

Rotary drilling hoses & swivels

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Increased production and efficiency requires better methods and equipment. In the past, traditional vertical down hole drilling involved only static pressures. The popular rotary hose coupling design for the steady high pressures at that time was the built-in epoxy coupling.

Production competition led to the development of directional drilling and down linking with negative pressure pulses and elevated temperatures. Built-in epoxy couplings do not hold up as well to the hammering effect of dynamic pressures and higher temperatures.

Since 1998, Gates has offered a high performance dynamic pressure rated assembly with swage-on couplings that meet the demands of today's higher performance drilling methods. This advanced coupling has no set screws to loosen with the pounding vibrations of directional drilling and down-linking. There are no nipple seals to leak. And there is no Epoxy to break down at the elevated temperatures that are experienced in these dynamic drilling procedures. These new dynamic couplings are performance proven (see data in Section 2). Gates Rotary Drilling, Vibrator, Cementing, Sour Service, Choke and Kill, Motion Compensator and Decoking oilfield hoses shown in this section have couplings attached by a Gates Internally Certified Fabricator from hose already in their stock. This greatly reduces the lead time required to supply product meeting customer specific needs. The advantage is that hose from the Fabricators stock can be cut to the customer's specified length. Couplings are then swaged-on, tested to API 7K standards and then shipped all in a matter of a few hours. Avoid damaging twisting of hoses by means of GS-Hydro Swivels.



Gates Black Gold® Rotary Vibrator/Drilling Hose



(Shown with Female Sub Hammer Union)

Recommended for: Flexible connection between standpipe and swivel (Rotary Drilling) or between pump and standpipe (Rotary Vibrator) for pumping mud at extra high pressure in oil drilling and exploration work. Meets the high demands of directional drilling and down linking with negative pressure pulses and elevated temperatures. This hose can also be used as a Motion Compensator hose for stabilization of rotary drilling and pumping equipment against vertical wave action on offshore drill platforms. The Motion Compensator hose is not recommended for phosphate ester fluids.

Temperature: -4°F to +180°F (-20°C to +82°C)

Tube: Type C₃ (Modified NITRILE). 3/16 thick. Black. Specially compounded for handling abrasion and corrosion.

Reinforcement: Multiple layers of 'close wound', high tensile steel cables with one layer of adhesion fabric placed between cable layers. Multiple layers of reinforcement under cover.

Cover: Type C₄ (Modified Nitrile). Black. Specially compounded UltraBracion cover is resistant to abrasion, corrosion, cutting, gouging, oil and weather. One continuous longitudinal yellow transfer label (with serial number and code date embossed).

Couplings: The end fitting will be butt welded onto the hose coupling. Couplings can be supplied with your choice of end fitting. NOTE: FIELD WELDING OF FITTINGS TO COUPLINGS IS NOT RECOMMENDED.

Fittings: Hammer Unions, Female Sub, Male Sub./Nut, Hubs, Flanges, GS Retain Ring Flange System

Optional: Accessories such as Safety Clamps, Hose Lift Eye & Collar Clamps and Stainless Steel Armor.

Certification/Standards:

- API Spec 7K
- ISO 14693
- ABS/CDA Type Approval
- DNV Type Approval. NV D-3352
- Test Certificates (included)
- Coupling/Material Traceability (available)
- 3rd Party Witness Test (additional cost)

THIS PRODUCT GROUP IS NOT ANY MORE IN GS-HYDRO'S OFFERING

5,000 psi W.P. – 10,000 psi Test Grade D 12,500 Minimum Burst

Nom. I.D.	Nom. O.D.	Min. bend radius [In.]	Wt. per Ft.	Swage Cplg. Wts. Ea. [Lbs.]	Max. lght. of hose [Ft.]	Safety clamp & chain Part No	Spec.
2-1/2	4.14	36	9.8	33	90	7361-0825	4774PE
3	4.61	48	10.8	44.5	90	7361-0830	4774PE
3-1/2	5.25	54	12.8	47	90	7361-0835	4774PE
4	5.61	54	13.4	55	90	7361-0840	4774PE

7,500 psi W.P. – 15,000 psi Test Grade E 18,750 Minimum Burst

Nom. I.D.	Nom. O.D.	Min. bend radius [In.]	Wt. per Ft.	Swage Cplg. Wts. Ea. [Lbs.]	Max. lght. of hose [Ft.]	Safety clamp & chain Part No	Spec.
2-1/2	5.16	48	20.2	62	90	7361-0835	4773PE
3	5.66	48	22.6	70	90	7361-0840	4773PE
3-1/2	6.04	54	24.1	75	90	7361-0845	4773PE
4	6.48	60	25.8	90	90	7361-0850	4773PE

Gates Black Gold® Cementing Hose (with Nitrile Tube)



(Shown with Female Sub Hammer Union)

Recommended for: Used as a flexible connection between the cementing pump manifold and cementing head for conveyance of cement slurries at high pressure.

