

The Orbit Valve Book 1

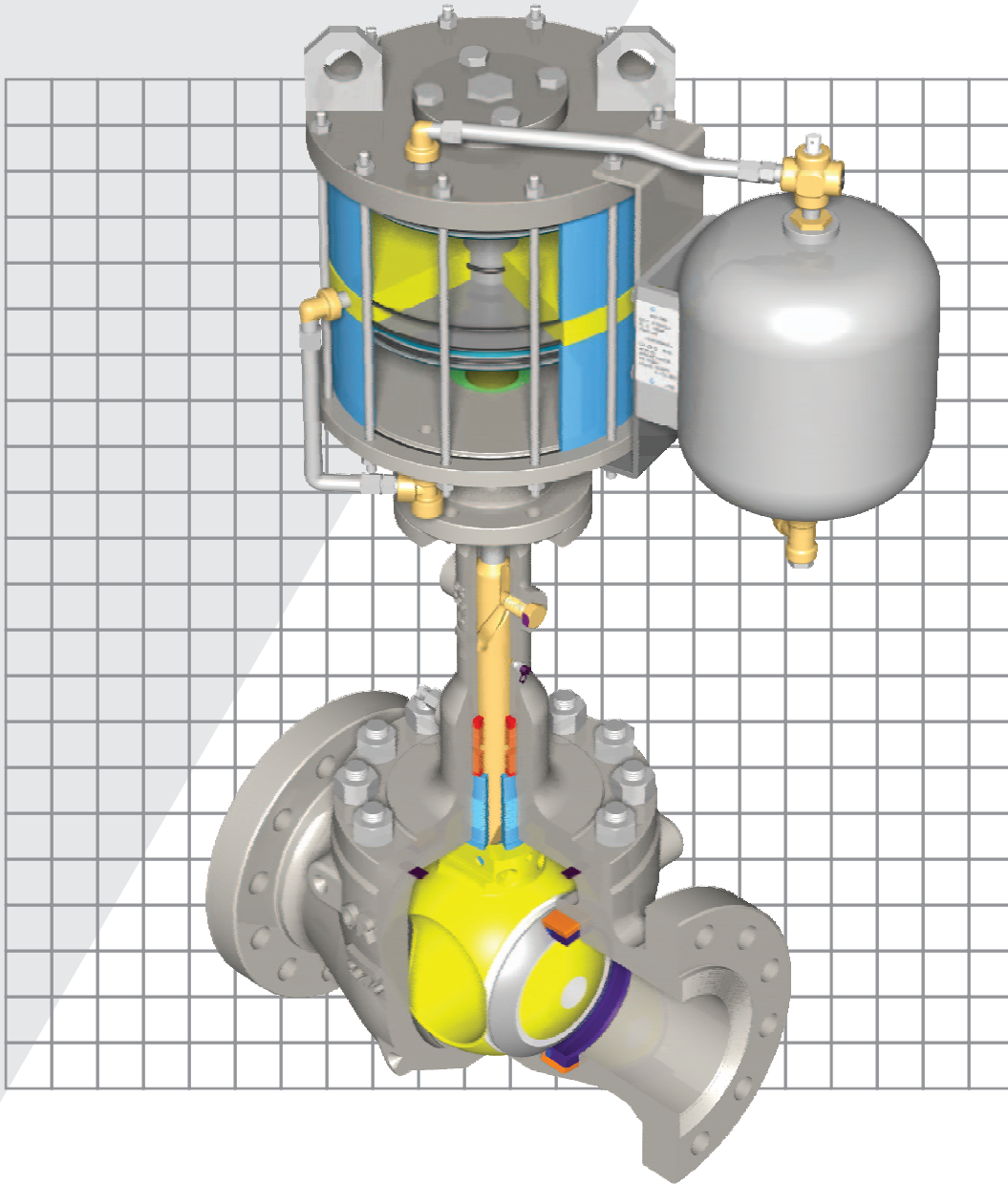




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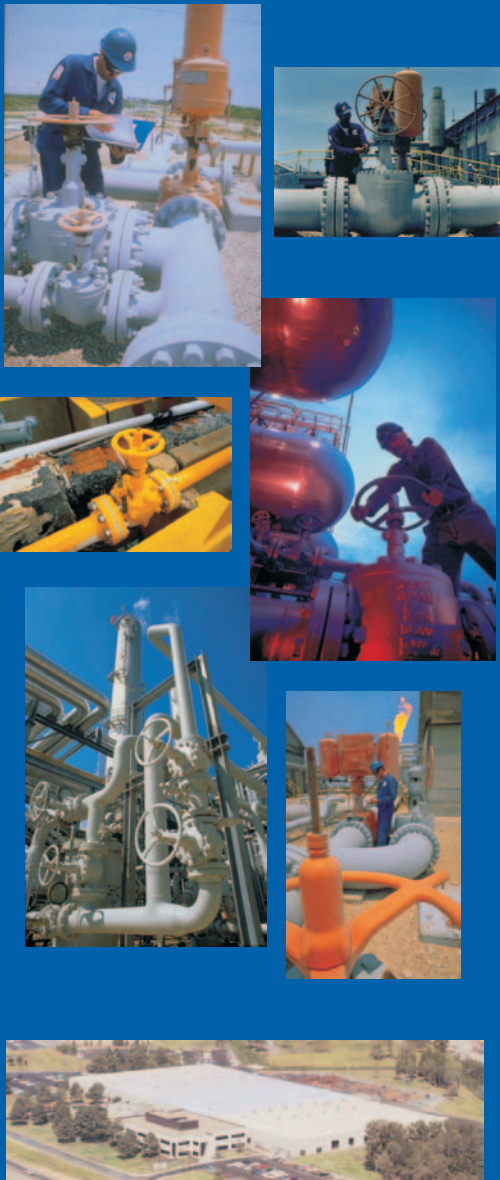
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Orbit Valve Manufacturing, Little Rock, Arkansas, USA



