



## SOLVING CUSTOMERS TOUGHEST CHALLENGES

Crane ChemPharma & Energy Business Overview









#### **Driven by Crane Values**



R. T. CRANE

Crane shares a proud 165-year history of doing business the right way—treating people fairly, dealing honestly and ethically with customers, suppliers, and shareholders, and working hard to meet or exceed the expectations of customers. They also share a fascinating history of innovation dating from the early years of the Industrial Revolution to the current era of technology driven product development and improvement.

While Crane's businesses, locations and opportunities are very diverse, the ethical standards that have been the hallmark of its way of doing business throughout its history to the present day are rock solid and uniform wherever Crane businesses are operating.

Crane Company was founded in 1855 by Richard Teller Crane who resolved at that time "to conduct my business in the strictest honesty and fairness, to avoid all deception and trickery, to deal fairly with customers and competitors, to be liberal and just toward employees, and to put my whole mind upon the business." - These remain Crane's standards today.

The concept of corporate responsibility—where companies take responsibility not only for profits but also for the impact of their activities on the many different stakeholders with which it interacts—is the foundation on which the company was built and the common thread that ties together all the company does today.





### **Crane Company Introduction**

#### **Crane Segments**



AEROSPACE & ELECTRONICS



PROCESS FLOW TECHNOLOGIES



ENGINEERED MATERIALS

#### **About Crane Company**

Crane Company has delivered innovation and technology-led solutions to its customers since its founding in 1855. Today, Crane is a leading manufacturer of highly engineered components for challenging, mission-critical applications focused on the aerospace, defense, space and process flow industry end markets. The Company is comprised of two strategic growth platforms, Aerospace & Electronics and Process Flow Technologies, as well as the Engineered Materials segment. Crane has approximately 7,000 employees in the Americas, Europe, the Middle East, Asia and Australia. www.craneco.com

#### **Process Flow Technologies**

Crane Process Flow Technologies provides highly engineered products including valves, pumps, controls, and water treatment equipment for fluid handling applications worldwide. Its operating units include CRANE ChemPharma & Energy, CRANE Nuclear, CRANE Building Services, CRANE Pumps & Systems, Barksdale Control Products.

#### **Crane ChemPharma & Energy**

Crane CP&E designs and manufactures a variety of high performance products including: highly engineered check valves, sleeved plug valves, lined valves, process ball valves, high performance butterfly valves, bellows sealed globe valves, aseptic and industrial diaphragm valves, multi/quarter-turn valves, actuation, sight glasses, lined pipe, fittings and hoses, and air operated diaphragm and peristaltic pumps, designed for the most demanding chemical processing, biotechnology, pharmaceutical, oil and gas, refining, power generation, and energy transition applications. For more information visit: www.cranecpe.com





### Why We Win

#### Crane Value

Since 1855 Crane has been the world's leading innovator and pioneer of practical flow control solutions addressing and exceeding our customers' needs to enable them to operate better, faster and safer. Crane's heritage of innovation is built upon our dedication to technical design and manufacturing excellence. Our world-class processes utilize the highest quality inputs, and every day, Crane delivers its highly engineered products, outstanding customer service, and support prior and post sales.

- · 165 years of Crane Values
- Strong brands and innovative products
- Commitment to continuous improvement
- Focus on quality and safety
- · Leading technical expertise
- Global presence with local support
- · Training centers in all regions
- · Personal service attitude





#### Global Markets Served on a Local Level



#### Key Manufacturing & Service Locations

**AMERICAS:** Baton Rouge, LA • Brazil, IN • Charleston, VW Chihuahua, Mex • Cincinnati, OH • Conroe, TX • Cullman, AL Edmonton, AB • Houston, TX • Marion, NC • Mexico City, Mex Saddle Brook, NJ • Spartanburg, SC • The Woodlands, TX (Hq) Jurupa Valley, California

**EUROPE:** Arad, RO • Belfast, UK • Bergschenhoek, NL Cwmbran, UK • Düsseldorf, DE • Pforzheim, DE • Lindau, • DE Székesverhérvár, HU • Muta, SL • Monza, IT • Mulhouse, FR Waalwijk, NL • Wavre, BE



#### Global Markets Served on a Local Level



- HP & LP STEAM SYSTEMS
- HP & LP FEED WATER & CONDENSATE SYSTEMS
- FLUE GAS DESULPHURIZATION
- CIRCULATING WATER
- EXTRACTION STEAM & COLD REHEAT LINES
- MAKE-UP WATER
- · CHEMICAL & WATER TREATMENT
- AMONG OTHERS

- LIQUEFACTION & REGASIFICATION UNIT
- COMPRESSOR STATION PROTECTION
- GAS TERMINALS
- SULPHUR CONVERSION
- GAS SEPARATION UNITS
- PIPELINE REVERSAL PROTECTION
- AMONG OTHERS
- OFFSHORE PLATFORMS AND FPSOS AMONG OTHERS
- LIQUID HYDROGEN TANKS & TRAILERS
- HYDROGEN LIQUEFACTION
- SPACE LAUNCH SYSTEMS
- CRYOGENIC PIPING



- COMPENDIUM WATER (WFI)
- CIP, SIP, FERMENTATION, SEPARATION, FILTRATION, FILL, FINISH
- HIGH-PURITY PROCESS
- BIO-BLOCK PROCESS
- VACCINES
- BLOOD PLASMA
- AMONG OTHERS

