

**SHIELD**

**Pressure Solutions**

[www.adsmpd.com](http://www.adsmpd.com)





*Technology and Service Improving Drilling  
Performance*



Shield Pressure Control ®

**PROPOSAL**

**Dynamic Security System**

**Proposal #:**  
**Version:** 001rev1  
**Date:** November 14, 2019  
**Prepared by:** Barry Babcock/Charlie Orbell  
**Prepared for:**  
**Purpose:** ADS Services supply of pressure control equipment

**ADS Services LLC  
PO BOX 8850  
Midland , Texas 79707**



Mr. ,

On Behalf of ADS Services, we would like to thank you for this potential opportunity to work with you on this project.

Please find below our technical and commercial proposal for your drilling project, the Shield Pressure Control Kit referred to in this proposal is subject to availability. This proposal is valid for 180 days from the dated listed on the signature page. If you have any questions or need further clarifications please do not hesitate to reach out to me.

Sincerely,

Barry Babcock  
Business Development  
ADS Services, LLC.  
10712 West County Rd. 77  
Midland, Texas 79707  
[bbabcock@adsmpd.com](mailto:bbabcock@adsmpd.com)  
(432) 553-3708 Cell  
(432) 488-7618 Cell  
(432) 218-4700 Office



**Scope of work:**

1. Provide Shield Pressure Control Package consisting of:
  - a. MP RCD with Hydraulic Closing Unit
  - b. Orbit Valve with Basic Control Panel
  - c. Electric Drilling Choke with Control Panel
  - d. 4" 206 Piping
  - e. 2-1/16" 1502 accessories
  - f. Complete air, hydraulic and electrical accessories
  
2. Personnel to carry out rig up, training, service and maintenance of tools

**COMMERCIAL PROPOSAL - SUMMARY**

Rates and terms as per attached detailed proposal

**Timing**

7-10 days' notice required to mobilize

**Proposal #150: 150-SPC20191015 Confidential**



ADS Services rotating control devices have been designed to help operators overcome the challenges of drilling in extreme environments with confidence.

The Medium-Pressure Rotating control device is a proven design tested under field conditions. It has been designed to help operators overcome the challenges of drilling in extreme environments with confidence.

From the seal element geometry to the housing material selection, all components of the SHIELD Medium-Pressure RCD's ensure the safety of the rig crew by creating a leak free seal between the annulus and the drill pipe. The seal allows the operator to safely divert fluid returns during drilling and stripping operations.

The bearing design and internal dynamic seals extend the life of the sealing element allowing for fewer bearing assembly change outs therefore reducing Non-Productive Time (NPT).

The triple segment clamp mechanism with safety latch allows for quick bearing assembly installation. The clamp actuating piston is remotely operated and removes the requirement for rig personnel in hazardous zones.

**TECHNICAL OVERVIEW:**

- Built to API 16 RCD
- 1000 psi dynamic rating @ 200 RPM
- 1500 psi dynamic rating @ 50 RPM
- 2000 psi static rating
- Quick change lower flange
- Sealed Bearing
- Replaceable side outlet flange
- 13 5/8" 5000 psi bottom flange
- 7 1/16" 3000 psi outlet flange

