



DRIVEN BY POSSIBILITY™

OIL & GAS

# BLACK GOLD 16C CHOKES & KILL HOSE

## DESIGNED FOR THE TOUGHEST CONDITIONS

Deeper wells bring higher pressures and elevated temperatures. BOP systems for these wells have to perform in challenging applications and demand reliable components, including critical hose assemblies delivered by Gates.

Our strategically located Global Service Centers provide API 16C Well Control hose assemblies in addition to our existing API 7K Mud & Cement high pressure products, stamped with the Gates License and API Monogram. All are available with industry standard couplings and accessories.

**Gates Black Gold hydraulic and industrial products complete the offering with custom fabrication to your demanding specifications.**

## PRODUCED TO THE HIGHEST INDUSTRY PERFORMANCE STANDARD

- API 16C Certified
- FSL 3
- 5,000 psi, 10,000 psi & 15,000 psi
- Global availability



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# DESIGNED FOR DRILLING NEEDS TODAY AND TOMORROW

Today's rapid pace of drilling demands products that can operate in changing environments that places increased demands on people and equipment, and safe, reliable connections. Gates products can deliver that performance in:

- Increased static and dynamic pressures
- MPD drilling
- Negative pressure pulses
- Elevated mud temperatures

HYDROSTATIC  
PRESSURE,  
BENDING &  
BURST TEST



EXPOSURE  
TEST



FIRE  
TEST



HIGH  
TEMPERATURE  
EXPOSURE  
TEST



API SPEC 16C  
CERTIFICATION

## TESTING TO API 16C STANDARDS REDUCES YOUR RISK

API Testing is tough for a reason — you want to protect all of your assets, so do we! Gates Black Gold™ Choke & Kill hose assemblies meet or exceed all exposure testing criteria that are designed into the products to ensure performance in the harshest conditions:

- **MATERIAL TESTING:** Specification covers material performance for pressure-containing components, including materials in direct contact with well fluids. Pressure-temperature integrity is tested with various methods in line with Flexible Specification Levels (FSL).
- **DESIGN VALIDATION TESTING:** Mechanical testing of the hose assembly includes Hydrostatic Internal Pressure, Bending Flexibility, and Hose Burst Test — in all, no visible leakage.
- **GAS EXPOSURE TESTING:** Evaluation of the effects of Gas Decompression, Gas Permeation at the full rated temperature, and with Long Term Exposure testing — no damage, no leakage.
- **FIRE TESTING:** 30 minute duration, at rating working pressure and rated temperature 1300°F (704°C) with no hose burst.
- **HIGH TEMPERATURE EXPOSURE:** Testing to the most severe, survival conditions, the hose is subjected to rated working pressure and maximum temperature, then to 350°F (177°C) for 60 minutes noticed with no visible leakage and then increased to failure.



## GATES CERTIFIED ASSEMBLY PROCESS: **BETTER DESIGN, SHORTER LEAD TIME, FASTER RESPONSE**

Producing hose and couplings are only the beginning of our process. Assembly, testing and delivery to your site are equally important.

Our Regional Assembly Centers offer bonded, crimp and swage coupling capabilities, fully qualified to the Gates Technical Specifications, industry standards, backed by internal and external certifications that assure you of our rigorous process controls are followed at each step from order to shipment.

### AVAILABLE CERTIFICATIONS:

- API 16C Certification (Latest Edition)
- ABS Type Approval (3" 15,000 PSI hose)

## POTENTIAL CONSEQUENCES OF HOSE FAILURE

Beyond disastrous results, failure of any drilling hose on a drilling rig causes:



