Collar is a cylindrical steel section with box and pin threads. Float Collar generally uses one string above the Float Shoe. It contains a check valve to permit fluid to pass

downward but not upward through the casing and provides a flat landing surface for cementing plugs.

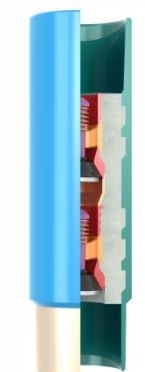
### Features:

- Fast Drill Out.
- Internal Parts are PDC drillable.
- Float Collar is available in all API grade material.
- Float Collar can be furnished in API threads as well as in Premium threads.
- Float Collar can be furnished with non rotating feature.
- Valve is tested as per API RP 10F Category III C.
- Maximum Back Pressure rating 5000 psi @400°F.

- Tubing Float Collar for high pressure up to 10000 PSI.
- Orifice float collar for Tie-back application.
- Ball Catcher/Ball Deflector is available upon request.
- Flat surface provides platform to bump the bottom plug.
- Baffle plate float collar is available upon request.
- Inner String float collar is available for larger size casing.



GR-CFC-1



GR-CFC-2

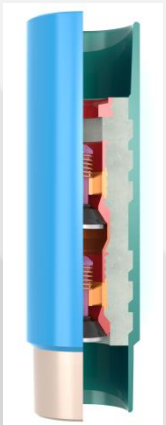
## NON-ROTATING SINGLE & DOUBLE VALVE FLOAT COLLAR MODEL : GR-NRFC-1 & GR-NRFC-2



GR-NRFC-1

Non-Rotating Float Collar attaches to one or two casing joints above Float Shoe and they are used to stop slurry from flowing back. Float collar also serves as the backbone of casing equipment used during primary cementing operations.

Also it provides a landing point for casing wiper plugs, reinforces the lower end of the casing string, and ensures greater accuracy of cement slurry displacement. Non-rotating insert helps to engage the connecting plugs in it and locks the rotation when PDC drill bit is used.



GR-NRFC-2



Non Rotating profile

### Features:

- PDC Drillable.
- Inverted Poppet valve has greater strength.
- Can withstand high temperatures & pressure.
- Non-Metallic parts prevent damage to PDC Drill Bit.
- Controlled buoyancy- regulated by filling casing cum surface.

Note: It is available in Single & Double Valve design.

## DIFFERENTIAL FILL-UP FLOAT COLLAR MODEL : GR-DFC



GR-DFC

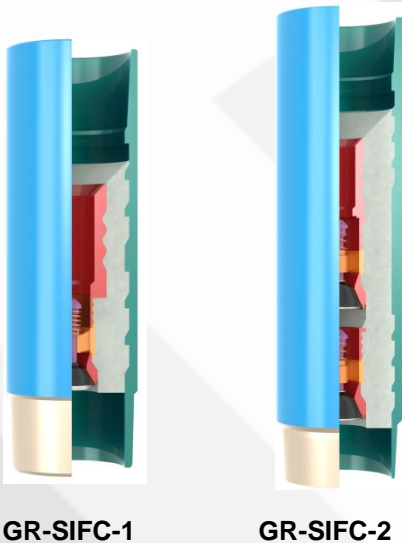
Differential fill-up Float Collar allows 90% casing fill-up during run-in, reducing surge pressures caused by the piston effect of running in restricted I.D. Use of differential collar provides additional buoyancy by allowing only 81% casing fill-up further enhancing works efficiency.

Circulating can be established at any time while running in. Dropping a ball converts the differential valve to a regular back-pressure valve. When collar and shoe are run together, dropping one ball converts both units. After allowing sufficient time for ball to reach the equipment conversion can be achieved by applying approximately 600-800 psi of pump pressure (adjustable).

### Features :

- 90% casing fill-up during run in.
- Reduce surge pressure.

**STAB IN SINGLE & DOUBLE VALVE FLOAT COLLAR  
MODEL : GR-SIFC-1 & GR-SIFC-2**



Gradwell Stab-in Float Collars are provided with features where the drill pipe is attached to Stab-in stinger or directly stab into the float collar. It resists high temperature, good sealing and drill-out ability & convenient connection. This kind of collars is used for inner string cementing operations. Stab-in cementing is an improved method for cementing large diameter casing. It can also improve displacement accuracy, and cement volume and net rig time. Gradwell provide Single as well as with double valve Stab-in Float Collar.

**Features:**

- Reduced cement volume, rig time for cementing operations.
- Use of Drill Pipe Dart instead of large dia. cementing plugs.
- Cementing pressure confined to Drill pipe as in squeeze cementing jobs.

Note: It is available in Single & Double Valve design.

