

1999 - 2000 CAMERON CATALOG

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**CAMERON**

# PRODUCTS

CAMSERV Aftermarket Services	137
Drilling	140
Subsea Production	147
Surface Production	153
API Gate Valve and Actuators	158
Cameron Willis Chokes	162
Cameron Controls	164
Cooper Cameron Valves	166

Cameron is a name that is unsurpassed for quality, dependability and technology in the oil and gas industry today. As a leader in the industry, Cameron provides total system solutions for both drilling and production applications.

But, while other suppliers are content to simply supply equipment, Cameron provides so much more. Like our worldwide network of CAMSERV Service Centers. And our comprehensive internet site. Our preengineered MOSAIC subsea production system. Decades of experience. Industry standard products like the U-BOP. Electronic commerce. Project management. Proprietary elastomers from Cameron Elastomer Technology. Brand names you know and trust - Cameron, Willis, W-K-M - to name a few. Highly trained service technicians. Ongoing research and development projects. Award-winning technology. The list goes on and on, much more than we could possibly present in one catalog. So, whether you need a single gate valve, or an entire system from the BOP stack to the controls, put Cameron to work for you.

# CONNECT

This catalog offers an introduction to Cameron systems and products. For additional information on products in this catalog or products which do not appear on these pages, Cameron has a myriad of additional resources available to you. Whether you prefer information in electronic or printed format - on the Internet or CD-ROM - or your desktop or on your library shelf, Cameron can give you the comprehensive information you need quickly.

Cameron maintains a comprehensive website at [www.cameron.com](http://www.cameron.com). Cameron offers more than 50,000 pages of information on all product lines: Drilling, Surface, Subsea, Aftermarket. Cameron Controls, Cameron Willis, and Cooper Cameron Valves.

The most powerful tool available to Cameron customers via the website is the Transact section. Transact is a secure extranet within the Cameron website available only to Cameron customers. Future Transact features include E-commerce which will soon enable authorized customers to place orders from their desktop. Current sections within Transact are:

- **Technical Library** - access operation and maintenance manuals, engineering bulletins and reports, assembly and testing procedures, inspection criteria, technical papers and experience lists.
- **Parts and Pricing** - review the list prices of Cameron standard products.
- **Training** - access fully interactive, dynamic product specific training modules which include installation procedures and service requirements.
- **Mainframe Access** - read product bills of material, verify revision status, check customer property, review consigned inventory levels, and much more in the Cameron SAP database.
- **Document Ordering System** - order free printed brochures or download Acrobat pdf files to print to your local printer.
- **Projects** - review project management information such as planning and scheduling, document control, costs expended, status reports and engineering deliverables.

Cameron maintains a comprehensive library of sales and marketing brochures and materials in printed format. Customers can utilize our mail service to have more than 100 materials

• **Internet Customer Service** - the Cameron Document Ordering System to receive free printed copies of brochures via the mail or they can email [cameron\\_at\\_mktconn@cameron.com](mailto:cameron_at_mktconn@cameron.com) to request specific product brochures.

• **Phone or Fax** - customers can receive product brochures by telephoning the Cameron Marketing Communications department in Houston at 713-939-7777 or by faxing 713-939-7765.

• **Cameron Sales Force** - customers can contact their local Cameron representative who can order brochures to be mailed directly to them anywhere in the world. Cameron offers training CDs on many of its products and services. Customers can order these CDs through local sales representatives.

## CD-ROMs

This catalog, along with other Cameron sales and marketing information is available on CD-ROM. Customers can order the CD catalog via the Internet, phone or fax or through the Cameron sales force. In addition, Cameron offers a library of training CD-ROMs on many of our products.

## CAMSERV™ Aftermarket Services

CAMERON



Cameron's CAMSERV Aftermarket Services program has redefined the term "oilfield service."

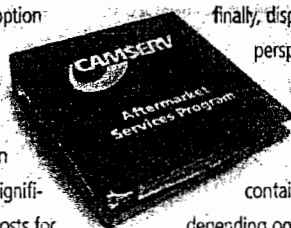
CAMSERV provides the most comprehensive offering of aftermarket products and services in the industry today. Each CAMSERV option is designed to reduce the Total Cost of Ownership and to offer unmatched value in service after-the-sale. And, when used in combination, these options can significantly reduce CAPEX and OPEX costs for our customers worldwide.

CAMSERV begins with a network of service centers located in every major oil and gas producing region of the world and continues with Cameron's team of service technicians. In addition, many new and innovative programs have been added which make CAMSERV the premier aftermarket program in the industry.

### CAMWARE™ Software

Cameron's CAMWARE Asset Management Software is designed to track, manage and report on customer equipment from acquisition to disposal. CAMWARE is available in versions for operators and drilling contractors, and for mainframe computers or PCs.

CAMWARE provides a full history of all serialized equipment, including maintenance and performance factors. CAMWARE can track a variety of items such as next-scheduled service, status of completed service jobs, recommended maintenance, well conditions, well performance, inventory control including certificate numbers, document references, part numbers and serial numbers. The system can even reference a storage location for original documents.



### Through-Life Cost Management (TLC)

TLC is a comprehensive program to reduce the Total Cost of Ownership. TLC Starts at equipment acquisition and covers ownership, usage, maintenance and finally, disposal. It is truly a "cradle to grave" perspective. Cameron can develop TLC programs for anything from annual maintenance agreements to global alliances. These programs can contain any number of CAMSERV options, depending on customer needs.