**APPLICATIONS:**

- Drilling Safety with a Closed System
- Managed Pressure Drilling

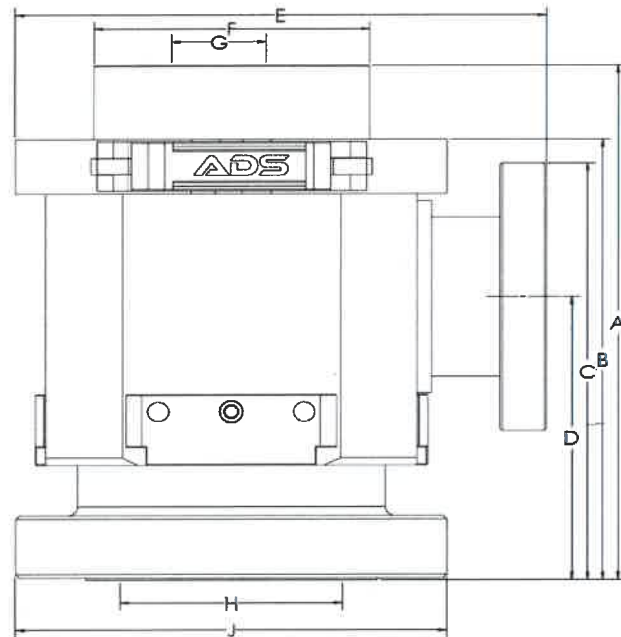
**OPTIONS AND ACCESSORIES:**

- Changeable Lower Flange
- Single element materials:
  - Rubber, NBR, HNBR, Urethane
- Second studded side outlet
- 2 inch studded inlet for equalization
- Logging Adaptors
- Bell Nipple



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**SHIELD** Medium-Pressure  
ROTATING CONTROL DEVICE



Dimensions (in.)

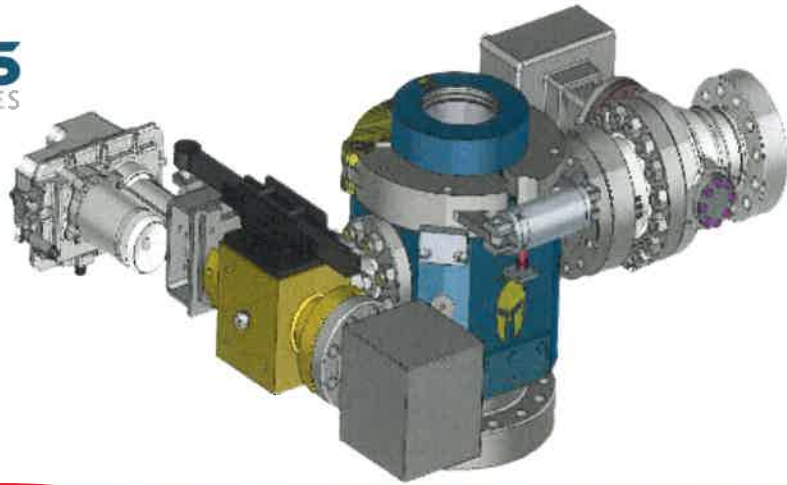
A	35.56
B	31.44
C	28.81
D	19.56
E	32.53
F	17.00
G	8.07
H	13.63
J	26.50
Weight	2,750 lbs
Bearing with Element	550 lbs



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Shield Pressure Control®



# SHIELD

## PRESSURE CONTROL

### Features

- The SHIELD application based pressure control system is focused on simplicity
- Stop using rig chokes, and poorly sized equipment. Stop wearing out your well control Chokes.
- Compact control system reducing the need for complicated and expensive drive servo combinations
- Proprietary electric linear actuator
- Pressure & position setpoint control
- Driller-friendly interface:
- No position calibration required  
Automated gain control

Web: [www.adsmgd.com](http://www.adsmgd.com)  
Phone: 432.218.4700  
Email: xxx

### Key Benefits

- Robust, smaller, simpler
- RCD with Secondary Latch
- Rig operated, and maintained
- Minimal training
- No cable length restriction
- Analog outputs to EDR
- Intrinsically safe single wire command & feedback
- Locally Owned and Operated

**A Permian Specific,  
Right Sized Solution**





# SHIELD

PRESSURE CONTROL

## RCD

Sealed Bearing	Low Maintenance
Secondary Latch	No Service Personnel
Big Bore Bearing	Allows Larger Drill Pipe
Multi-Outlet Body	

## Simulator

Simulator System For Pre-Training and Familiarization of Personnel	Apple (iOS) Android Phone & Tablet Compatible
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## Technical Specifications