**STAB IN LATCH FLOAT COLLAR  
MODEL : GR-SILFC-1**



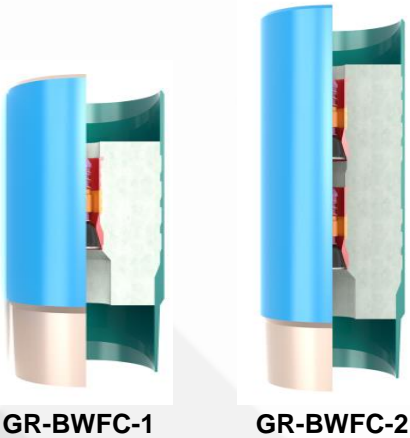
These Float Shoes are provided with latch in profile & allow the drill pipe to be stabbed directly into the float shoe. These float shoe resists high temperature, good sealing and drill ability, convenient connection. This kind of shoe is used for inner string cementing operations. Stab-in cementing is an improved method for cementing large diameter casing. It improves displacement accuracy, and cement volume and net rig time. Gradwell provide Single as well as with Double Valve Stab-in Latch Float Shoe..

**Features:**

- Receptacle has ratcheting left hand threads to lock the stringer into the float equipment.
- Drill pipe and stringer can be easily pulled out of the float equipment when cement job is completed.
- Recommended when reciprocation of the casing is required.
- Stab-in Latch-in Stinger required.
- PDC drillable.

Note: It is available in Single & Double Valve design.

**BUTT WELD SINGLE & DOUBLE VALVE FLOAT COLLAR**  
**MODEL : GR-BWFC-1 & GR-BWFC-2**



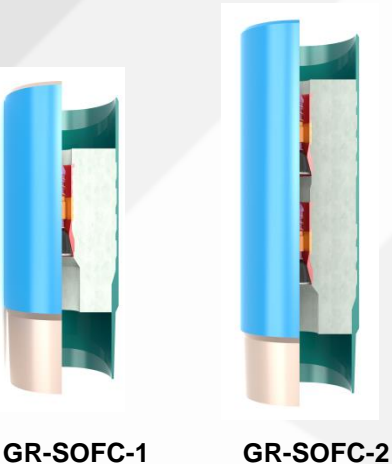
In Butt-Weld type of cement float collar the casing collar O.D matches with the casing O.D and upper end is only beveled, not recessed for directly welding to the casing pipe.

**Features:**

- Hold back flow pressure of cement.
- We consider all point of hole geometry, operation process.

Note: It is available in Single & Double Valve design.

**SLIP ON CEMENT SINGLE & DOUBLE VALVE FLOAT COLLAR**  
**MODEL : GR-SOFC-1 & GR-SOFC-2**



In Slip on type of cement float collar the casing collar O.D matches with the casing O.D and upper end is only beveled, not recessed for directly welding to the casing pipe.

**Features:**

- Hold back flow pressure of cement.
- We consider all point of hole geometry, operation process.

Note: It is available in Single & Double Valve design.

## AUTO FILL FLOAT COLLAR MODEL : GR-AFFC



GR-AFFC

Auto fill float collar permits the casing to fill automatically while being run into the hole. The valve is always in open position, allowing maximum filling of the casing as it running in the well bore. This is especially effective on liner job and sensitive hole conditions.

### Features:

- Casing can be automatically filled up during running-in
- Casing can be circulated at any time at low rates, without having to convert the valve from the fill-up to the back-pressure mode.
- It can be provided in conventional as well as with non rotating profile.
- PDC Drillable.

## CEMENT GUIDE SHOE MODEL : GR-CGS

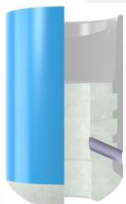


GR-CGS

Guide Shoe is a cylindrical steel section with a rounded nose which guides the casing toward the that is attached to the bottom of the casing string towards the centre of the hole.

### Features:

- Guide Shoe is available in all API grade material.
- Guide shoe can be furnished in API threads as well as in Premium threads.
- Jet port configuration is available upon request. Gradwell offers Side Jet Ports, Down Jet Ports and Up Jet Ports.



Down Jet Float Shoe



Side Jet Float Shoe



Up Jet Float Shoe

## STAB IN STINGER & STAB IN LATCH STINGER MODEL : GR-SIS & GR-SILS



Gradwell Stab-in Latch Stinger is used for cementing large diameter casings lowered on drill pipe. The string presents special cementing consideration due to high displacement volume of large diameter casing. Problem with high displacement are overcome by using Stab in Cementing Equipment to allow cementing through drill pipe.