THE ORBIT VALVE

Today, Orbit continues to provide outstanding products and services through the ongoing process of Six Sigma.

The Orbit Valves' block valve technology provides valves with unmatched durability, safety and long term performance.

Cooper Cameron Valve people are skilled professionals who take pride in their work and are committed to the highest standards of excellence.

The Orbit Valve is aligned with the other fine products of Cooper Cameron Valves that lead their field in pipelining, oil and gas production, offshore, onshore, sub-sea, refining and industrial processing.

With its full spectrum of quality designs and field service that spans the globe, Cooper Cameron Valves is the World Leader in Single Source Partnering for valve products.

A Low Maintenance, High Integrity Zero Leakage Valve

ACCREDITATIONS AND APPROVALS



DESIGN AND MANUFACTURING

In Cooper Cameron Valves' Little Rock factory, production process teams are organized into manufacturing cells, each with responsibility for quality and on time delivery.

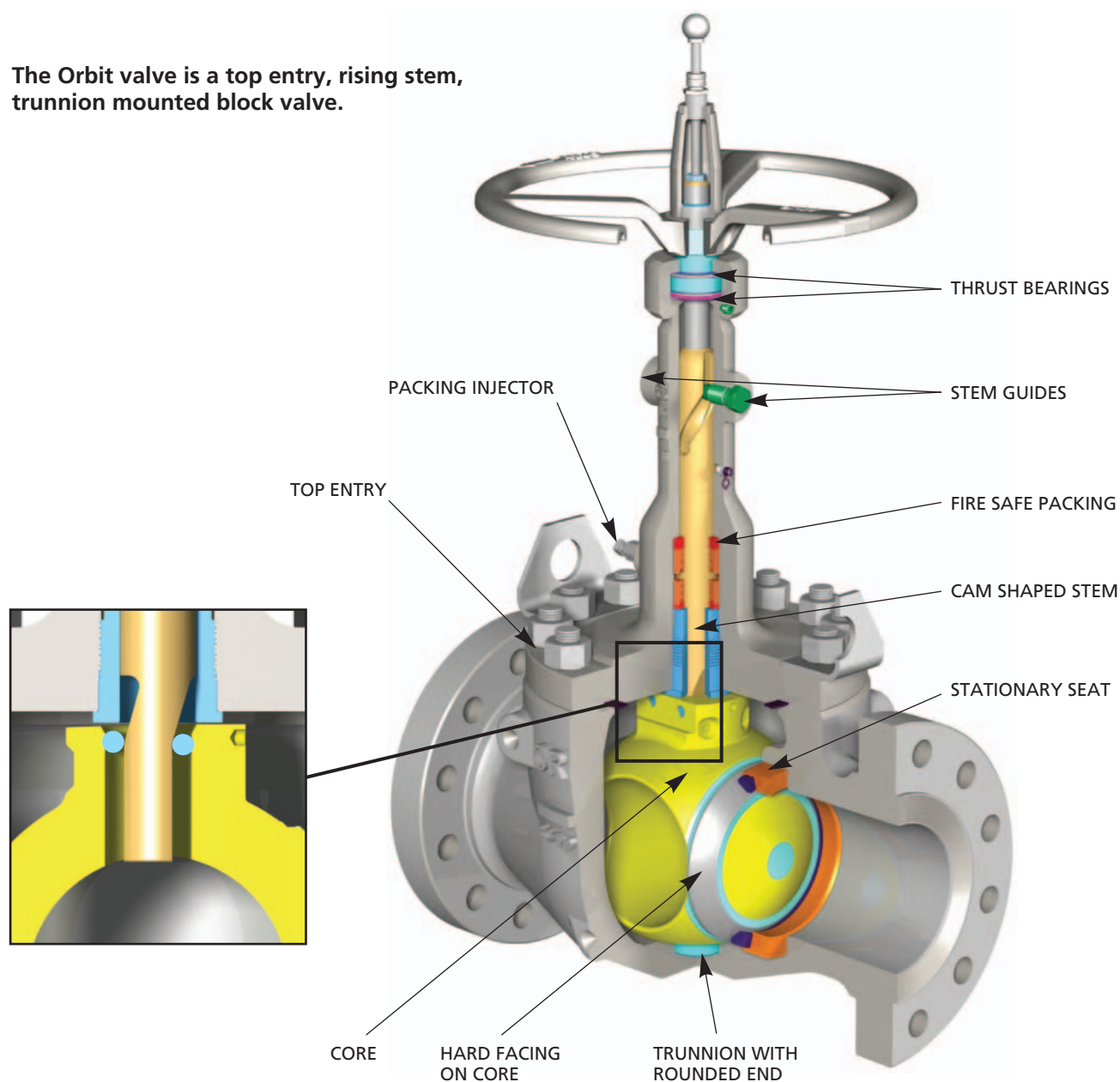
Using Six Sigma lean methods the result is a finished product of unmatched excellence, built with precision and pride.