### CAMSERV Advantage Program

CAMSERV Advantage is an incentive program designed to encourage customers to maximize their savings by utilizing a full array of CAMSERV service options. Due to the complex nature of aftermarket service needs, CAMSERV facility managers are authorized to customize CAMSERV Advantage packages to meet individual customer requirements. CAMSERV Advantage incentives may include pricing frame agreements, volume discounts, consignment programs, electronic information interfaces or faster turnarounds. Individual CAMSERV Advantage options may include:

**Field Services** - CAMSERV field service technicians are on call 24-hours a day, 7-days a week to handle on-site service needs. These people are highly skilled in providing installation assistance, making field repairs and performing routine, scheduled maintenance. They also provide technical support and well services such as decompletion, recompletion, trim changes and installation of safety equipment.



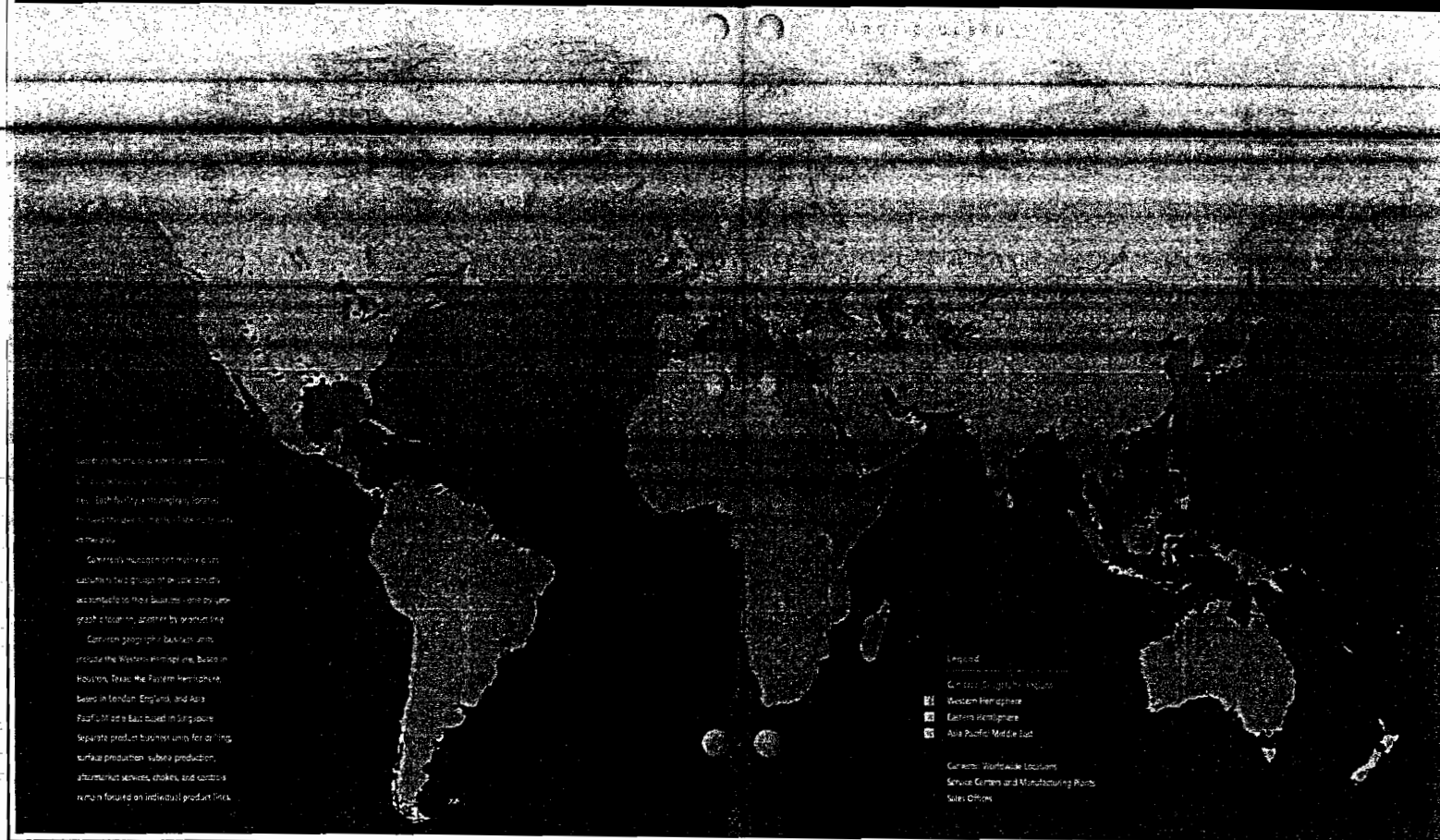
**Customer Equipment Reconditioning** - CAMSERV Service Centers offer a full range of equipment repair services for all types and brands of oilfield equipment. In addition to disassembly, inspection, re-assembly and testing services, Cameron provides machining, welding, heat-treating and other re-manufacturing operations. Cameron offers reconditioned products in first class, fit for function, and working condition performance standards.

**Customer Property Management** - Property management services can be arranged to extend and complement existing warehousing capabilities. Services provided include storage/warehousing, equipment utilization services, brokering and equipment buy-back.