**ASIA:** Beijing, PRC • Bekasi, Indonesia • Kanagawa, Japan NINjin, PRC • Pune, India • Satara, India • Shanghai, PRC Singapore • Suzhou, PRC • Vadodara, India

**AUSTRALIA:** Brisbane, Australia • Kewdale, Australia Melbourne, Australia • St. Marys, Australia

MIDDLE EAST: Dammam, Saudi Arabia • Dubai, UAE



## **Product Portfolio**

VALVES		VALVE TYPE BRAND MATERIALS		SIZES	
		LINED	XOMOX®	DUCTILE IRON / PFA CARBON STEEL / STAINLESS STEEL	½" - 12" DN15 - DN300
		METAL SEATED	KROMBACH®	C-STEEL, STAINLESS STEEL WCB, CF8M, SPECIAL ALLOYS	½" - 20" DN15 - DN500
		METAL SEATED	KROMBACH® TUFSEAT® SEVERE SERVICE SERIES	WCB, CF8M, DUPLEX, HASTELLOY®	½" - 16" DN15 - DN400
BALL		METAL SEATED	KROMBACH® TUFSEAT® PERFORMANCE SERIES	WCB, CF8M, DUPLEX, SUPERDUPLEX, HASTELLOY®, MONEL®, INCONEL®	½" - 12" DN15 - DN300
BA		SOFT SEATED	XOMOX® KROMBACH®	WCB, CF8M, OTHER ALLOYS	½" - 12" DN15 - DN300
		SOFT SEATED	CRANE® STOCKHAM® JENKINS®	BRASS	1/4"-4"
		SOFT SEATED	CRANE® STOCKHAM® JENKINS®	BRONZE	14"-3"
		SOFT SEATED	CRANE® STOCKHAM® JENKINS®	CS/SS	1/4"-2"
TRIPLE OFFSET		TRIPLE OFFSET	CRANE® FK-TRIEX	WCB, CF8M, DUPLEX, SUPERDUPLEX, DUPLEX, LCB, WC6, CF3M, INCONEL®, HASTELLOY®, ALLOY 20	6"-36"



PRESSURE	TEMPERATURE	CONNECTIONS	CHEMICAL	BIOPHARM	OIL & GAS	POWER	REFINING
CLASS 150 PN10 - PN16	-20°F TO 400°F -4°C TO 204°C	FLANGED	•	•			
UPTO CLASS 4500	-325°F TO 1200°F -198°C TO 650°C	FLANGED, SE, SW, AND BW	•		•	•	•
CAST CLASS 150-600 / PN 25-100 FORGED CLASS 150-4500 / PN25-720	-310°F TO 1100°F -190°C TO 600°C	FLANGED, SE, SW, AND BW	•		•		•
CLASS 150-300 / PN 25-40	-40°F TO 800°F -40°C TO 425°C	FLANGED	•		•		•
CLASS 150 & 300 PN10 - PN40	-20°F TO 450°F -4°C TO 232°C	FLANGED	•	•	•	•	•
CLASS 150	-20°F TO 400°F -4°C TO 232°C	THREADED, SOLDER END	•				•
CLASS 150	-20°F TO 400°F -29°C TO 205°C	THREADED, SOLDER END	•				•
2000 CWP	-20°F TO 400°F -29°C TO 205°C	THREADED	•				•
CLASS 150-600	-76°FTO 1022°F -60°CTO 550°C	FLANGED	•		•		•



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VALVES		VALVE TYPE	BRAND	MATERIALS	SIZES
		BELLOWS SEALED GLOBE	WTA®	CARBON STEEL, STAINLESS STEEL, LCB, SPECIAL	½"-24" DN 15 - DN 600
BSGV	<b>* T</b>	CHLORINE	WTA®	LCB, LCC, WCB, OTHER MATERIALS ON REQUEST	1" - 6" DN25 - DN150
BS	3000 D	CHANGE-OVER	WTA®	CARBON STEEL, STAINLESS STEEL, LCB, SPECIAL	½"-24" DN 15 - DN 600
		HF ALKYLATION	WTA®	WCB, MONEL M35-1, OTHER MATERIALS ON REQUEST	1/2" - 12"
		LINED BUTTERFLY	XOMOX®	DUCTILE IRON / PFA	2" - 24" DN50 - DN600
		DOUBLE OFFSET	KROMBACH®	DIN 1.0038 A283(C)	28"- 136" DN700 - DN3400
		HIGH PERFORMANCE BUTTERFLY	FLOWSEAL®	WCB, CF8M, ALUMINUM-BRONZE, AND DUPLEX STAINLESS STEELS	2" - 48" DN50- DN1200
RFLY	CANNE	HIGH PERFORMANCE BUTTERFLY	XOM0X®	WCB, CF8M, M35-1 (MONEL), CZ100 (NICKEL), CW6M (HASTELLOY C-276), OTHER ALLOYS	3" - 108" DN80 - DN 2700
BUTTERFLY		RESILIENT SEATED	CENTERLINE®	BODY: CAST IRON, DUCTILE IRON, AND WCB DISC: DUCTILE IRON, CF8M, AND ALUMINUM-BRONZE	2"- 48" DN50 - DN1200
	#	TRIPLE OFFSET	KROMBACH®	DIN 1.0425 ASME A515 (60)	DN700 - DN2400 28"- 96"
		TRIPLE OFFSET	CRANE®	WCB AND CF8M	3" - 48" DN80 - DN1200
		TRIPLE OFSET METAL SEATED	FLOWSEAL®	WCB AND CF8M 1.0619 AND 1.4541	3" - 24" DN80 - DN600