Orbit valves are ideally suited for:

- Flow lines
- Meter isolation
- Dryer switching
- Block and bypass
- Product segregation
- Emergency shutdown
- Suction and discharge isolation
- Heat transfer fluids/Hot Oil and many other applications.

ORBIT VALVES ARE WITHOUT EQUAL WHEN ZERO LEAKAGE AND FREQUENT OPERATION ARE DEMANDED.

The Orbit valve is a top entry, rising stem, trunnion mounted block valve.



QUALITY ASSURANCE

Cooper Cameron Valves' Little Rock manufacturing facility has quality programs that are ISO 9001 registered.

SPECIFICATIONS AND COMPLIANCES:

- API 6D
- ISO 9001:2000
- PED (Pressure Equipment Directive) 97/23/EC
- ATEX Directive 94/9/EC
- GOST (Russian Certificates)
- GOST R & GOST GGTN



Every Orbit valve is individually pressure tested to meet or exceed industry standards.



Critical components are subjected to Finite Element Analysis to produce safe, economical designs.



As part of the ISO 9001 quality plan, every measuring instrument, gauge, fixture and jig is checked for accuracy on a regular basis by the calibration laboratory.

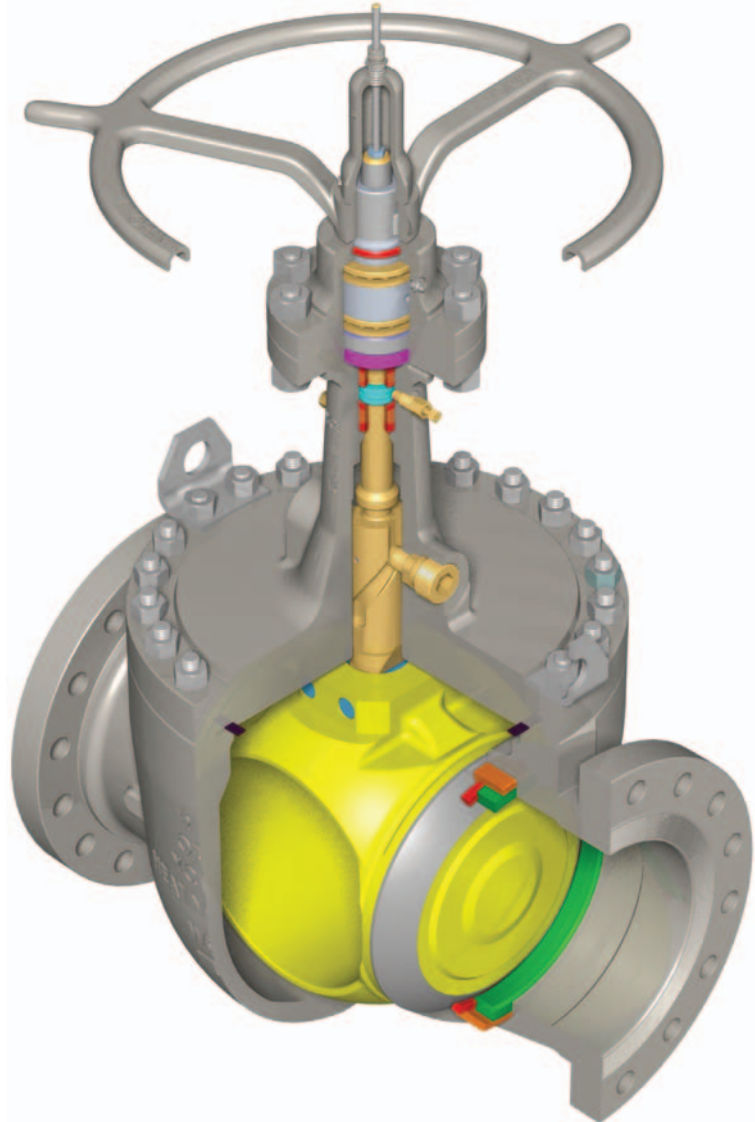
Cooper Cameron Valves Six Sigma lean manufacturing philosophy and the standard 36 month warranty, assures that the design, materials and workmanship of all Orbit products result in years of dependable operation.

Every Orbit valve built is individually pressure tested to meet or exceed industry standards.

Certifications for hydrostatic test results and material properties are provided when requested.



Fire testing and certification to the latest industry standards is performed under the eye of independent inspectors.



OPERATING PRINCIPLE



Orbit valves are ideal where frequent cycling and a positive shut off are required.