**Reconditioned Equipment** - Reconditioned drilling and production equipment meeting API standards is available in a broad range of products including blowout preventers, choke manifolds, well-heads, gate valves, and Christmas trees. Reconditioned equipment can be obtained through direct purchase, equipment exchange or rental.

**Replacement Parts** - CAMSERV Service Centers stock replacement parts (new and reconditioned) for many Cameron products for immediate delivery. Less frequently needed items or parts for older equipment can be quickly located through our Global Product Search Engine (GPSE). In addition, a secure, restricted-access "Transact" section of the Cameron website has been set-up to offer electronic ordering of many types of replacement parts.





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## Drilling

## Surface Drilling Systems

## Ram-Type BOPs

- TL BOPs
- UM BOPs
- U BOPs

## Rams

- Shearing Blind Rams
- DVS Shear Rams
- Super Shear Rams
- VBRA Variable Bore Rams
- FlexPacker Rams
- Dual FlexPacker Rams
- Pipe Rams

## Ram Packers and Top Seals

- CAMRAM
- CAMRAM 350
- CAMLAST
- Low Temperature
- Stripping and Snubbing

## Annular BOPs

- Single and Double DL Annular BOPs

## Connectors

- FastLock Connectors
- FastClamp Connectors
- FlangeLock Connectors
- API Clamps

## Choke Manifold Systems

- Hydraulic and Manual Drilling Chokes
- H2 and H2I Adjustable and Positive Chokes
- Hydraulic and Manual Gate Valves
- Tailrod Gate Valves
- MS Check Valves
- I-2 Pressure Transmitters
- Buffer Tanks

## Control Systems

- Hydraulic

This product overview represents the Cameron preferred products for surface and subsea drilling applications. Not all products which appear on the list are represented in this catalog. For additional information, contact the Cameron website at [www.cameron.com](http://www.cameron.com) or contact your Cameron representative.

## Subsea Drilling Systems

## Ram-Type BOPs

- TL BOPs
- UM BOPs
- U BOPs

## Rams

- Shearing Blind Rams
- DVS Shear Rams
- Super Shear Rams
- VBRA Variable Bore Rams
- FlexPacker Rams
- Dual FlexPacker Rams
- Pipe Rams

## Ram Packers and Top Seals

- CAMRAM
- CAMRAM 350
- CAMLAST
- Low Temperature
- Stripping and Snubbing

## Annular BOPs

- Single and Double DL Annular BOPs

## Connectors

- DWHC Collet Connector
- HC Collet Connectors
- HCHA Collet Connectors
- Model 70 Collet Connector

## Choke Manifold Systems

- Hydraulic and Manual Drilling Chokes
- H2 and H2I Adjustable and Positive Chokes
- Hydraulic and Manual Gate Valves
- Tailrod Gate Valves
- MS Check Valves
- I-2 Pressure Transmitters
- Buffer Tanks

## Control Systems

- Hydraulic
- Multiplex
- Acoustic
- Deadman (DMS)

## Riser Systems

- LoadKing Riser Systems
- LoadKing Riser Connectors and Joints
- LoadKing Spiders
- LoadKing Manual and Hydraulic Running Tools
- RF Riser Systems
- RF Riser Connectors and Joints
- RF Spiders
- RF Manual and Hydraulic Running Tools
- Telescoping Joints
- Goosenecks
- Riser Fill-Up Valves
- Termination Spools
- Instrumentation Joints
- Flex Joints
- RST Swivel Tensioning Rings

## Drilling Capabilities Overview

CAMERON



### Cameron Drilling Systems Delivered Worldwide for Varied Applications

Cameron has designed, manufactured and delivered surface and subsea drilling systems from the wellhead through the manifold to meet a wide variety of customer requirements and drilling applications. These systems are on their way to projects from Africa to the Gulf of Mexico, and represent Cameron system solutions and their array of design configurations.

#### Varied Drilling Applications

Cameron has delivered complete drilling systems for drillships, semisubmersibles, platforms and jackups. These rigs have rated water depths from several hundred to over 10,000 feet and operate from 5000 to 15,000 psi working pressure.

#### BOP Stack Systems

The vast majority of these rigs are using Cameron's 18-3/4" TL BOPs in 4-, 5- and 6- cavity body styles. BOP Stack systems also include Cameron collet connectors including the Model 70, HC, DWHC and HCH4 designs.

#### Riser Systems

The Cameron LoadKing and RF riser systems are being utilized on several of these rigs to meet the demands of drilling in deepwater. Both riser systems accommodate high tension loads and provide for multiple control lines.

#### Control Systems

Many of the control systems used on these rigs are Cameron Controls' Multiplex (MUX) BOP Control Systems. Cameron's MUX system features the lightest weight, most compact pod in the industry today. In addition, Cameron offers the industries only fully

retrievable MUX pods. The popularity of the Cameron MUX control system has made Cameron Controls the industry leader in the supply of drilling control systems. Cameron Controls also offers direct hydraulic control systems for subsea and land applications.

#### Choke Manifold Systems

Cameron has also provided the manifold systems for these drilling rigs. Cameron provides complete manifold systems from the surface panels to the chokes, valves, actuators and pressure transmitters.