### System

Pressure Rating	2,500 psi Continuous
Assembly Weight	950 lbs

### Choke

Inner Diameter	3 in (76.2 mm)
Connection	4 1/16 in. 5K API RTJ
Rated Pressure	3000 psi
Actuator Power	20A 110/220 V AC 50-60Hz
Stroke Time	11 s
Rating	Class 1, Division 1
Local Override	Manual and Electronic

### Control Panel / Touchscreen HMI

Power	5A 110/220 V AC 50-60Hz
Full Color HMI	7"
Rating	Class 1, Division 2

### Linear Actuator

Hysteresis	0.25% of span
Weight	165 lbs

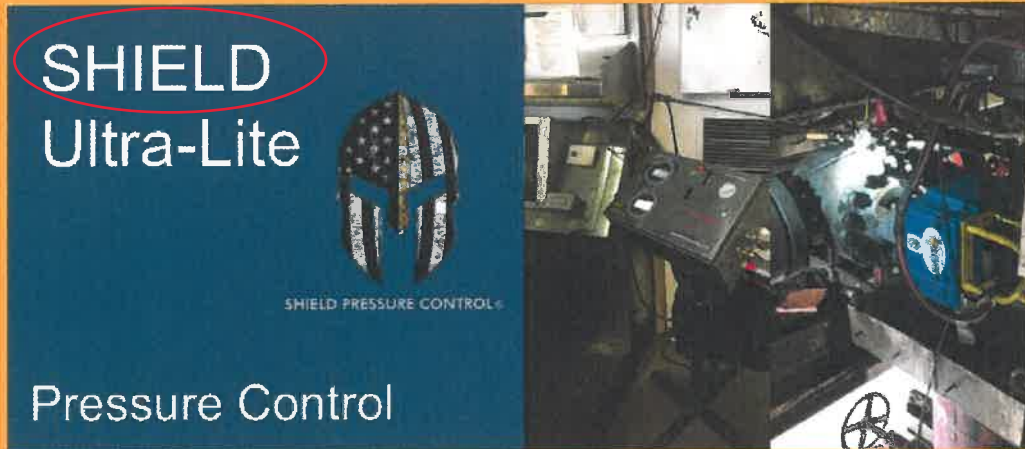
ADS Disclosures



# SHIELD PRESSURE CONTROL



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 Email: xxx



# SHIELD Ultra-Lite



SHIELD PRESSURE CONTROL®

## Pressure Control

The SHIELD Ultra-Lite provides a cost effective drilling fluid return pressure control system for your closed system drilling needs.

The V-ball valve is a design tested under field conditions. It has been designed to help operators overcome the challenges of drilling in extreme environments with confidence.

A remote-control panel is situated beside the driller allowing opening and closing of the valve. The percentage opening of the valve and the pressure in the annulus are displayed giving full control over wellbore pressure while drilling.

This system is the first solar powered, battery powered, rig powered and intrinsically safe pressure control system in the world. It is completely autonomous from the rig power supply to assure on demand use at any time. Patent Pending.

#### TECHNICAL OVERVIEW:

- 0-500 psi operational rating
- 1500 psi pressure rating for shut-in
- 4-piston compact actuator
- 6 inch or 8 inch bore available
- 0-1000 psi pressure transducer
- Displays % opening of the valve
- Intrinsically safe cabling, Class I, Div. 1
- Remote Control Panel

#### APPLICATIONS:

- Drilling Safely with a Closed System



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## Part 2: Commercial Terms & Pricing Proposal

The Terms and Conditions listed below are an inseparable part of this proposal. In the event COMPANY accepts this proposal from CONTRACTOR, then these terms and conditions will apply as contractual in nature, and both Parties will agree to abide by these