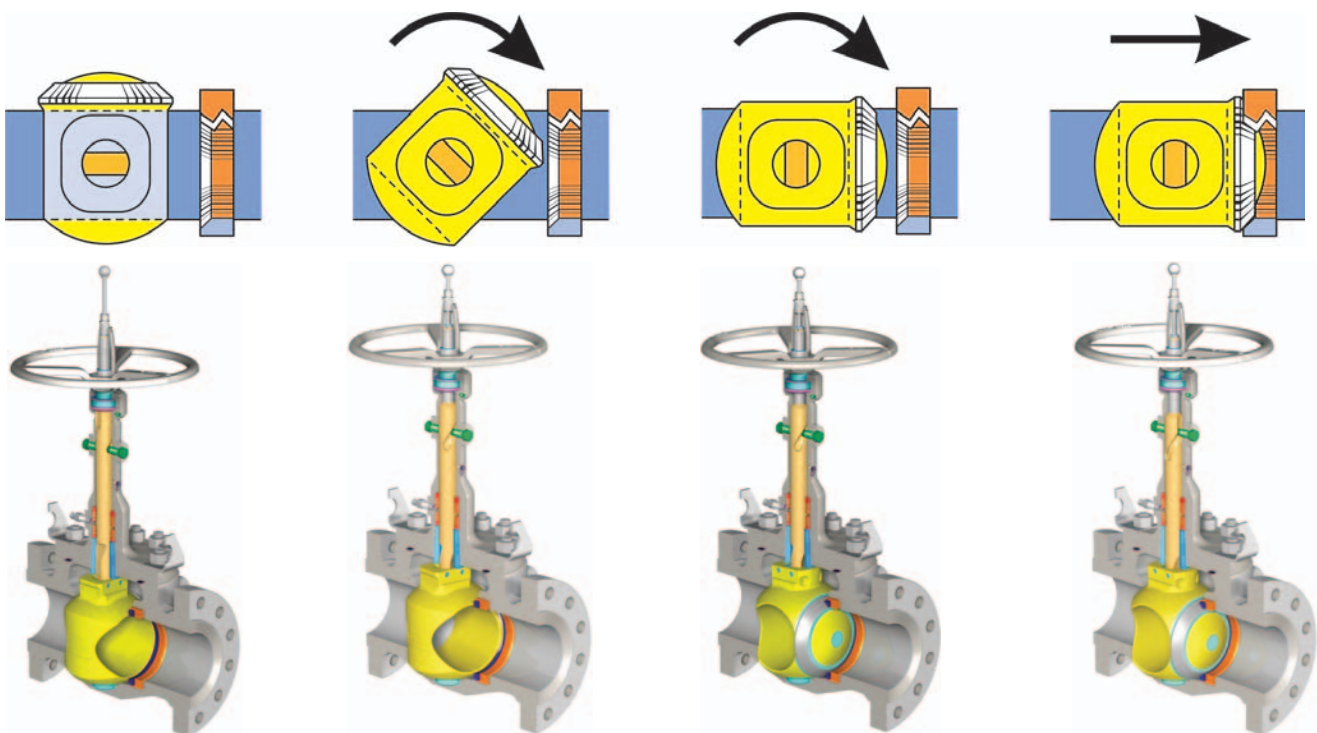
TO CLOSE AN ORBIT VALVE

To close an Orbit valve, as the handwheel is turned, the stem begins to lower.

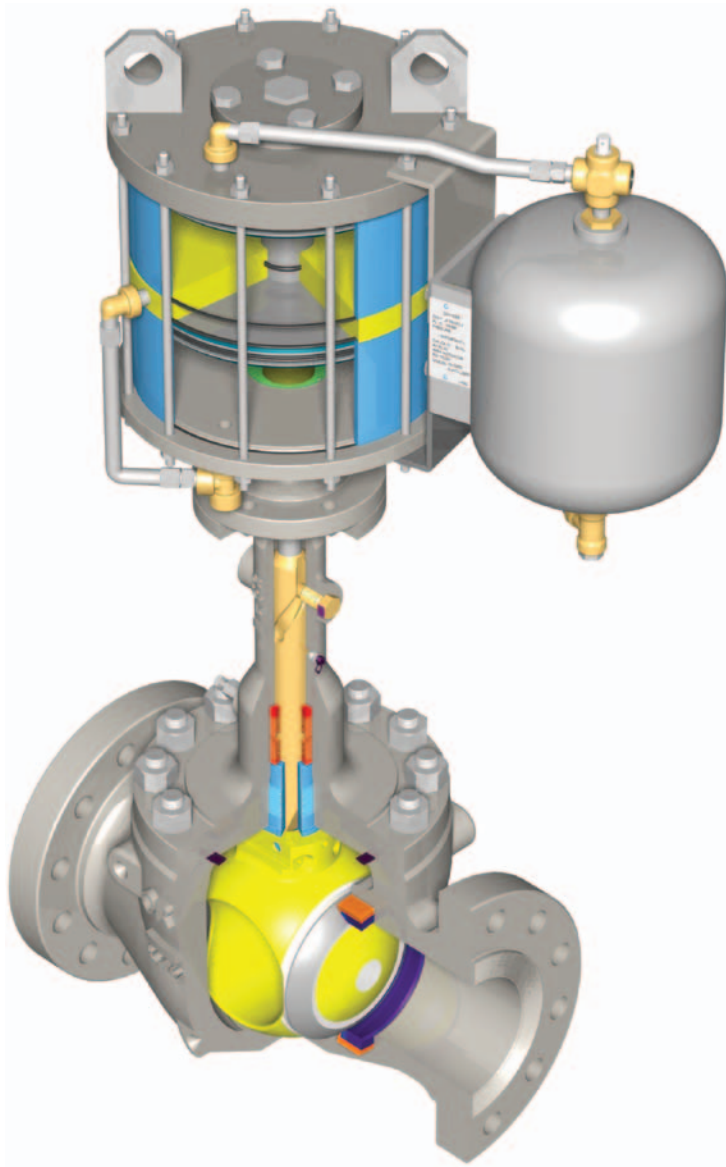
Precision spiral grooves in the stem act against fixed guide pins, causing the stem and core to rotate.