### Cameron Puts Experience to Work to Develop New and Innovative Solutions for Future Challenges

Cameron's vast experience with both drilling and production systems provides a unique opportunity to design and manufacture integrated systems specifically designed to optimize customer operations. Cameron has provided, designed, or is actively designing Free-Standing Production Riser Systems, Free-Standing Drilling Riser Systems, systems designed for SPAR/TLP applications and Slender Well Systems.

#### Hybrid (Free-Standing Production) Riser System

Cameron's Free-Standing Production Riser System (FSPR) represents an economical alternative to traditional deepwater development concepts including the steel catenary riser system.

Cameron's FSPR was installed in 1521 feet (463 meters) of water for an early production system, later retrieved, modified and rerun in 2096 feet (639 meters) of water for a deeper field. This represents the only hybrid riser system installed. Cameron can now supply various hybrid riser options for the free standing riser including towed-out and up-ended and stalked-in designs. Cameron's options offer the opportunity to decrease the risks and costs typically associated with steel catenary riser systems particularly for the larger deeper fields.

The FSPR system was the winner of the 1989 Petroleum Engineer International Meritorious Award for Engineering Innovation.



Hybrid (Free-Standing Production) Riser System

#### Free-Standing Drilling Riser System

Based on the field-proven Free-Standing Production Riser System, Cameron's Free-Standing Drilling Riser System (FSDR) provides an alternative to the time-consuming operation of drilling riser deployment and retrieval in deepwater.

In this system, a retrievable upper section and a free-standing lower section are mated 300 to 500 feet (91 to 152 meters) below the surface of the water. When disconnect is required, either in an

emergency or for standard rig operations, the upper section is retrieved and the lower section is left to free-stand on the ocean floor. The retrievable riser section can be pulled in several hours, saving rig time during both retrieval and redeployment.

Cameron's free-standing drilling riser is the winner of the prestigious 1999 Petroleum Engineer International Meritorious Award for Engineering Innovation and provides savings by increasing the operating window, lowering development drilling costs and lowering maintenance costs.

#### SPARs and TLPs

Cameron has the unique ability to provide a total system for a SPAR or tension leg platform (TLP). Cameron systems are based on field experience and represent the most efficient, cost-effective systems possible for each individual application.

Cameron's broad scope of supply includes subsea, platform and adjustable wellhead systems, BOP stacks, drilling and production risers (including free-standing, integral and non-integral systems), completion systems, subsea manifolds, connection systems, and drilling and production control systems. Each component, as well as the total system is designed based on the best individual solution for each specific field application. Cameron designs are backed by numerous computer based analysis programs, basin testing and prototype testing, all based on field data collected from instrumentation packages.

#### Slender Well Systems

The industry trend today is to look for ways to utilize second or third generation vessels for deepwater. Cameron's Slender Well Systems provide the contractor with the opportunity to do just that. With Cameron's wellhead, small bore BOP stacks, and reduced bore riser systems, variable deck loads and tension requirements are substantially reduced, and the drilling process is optimized to reduce drilling time.



**Surface Drilling System Components**  
Cameron has a definite advantage in the supply of complete drilling systems for surface applications. From the BOP to the control system, the manifold to the wellhead, Cameron offers a variety of systems to meet different requirements. Cameron components for surface systems include all the following:

**Cameron BOP Stack**

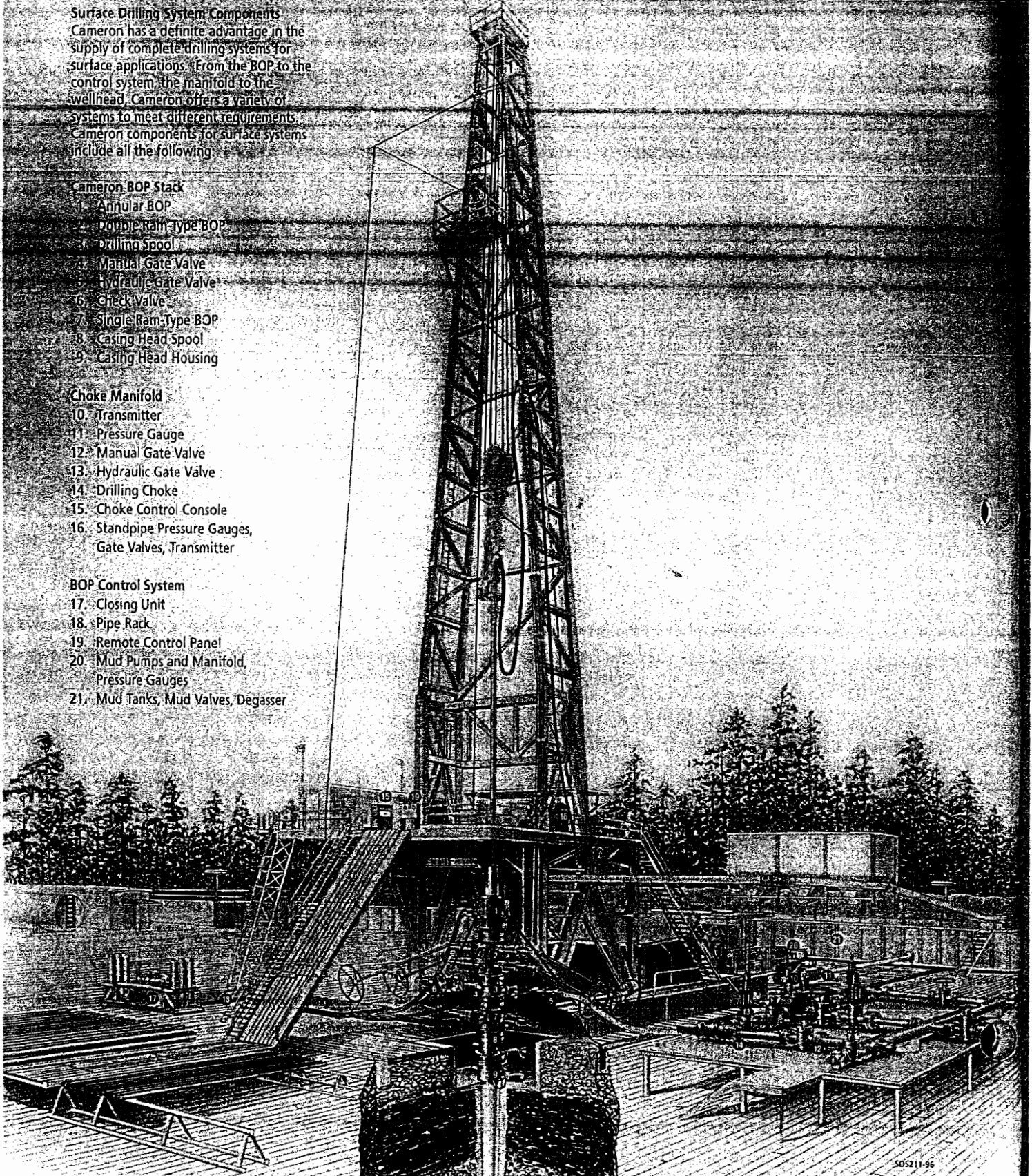
1. Annular BOP
2. Double Ram Type BOP
3. Drilling Spool
4. Manual Gate Valve
5. Hydraulic Gate Valve
6. Check Valve
7. Single Ram Type BOP
8. Casing Head Spool
9. Casing Head Housing