### Section A – Mobilization & Demobilization of Equipment

1. CONTRACTOR warrants that all equipment has been inspected and is in excellent working condition prior to initial mobilization to a COMPANY rig site. This applies to the initial equipment mobilization and all subsequent mobilizations during the Contract term. CONTRACTOR is responsible for the cost of all pre-mobilization inspections.
2. COMPANY shall provide CONTRACTOR with a written seven (7) day minimum notice to mobilize CONTRACTOR's equipment to COMPANY's initial rig site. This Mobilization Notice shall stipulate the Mobilization Date, by which the equipment will need to arrive on COMPANY's shore base.
3. COMPANY is responsible for all costs associated with transporting its equipment to COMPANY's location. COMPANY is responsible for all costs associated with transporting CONTRACTOR's equipment between its drilling locations.
4. COMPANY shall inspect CONTRACTOR's equipment within two (2) working days from its arrival on COMPANY's location or temporary storage area for completeness and that it meets the Technical Specifications of the Contract, and provide CONTRACTOR with an Acceptance Notice upon final acceptance by COMPANY. COMPANY's acceptance of said equipment shall not be dependent upon the equipment actually being rigged up and ready to operate. Any discrepancies found by COMPANY shall be communicated in writing to CONTRACTOR.
5. Upon COMPANY's release of CONTRACTOR's equipment COMPANY is responsible for all costs associated with transporting CONTRACTOR's equipment from COMPANY's rig site to CONTRACTOR's base.

### **Section B - Equipment Charges**

<b>Shield Pressure Control Package</b>	
<b>Stand-by Charge-SPC Kit</b>	
<b>Crossovers, Tee Blocks, Spools, Piping</b>	
<b>MP RCD Spare Bearing</b>	
<b>MP RCD Bearing Soft Redress Charge</b>	
<b>Orbit Valve Soft Redress Charge</b>	
<b>MP Drilling Nipple, Logging Adapter, Casing Stripper, Companion Flow Line Flange, Starting Mandrel, Equipment Basket.</b>	\$



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**Section C - Personnel Charges**

1. The Personnel Day Rates are portal-to-portal, i.e. from departure from home base until return to same.
2. Personnel work on twelve-hour daily shifts.

<b>ADS Tech Charges Rig Up/Rig Down/Call out</b>	<b>\$1250/day</b>
<b>Mileage Charge for ADS Technicians</b>	<b>\$2.35/mile</b>

**Section D - Consumables**

1. COMPANY is responsible for supplying electrical power, fuel, water and rig air for CONTRACTOR's equipment at its sole cost. CONTRACTOR is responsible for supplying all other consumables required for its equipment and ongoing operations.
2. Pricing

<b>MP Nitrile Pack off Elements</b>	<b>\$1250/ea</b>
<b>MP Urethane Pack off Elements</b>	<b>\$1450/ea</b>
<b>Casing Stripper Rubber 5"</b>	<b>\$1250/ea</b>
<b>Casing Stripper Rubber 7" to 9-5/8"</b>	<b>\$1800/ea</b>
<b>Bolts, Ring Gaskets, slings</b>	<b>Cost + 25%</b>
<b>Bowl Gaskets</b>	<b>\$100/ea</b>
<b>Delivery Costs to Location</b>	<b>Cost + 25%</b>
<b>Third Party Billing</b>	<b>Cost + 25%</b>
<b>2-1/16" x 5K 1502 Package</b>	<b>\$135/day</b>
<b>1502 Soft Redress Charge</b>	<b>\$1500/well</b>
<b>Cable End - Dust caps for Female 4 and 5 pin</b>	<b>\$27.90</b>
<b>Primary - 100' 9 pin male to 9 pin female shielded cable</b>	<b>\$810.00</b>
<b>SBP #2 Cable - 100' 4 pin male to 4 pin female shielded cable</b>	<b>\$195.75</b>
<b>SBP #2 Cable - 100' 4 pin male to 4 pin female shielded cable</b>	<b>\$303.75</b>
<b>TPM Choke - Gate Assy Tungsten Carbide</b>	<b>\$2,397.00</b>
<b>TPM Choke - Gate Retainer - Inconel</b>	<b>\$851.00</b>
<b>TPM Choke - Seat Tungsten Carbide</b>	<b>\$895.00</b>
<b>TPM Choke - Wear Sleeve Tungsten Carbide</b>	<b>\$620.00</b>
<b>TPM Choke - O-ring - Gate Assy Tungsten Carbide</b>	<b>\$23.00</b>
<b>TPM Choke - O-ring - For Front Retainer</b>	<b>\$23.00</b>
<b>TPM Choke - O-ring - Bonnet Extension</b>	<b>\$23.00</b>
<b>TPM Choke - Backup ring - Bonnet Extension</b>	<b>\$23.00</b>
<b>TPM Choke - Backup ring - Seat</b>	<b>\$23.00</b>