PRESSURE	TEMPERATURE	CONNECTIONS	CHEMICAL	BIOPHARM	OIL & GAS	POWER	REFINING
CLASS 150-900 PN 10-160	-328°FTO 986°F -196°CTO 530°C	FLANGED, BUTT WELDED	•		•	•	•
CLASS 150 & 300 PN40 (OTHER EG. PN63 ON REQUEST)	-40°F TO 400°F -40°C TO 204°C	FLANGED, ONLY T-TYPE BODY	•				
CLASS 150-2500 PN 10-400	-328°FT0 797°F -196°CT0 450°C	FLANGED	•		•	•	•
CLASS 150, 300, 600	20°F TO 500°F -29°C TO 260°C	FLANGED	•		•		•
CLASS 150 PN10 - PN16	-20°F TO 392°F -4°C TO 200°C	WAFER AND LUG	•	•			
2.5 BAR - 25 BAR 36PSI -350PSI	-20°C TO 200°C, -4°F TO 390°F	FLANGED AND BW	•			•	
CLASS 150, 300 & 600	-100°F TO 900°F -73°C TO 482°C	WAFER AND LUG			•	•	•
CLASS 150, 300 & 600 PN6 - PN100	-425°FTO 1200°F -254°CTO 649°C	WAFER AND LUG	•		•	•	•
CLASS 150 PN10 - PN16	-20°F TO 400°F -4°C TO 204°C	WAFER AND LUG			•	•	•
2.5 BAR - 25 BAR 36PSI -350PSI	-60°C TO 450°C -76°F TO 840°F	FLANGED AND BW	•			•	
CLASS 150, 300, 600 PN10 - PN100	-76°F TO 1022°F -60°C TO 550°C,	LUG, DOUBLE FLANGED SHORT, DOUBLE FLANGED LONG:	•		•	•	•
CLASS 150, 300 & 600 PN10 - PN100	-325°FT0 1000°F -196°CT0 550°C	LUG AND FLANGED			•	•	•



## **Product Portfolio**

VALVES		VALVE TYPE	BRAND	MATERIALS	SIZES
		LINED CHECK	XOM0X®	DUCTILE IRON/PFA	½" - 12" DN15 - DN300
		NOZZLE CHECK	NOZ-CHEK®	WIDE RANGE OF MATERIALS OF CONSTRUCTION AVAILABLE	2" - 84" DN50 - DN2100
		DUAL PLATE WAFER CHECK	DUO-CHEK®	WIDE RANGE OF MATERIALS OF CONSTRUCTION AVAILABLE	2" - 88" DN50 - DN2200
		NOZZLE-TYPE WAFER CHECK	COMPAC-NOZ®	WIDE RANGE OF MATERIALS OF CONSTRUCTION  AVAILABLE	12" - 48" DN 300 - DN1200
		WAFER SWING CHECK	UNI-CHEK®	UNI-CHEK® CAST IRON, CARBON STEEL, CF8M STAINLESS STEEL	
CHECK		SWING CHECK	CRANE® STOCKHAM® JENKINS®	BRONZE	1/2" - 3"
	Sh.	SWING CHECK	CRANE® STOCKHAM® JENKINS®	IRON	2"-24"
		SWING CHECK	CRANE®	A105N FORGED STEEL	1/4"-2"
		SWING CHECK	ALOYCO®	316 SS, 316L SS, ALLOY 20	1/2"-24"
		SWING CHECK	KROMBACH®	DIN 1.0425 AND 1.0038 ASME 515 (60 AND A283 (C)	DN400-DN1600 16" - 64"
		STOP CHECK	CRANE®	IRON BODY WITH BRONZE TRIP	2½ - 10″



PRESSURE	TEMPERATURE	CONNECTIONS	CHEMICAL	BIOPHARM	OIL & GAS	POWER	REFINING
CLASS 150 PN10- PN16,	-20°F TO 400°F -4°C TO 204°C	FLANGED	•	•			
CLASS 150 - 4500 API 6A 2000 - 15,000	-321°F TO 932°F -196°C TO 500°C	FLANGED, BUTT-WELD ENDS, HUBS ENDS AND SPECIALS	•		•	•	•
CLASS 125 - 2500 API 6A 2000 - 10,000	-321°F TO 932°F -196°C TO 550°C	WAFER, LUG, DOUBLE FLANGED AND EXTENDED BODY STYLES	•		•	•	•
CLASS 150 - 1500 API 6A 2000 - 15,000	-58°F TO 410°F -50°C TO 210°C	WAFER AND FLANGED			•	•	•
CLASS 125, 150 & 300	-321°FTO 446°F -196°CTO 230°C	WAFER	•		•	•	•
CLASS 125-300	-20°F TO 400°F -29°C TO 205°C	THREADED, SOLDER END	•				•
CLASS 125-300	-20°F TO 450°F -29°C TO 232°C	THREADED, FLANGED	•				•
CLASS 800 & 1500	-20°F TO 800°F -29°C TO 427°C	THREADED, SOLDER END	•	•	•	•	•
CLASS 150-600	-20°F TO 1000°F -29°C TO 538°C	THREADED, SOCKED WELD, FLANGED	•				•
2.5 BAR - 25 BAR 36PSI -350PSI	-20°FTO 400°F -4°CTO 204°C	FLANGED, BUTT-WELD ENDS	•		•	•	•
CLASS 150 PN10 - PN16	-20°F TO 4000°F -4°C TO 204°C	FLANGED	•	•	•	•	•