**Choke Manifold**

10. Transmitter
11. Pressure Gauge
12. Manual Gate Valve
13. Hydraulic Gate Valve
14. Drilling Choke
15. Choke Control Console
16. Standpipe Pressure Gauges, Gate Valves, Transmitter

**BOP Control System**

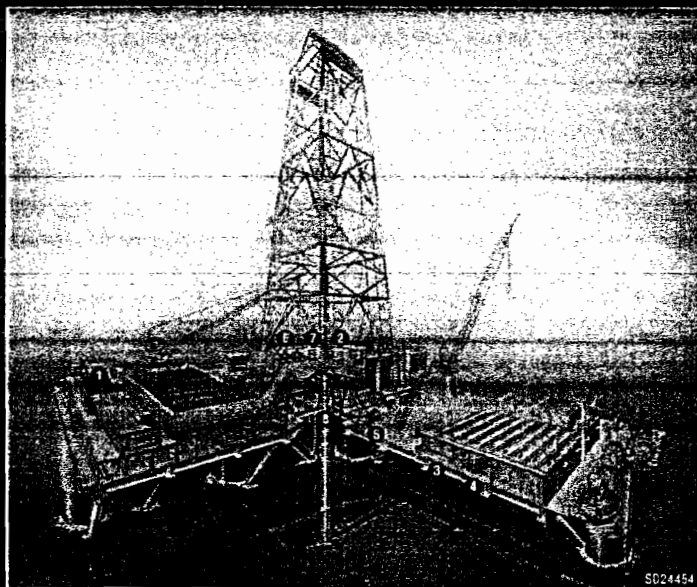
17. Closing Unit
18. Pipe Rack
19. Remote Control Panel
20. Mud Pumps and Manifold, Pressure Gauges
21. Mud Tanks, Mud Valves, Degasser



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# Subsea Drilling Systems

CAMERON



SD24454

Cameron supplies integrated subsea drilling systems designed specifically to tackle the demands of deepwater, high pressure applications including BOP stack systems, control systems, riser systems and choke systems. Cameron subsea drilling components include the following:

## Subsea Drilling System Components (Surface)

### Control System

1. Auxiliary Remote Control Panel and Battery Bank
2. Driller's Panel
3. Hydraulic Power Unit
4. Accumulator Bank
5. Hose/Cable Reels