**Section E - Miscellaneous Charges and Special Terms**

1. The equipment supplied by CONTRACTOR under this Contract remains the sole property of CONTRACTOR and shall not be lent, given, sub let, modified, changed, sold or disposed of to any third party whatsoever by COMPANY without the expressed written permission of CONTRACTOR.
2. Payment in U.S. Dollars (or other currency specified) strictly net 30 days. Invoices not paid within 30 days will be subject to a surcharge of two per cent (2%) per month per invoice, from the date of the invoice. Payment will not be subject to COMPANY getting paid by its financier or client.
3. COMPANY will be charged for repairs beyond normal wear and tear, such as excessive erosion or corrosion damage caused by inadequate corrosion control. This also applies to choke valves, Orbit Valves etc. All the inspections and repairs of damaged equipment will be charged
4. All costs incurred because of damaged or negative impact of H<sub>2</sub>S, CO<sub>2</sub> or other corrosive elements to CONTRACTOR's equipment shall be to COMPANY's account.
5. CONTRACTOR will not be held liable for any failures or corrosion of drill string.
6. Should COMPANY elect to have CONTRACTOR pay any third-party charges then these costs incurred will be billed to COMPANY at cost with supporting documentation plus a twenty-five percent (25%) handling fee.
7. COMPANY shall provide access to communication facilities including telephone, fax, email and internet services, at the sole cost of COMPANY.
8. Inter field transportation to be provided by COMPANY or re-billed at cost with supporting documentation plus 25%.
9. COMPANY is responsible for providing transportation between wells, cranes and all lifting gear for all of CONTRACTOR's equipment, at the sole cost of COMPANY. COMPANY shall only use trucks and lifting equipment to transport CONTRACTOR's Equipment that is pre-approved by CONTRACTOR, alternately CONTRACTOR may provide these at COMPANY's expense.
10. Lost Equipment: Any equipment that is used and is either lost or damaged or stolen will be to COMPANY's account at replacement value.
11. Complete Loss values

Item	Quantity supplied	Loss value (US\$)
<b>MP Rotating control head with 2 bearings</b>	<b>1</b>	<b>\$300000</b>
<b>6" 900 # Class Orbit Valve</b>	<b>1</b>	<b>\$25000</b>
<b>2-1/16" X 5K 1502 Valves Assembly</b>	<b>4</b>	<b>\$7500</b>
<b>Electric Drilling Choke</b>	<b>1</b>	<b>\$170000</b>
<b>9 Pin Termination Module - C1D1 certified 1/2" 3' leads NPT</b>	<b>1</b>	<b>\$147.25</b>
<b>Primary System Control Panel - PLC - WAGO</b>	<b>1</b>	<b>\$1,672.65</b>
<b>Primary Actuator Control Board</b>	<b>1</b>	<b>\$2,345.00</b>



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<b>Complete Choke actuator assembly with mounting plate - predrilled c/w isolator</b>	<b>1</b>	<b>\$29,175.00</b>
<b>Wireless Modem - 2.4 GHz NANO ENCLOSED OFDM ETHERNET &amp; SERIAL GA</b>	<b>1</b>	<b>\$781.65</b>
<b>SBP 1&amp;2 - Pressure Transducer - PT-400 0-3000psi</b>	<b>1</b>	<b>\$546.75</b>
<b>SPP Pressure Transducer - 0-10000psi 1502 Hammer union</b>	<b>1</b>	<b>\$1,394.55</b>