Continued turning of the handwheel rotates the core and stem a full 90° without the core touching the seat.

Final turns of the handwheel mechanically wedge the stem down, pressing the core firmly against the seat.



OPERATING PRINCIPLE



The Orbit valve shown is complete with an Orbit piston actuator that allows remote or automatic operation.



The Orbit valve top entry design provides convenient access for inline inspection and repairs when required. For environmental protection, injectable packing can be replenished while valves are under full line pressure, on enclosed bonnet models.

Every Orbit valve incorporates a proven tilt and turn operation that eliminates seal rubbing, which is the primary cause of valve failure.

When an Orbit valve is closed, the core is mechanically wedged tightly against the seat, assuring positive shut off.

When an Orbit valve begins to open, the core tilts away from the seat and line flow passes uniformly around the core face. This eliminates the localized high velocity flow that typically creates uneven seat wear in ordinary ball, gate and plug valves.

The core then rotates to the full open position.

The absence of seal rubbing during both opening and closing means easy, low torque valve operation and long term reliable performance.

When valve leakage cannot be tolerated, the Orbit operating principle can be relied upon to deliver a positive shut off.

PRODUCT RANGE AND OPTIONS



Orbit builds complete packages that may include valve, actuator and instrumentation. Single source responsibility removes any doubt about where to call for service.

Orbit valves are manufactured in a variety of materials, sizes and trims to meet specific requirements.

Materials:

Carbon Steel, Stainless Steel, Duplex SS, High Nickel Alloys and other special materials are used as service conditions require. Internal and external protective coatings are available for added durability in corrosive situations.

Seats:

Elastomer or metal seal options are selected for the intended service. Because the seals in the valves do not rub and because they are mechanically compressed shut, they survive in high temperature and abrasive situations.

Operation:

Hand or power operation can be selected. Orbit builds double acting, spring close and spring open pneumatic actuators.

User selected electric and hydraulic actuators are available.

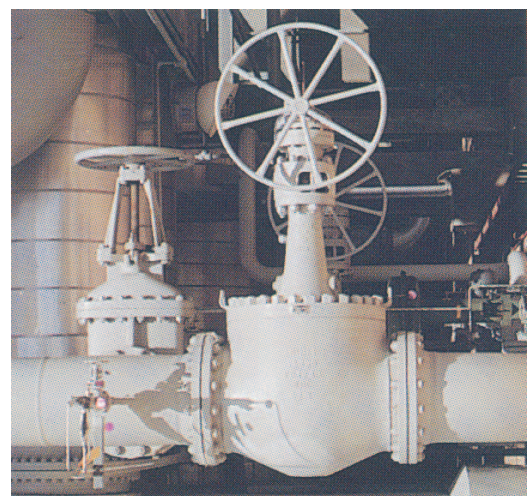
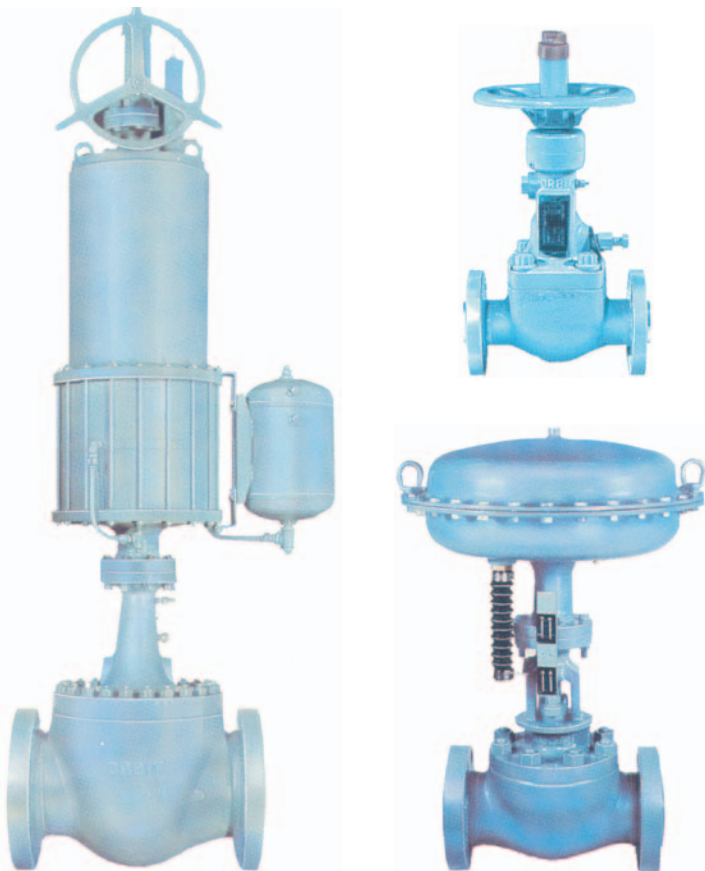
Extensive instrumentation choices are offered.