### Choke System

6. Choke Manifold
7. Choke Manifold Control Console

### Riser System

8. Telescoping Joint

## Subsea Drilling System Components (Subsea)

### Control System

1. Hydraulic Conduit Supply Line
2. MUX Control Pod
3. Conduit Valve

### Riser System

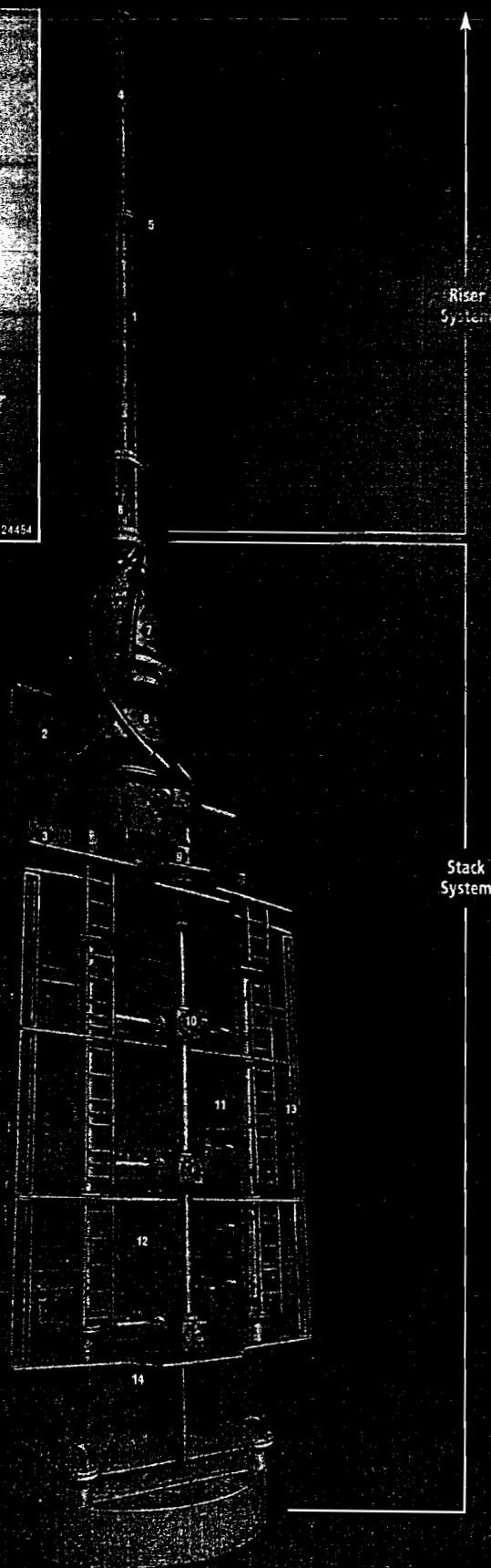
4. Riser Joint
5. Riser Connector
6. Termination Spool

### Lower Marine Riser Package

7. Flex Joint
8. Annular BOP
9. Choke/Kill Connector

### BOP Stack

10. Subsea Gate Valve
11. Double Ram-Type BOP with Super Shear
12. Double Ram-Type BOP
13. Guide Structure
14. Collet Connector



SD24453-96



## Ram-Type and Annular BOPs

CAMERON

Cameron developed the TL and UM ram-type BOPs based on the highly successful U BOP design to meet today's demand for reduced weight, lower height and easier maintenance. Cameron also makes the DL Annular BOP which features a lightweight, low profile design available in single or double body styles.

### TL™ BOP

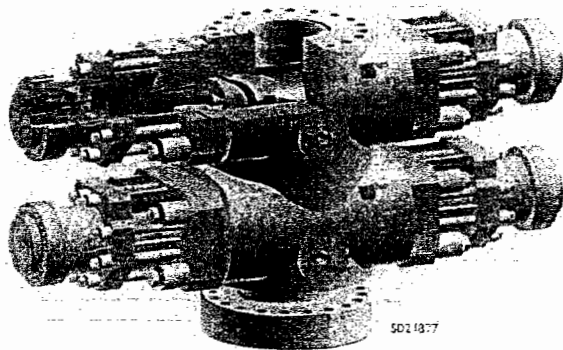
The TL BOP integrates all of the design features of Cameron's popular T and U BOPs into a lightweight unit. The TL offers side ram removal and other features which reduce maintenance and rig time.

<b>Application:</b>	Surface and subsea
<b>Bore Sizes and Working Pressures:</b>	18-3/4" 5000, 10,000, 15,000 psi 13-5/8" 10,000 psi
<b>Body Styles:</b>	Single, double, triple
<b>Pressure-Energized Rams:</b>	Yes
<b>Bonnet Seal Carrier:</b>	Standard
<b>Hydromechanical Lock:</b>	RamLocks (5000, 10,000, 15,000 psi WP) ST Lock (10,000, 15,000 psi WP) WedgeLocks (5000 psi WP)
<b>Hydraulically Opening Bonnets:</b>	Yes
<b>Bonnet Studs Instead of Bolts:</b>	Yes

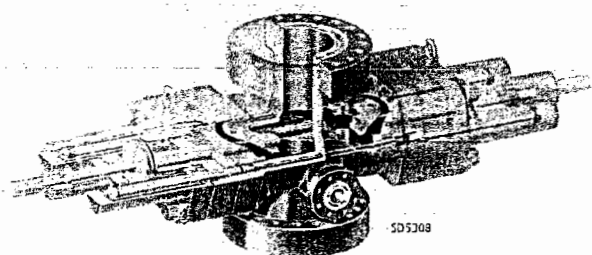
### U™ BOP

The Cameron U BOP is the most widely used ram-type BOP in the world and offers the widest range of sizes of any Cameron ram-type BOP.

