OIL & GAS DRILLING PROGRAM

HOSE & FITTINGS

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JGB DRILLING PRODUCT RANGE

JGB Drilling Division in-house engineering and API Q1 (ISO TS 29001) approved manufacturing facilities are able to build drilling hose assemblies to exact customer requirements.

The Drilling Division has achieved American Petroleum Industry (API) approvals for an extended range of products developed to match the needs of the offshore and onshore drilling markets, including the Golden-drill product line up to 4” grade D (5000 psi) and 3-1/2” grade E (7500 psi). The new range of steel armoured Blow Out Preventer (BOP) hoses and a range of fire rated products using the Manuli BRICKOAT technology passed the API 16D Flame Test to increase the range offered to this market and further emphasising the Manuli presence in oil and gas markets globally. All butt welded couplings are fabricated by ASME Section IX certified welders.

A quality assurance system fully compliant with API Q1 9th edition allows JGB to exercise full control over all aspects of the hose assembly build and validation processes.

Customers can be provided with hose assembly data books such as API 7K SR3 to provide documentary evidence of performance and quality conformity.
APPLICATIONS

*Working with customers directly to always maximize uptime and lower the total cost of ownership.*

**ON LAND DRILLING**

*Land Rig*

Drilling rigs are massive structures housing equipment used to drill oil wells or natural gas extraction wells. Drilling rigs can be mobile equipment mounted on trucks, tracks or trailers, or more permanent land based structures.

**OFFSHORE DRILLING**

*Jackup Rig*

A jackup rig is a type of mobile platform that consists of a buoyant hull fitted with a number of movable legs, capable of raising its hull over the surface of the sea. The buoyant hull enables transportation of the unit and all attached machinery to a desired location.

*Semi Submersible Shallow Water*

Semi submersible rigs make stable platforms for drilling for offshore oil and gas. They can be towed into position by a tugboat and anchored, or moved by and kept in position by their own with dynamic positioning.

*Semi Submersible Deep Water*

Platforms are kept in place by the use of dynamic positioning (DP) system. Semi submersibles have advanced capabilities to drill in ultra deep waters.

*Drill Ships*

Operates in deep waters to 15,000 feet and unique from other offshore drilling due to the mobility. They propel themselves from location to location.

*Fixed Platforms*

This type of oil rig has a fixed structure, ranging from spar, fixed jacketed platform, tension leg platform or gravity structure. Despite the structure the rig always sits at the very top.
This family fulfills the requirements for rotary and vibrator hoses applications.

The vibrator hose is a flexible hose assembly used to convey high pressure drilling liquids between two piping systems or between the mud pump discharge outlet and the high pressure mud piping system for the purpose of attenuating noise, vibration, misalignment and/or thermal expansion. Available at three pressure level: Grade C (3,000psi), Grade D (5,000psi) and Grade E (7,500psi).

The rotary hose is a flexible hose assembly used to convey high pressure drilling liquids between the top of the mud standpipe and the rotary swivel.
**Application:** Flexible connection between standpipe and swivel (rotary drilling) or between pump and standpipe (rotary vibrator) for pumping mud at very high pressure in oil drilling and exploration works.

**Tube:** Oil and abrasion resistant synthetic rubber

**Cover:** Black synthetic rubber with high abrasion, weather and heat resistance

**Reinforcement:** Four high tensile steel wire spirals

**Temperature:** -40°F to 212°F (Continuous Service Range)*

**Fluids:** Water and mud, mineral oils, glycols and polyglycols, mineral oils in aqueous emulsion

**Approvals:** MSHA

**Features:**
- Highly robust and flexible, compact spiral hose structure
- Extremely high ozone, weather and abrasion resistant hose cover
- Flame retardant (MSHA) and antistatic properties
- Coupling solution uses a distinctive double skive, crimped-on hose fitting, creating a highly robust, safe connection

### GOLDENDRILL 5000 - Grade D

<table>
<thead>
<tr>
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<th>SIZE</th>
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<th>O.D.</th>
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</table>

*Min. hose temperature resistance according to ISO 10619-2 method:
- Tube (internal mud): -50°F (-46°C)
- Cover (environment): -67°F (-55°C)

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GOLDENDRILL H
Grease Injection Hose

Goldendrill/H is a rubber wire spiral compact hose structure with high flexibility, excellent kink resistance and outstanding performance compared to thermoplastic solutions. This 15,000psi grease injection hose are used in oil rig and industrial plants.