Temperature: -4°F to +250°F (-20°C to +121°C) continuous service.

Tube: Type C₃(NITRILE). Black. Specially compounded for handling abrasion and corrosion.

Reinforcement: Multiple layers of spiraled high tensile steel wire.

Cover: Type A (Neoprene). Black. Oil and abrasion resistant. One continuous longitudinal yellow transfer label (with serial number and code date.)

Couplings: Crimped-Gates GSH with integral 2" Fig. 150 Hammer Union coupling.

Couplings can be supplied with your choice of end fittings. Please contact your nearest Roughneck Distributor for more detailed information.

NOTE: FIELD WELDING OF FITTINGS TO COUPLINGS IS NOT RECOMMENDED.

Fittings: GSH with Integral 2" Fig. 1502 Hammer Unions.

Certification/Standards:

- API Spec 7K
- ISO 14693
- DNV Type Approval: D-3706
- Test Certificates (included)
- Coupling/Material Traceability (available)
- 3rd Party Witness Test (additional cost)



Optional: Accessories such as Safety Clamps.

THIS PRODUCT GROUP IS NOT ANY MORE IN GS-HYDRO'S OFFERING

5,000 psi W.P. – 10,000 psi Test 12,500 Minimum Burst

Nom. I.D.	Nom. O.D.	Min. bend radius [In.]	Wt. per Ft.	Crimped Cplgs. Wt. [Lbs.] 1502 Hammer Union Assy.		Max. Lght. of hose [Ft.]	Safety clamp & chain Part No	Spec.
2	2.80	36	4.64	Female Sub/Seal 7341-1569 (7.8 Lbs.)	Male Sub/Nut 7341-1571 (17.7 Lbs.)	200	7361-6550	4651ZL

10,000 psi W.P. – 15,000 psi Test 22,500 Minimum Burst

Nom. I.D.	Nom. O.D.	Min. bend radius [In.]	Wt. per Ft.	Crimped Cplgs. Wt. [Lbs.] 1502 Hammer Union Assy.		Max. Lght. of Hose [Ft.]	Safety clamp & chain Part No	Spec.
2	2.80	48	4.66	Female Sub/Seal 7341-1569 (7.8 Lbs.)	Male Sub/Nut 7341-1571 (17.7 Lbs.)	200	7361-6550	4651ZA

Gates Black Gold® Cementing Hose (with Nitrile Tube)



(Shown with Female Sub Hammer Union)

Recommended for: Used as a flexible connection between the cementing pump manifold and cementing head for conveyance of cement slurries at high pressure.

Temperature: -4°F to +180°F (-20°C to +82°C)

Tube: Type C₃ (Modified NITRILE). 3/16 thick. Black. Specially compounded for handling abrasion and corrosion.

Reinforcement: Multiple layers of 'close wound', high tensile steel cables with one layer of adhesion fabric placed between cable layers. Multiple layers of reinforcement under cover.

Cover: Type C₄ (Modified Nitrile). Black. Specially compounded UltraBracion cover is resistant to abrasion, corrosion, cutting, gouging, oil and weather. One continuous longitudinal yellow transfer label (with serial number and code date embossed).

Couplings: The end fitting will be butt welded onto the hose coupling. Couplings can be supplied with your choice of end fitting.

NOTE: FIELD WELDING OF FITTINGS TO COUPLINGS IS NOT RECOMMENDED.

Fittings: Hammer Unions, Female Sub, Male Sub./Nut, Hubs, Flanges, GS Retain Ring Flange System

Optional: Accessories such as Safety Clamps, Hose Lift Eye & Collar Clamps and Stainless Steel Armor.