Customizing:

Handwheel extensions, safety interlocks, position indicator limit switches, thermal jackets, custom painting and special inspection can be provided.

Maintenance and Repairs:

Contact VALVSERV for inspection, maintenance and repairs for all Orbit valve products.



TRADE MARK INFORMATION

References in this catalog to registered trademarks or product designations, which are owned by Cooper Cameron Corporation are as follows:

Cameron®
Demco®
DynaCentric®
DynaSeal®
Foster®
General Valve®
NAVCO®
Nutron™
Orbit®
Pow-R-Seal®
Saf-T-Seal®
TBV™
Techno™
Thornhill Craver™
TruSeal®
Unibolt™
W-K-M®

TERMS AND CONDITIONS

1. CONTRACT ACCEPTANCE:

Any written or oral purchase order received from Buyer by Cooper Cameron Corporation, Cameron Division and Cooper Cameron Valves ("Seller") shall be construed as a written acceptance of Seller's offer to sell and shall be filled in accordance with the terms and conditions of sale set forth herein. SELLER'S ACCEPTANCE OF THIS ORDER IS EXPRESSLY CONDITIONED ON BUYER'S ASSENT TO THE TERMS CONTAINED HEREIN. The terms and conditions of Seller's proposal (if any) and acknowledgement shall prevail over any conflicting or different terms in Buyer's order unless Buyer notifies Seller in writing of its objections thereto within fifteen (15) days from receipt of Seller's acknowledgement. Buyer's standard terms of purchase will not be considered a counteroffer to Seller's terms and conditions of sale. The failure of Seller to object to any provision in conflict herewith whether contained on Buyer's purchase order or otherwise shall not be construed as a waiver of the provisions hereof nor as an acceptance thereof.

2. QUOTATIONS AND PRICES:

All quotations are made for prompt acceptance and any terms quoted therein are subject to change without notice after thirty (30) days from the date quoted unless specifically stated otherwise on the quotation. Any product, service capability or manufacturing capability which may be available at the time a quotation is made is subject to prior sale. Prices quoted are valid for thirty (30) days unless specifically stated otherwise on the quotation and are subject to change without notice. The price in effect at the time of shipment including any escalation formula will apply, unless a valid quotation or written agreement to the contrary exists between Buyer and Seller. All prices shown are in U.S. dollars and are F.O.B. Seller's shipping point. Any documentation pertaining to traceability requirements for raw materials or products or documentation required for any routine or special processes must be identified by the Buyer at the time of quotation (if any) or at the time of order placement.

3. TAXES:

Any tax or other charge imposed by law on the sale or production of goods or the performance of services shall be paid by the Buyer, unless the law specifically provides that such payment must be made by Seller, in which case Buyer shall reimburse Seller for such payment as part of the purchase price. Custom duties, consular fees, insurance charges and other comparable charges will be borne by Buyer.

4. SHIPPING SCHEDULE AND DELIVERY:

Shipment schedules are given as accurately as conditions permit and every effort will be made to make shipments as scheduled. Seller will not be responsible for deviations in meeting shipping schedules nor for any losses or damages to Buyer (or any third party) occasioned by deviations in the shipping schedule, whether due to Acts of God, orders bearing priority ratings established pursuant to law, differences with workmen, local labor shortages, fire, flood, shortages or failure

of raw materials, supplies, fuel, power or transportation, breakdown of equipment or any other causes beyond Seller's reasonable control, whether of similar or dissimilar nature than those enumerated. Seller shall have additional time within which to perform as may be reasonably necessary under the circumstances and shall have the right to apportion its production among its customers in such a manner as it may consider to be equitable.

Seller reserves the right to furnish commercially equivalent or better substitutes for materials or to subcontract the Buyer's order or portions thereof as Seller deems necessary. In no event shall Seller be liable for any consequential damages for labor resulting from failure or delay in shipment. If Buyer requires drawings, procedures, standards or similar material for approval, shipping schedules will be calculated from the time such approvals are received by Seller, since shipping schedules are based on Seller having all required information and a firm order from Buyer which is enterable into production. Any hold points, witness points or the need for inspection by Buyer's representatives must be identified by Buyer at the time of quotation (if any) and/or order placement in order that the effect on the prices or shipping schedules (if any) can be taken into account. Additional inspection or testing required by Buyer which affects normal production sequence will be considered as extending the shipping dates accordingly.

5. MINIMUM BILLING:

Seller reserves the right to impose a minimum billing charge on all sales, change orders or order supplements.