<b>Application:</b>	Surface and subsea
<b>Bore Sizes and Working Pressures:</b>	7-1/16", 11", 13-5/8" 3000 - 15,000 psi 16-3/4" 3000 - 10,000 psi 18-3/4" 10,000 psi 20-3/4" 3000 psi 21-1/4" 2000, 5000, 10,000 psi 26-3/4" 3000 psi



TL Blowout Preventer  
(Shown With RamLocks)



U Blowout Preventer

<b>Body Styles:</b>	Single, double
<b>Pressure-Energized Rams:</b>	Yes
<b>Bonnet Seal Carrier:</b>	Available
<b>Hydromechanical Lock:</b>	WedgeLocks (with pressure balance chambers)
<b>Hydraulically Opening Bonnets:</b>	Yes

### UM™ BOP

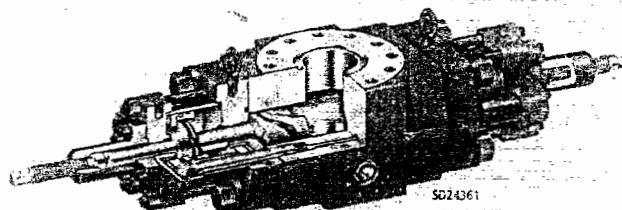
The UM BOP is a lightweight BOP designed for easy maintenance and long life. The UM complements the existing line of U preventers and includes bonnets which can be installed on any comparable size U BOP.

<b>Application:</b>	Surface, subsea, snubbing (7-1/16" only)
<b>Bore Sizes and Working Pressures:</b>	7-1/16" and 11" 3000 - 15,000 psi
<b>Body Styles:</b>	Single, double
<b>Pressure-Energized Rams:</b>	Yes
<b>Bonnet Seal Carrier:</b>	Available
<b>Hydromechanical Lock:</b>	WedgeLocks
<b>Hydraulically Opening Bonnets:</b>	Yes
<b>Bonnet Studs Instead of Bolts:</b>	Yes

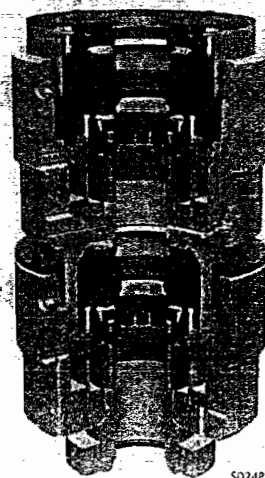
### DL Annular BOP

The Cameron DL annular preventer features a quick-release top for quick packer change-out. It is shorter in height than comparable annulars.

<b>Application:</b>	Surface and subsea
<b>Bore Sizes and Working Pressures:</b>	7-1/16" - 21-1/4" 2000 - 20,000 psi
<b>Body Styles:</b>	Single, dual
<b>Packer:</b>	High performance CAMULAR™



UM Blowout Preventer



DL Annular Blowout Preventer

## Rams and Ram Packers

CAMERON

Cameron offers the most comprehensive line of rams and ram packers in the industry. Cameron rams cover the full range of drilling requirements including shearing high strength casing, drill collars, etc. Cameron also offers a choice of rams for variable bore sealing and high temperature applications.

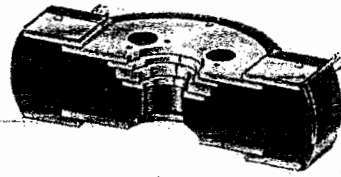
Cameron is known as a pioneer in variable bore sealing technology. The name variable bore ram (VBR) is synonymous with the Cameron VBR. Cameron has now introduced the second generation VBR, the VBR-II. This design offers even more packer life than the original design. In addition, Cameron offers the FlexPacker, FlexPacker-NR and the Dual Bore FlexPacker which provide sealing on specific multiple bore sizes and fit into existing ram blocks.

### Cameron Elastomer Technology

One of the many ways to differentiate Cameron drilling products from other manufacturers' is the elastomers used in critical sealing areas such as ram packers and top seals.

Cameron drilling products exclusively use the proprietary elastomers designed and manufactured by Cameron Elastomer Technology (CET), located in Katy, Texas. CET provides engineered solutions to elastomeric material problems. For drilling applications, CET has developed CAMRAM™, CAMRAM 350™, CAMULAR™, CAMLAST™ and DUROCAM™ elastomer products to meet the rigorous demands of the oilfield.

These products, when used in Cameron ram-type BOPs and annular BOPs, improve performance, extend service life, reduce downtime and lower operating costs.