### Features:

- Small diameter inner string off drill pipe is used to displace cement which minimizes displacement volume behind cement and there by reduces contamination and save time.
- Drill out of cement inside large casing is minimized by controlling cement top with displacement fluid in drill pipe and Poppet valve in Stab in Shoe.
- Reduce cement volume conventional displacement requires calculation of excess cement factor, whereas with stab-in methods excess cement need be no greater than the volume of the drill pipe. No large plugs are needed. Flow ports provide full-bore coverage while rotating and reaming, and they prevent channeling while cement is pumped.
- Protect casing cementing pressures are confined to the drill pipe as in a squeeze job.

Available sizes 3 1/2" to 6 5/8" and any special sizes can be custom made as required.

## CONVENTIONAL TOP & BOTTOM PLUG MODEL : GR-TP & GR-BP



GR-TP



GR-BP

Cementing plug is used to separate cement slurry from other fluids, reducing contamination and maintaining expected slurry Performance. Gradwell provides two types of cementing plug which are generally used on a cementing operation.

- Conventional (Rotating) Type Cementing Top & Bottom Plug
- Non-Rotating Type Cementing Top & Bottom Plug The bottom plug (In Blue/Red) is launched ahead of the cement slurry to minimize contamination by fluids inside the casing prior to cementing. A rupture disk in the plug body ruptures to allow the cement slurry to pass through after the plug reaches the Float Collar.
- The Top Plug (In Black) has a solid body that provides positive indication of contact with the Float Collar and Bottom Plug through an increase in pump pressure.

### Features:

- Internal core is available in Phenolic as well as aluminum.
- Oil Resistant.
- Plugs are available in Nitrile, Viton, Aflas and other elastomers.
- Plugs are available in conventional and Non Rotating Design.
- Plugs are PDC drillable.
- One plug can be used in range of PPF for same size of casing.
- Maximum temperature rating 400°F.
- Non Rotating profile reduces the drilling time.

**ANTI-ROTATIONAL TOP & BOTTOM CEMENTING PLUG  
MODEL : GR-TP-AR & GR-BP-AR**



**GR-TP-AR**



**GR-BP-AR**

Gradwell ANTI-ROTATING CEMENTING PLUG is used with profile float collar. Both the cementing plug- Top cementing plug and bottom cementing plug are manufactured with auto lock profile which on plumbing automatically locks in each other, and restricts rotational of cementing plugs.

These plugs are made of phenolic core integral teeth which eliminates aluminum and large mass of rubber found in conventional cementing plugs. These are no metal parts are used and the plugs are completely PDC drillable. It consist of wiping fins are molded from natural rubber or hydrogenated nitrile (HNBR). They are suitable for standard and high temperature well conditions. After the top plug latches . Into the bottom plug, they provides anti-rotational feature to eliminate rotation during drilling and save drill out time

Note : The plugs available in 3-1/2" to 30" size.

**COMBINATION TOP & BOTTOM CEMENTING PLUG  
MODEL : GR-CTP & GR-CBP**



**GR-CTP**



**GR-CBP**

Cementing plug involves wiping inner diameter of two or more casing string in one wiping action. These plugs allows tapered casing string to be cemented while ensuring efficient wiping of the cement from casing different IDs in the string.

They are designed and tested to withstand 5,000 psi differential pressure. The different sizes of rubber fins which help in wiping on the casing wall as well as assist in displacing the cement in one step. It is made of graded rubber. These plug are completely PDC drillable.

Note : The plugs available in 2-3/8" to 13.3/8" size.

**ANTI-ROTATIONAL WIPER TOP & BOTTOM PLUG**  
**MODEL : GR-CTP-AR & GR-CBP-AR**



GR-CTP-AR



GR-CBP-AR

Cementing plug involves wiping inner diameter of two or more casing string in one wiping action. These plugs allows tapered casing string to be cemented while ensuring efficient wiping of the cement from casing different IDs in the string. They are designed and tested to withstand 5,000 psi differential pressure. The different sizes of rubber fins which help in wiping on the casing wall as well as assist in displacing the cement in one step. It is made of graded rubber. These plug are completely PDC drillable.

Note : The plugs available in 2-3/8" to 13.3/8" size.

**TOP PLUG & BOTTOM PLUG WITH ALUMINIUM CORE**  
**MODEL : GR-TP-AL & GR-BP-AL**



GR-TP-AL



GR-BP-AL

These plug are ideal for use in high temperature well condition. They are made of cast aluminum core and wiping fins are molded from natural rubber or Hydrogenated nitrile (HNBR). These plugs are PDC Drillable. The top plug is manufactured in black natural rubber and the bottom plug in orange with rapture diaphragm at 300 psi differential. Operating range is up to 275°F. Plugs can be ordered in viton.

Note : The plugs available in 16" to 20" size.





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