6. TERMS OF PAYMENT:

Terms of payment for all materials and service are 30 days from invoice date, at net price, provided satisfactory credit has been established. All unpaid invoices are subject to the maximum legal interest rate per annum commencing with the due date.

7. CANCELLATIONS AND RETURNS:

Purchase orders once placed by Buyer and accepted by Seller can be canceled only with Seller's written consent and upon terms which will save Seller from loss. No products may be returned for credit or adjustment without written permission from Seller's office authorized to issue such permission.

8. WARRANTIES:

All products of Seller's manufacture are warranted against defects of material and workmanship for a period of twelve (12) months from the date of installation or eighteen (18) months from date of shipment, whichever period first expires, when such products are used in the service and within the pressure range for which they were manufactured. In the case of products or parts not wholly of Seller's manufacture, Seller's liability shall be limited to the extent of its recovery from the manufacturer of such products or parts under its liability to Seller.

Any repair work performed by Seller is warranted for one year from completion of such repairs and applies only to work performed.

If, within these specified periods, Seller receives notice from Buyer of any alleged defect in or nonconformance of any product or repair and if, in the Seller's sole judgment, the product or repair does not conform or is found to be defective in material or workmanship, then, Buyer shall, at Seller's request, return the part or product F.O.B. to Seller's designated plant or service location. Seller has no liability for removal or reinstallation of products or equipment from below the surface of the water. Seller, at its option and expense, shall repair or replace the defective part or product, or repay to Buyer the full price paid by Buyer for such defective part, repair or product. Any repayment of purchase price shall be without interest.

Seller's warranty liability, including defects caused by Seller's negligence, shall be limited to such repair, replacement or refund, and shall not include claims for labor costs, expenses of Buyer resulting from such defects, recovery under general tort law or strict liability or for damages resulting from delays, loss of use, or other direct, indirect, incidental or consequential damages of any kind. Seller will not be responsible for failures of products which have been in any way tampered with or altered by anyone other than an authorized representative of Seller, failures due to lack of compliance with recommended maintenance procedures or products which have been repaired or altered in such a way (in Seller's judgment) as to affect the products adversely. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, STATUTORY OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE WHICH EXCEED THE FOREGOING WARRANTY.

9. NUCLEAR SALES:

The products sold hereunder are not designed or manufactured for use in or with any atomic installation or activity. If the Buyer or ultimate user of these products intends to use them in such an installation or activity, Seller's Nuclear Terms of Sale shall be part of and control this contract. Seller will furnish Buyer with a copy of its Nuclear Terms of Sale upon request.

10. PATENT INFRINGEMENT:

Seller warrants that the use or sale of material or apparatus sold or rented by it to Buyer hereunder will not infringe United States' patents of others covering such material or apparatus by itself, and hereby agrees to indemnify Buyer against judgment for damages for such infringement of any such patent, provided that Buyer shall, upon receipt of any claim for infringement of any such patent or threat of suit for such infringement or upon the filing of any suit for infringement, whichever comes first, promptly notify Seller in writing and afford Seller full opportunity, at its option and its own expense, to answer such claim or threat of suit, assume the control of the defense of said suit, and settle or compromise same in any way Seller sees fit. Other than court-awarded judgments as aforesaid Seller shall not be liable

for any delays, loss of use or for other direct, indirect, incidental or consequential damages incurred by reason of any such judgment. Seller does not warrant that such material or apparatus (a) will not infringe any such patent when not manufactured by or for Seller or when specially made in whole or in part to the Buyer's design specification and such infringement arises from the inclusion of such specified design or (b), if used or sold in combination with other material or apparatus, or if used in the practice of a process, will not, as a result of such combination or use, infringe any patent covering such combination or process; and Seller shall not be liable for and does not indemnify Buyer for damages or losses of any nature whatsoever resulting from actual or alleged patent infringement arising pursuant to (a) or (b) above.

11. SELLER'S RIGHT TO MANUFACTURE:

Seller in its sole discretion shall have the right to manufacture the products provided hereunder as far in advance of its estimated shipping schedule as it deems appropriate. Seller expressly reserves the right to change or modify the design and construction of any product in due course of Seller's manufacturing procedure without incurring any obligation or liability to furnish or install such changes, modifications or improvements to products previously or subsequently sold.

12. ENGINEERING AND SERVICE:

Upon request, Seller will provide engineering and/or technical information regarding its products and their uses and if feasible, will provide personnel to assist Buyer in effecting field installations and/or field service. Any such information, service or assistance so provided, whether with or without charge, shall be advisory only. In that regard, neither Seller nor Buyer assumes any liability for the acts or omissions of the other party except as may be provided in these terms.

13. LABOR STANDARDS:

Seller hereby certifies that these products were produced in accordance with all applicable requirements of Section 6, 7 and 12 of the Fair Labor Standards Act as amended and of regulations and orders of the United States Department of Labor issued under Section 14 thereof.

14. INSPECTION:

Unless otherwise agreed in writing, final inspection and acceptance of products must be made at Seller's plant or other shipping or receiving point designated by Seller and shall be conclusive except as regards latent defects. Buyer's representatives may inspect at the Seller's plant or shipping point during working hours prior to shipment in such manner as will not interfere with operations.