## **Product Portfolio**

VALVES		VALVE TYPE	BRAND	MATERIALS	SIZES
	ST.	BOLTED BONNET	CRANE®/STOCKHAM®/ JENKINS®	BRONZE	1/2" - 3"
		BOLTED BONNET	CRANE®/STOCKHAM®/ JENKINS®	IRON BODY WITH BRONZETRIP	2"-24"
CK		BOLTED BONNET	CRANE®	A105N FORGED STEEL	1/4"-2"
GATE, GLOBE, CHECK	000	BOLTED BONNET	ALOYCO®	316 SS, 316L SS, ALOY 20	1/2"-24"
		CAST STEEL	CRANE®/ PACIFIC®	WCB, LCB, LCC, WC6, WC9, C5, C12, CF3M, CF8, CF8M	2"-24" DN 50 - DN600
GA		BOLTED BONNET	KROMBACH®	CARBON STEEL AND STAINLESS STEEL	DN15-DN600
		HF ACID	PACIFIC®	WCB AND M35-1 (MONEL)	1½" - 24" REDUCED & FULL PORT
		PRESSURE SEAL	PACIFIC®	CARBON STEELS, ALLOY STEELS, STAINLESS STEELS, DUPLEX STAINLESS STEELS, SPECIALS (CAST AND FORGED)	2"TO 36" DN50 - DN900
		LINED PLUG	XOMOX®	DUCTILE IRON / PFA CARBON STEEL / STAINLESS STEEL	1½" - 12" DN50 - DN250
	THE REAL PROPERTY AND ADDRESS OF THE PERTY ADDRESS OF THE PERTY ADDRESS OF THE PERTY AND ADDRESS OF THE PERTY ADDR	HF ACID	XOMOX®	WCB AND M35-1 (MONEL)	1½" - 24" REDUCED & FULL PORT
PLUG		SLEEVED PLUG	XOMOX® L-TORQ™	WCB, CF8M, M35-1 (MONEL), CZ100 (NICKEL), CW6M (HASTELLOY C-276), OTHER ALLOYS	1/2" – 24"  DN50 – DN600  2 WAY & MULTIPORT  PARTIAL & FULLY JACKETED  REDUCED & FULL PORT  LOW EMMISSIONS PACKING
		METAL SEATED	XOM0X®	CARBON STEEL, STAINLESS STEEL SEALS: GRAPHITE TRIM	1" - 8" DN25 - DN200 REDUCED PORT



PRESSURE	TEMPERATURE	CONNECTIONS	CHEMICAL	BIOPHARM	OIL & GAS	POWER	REFINING
CLASS 125-300	-20°F TO 40°F -29°C TO 5°C	THREADED, SOLDER END	•				•
CLASS 125-300	-20°F TO 450°F -29°C TO 232°C	THREADED, FLANGED	•				•
CLASS 800 & 1500	-20°F TO 800°F -29°C TO 427°C	THREADED, SOLDER END	•	•	•	•	•
CLASS 150-600	-20°F TO 1000°F -29°C TO 538°C	THREADED, SOCKED WELD, FLANGED	•				•
CLASS 150, 300 & 600	-20°F TO 800°F -29°C TO 427°C	FLANGED AND BUTT WELD	•		•	•	•
PN10-160	-193°C TO 400°C	FLANGED AND BUTT WELD	•		•	•	•
CLASS 150, 300 & 600 PN10 - PN100	-20°F TO 400°F -29°C TO 204°C	SCREWED END FLANGED END	•		•		•
CLASS 600, 900, 1500, 2500 & 4500	-20°FT0 1500°F -29°CT0 816°C	FLANGED AND BUTT WELD	•		•	•	•
CLASS 150 & 300 PN10 - PN40	-20°F TO 400°F -29°C TO 204°C	FLANGED	•	•			
CLASS 150 & 300 PN10 - PN40	-20°F TO 400°F -29°C TO 204°C	FLANGED	•	•			
CLASS 150, 300, & 600 PN10 - PN100	-20°F TO 600°F -29°C TO 316°C	FLANGED, SCREWED END SOCKET WELD, BUTT WELD	•		•	•	•
CLASS 150 & 300 PN10 - PN40	-20°F TO 650°F -29°C TO 343°C	FLANGED END FULL JACKET	•				