Certification/Standards:

- API Spec 7K
- ISO 14693
- ABS/CDA Type Approval
- DNV Type Approval: NV D-3372
- Test Certificates (included)
- Coupling/Material Traceability (included)
- 3rd Party Witness Test (additional cost)

THIS PRODUCT GROUP IS NOT ANY MORE IN GS-HYDRO'S OFFERING

5,000 psi W.P. – 10,000 psi Test 12,500 Minimum Burst

Nom. I.D.	Nom. O.D.	Min. bend radius [In.]	Wt. per Ft.	Cpig. threads API [In.]	Swage Cplg. Wts. Ea. [Lbs.]	Max. lght. of hose [Ft.]	Safety clamp & chain Part No	Spec.
2-1/2	4.14	36	9.8	3	33	90	7361-0825	4774PE
3	4.61	48	10.8	4	44.5	90	7361-0830	4774PE
3-1/2	5.25	54	12.8	4	47	90	7361-0835	4774PE
4	5.61	54	13.4	5	55	90	7361-0840	4774PE

10,000 psi W.P. – 15,000 psi Test 22,500 Minimum Burst

Nom. I.D.	Nom. O.D.	Min. bend radius [In.]	Wt. per Ft.	Swage Cplg. Wts. Ea. [Lbs.]	Max. lght. of hose [Ft.]	Safety clamp & chain Part No	Spec.
2-1/2	5.16	48	20.2	62	90	7361-0835	4773PE
3	5.66	48	22.6	70	90	7361-0840	4773PE
3-1/2	6.04	54	24.1	75	90	7361-0845	4773PE

Gates Black Gold® Cementing Hose (with Fluoroelastomer Tube)



(Shown with Hub Fitting)

Recommended for: Used as a flexible connection between the cementing pump manifold and cementing head for conveyance of cement slurries at high pressure.

Temperature: -4°F to +212°F (-20°C to +100°C)

Tube: Type V (Fluoroelastomer). Black. Excellent resistance to abrasion and corrosion.

Reinforcement: Multiple layers of 'close wound', high tensile plated steel cables to withstand flexing and high pressures encountered in offshore operations. Multiple layers of fabric reinforcement under cover.

Cover: Type C₄ (Modified Nitrile). Black. Specially compounded UltraBracion cover is resistant to abrasion, corrosion, cutting, gouging, oil and weather. One continuous longitudinal yellow transfer label (with serial number and code date embossed).

Couplings: Special Built-in supplied with your choice of end fittings.

Fittings: Hammer Unions, Female Sub, Male Sub./Nut, Hubs, Flanges,

Optional: Accessories such as Safety Clamps, Hose Lift Eye & Collar Clamps and Stainless Steel Armor.

Certification/Standards:

- Test Certificates (included)
- Coupling/Material Traceability (available)
- 3rd Party Witness Test (additional cost)

**THIS PRODUCT GROUP IS NOT
ANY MORE IN GS-HYDRO'S OFFERING**

**15,000 psi W.P. – 22,500 psi Test
33,750 Minimum Burst**

Nom. I.D.	Nom. O.D.	Min. bend radius [In.]	Wt. per Ft.	Swage Cplg. Wts. Ea. [Lbs.]	Max. lght. of hose [Ft.]	Safety clamp & chain Part No	Spec.
2-1/2	5.66	60	29.4	130	90	7361-0840	4758L
3	6.16	60	33.2	172	90	7361-0845	4788L

Gates Black Gold® Sour Service Hose



(Shown with Female Sub Hammer Union)

Recommended for: Flexible connection between standpipe and swivel (rotary drilling) or between pump and standpipe (rotary vibrator).

Temperature: -4°F to +200°F (-20°C to +93°C)

Tube: Type V (Fluoroelastomer). Black. Resists abrasion, corrosion, oil, and up to 20% H₂S. NOTE: Hose is manufactured to handle up to 20% Hydrogen Sulfide (H₂S) for 1 hour at 93°C (200°F) at rated working pressure.

Reinforcement: Multiple layers of 'close wound', high tensile steel cables with one layer of adhesion fabric placed between cable layers. Multiple layers of reinforcement under cover.

Cover: Type C₄ (Modified Nitrile). Black. Specially compounded UltraBracion cover is resistant to abrasion, corrosion, cutting, gouging, oil and weather. One continuous longitudinal yellow transfer label (with serial number and code date embossed).

Couplings: Swaged – meets NACE MR0175. The end fitting will be butt-welded onto the hose coupling. Couplings can be supplied with your choice of end fitting.

NOTE: FIELD WELDING OF FITTINGS TO COUPLINGS IS NOT RECOMMENDED.