**Section F - Warranty and Responsibility**

It is recognized that conditions in and about any well or work may involve hazards to life and property and obstacles to the functioning of products and the performance of services and that such conditions are not and never have been subject to inspection or control by CONTRACTOR. It is therefore agreed that:

1. CONTRACTOR warrants only that products, or parts thereof, sold or rented to COMPANY shall be free from defects in materials and workmanship and not that they will accomplish any particular result. Liability under this warranty is limited to replacement or a credit for defective equipment or parts.
2. Services rendered by CONTRACTOR in connection with the rental or sale of its products consist only of technical advice as to make-up, inspection and operation or use. When any such services are rendered, COMPANY will retain custody, control and supervision of the work or the well and the conduct or operation thereof, and a representative of COMPANY shall be present with full authority to direct operations.
3. CONTRACTOR will exert its best efforts to render other services offered by it as requested. No guarantee of representation is made as to results, and charges will be made regardless of results obtained. CONTRACTOR reserves the right to remove equipment and personnel from the well at any time if in its opinion the well or other conditions make such action advisable.
4. COMPANY will hold CONTRACTOR harmless from any and all liability or claim if liability to any person, firm or corporation for damage to person or property arising out of or in connection with damaged caused by CONTRACTOR's wilful fault or gross negligence except in cases where concurrent or contributory fault of the COMPANY or COMPANY's agents, servants, employees or contractors shall have contributed to such damage.
5. CONTRACTOR holds COMPANY harmless from any liability or injury to employees of CONTRACTOR except in cases where such injury results from the fault of COMPANY or COMPANY's agents, servants, employees or contractors.
6. CONTRACTOR will defend at its own cost and expense any suit charging patent infringement in the rental or use of any unaltered rented products, and will pay judgment awarded by court against COMPANY as a result of any such suit, provided the COMPANY is using the product in a manner prescribed by CONTRACTOR



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7. Products not sold to COMPANY will remain the property of CONTRACTOR and are not to be repaired or modified without CONTRACTOR consent. If lost or damaged beyond ordinary wear and tear, such products will be charged for as provided in CONTRACTOR current schedules. Any equipment belonging to CONTRACTOR in COMPANY's possession may be repossessed by CONTRACTOR upon sixty (60) days notice.
8. All of the preceding terms and conditions shall apply between CONTRACTOR or any affiliate of CONTRACTOR and any service company, operator, or other party or parties, selling, renting or using CONTRACTOR products, parts thereof, or services furnished hereunder.
9. The entire liability of CONTRACTOR including express and implied warranties, in connection with its products or service is set forth above, and no one is authorized to waive or amend the same in particular.
10. Prices, rates or terms are subject to change without notice. Equipment manufactured by others will be sold, rented or used by CONTRACTOR under these terms and conditions except where inconsistent with the manufacturer's terms and conditions, when the latter shall prevail.

Respectfully submitted,

*Barry Babcock*

Business Development

ADS Services, LLC.

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## **SIGNATURE PAGE**

**IN WITNESS WHEREOF**, the parties hereto have caused this SOW to be effective as of the day, month and year first written above.

ADS Services, LLC

By:

By:

Name:

Name:

Title:

Title

Date:

Date:

### **Please list your company's accounts payable contact info below**

**Contact**

**Name:**

**Email:**

**Phone:**

**Invoice Mailing Address:**



**COST EFFECTIVE**  
**INNOVATIVE**  
**DRILLING TECHNOLOGY**

**ADS SERVICES YOUR PERMIAN PARTNER**



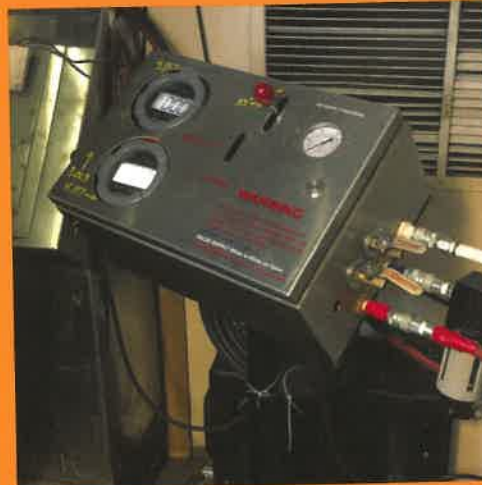
# TECHNOLOGY & SERVICE TO IMPROVE DRILLING OPERATIONS