## **Product Portfolio**

VALVES		VALVE TYPE	BRAND	MATERIALS	SIZES
		STANDARD 2 WAY FORGED & INVESTMENT CAST	SAUNDERS®	DIN 1.4435, 316L	¼"-6" DN8 - DN150
		ZERO DEADLEG TEE AND POINT OF USE MACHINED BLOCK	SAUNDERS®	DIN 1.4435, 316L	¼"-6" DN8 - DN150
HC4		TANDEM/ACCESS VALVES MACHINED BLOCK OR FABRICATION	SAUNDERS®	DIN 1.4435, 316L	¼"-6" DN8 - DN150
ASEPTIC - HC4		MACHINED BLOCK MULTIPORT DIVERTER VALVES	SAUNDERS®	DIN 1.4435, 316L	¼"-6" DN8 - DN150
<b>∀</b>	Saunders is line series and series are series as a series are	MACHINED BLOCK TANK BOTTOM VALVES	SAUNDERS®	DIN 1.4435, 316L	1/4"-6" DN8 - DN150
		BIO BLOCK MACHINED CUSTOMISED SOLUTIONS	SAUNDERS®	DIN 1.4435, 316L	¼"-6" DN8 - DN150
		HYGENIC BALL VALVES	SAUNDERS®	ASTM A182 F316L, ASTM A351 CF3M	½″TO 4″
		UNLINED	SAUNDERS®	CAST IRON, DUCTILE IRON, CAST STEEL. STAINLESS STEEL, GUN METAL	1/4" - 20" DN8 - DN500
- IDV	The same of the sa	RUBBER LINED	SAUNDERS®	CAST IRON, DUCTILE IRON, CAST STEEL; LININGS: SOFT , HARD , BUTYL & POLYCHLOROPRENE RUBBERS	34"- 20" DN20 - DN500
INDUSTRIAL	A STATE OF THE STA	PLASTIC LINED	SAUNDERS®	DUCTILE IRON, STAINLESS STEEL; LININGS: PFA, ETFE, PVDF, PP	½" - 10" DN15 - DN250
IND	O CO	GLASS LINED	SAUNDERS®	CAST IRON GLASS LINED	½" - 8" DN15 - DN200
		FIRE HYDRANT	SAUNDERS®	DUCTILE IRON, GUN METAL	1½" & 2½" DN40 & DN65

<sup>\*</sup> Please contact factory for specifications on our comprehensive line of Saunders diaphragms and sensors



PRESSURE	TEMPERATURE	CONNECTIONS	CHEMICAL	BIOPHARM	OIL & GAS	POWER	REFINING
0-16BAR 232PSI	-20°C TO 175°C 68°F TO 347°F	DIN 11866 PART A, B, & C		•			
0-16BAR 232PSI	-20°C TO 175°C 68°F TO 347°F	DIN 11866 PART A, B, & C		•			
0-16BAR 232PSI	-20°C TO 175°C 68°F TO 347°F	DIN 11866 PART A, B, & C		•			
0-16BAR 232PSI	-20°C TO 175°C 68°F TO 347°F	DIN 11866 PART A, B, & C		•			
0-16BAR 232PSI	-20°C TO 175°C 68°F TO 347°F	DIN 11866 PART A, B, & C		•			
0-16BAR 232PSI	-20°C TO 175°C 68°F TO 347°F	DIN 11866 PART A, B, & C		•			
CLASS 300	30°C TO +200°C	ETO AND TRI-CLAMP		•			
CLASS 125-150 PN10-16	-22°FTO 347°F -30°CTO 175°C	FLANGED - SCREWED	•			•	•
CLASS 125-150 PN10-16	-22°FTO 230°F -30°CTO 110°C	FLANGED	•			•	•
CLASS 125-150 PN10-16	14°F TO 347°F -10°C TO 175°C	FLANGED	•				•
CLASS 125-150 PN10-16	14°FTO 347°F -10°CTO 175°C	FLANGED	•				•
CLASS 150 PN15	14°F TO 302°F -10°C TO 150°C	FLANGED - SCREWED			•		•



## **Product Portfolio**

VALVES		VALVE TYPE	BRAND	MATERIALS	SIZES
	*	VACUUM JACKETED T-BSGV AND Y-BSGV	CRANE CRYOGENICS	STAINLESS STEEL	1/2"-8"
U N		VACUUM JACKETED LIFT CHECK	CRANE CRYOGENICS	STAINLESS STEEL	1/2"-4"
CRYOGENIC		DUAL PLATE CHECK VALVE	DUO-CHEK	STAINLESS STEEL	1/2"-24"
CR		API-603 BOLTED BONNET	ALOCYO	STAINLESS STEEL	1/2"-24"
		CHANGE OVER VALVE	WTA	STAINLESS STEEL	1/2"-16"



PRESSURE	TEMPERATURE	CONNECTIONS	HYDROGEN	HELIUM	AIR SEPARATION	AEROSPACE
300 PSIG MAWP	-269′C TO +90′C	SOCKET WELD BUTT-WELD	•	•		•
300 PSIG MAWP	-269'T0 +90'C	SOCKET WELD BUTT-WELD	•	•		•
CLASS 150-600	-196′CTO +90′C	WAFER, LUG, FLANGED	•		•	
CLASS 150-600	-196′CTO +90′C	SOCKET, THREADED, FLANGED			•	
CLASS 150-2500	-196′C TO +90′C	FLANGED	•		•	



## **Product Portfolio**

PIPE		ТҮРЕ	BRAND	SIZES
		PTFE-LINED PIPE AND FITTINGS	RESISTOFLEX® PSI®	1" - 24" DN 25 - DN 600
		PTFE ATL - LINED PIPE AND FITTINGS	RESISTOFLEX®	1" - 12" DN25 - DN300
		PTFE-LINED PIPE AND FITTINGS	RESISTOFLEX®	1"-4"
		PFA-LINED PIPE AND FITTINGS	RESISTOFLEX® PSI®	1"-6"
		PVDF-LINED PIPE AND FITTINGS	RESISTOFLEX® PSI®	1"- 10"
LINED PIPE		PVDF-LINED PIPE AND FITTINGS	RESISTOFLEX®	1"-4"
LINE		PP-LINED PIPE AND FITTINGS	RESISTOFLEX® PSI®	1"-12"
		PP-LINED PIPE AND FITTINGS	RESISTOFLEX®	1"-4"
		PTFE-LINED HOSES	RESISTOFLEX®	1"-8"
	6	PTFE EXPANSION JOINTS ARMORED PTFE LINED EXPANSION JOINTS	RESISTOFLEX®	1" - 24" DN25 - DN600
		LINED PIPING SYSTEMS	BAUM®	1/2" - 20 " DN15 - DN500