Application:
• Hydraulic DN 12 wire spiral hose for GREASE INJECTION in oil rig and industrial plants
• Waterblasting in modern construction and shipbuilding industries and cleaning applications
• Mineral based greases, water, mineral oils, water emulsions

Tube: Water and oil resistant synthetic rubber
Cover: Synthetic rubber with high ozone and super high abrasion resistance
Reinforcement: Four very high tensile steel wire spirals
Temperature: -40°F to 212°F (Continuous Service)*
Approvals: MSHA

Features:
• Compactness, lightness and flexibility
• “Greasy oil” static high pressure applications
• Safety factor 2.5:1
• Super High abrasion resistant cover
• New compact hose structure, super-high-tensile wires
• WP=1050 bar, safety factor 2.5:1
• “H” for Honey oil hose, as commonly known
• Mylar brand
• NPTF and Type “M” swivel female termination ends available
• DNV certified

<table>
<thead>
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<th>PART #</th>
<th>SIZE</th>
<th>R.O.D.</th>
<th>O.D.</th>
<th>MAX W.P.</th>
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<td>23.0 0.91</td>
<td>1050 15220</td>
<td>2625 38070</td>
<td>80 3.15 905 0.61</td>
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GOLDENCEMENT

Cementing Hose

This 10,000psi cement hose is used for the conveyance of cement slurries at high pressure to fix drill casings in place for land and offshore oil rigs.

Application: The line is dedicated to cementing hose application, in the drilling operations (flexible connection between the cementing pump manifold and the cementing head for conveyance of cement slurries at high pressure).

Fluids: Water and mud, mineral oils, glycols and polyglycols, mineral oils in aqueous emulsion, liquid cement.

Tube: Oil resistant synthetic rubber (NBR based)

Cover: Synthetic rubber with high abrasion, ozone and weather resistance

Reinforcement: Multiple high tensile steel wire or cords spirals

Temperature: -40°F to 212°F (Continuous Service)*

Approvals: MSHA

Features:

- High abrasion resistant tube compound
- Outstanding resistance of the cover
- High flexibility and robustness of the hose structures
- Flame retardant (MSHA) and antistatic properties
- Safety factor burst / working pressure 2,25:1
- High ozone, weather and fluids resistance
- Crimped fittings IL Plus architecture

<table>
<thead>
<tr>
<th>PART #</th>
<th>SIZE</th>
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<th>O.D.</th>
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* Min. hose temperature resistance according to ISO 10619-2 method:

- Tube (internal mud): -50°F (-46°C)
- Cover (environment): -67°F (-55°C)

Choke and kill hose can replace Cementing hose (not vice versa).
GOLDENGUARD
Fire Resistance & BOP Hose

The GoldenGuard hose offers two pressure solutions (3,000psi and 5,000psi) and exceeds fire test requirements of API 16D specifications and is DNV type approved. The 3,000psi hose is a solution commonly used on land rig BOP stacks. It is a ‘through the cover’ partial skive one-piece fitting solution. The 5,000psi hose is supplied with a special fitting protection against heat and fire.

Application:  
- Hydraulics: designed for use in areas where the continuous hydraulic function is required to drive the emergency systems (industrial, marine, off-shore and refineries, defense, mining)
- Flexible hose for hydraulic systems of Blow Out Preventer control lines on drilling rigs
- Mineral oils, glycols and polyglycols, mineral oils in aqueous emulsion

Tube: High grade NBR oil resistant rubber
Cover: Red insulant and flame retardant synthetic rubber
Reinforcement: Four high tensile steel wire spirals
Temperature: -40°F to 250°F (Continuous Service)*
Approvals: MSHA; API 16D fire test (DNV)

Note: Contact JGB for proper assembly instructions.