## ADS MISSION STATEMENT

Provide superior service and technology to improve drilling and completion performance from a local team who is empowered to ensure success.

## ADS SERVICES VISION

Integrate next generation technologies to improve drilling and completions while delivering top-tier service and reducing the operating cost, rendering ADS Services to be the preferred service partner.



## OUR CORE BELIEFS

### INTEGRITY

To ensure that our business practices comply with all applicable laws and regulations and exhibit honesty, transparency and diligence in all we do.

### SAFETY

To ensure our own personal safety as well as the safety of others.

### RESPECT

To value our various talents and skills to deliver quality service together.

### INNOVATIVE

To strive to apply the right solutions with the right resources.

### PARTNERSHIP

To approach each relationship and decision-making with the mind set of collaboration and each party's interests.

### COMPETITION

To provide a healthy, ethical competition to grow stronger.



# MGS



SHIELD PRESSURE CONTROL®

## Mud Gas Separator & Connection Piping



The **ADS** Mud Gas Separator provides a high capacity vessel for your pressurized drilling needs.

Please contact us with your connection needs.

We can also supply 4 inch and 6 inch x Fig. 206 piping and target tees to simplify your rig-up.

#### TECHNICAL OVERVIEW:

- Atmospheric operational rating
- 8" gas outlet
- Dual 6" inlets
- 15 feet by 60 inch diameter available
- 24 feet by 72 inch diameter available

#### APPLICATIONS:

- Drilling Safely with a Closed System
- Managed Pressure Drilling



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# SHIELD

Low-Pressure



SHIELD PRESSURE CONTROL®

## ROTATING CONTROL DEVICE



ADS Services rotating control devices have been designed to help operators overcome the challenges of drilling in extreme environments with confidence.

The low pressure rotating control device is a proven design tested under field conditions. It has been designed to help operators overcome the challenges of drilling in extreme environments with confidence.

From the seal element geometry to the housing material selection, all components of the SHIELD Low-Pressure RCD's ensure the safety of the rig crew by creating a leak free seal between the annulus and the drill pipe. The seal allows the operator to safely divert fluid returns during drilling and stripping operations.

The bearing design and internal dynamic seals extend the life of the sealing element(s) allowing for fewer bearing assembly change outs therefore reducing Non-Productive Time (NPT).

The triple segment clamp mechanism with safety latch allows for quick bearing assembly installation. The clamp actuating piston is remotely operated and removes the requirement for rig personnel in hazardous zones.

### TECHNICAL OVERVIEW:

- Built to API standards
- 500 psi dynamic rating
- 1000 psi static rating
- Sealed bearing
- Rotation speeds up to 200 RPM
- Remote operated clamp with locking pin assembly
- 13 5/8" 5000 psi lower flange
- 7 1/16" x 3000 psi side outlet flange

### APPLICATIONS:

- Drilling Safely with a Closed System

### OPTIONS AND ACCESSORIES:

- Extensions below lower flange
- Single element materials;  
Rubber, NBR, HNBR, Urethane
- 2 inch inlet for equalization
- Logging Adaptors
- Bell Nipple



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# SHIELD Ultra-Lite



SHIELD PRESSURE CONTROL®

## Pressure Control



The SHIELD Ultra-Lite provides a cost effective drilling fluid return pressure control system for your closed system drilling needs.

The V-ball valve is a design tested under field conditions. It has been designed to help operators overcome the challenges of drilling in extreme environments with confidence.