PRESSURE	TEMPERATURE	CONNECTIONS	CHEMICAL	BIOPHARM	OIL & GAS	POWER	REFINING
CLASS 150-300* DIN PN10/25	-20°F TO 450°F -29°C TO 230°C	FLANGED	•		•	•	•
CLASS 150-300* DIN PN10/25	-20°F TO 450°F -29°C TO 230°C	FLANGED	•		•	•	•
CLASS 150-300*	-20°F TO 450°F -29°C TO 230°C	CONQUEST® (FLANGELESS)	•		•	•	•
CLASS 150-300*	0°F TO 450°F -18°C TO 230°C	FLANGED	•		•	•	•
CLASS 150-300*	-18°F TO 275°F -27°C TO 135°C	FLANGED	•		•	•	•
CLASS 150-300*	-18°F TO 275°F -27°C TO 135°C	CONQUEST® (FLANGELESS)	•		•	•	•
CLASS 150-300*	0°F TO 450°F -18°C TO 230°C	FLANGED	•		•	•	•
CLASS 150-300*	0°F TO 450°F -18°C TO 230°C	CONQUEST® (FLANGELESS)	•		•	•	•
CLASS 150-300**	0°FT0 450°F*** -18°CT0 230°C	THREADED / FLANGED CAM-LOCK / SANITARY	•	•	•	•	•
FLANGE CONNECTION BUT REDUCED PRESSURE CAPABILITY ANSI 150+, ANSI 300+ DIN PN10/16+	-20°F TO 450°F -29°C TO 230°C	FLANGED	•		•	•	
CLASS 150-300*	-20°F TO 450°F -29°C TO 230°C	FLANGED	•		•	•	•

<sup>\* 475</sup> psig (33 barg) max | \*\* Depending on end connection | \*\*\* Depending on hose carcass material | \* Depending on diameter



## **Product Portfolio**

PIPE		ТҮРЕ	BRAND	SIZES
		HDPE-ROTOLINED PIPE AND FITTINGS ROTOMAX <sup>TM</sup>	RESISTOFLEX LD	"14"" - 48"" DN350 - DN1200*"
TTINGS	TINGS	HDPE-ROTOLINED PIPE AND FITTINGS ROTOMAX™	RESISTOFLEX LD	"14"" - 48"" DN350 - DN1200*"
PE & FI		HDPE-ROTOLINED PIPE AND FITTINGS ROTOMAX™	RESISTOFLEX LD	"14"" - 48"" DN350 - DN1200*"
NED PI	ROTOLINED PIPE & FITTINGS	HDPE-ROTOLINED PIPE AND FITTINGS ROTOMAX™	RESISTOFLEX LD	UP TO 3,000 GAL**
ROTOLI		HDPE-ROTOLINED PIPE AND FITTINGS ROTOMAX™	RESISTOFLEX LD	UP TO 3,000 GAL**
- <b>L</b>		HDPE-ROTOLINED PIPE AND FITTINGS ROTOMAX™	RESISTOFLEX LD	UP TO 3,000 GAL**



## The Right Product for The Right Application

PRESSURE	TEMPERATURE	CONNECTIONS	CHEMICAL	BIOPHARM	OIL & GAS	POWER	REFINING
CLASS 150-300*	-20F TO 180F	FLANGED	•		•	•	•
CLASS 150-300*	0FTO 225F	FLANGED	•		•	•	•
CLASS 150-300*	-20F TO 300F	FLANGED	•		•	•	•
CLASS 150-300*	-20F TO 180F	FLANGED	•		•	•	•
CLASS 150-300*	0F TO 225F	FLANGED	•		•	•	•
CLASS 150-300*	-20F TO 300F	FLANGED	•		•	•	•

<sup>\*</sup>Consult factory for sizes above 48", Minimum flanged nozzle diameter 1.5"

Max. allowable temperature depends on the specific contact chemicals.

<sup>\*\*</sup>Consult factory for specific vessel requirements. Any Internal projections must be minimal or removable.

<sup>\*</sup>The pressure ratings for lined piping with ASME B16.5 Class 300 flanges are lower than the true Class 300 ratings due to the plastic raised face gasket sealing surface on lined pipe and fittings



## **Product Portfolio**

CONTROLS	ТҮРЕ	BRAND	VALVE
	SWITCH BOXES & VALVE MONITORS	WESTLOCK CONTROLS®	ROTARY
	VALVE CONTROL MONITORS	WESTLOCK CONTROLS®	ROTARY
MONITORS	POSITIONERS	WESTLOCK CONTROLS®	LINEAR/ROTARY
CONTROL MONITORS	SANITARY POSITION AND CONTROL MONITORS	WESTLOCK CONTROLS®	LINEAR
	VALVE NETWORK SOLUTIONS	WESTLOCK CONTROLS®	ROTARY
	DIGITAL CONTROL TRANSMITTERS	WESTLOCK CONTROLS®	LINEAR/ROTARY