15. DELIVERY AND ACCEPTANCE:

Delivery shall be in accordance with the requirements in the Purchase Contract, provided, in the event Buyer is unable to accept delivery upon completion of the manufacture of the Goods in accordance with such requirements,

Buyer agrees that (i) title and risk of ownership shall pass to Buyer on date of Seller's invoice and (ii) Buyer will make payments within thirty days after date of such invoice. Seller shall retain custodial risk of loss until delivery is made in accordance with such requirements.

16. TRANSPORTATION CHARGES, ALLOWANCES, CLAIMS:

All prices are F.O.B. Seller's plant or other designated shipping point.

No freight is allowed unless stated in Seller's quotation (if any) or in a written contract which may exist between Seller and Buyer at the time of shipment. If Seller's quotation or a written contract states that all or a portion of freight is allowed, all prices are F.O.B. Seller's plant or other designated shipping point, with most economical surface transportation allowed. If the quoted or contractual price includes transportation, Seller reserves the right to designate the common carrier and to ship in the manner it deems most economical. Added costs due to special routing requested by the Buyer are chargeable to the Buyer. Under no circumstances is any freight allowance which is absorbed by Seller to be deducted from the selling price. If the quoted price or contract includes transportation, no deduction will be made in lieu thereof whether Buyer accepts shipment at plant, warehouse, freight station, or otherwise supplies its own transportation. When sales are made from the Seller's warehouse, Seller reserves the right to charge either actual or pro-rated freight from Seller's principle point of manufacture to Seller's warehouse. Buyer assumes risk of loss upon delivery to the carrier, regardless of who pays shipping costs.

Seller endeavors to pack or prepare all shipments so that they will not break, rust or deteriorate in transit, but does not guarantee against such damage. Unless requested in writing by the Buyer, no shipments are insured by Seller against damage or loss in transit. Seller will place insurance as nearly as possible in accordance with Buyer's written instructions but in such case Seller acts only as agent between the insurance company and the Buyer and assumes no liability whatsoever.

Any claims for shipping loss, breakage or damage (obvious or concealed) are Buyer's responsibility and should be made to the carrier. All claims regarding shortages must be made within thirty (30) days from receipt of shipment and must be accompanied by the packing list(s) covering the shipment.

17. CONSULAR INVOICES:

Consular fees for legalizing invoices, stamping bills of lading, or other documents required by the laws of any country or destination are not included in quotations or selling prices. If instructed in writing, Seller will make arrangements for consular documents and declarations as agent of the Buyer, but Seller assumes no liability whatsoever as a result of making such arrangements. Seller assumes no responsibility for any fines or other charges imposed due to errors or incorrect declarations.

18. INDEMNIFICATION AND LIMITATION OF LIABILITY:

A. INDEMNIFICATION:

Seller agrees to indemnify Buyer and hold Buyer harmless against any claims, demands or causes of action for property damage or personal injury (including death) caused by the negligent act or omission of any employee, agent or sub-contractor of Seller and not contributed to by the negligence of Buyer, its employees, its agents or any third party. Seller shall not be responsible for the acts and workmanship of employees, agents, contractors or subcontractors of Buyer or any third party, nor for failure or malfunction of any tools, materials, equipment, products, supplies, facilities or devices not manufactured and supplied by Seller. Buyer agrees to hold Seller harmless from any and all losses, claims, or damages arising from subsurface damage, surface damage caused by subsurface damage, loss of hydrocarbons and from pollution, regardless of whether such damages, losses or claims were caused by the negligence or sole negligence of Seller, it being the intent of the parties that this indemnity shall apply to property of Buyer or to that of any third party.

B. LIMITATION OF LIABILITY:

UNDER NO CIRCUMSTANCES SHALL SELLER BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES, INCLUDING, BUT NOT LIMITED TO LOSS OF ANTICIPATED PROFITS, LOSS OF USE OF EQUIPMENT OR OF ANY INSTALLATION, SYSTEM OR FACILITY INTO WHICH SELLER'S EQUIPMENT MAY BE LOCATED OR AT WHICH SELLER, ITS AGENT OR SUBCONTRACTOR MAY BE PERFORMING WORK. Seller's total responsibility for any claims, damages, losses or liabilities arising out of or related to its performance of this contract or the products or services covered hereunder shall not exceed the purchase price.

19. MODIFICATION, RESCISSION & WAIVER:

The terms herein may not be modified or rescinded nor any of its provisions waived unless such modification, rescission or waiver is in writing and signed by an authorized employee of Seller at its office in Houston, Texas.

Failure of Seller to insist in anyone or more instances upon the performance of any of the terms and conditions of the contract or the failure of Seller to exercise any of its rights hereunder shall not be construed as a waiver or relinquishment of any such term, condition, or right hereunder and shall not affect Seller's right to insist upon strict performance and compliance with regard to any unexecuted portions of this contract or future performance of these terms and conditions.

All orders must be accepted by an authorized employee of Seller. The rights and duties of the parties and construction and effect of all provisions hereof shall be governed by and construed according to the internal laws of the State of Texas. Any disputes which arise under this agreement shall be venued in the District Court of Harris County, Texas or in the Southern District of Texas.



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