A remote-control panel is situated beside the driller allowing opening and closing of the valve. The percentage opening of the valve and the pressure in the annulus are displayed giving full control over wellbore pressure while drilling.

This system is the first solar powered, battery powered, rig powered and intrinsically safe pressure control system in the world. It is completely autonomous from the rig power supply to assure on demand use at any time. Patent Pending.

#### TECHNICAL OVERVIEW:

- 0-500 psi operational rating
- 1500 psi pressure rating for shut-in
- 4-piston compact actuator
- 6 inch or 8 inch bore available
- 0-1000 psi pressure transducer
- Displays % opening of the valve
- Intrinsically safe cabling, Class I, Div. 1
- Remote Control Panel

#### APPLICATIONS:

- Drilling Safely with a Closed System



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# SHIELD

High-Pressure



SHIELD PRESSURE CONTROL®

## ROTATING CONTROL DEVICE



ADS Services rotating control devices have been designed to help operators overcome the challenges of drilling in extreme environments with confidence.

From the seal element geometry to the housing material selection, all components of the SHIELD High-Pressure RCD's ensure the safety of the rig crew by creating a leak free seal between the annulus and the drill pipe. The seal allows the operator to safely divert fluid returns during drilling and stripping operations.

The bearing design and internal dynamic seals extend the life of the sealing element(s) allowing for fewer bearing assembly change outs therefore reducing Non-Productive Time (NPT)

The clamp-less hydraulic latching mechanism allows for quick bearing assembly installation and also removes the requirement for rig personnel in hazardous zones.

### TECHNICAL OVERVIEW:

- API 16 RCD Certified
- Static rating: 3000 psi
- Dynamic rating: 1500 psi
- Accurate bearing pre-load for extended life
- Floating dynamic seals, long service life
- Sealed bearing
- Rotation Speeds up to 220 RPM

### APPLICATIONS:

- Managed Pressure Drilling
- Underbalanced Drilling

### OPTIONS AND ACCESSORIES:

- Swivel Flange Connection
- Single Element
- Element Material
- Rubber, NBR, HNBR, Urethane
- Fourth Studded Outlet
- Logging Adaptors
- Bell Nipple



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# SHIELD

Medium-Pressure



SHIELD PRESSURE CONTROL®

## ROTATING CONTROL DEVICE



ADS Services rotating control devices have been designed to help operators overcome the challenges of drilling in extreme environments with confidence.

The Medium-Pressure Rotating control device is a proven design tested under field conditions. It has been designed to help operators overcome the challenges of drilling in extreme environments with confidence.

From the seal element geometry to the housing material selection, all components of the SHIELD Medium-Pressure RCD's ensure the safety of the rig crew by creating a leak free seal between the annulus and the drill pipe. The seal allows the operator to safely divert fluid returns during drilling and stripping operations.

The bearing design and internal dynamic seals extend the life of the sealing element allowing for fewer bearing assembly change outs therefore reducing Non-Productive Time (NPT).

The triple segment clamp mechanism with safety latch allows for quick bearing assembly installation. The clamp actuating piston is remotely operated and removes the requirement for rig personnel in hazardous zones.

### TECHNICAL OVERVIEW:

- Built to API 16 RCD
- 1000 psi dynamic rating @ 200 RPM
- 1500 psi dynamic rating @ 50 RPM
- 2000 psi static rating
- Quick change lower flange
- Sealed Bearing
- Replaceable side outlet flange
- 13 5/8" 5000 psi bottom flange
- 7 1/16" 3000 psi outlet flange

### APPLICATIONS:

- Drilling Safely with a Closed System
- Managed Pressure Drilling

### OPTIONS AND ACCESSORIES:

- Changeable Lower Flange
- Single element materials:
  - Rubber, NBR, HNBR, Urethane
- Second studed side outlet
- 2 inch studed inlet for equalization
- Logging Adaptors
- Bell Nipple



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