CLASSIFICATION	MATERIALS	CHEMICAL	BIOPHARM	OIL & GAS	POWER	REFINING
NON HAZARDOUS NON-INCENDIVE EXPLOSIONPROOF INTRINSICALLY SAFE	ENGINEERED RESIN ALUMINIUM STAINLESS STEEL	•	•	•	•	•
NNON HAZARDOUS NON-INCENDIVE EXPLOSIONPROOF INTRINSICALLY SAFE	ENGINEERED RESIN ALUMINIUM STAINLESS STEEL	•	•	•	•	•
NON-INCENDIVE INTRINSICALLY SAFE EXPLOSIONPROOF	ENGINEERED RESIN ALUMINIUM STAINLESS STEEL	•	•	•	•	•
NON HAZARDOUS NON-INCENDIVE EXPLOSIONPROOF	ENGINEERED RESIN ALUMINIUM	•	•	•	•	•
NON HAZARDOUS NON-INCENDIVE INTRINSICALLY SAFE EXPLOSIONPROOF	ENGINEERED RESIN ALUMINIUM STAINLESS STEEL	•	•	•	•	•
NON HAZARDOUS NON-INCENDIVE INTRINSICALLY SAFE EXPLOSIONPROOF	ENGINEERED RESIN ALUMINIUM STAINLESS STEEL	•	•	•	•	•

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## **Product Portfolio**

PUMPS		ТҮРЕ	BRAND	MATERIALS
	AA	METALIC PUMPS SERIES M	DEPA®	ALUMINIUM, CAST IRON, CAST STAINLESS STEEL, HASTELLOY
PUMPS		NON-METALIC PUMPS SERIES P	DEPA®	POLYPROPYLENE, PTFE, PVDF
AIR OPERATED DIAPHRAGM PUMPS		STAINLESS STEEL PUMPS SERIES L	DEPA®	FORGED STAINLESS STEEL 316L, 304
DIAPH		POWDER PUMPS TYPE DP	DEPA®	ALUMINIUM, CAST IRON, STAINLESS STEEL
ERATED		HIGH PRESSURE PUMPS TYPE DB	DEPA®	CAST STAINLESS STEEL
AIR OP		DRUM PUMPS TYPE DF	DEPA®	ALUMINIUM, CAST STAINLESS STEEL
		DUAL ACTION PUMPS TYPE DZ	DEPA®	ALUMINIUM, CAST IRON, CAST STAINLESS STEEL, POLYPROPYLENE
	8	TYPE IP	ELRO®	NATURAL RUBBER, NBR EPDM, CSM
PERISTALTIC		TYPE XP	ELRO®	NATURAL RUBBER, NBR, CSM
PERIST		ТҮРЕ М	ELRO®	NATURAL RUBBER, NBR, CSM
		TYPE GUP/GP	ELRO®	CSM, NBR



SIZES*	CAPACITY	TEMPERATURE**	PRESSURE	SURE CONNECTIONS		BIOPHARM	INDUSTRIAL
1/2", 1", 11/2", 2", 3"	UP TO 44 M³/H	-13° F TO 266°F -25°C TO 130°C	UP TO 8.6 BAR	BSP FEMALE, FLANGE (DIN, ANSI, JIS)	•		•
1/2", 1", 11/2", 2", 3"	UP TO 42 M³/H	-4° FTO 212°F -20°CTO 100°C	UP TO 7 BAR	FLANGE (DIN, ANSI, JIS)	•		•
1", 1½", 2", 3"	UP TO 45 M <sup>3</sup> /H	-13° F TO 266°F -25°C TO 130°C	UP TO 7 BAR	DIN, HYGIENIC	•	•	
1", 1½", 2", 3", 5"	UP TO 140 M³/H	-13° F TO 266°F -25°C TO 130°C	UP TO 7 BAR	BSP FEMALE, FLANGE (DIN, ANSI)	•		
1", 1½", 2"	UP TO 30 M³/H	-13° F TO 266°F -25°C TO 130°C	UPTO 21 BAR	BSP FEMALE, FLANGE (DIN, ANSI)			•
1"	UP TO 8M³/H	-13° F TO 266°F -25°C TO 130°C	UP TO 7 BAR	BSP FEMALE	•		•
1/2", 1", 11/2", 2"	UPTO 34M³/H	-13° F TO 266°F -25°C TO 130°C	UP TO 7 BAR	BSP FEMALE, FLANGE (DIN, ANSI)			•
1", 1¼", 2, 2½", 3"	UP TO 27 M3/H	-22° F TO 176°F -30°C TO 80°C	UPTO 13 BAR	BSP MALE (SS OR PP), FLANGE	•	•	•
1½", 2½", 4"	UP TO 46 M3/H	-4° FTO 176°F -20°CTO 80°C	UPTO 13 BAR	BSP MALE (SS OR PP), FLANGE	•	•	•
2"	UP TO 20 M3/H	-4° F TO 176°F -20°C TO 80°C	UP TO 2 BAR	C-COUPLING TANKTRUCK, CAMLOCK	•	•	•
2"	9/18 M3/H	-4° FTO 176°F -20°C TO 80°C	UPTO 1.5 BAR	DIN, TANK TRUCK, C-COUPLING	•	•	•

<sup>\*</sup>Sizes are according to specific material

<sup>\*\*</sup> Max temperatures for housing or hose material, deviations due to specific elastane material has to be considered