SD10315

FlexPacker™



SD24363

VBR-II™



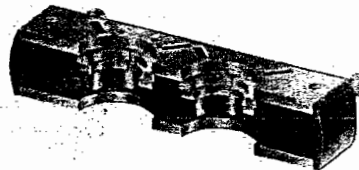
SD24364

FlexPacker-NR™



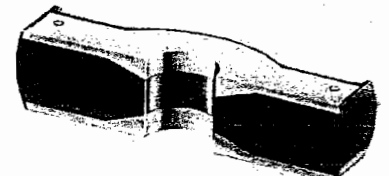
SD24413

Inserted Packer for Stripping and Snubbing



SD015389

Dual Bore FlexPacker



SD7395

CAMRAM 350™ Packer

### Cameron Ram Selection Chart

Description	TL BOP	UM BOP	U BOP	Elastomer	Per NACE
<b>Shearing</b>					
Shearing Blind Rams	Available in Some Sizes	Available	Available	CAMRAM Nitrile	Yes
DVS Shear Rams	Available in Some Sizes	Available in Some Sizes	Available in Some Sizes	CAMRAM Nitrile	Yes
Super Shear Rams	Available	Available in Some Sizes	Available	See Note	No
<b>Variable Bore Sealing</b>					
VBR-IIs	Available in Some Sizes	Available in Some Sizes	Available in Some Sizes	CAMRAM Nitrile	Yes
FlexPackers	Available in Some Sizes	Available in Some Sizes	Available in Some Sizes	CAMRAM Nitrile	Yes
FlexPacker-NRs *	Available in Some Sizes	Available in Some Sizes	Available in Some Sizes	CAMRAM Nitrile	Yes
Dual Bore FlexPackers	Available in Some Sizes	Available in Some Sizes	Available in Some Sizes	CAMRAM Nitrile	Yes
<b>Pipe Rams</b>					
Standard Service	Yes	Yes	Yes	CAMRAM Nitrile	Yes
High Temperature Service	Yes	Yes	Yes	CAMLAST	Yes
<b>Snubbing/Stripping</b>					
Grip and Seal Rams	Not Available	7" Only	Not Available	CAMRAM Nitrile	Yes
Snubbing Insert Packers	Not Available	7" Only	Not Available	CAMRAM Nitrile	Yes

Note: Super Shear Rams do not seal

\* Cameron also offers special hang-off FlexPacker-NR assemblies

**Collet Connectors**

As drilling depths have increased, Cameron collet connectors have evolved to address issues concerning higher internal and external pressures, increasing applied bending and tension loads and extreme operating conditions. Cameron offers four collet connectors:

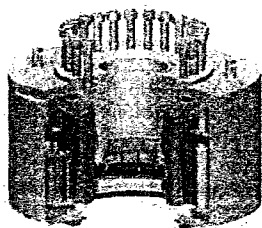
- Model 70 Collet Connector
- High Capacity (HC) Collet Connector
- Deepwater High Capacity (DWHC) Collet Connector
- HCH4 Collet Connector

The Model 70 is offered in sizes and pressure ratings for a wide variety of applications. The HC is similar to the Model 70 but is designed to provide greater preload to withstand higher separating forces. The DWHC is a high strength drilling and completion collet connector engineered for the high loads encountered in ultra deepwater applications. The HCH4 connector locks onto an H4 wellhead.

All Cameron connectors offer high strength and stiffness with a direct load path through the connector and metal-to-metal sealing AX gaskets on the collet end ensure seal integrity. Positively driven-open collet segments during unlock ensure that no overpull is required to disconnect. A secondary unlock function is also included in each design.

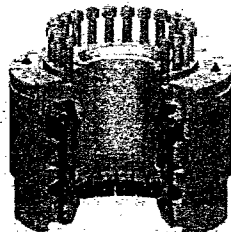
Availability and Performance	Collet Connector Model			
	Model 70	HC	DWHC	HCH4
Available Bore Sizes	13-5/8" to 21-1/4"	13-5/8" to 21-1/4"	18-3/4"	18-3/4"
Available Working Pressures	2000 - 15,000 psi	5000 - 15,000 psi	15,000 psi	10,000 - 15,000 psi
Bending at 10,000 psi WP, 2,000,000 lb Tension	549,000 ft-lb	2,063,000 ft-lb	10,300,000 ft-lb	2,109,000 ft-lb
Preload	245,000 lb	4,385,000 lb	12,000,000 lb	4,740,000 lb
Maximum Release Angle	30°	30°	7°	4°

Note: Data for the Model 70, HC and HCH4 represents 10,000 psi WP connectors.



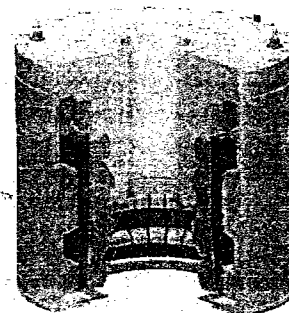
SD21873

Model 70 Collet Connector



SD21879

HC Collet Connector



SD21890

DWHC Collet Connector

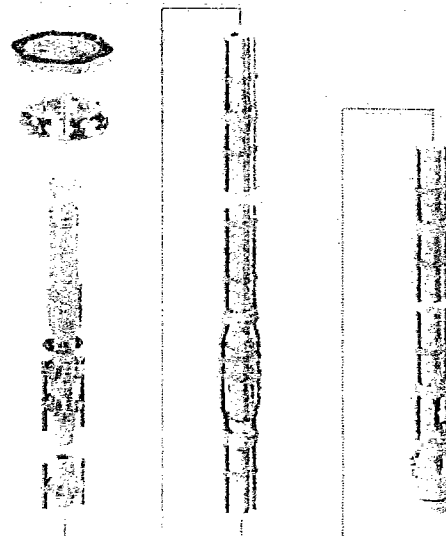
**Riser Systems**

Cameron offers drilling riser systems which accommodate the stringent conditions encountered in deepwater drilling including high tension loads, multiple control lines, and the need to respond to changes in surface weather conditions.

The LoadKing™ family of riser connectors is designed to meet the demands of ultra deepwater drilling in water depths of 7000 feet (2134 meters) or more.

The RF riser connector is designed to meet API 16R requirements with fewer components and higher capacity than other flanged riser connectors.

Description	LoadKing	RF
Rated Tension Load	3,500,000 lb	2,000,000 lb
Auxiliary Lines	Up to Six Positions Fixed 2" - 6-3/4" OD	Up to Six Positions Interchangeable 2" - 5-1/2" OD
Trim	API 16 R	API 16R NACE MR-01-75



SD24362

Riser System





# CAMERON

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