**DOWNTIME AND  
LOSS OF  
PRODUCTION**



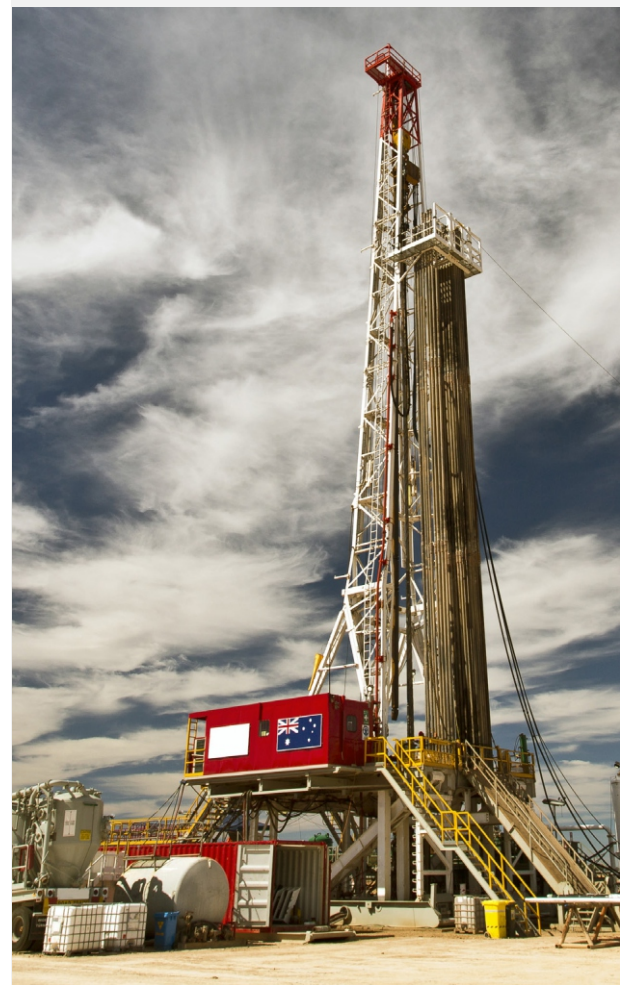
**ENDANGERMENT  
OF WORKERS**



**ENVIRONMENTAL  
SPILLS AND  
CLEAN-UP COSTS**



**EQUIPMENT  
REPLACEMENT  
COSTS**



## BLACK GOLD™ 16C CHOKE & KILL HOSE PRODUCT SPECIFICATIONS

<b>INNER CARCASS</b>	Helically wound, interlocked stainless steel inner to provide internal support for the elastomeric liner and enhance overall physical strength and durability of the assembly.
<b>TUBE</b>	Black synthetic polymer (HNBR), resistant to well control drilling fluids, chemicals, hydrocarbons and H2S.
<b>REINFORCEMENT</b>	Multiple layers of high tensile plated steel cables with superior corrosion resistance, combined with multiple layers of textile reinforcement.
<b>FIRE RATING</b>	Supplied with an integral fire resistant cover that conforms to API 16C Flexible Line Fire Test requirement for minimum 30 minutes at 1300°F (704°C).
<b>JACKET</b>	Black synthetic polymer, resistant to abrasion, hydrocarbon exposure, ozone and weathering. Can be supplied with external armor guarding, 316 Stainless Steel (Optional)
<b>DESIGN FACTOR</b>	2.25:1
<b>SURVIVAL TEMPERATURE</b>	Achieved 399°F (204°C) during API16C Flexible Line High Temperature Exposure Test.

## BLACK GOLD™ 16C CHOKE & KILL HOSE

<b>COUPLINGS</b>	Bonded couplings supplied with your choice of API compliant end connections. NOTE: Per API, the end fitting pressure rating must be equivalent to the pressure rating of the flexible hose. Materials meet NACE MR0175/ISO 15156.
<b>ACCESSORIES</b>	Safety clamps, hose lift eyes, and collar clamps (Optional)
<b>DOCUMENTATION</b>	Product data books (confirmity certificates, pressure test records and assembly materials traceability) and 3 <sup>rd</sup> party witness tests are available upon request.

NOMINAL I.D.		NOMINAL O.D.		MIN. BEND RADIUS		HOSE WEIGHT		TEMPERATURE RANGE	MAX. WORKING PRESSURE		TEST PRESSURE		MIN BURST PRESSURE	
in	mm	in	mm	in	mm	lb/ft	kg/m		psi	bar	psi	bar	psi	bar
2.0	50.8	5.8	148.0	47.2	1,200	27.6	41.2	-13°F to +212°F -25°C to +100°C	5,000	345	7,500	517	11,250	776
2.0	50.8	5.8	148.0	59.1	1,500	26.2	39.0	-13°F to +212°F -25°C to +100°C	10,000	690	15,000	1,034	22,500	1,551
2.0	50.8	6.5	165.8	55.1	1,400	45.0	67.0	-13°F to +212°F -25°C to +100°C	15,000	1,034	22,500	1,551	33,750	2,327
2.5	63.5	6.2	158.0	59.1	1,500	35.0	52.1	-13°F to +212°F -25°C to +100°C	10,000	690	15,000	1,034	22,500	1,551
3.0	76.2	6.5	165.0	59.1	1,500	31.3	46.6	-13°F to +212°F -25°C to +100°C	5,000	345	7,500	517	11,250	776
3.0	76.2	7.2	183.0	59.1	1,500	44.9	66.9	-13°F to +212°F -25°C to +100°C	10,000	690	15,000	1,034	22,500	1,553
3.0	76.2	8.2	208.0	63.0	1,600	66.3	98.8	-13°F to +212°F -25°C to +100°C	15,000	1,034	22,500	1,551	33,750	2,327

# GATES OIL & GAS GLOBAL LOCATIONS

## AMERICAS

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