Features:
- High robustness of the hose structures
- Thermal insulation of the hose with a special cover material
- Long lasting resistance of the cover layer
- Flame retardant properties of the cover
- High ozone and weather resistance

The hose has to meet severe fire testing to be approved in this special application (API 16D fire test is the most common qualification required).

API 16D Fire Test:
- 5 min @ 1292°F
- Pressured up to WP
### GOLDENGUARD 3000

<table>
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<th>SIZE</th>
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### GOLDENGUARD 5000

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<td>2,69</td>
<td>76,4</td>
<td>3,01</td>
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### GOLDENARMOUR

**Fire Resistance & BOP Hose**

*GoldenArmour is a hose covered by a stainless steel strip wound armour guard and offers excellent fire protection compliant to API 16D. It has outstanding resistance to abrasion and protects against mechanical damage.*

<table>
<thead>
<tr>
<th>Standards</th>
<th>Lengths</th>
<th>Sizes</th>
<th>WP</th>
<th>Temp. Ranges</th>
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<td>145 feet</td>
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<td>5,000 psi</td>
<td>-40°F to +250°F</td>
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GOLDENWAVE

Motion Compensator Hose

This motion compensator hose is used on offshore rigs for the purpose of compensating the effect of rig movements due to ocean waves in order to keep constant the position of the top drive and the drilling string. The hose is part of an hydraulic system and connects the pressure accumulator to the hydraulic cylinders mounted on the derrick.

Application: Flexible hose for hydraulics using mineral oils, glycols and aqueous emulsion oils, used in Motion Compensator systems of offshore rig’s hoisting equipment.

Fluids: Mineral oils, glycols and polyglycols, mineral oils in aqueous emulsions

Tube: High grade NBR oil resistant rubber

Cover: Black super high abrasion resistant and flame retardant synthetic rubber

Reinforcement: Multiple plies of high tensile steel wire spirals

Temperature: -40°F to 212°F (Continuous Service)*

Approvals: MSHA

Features:
- High flexibility and robustness of the hose structures
- Outstanding abrasion and weather resistance of the cover
- Flame retardant (MSHA) and antistatic properties

<table>
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<tr>
<th>PART #</th>
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Connectors and Fittings

JGB offers a wide selection of fitting termination ends for rotary drilling applications.

A range of beveled to weld fittings with integrated inserts and ferrules is available to suit any termination ends. All welds are carried out and controlled by qualified engineers following ASME IX procedures.

Termination ends comply with:
API 16A, API 6A, API 5B, API 5L, API 16BX, API 6B and API 6BX

Fitting designs, qualifications and control methods comply with:
API 7K, API 7L, ASME IX, ASTM and E709

Quick Couplings

Quick couplings guarantee a fast and safe connection. JGB offers a range of quick couplings dedicated to BOP hoses, which exceed fire test requirements of API 16D. Couplings are red for easy identification.

MQS BOP

<table>
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<th>Standards</th>
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<td>ISO 7241B</td>
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<td>1/2&quot;, 3/4&quot; and 1&quot;</td>
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MQS FS

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<td>4:1</td>
<td>5/8&quot; to 1-1/2&quot;</td>
<td>5,000 psi</td>
<td>-22°F to +230°F</td>
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</tbody>
</table>
Click for Directions:

Williston Branch
520 Bean Dr.
Williston, ND 58801
(701) 774-2195

Buffalo Branch
2540 Walden Ave.
Suite 150
Cheektowaga, NY 14225
(716) 684-8224

JGB Corporate
115 Metropolitan Dr
Liverpool, NY 13088
(315) 451-2770

St. Louis Branch
242 Carondelet Blvd.
St. Louis, MO 63111
(314) 487-3144

Southeast Regional Hub
1407 Westinghouse Blvd.
Suite B
Charlotte, NC 28273
(704) 588-9920

Houston Branch
619 E. Sam Houston Pkwy.
Suite 200
Pasadena, TX 77503
(281) 930-7777

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ADDITIONAL RESOURCES:

JGB Eagle Brand Master Catalog
Oilfield Catalog Hoses, Fittings & Assemblies
Large Diameter Hose Catalog
Industrial Rental Catalog Hoses, Fittings & Assemblies