Fittings: Hammer Unions, Female Sub, Male Sub./Nut, Hubs, Flanges, GS Retain Ring Flange System

Optional: Accessories such as Safety Clamps, Hose Lift Eye & Collar Clamps and Stainless Steel Armor.

Certification/Standards:

- Test Certificates (included)
- Coupling/Material Traceability (included)
- 3rd Party Witness Test (additional cost)
- NACE (additional cost)

THIS PRODUCT GROUP IS NOT ANY MORE IN GS-HYDRO'S OFFERING

**5,000 psi W.P. – 10,000 psi Test
12,500 Minimum Burst**

Nom. I.D.	Nom. O.D.	Min. bend radius [In.]	Wt. per Ft.	Swage Cplg. Wts. Ea. [Lbs.]	Max. lght. of hose [Ft.]	Safety clamp & chain Part No	Spec.
2-1/2	4.15	36	10.1	33	90	SCC40D5K	4774F
3	4.61	48	11.1	44.5	90	SCC48D5K	4774F
3-1/2	5.25	54	13.2	47	90	SCC56D5K	4774F
4	5.58	54	13.9	55	90	SCC64D5K	4774F

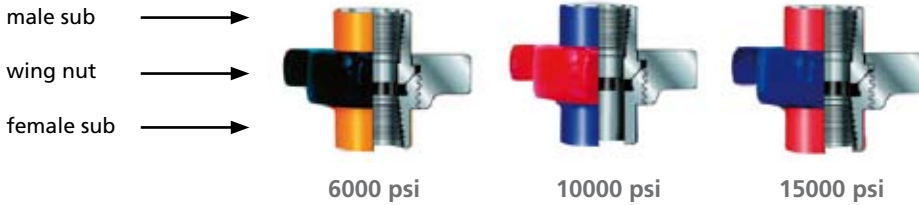
**7,500 psi W.P. – 15,000 psi Test
18,750 Minimum Burst**

Nom. I.D.	Nom. O.D.	Min. bend radius [In.]	Wt. per Ft.	Swage Cplg. Wts. Ea. [Lbs.]	Max. lght. of hose [Ft.]	Safety clamp & chain Part No	Spec.
2-1/2	5.14	48	20.6	62	90	SCC40E10K	4773LE
3	5.64	48	23.0	70	90	SCC48E10K	4773LE
3-1/2	6.05	54	24.6	75	90	SCC56E10K	4773LE
4	6.40	60	26.4	90	90	SCC64E10K	4773LE

Hammer Lug Unions

The GS-Hydro hammer lug unions are frequently used on Rotary Drilling Hoses, Hydraulics or BOP. They are available with butt weld (BW) and NPT/API threads (butt weld shown in table).

Complete unions consist of three parts,



- Hammer unions range in size from 1" to 12"
- Max. working pressure of 15 000 psi
- Complete traceability
- Manufactured from forged steel
- ASTM A - 105 unions > 6 000 psi (W.P.)
- ASTM 4130 for unions < 6 000 psi (W.P.)
- Available with charpy testing

Part No	Dimension	Description	W.P. [psi]	Color nut/sib	Material
058104-32	2"	Fig. 602 BW union complete 2"	6000	black/orange	Carbon steel
058114-32	2"	Fig. 602 BW wing nut	6000	black/orange	Carbon steel
058115-32	2"	Fig. 602 BW female sub	6000	black/orange	Carbon steel
058016-32	2"	Fig. 602 BW male sub	6000	black/orange	Carbon steel
058104-48	3"	Fig. 602 BW union complete 3"	6000	black/orange	Carbon steel
058114-48	3"	Fig. 602 BW wing nut	6000	black/orange	Carbon steel
058115-48	3"	Fig. 602 BW female sub	6000	black/orange	Carbon steel
058116-48	3"	Fig. 602 BW male sub	6000	black/orange	Carbon steel
058104-64	4"	Fig. 602 BW union complete 4"	6000	black/orange	Carbon steel
058114-64	4"	Fig. 602 BW wing nut	6000	black/orange	Carbon steel
058115-64	4"	Fig. 602 BW female sub	6000	black/orange	Carbon steel
058116-64	4"	Fig. 602 BW male sub	6000	black/orange	Carbon steel
058205-32	2"	Fig. 1002 BW union complete 2"	10000	red/blue	Carbon steel
058215-32	2"	Fig. 1002 BW wing nut	10000	red/blue	Carbon steel
058216-32	2"	Fig. 1002 BW female sub	10000	red/blue	Carbon steel
058217-32	2"	Fig. 1002 BW male sub	10000	red/blue	Carbon steel
058205-48	3"	Fig. 1002 BW union complete 3"	10000	red/blue	Carbon steel
058215-48	3"	Fig. 1002 BW wing nut	10000	red/blue	Carbon steel
058216-48	3"	Fig. 1002 BW female sub	10000	red/blue	Carbon steel
058217-48	3"	Fig. 1002 BW male sub	10000	red/blue	Carbon steel
058005-64	4"	Fig. 1002 BW union complete 4"	10000	red/blue	Carbon steel
058015-64	4"	Fig. 1002 BW wing nut	10000	red/blue	Carbon steel
058216-64	4"	Fig. 1002 BW female sub	10000	red/blue	Carbon steel
058217-64	4"	Fig. 1002 BW male sub	10000	red/blue	Carbon steel
058005-80	5"	Fig. 1002 BW union complete	10000	red/blue	Carbon steel
058015-80	5"	Fig. 1002 BW wing nut	10000	red/blue	Carbon steel
058016-80	5"	Fig. 1002 BW female sub	10000	red/blue	Carbon steel
058017-80	5"	Fig. 1002 BW male sub	10000	red/blue	Carbon steel
058306-32	2"	Fig. 1502 BW union complete 2"	15000	blue/red	Carbon steel
058316-32	2"	Fig. 1502 BW wing nut	15000	blue/red	Carbon steel
058317-32	2"	Fig. 1502 BW female sub	15000	blue/red	Carbon steel
058318-32	2"	Fig. 1502 BW male sub	15000	blue/red	Carbon steel
058306-48	3"	Fig. 1502 BW union complete 3"	15000	blue/red	Carbon steel
058316-48	3"	Fig. 1502 BW wing nut	15000	blue/red	Carbon steel
058317-48	3"	Fig. 1502 BW female sub	15000	blue/red	Carbon steel
058318-48	3"	Fig. 1502 BW male sub	15000	blue/red	Carbon steel
058306-64	4"	Fig. 1502 BW union complete 4"	15000	blue/red	Carbon steel
058316-64	4"	Fig. 1502 BW wing nut	15000	blue/red	Carbon steel
058317-64	4"	Fig. 1502 BW female sub	15000	blue/red	Carbon steel
058318-64	4"	Fig. 1502 BW male sub	15000	blue/red	Carbon steel

GS-FLANGE SYSTEM

PIPES & TUBES

CLAMPS

VALVES

TEST EQUIPMENT

BITE TYPE FITTINGS

SAE J514 JIC

HOSES & COUPLINGS

QUICK DISCONNECT

RN HOSES & SWIVELS

ADAPTORS

OTHER COMPONENTS

MACHINES

GENERAL INFORMATION

Swivel ranges

GS-Hydro offers high-performance swivels, for a variety of applications. Permissible media ranges from hydrocarbons, steam, powder/solids and cement, to food.

The swivels are available in carbon and stainless steel materials, including 6MO and duplex steel.

The swivels incorporate from one to seven raceway antifriction bearings and a number of high reliability low friction sealing alternatives, to suit the service in question. The swivels are available with GS-flanged-, regular flanged-, threaded-, vitaulic- or special end connections. GS-Hydro also offers special service high pressure swivels.



	ANSI Class [#]							API Rating [psi]				High Pressure	
	150	300	600	900	1500	2500	3000	2.5k	5k	10k	15k	1000 bar	1500 bar
1/2"												x	x
3/4"												x	x
1"												x	x
2"	x	x	x	x	x	x	x	x	x	x	x	x	
3"	x	x	x	x	x	x	x	x	x	x	x	x	
4"	x	x	x	x	x	x	x	x	x	x	x	x	
5"	x	x	x	x	x	x	x	x	x	x	x		
6"	x	x	x	x	x	x	x	x	x				
8"	x	x	x	x	x	x	x	x	x				
10"	x	x	x										
12"	x	x											

Swivel joints can be combined in 8 basic structural types.

Thus, the swivel joints can be swivelled by 360° in one, two and three planes.

Connections: Welding ends, flanges (DIN, ANSI, SAE), socket nipples, customer's demands.

Dimensions: 1/4" – 8"

Pressure: Up to 1379 bar (20 000 psi)