## **Product Portfolio**

		ТҮРЕ	BRAND	SIZE
		BALL	HOKE®	1/8"-3"
		NEEDLE	HOKE®	1/4"-1"
		CHECK	GYROLOK®	1/8"-2"
ATION		RELIEF	HOKE®	1/4"
INSTRUMENTATION		METERING	HOKE®	1/16"-1/4"
INSTR		CYLINDERS	HOKE®	10ML TO 3.5 GAL.(CYL)
	3 1 2 2	FLANGED PRODUCTS (MONOFLANGE, DBB & ADAPTERS)	HOKE®	1/2"-3"
		HAND VALVES, MANIFOLDS & DBB VALVES)	HOKE®	1/4"-1/2"
		TUBE FITTINGS	GYROLOK®	1/16-2" (3-38MM)



# The Right Product for The Right Application

MATERIAL	OPTIONS	CHEMICAL	BIOPHARM	OIL & GAS	POWER	REFINING
316SS, 6MO, MONEL®, DUPLEX 2205 SS, SUPER-DUPLEX 2507 SS, INCONEL®, INCOLOY® 825, HASTELLOY® C, TITANIUM, BRASS	2-WAY, 3-WAY, 4-WAY, 5-WAY, HIGH CYCLE AND REMOTE ACTUATION	•		•		•
316SS, 6MO, MONEL®, DUPLEX 2205 SS, SUPER-DUPLEX 2507 SS, HASTELLOY® C, TITANIUM, BRASS	DYNA-PAK® OR GRAPH-LOCK® HIGH TEMPERATURE PACKING, BROAD SELECTION OF END CONNECTIONS, METAL STEM OR METAL STEM WITH PCTFE STEM TIP	•		•		•
316SS, 6MO, MONEL®, HASTELLOY® C, TITANIUM, BRASS	BALL & POPPETTYPE, VARIOUS END CONNECTIONS, VARIOUS SEAT MATERIALS, MULTIPLE CRACK PRESSURES AND HI-FLOW CAPABILITY	•		•		•
316SS, 6MO, HASTELLOY® C, TITANIUM	BROAD SELECTION OF END CONNECTIONS, MANUAL OVERRIDE HANDLE, VARIOUS SEAL MATERIAL OPTIONS	•		•		•
316SS, BRASS	INTEGRAL GYROLOK CONNECTIONS, SHUT-OFF CAPABILITY	•		•		•
316SS, MONEL®, HASTELLOY® C,	SAFETY RELIEF DEVICES, DIP TUBES, CARRYING HANDLE, CAP & COLLAR	•		•		•
316SS, 6MO, MONEL®, DUPLEX 2205 SS, SUPER-DUPLEX 2507 SS, INCONEL®, INCOLOY® 825, HASTELLOY® C, TITANIUM	AVAILABLE IN MULTIPLE SIZES AND CONFIGURATIONS.	•		•		•
316SS, 6MO, MONEL®, DUPLEX 2205 SS, SUPER-DUPLEX 2507 SS, INCONEL®, INCOLOY® 825, HASTELLOY® C, TITANIUM	MOUNTING BRACKETS, ANTI-TAMPER & LOCKING HANDLES, TUBE ADAPTERS	•		•		•
316SS, 6MO, MONEL®, DUPLEX 2205 SS, SUPER-DUPLEX 2507 SS, INCONEL®, INCOLOY® 825, HASTELLOY® C, TITANIUM, BRASS	BROAD SELECTION OF METALLURGY	•		•		•

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## **Product Portfolio**

	ТҮРЕ	BRAND	SIZE
	PRESSURE REDUCING REGULATORS	GO REGULATOR®	1/8"-3/4"
NOI	CYLINDER PRESSURE REGULATORS	GO REGULATOR®	1/8"-3/8"
INSTRUMENTATION	CHANGE OVER MANIFOLD SYSTEMS	GO REGULATOR®	1/4"
LSNI	HEATED VAPORIZING PRESSURE REGULATORS AND SYSTEMS	GO REGULATOR®	1/8"-1/4"
	BACK PRESSURE REGULATORS	GO REGULATOR®	1/8"-3/4"
SAMPLING	GRAB SAMPLING SYSTEM	DOPAK®	ENGINEERED TO DESIGN
SAMP	GRAB SAMPLING SYSTEM	TEXAS SAMPLING®	ENGINEERED TO DESIGN



# The Right Product for The Right Application

MATERIAL	OPTIONS	CHEMICAL	BIOPHARM	OIL & GAS	POWER	REFINING
316 SS, 316L.  MONEL®,HASTELLOY® C, HASTELLOY® B, BRASS, 6MO,  DUPLEX, SUPER DUPLEX, TITANIUM, INC 625, INC 825	INLET PRESSURES UP TO 10,000 PSIG  CONTROL PRESSURES FROM 1-30 PSIA TO 10,000 PSIG.  CV'S FROM .004 TO 1.2  MAX TEMP. UP TO 500'F (650'F AND 1000'F OPTIONAL)  20 MICRON FILTER AT INLET	•		•		•
316 SS, 316L. MONEL®,HASTELLOY® C, HASTELLOY® B, BRASS, 6MO, DUPLEX, SUPER DUPLEX, TITANIUM, INC 625, INC 825	INLET PRESSURES UP TO 6,000 PSIG CONTROL PRESSURES FROM 10 TO 500 PSIG CV'S FROM .025 TO 0.5 MAX TEMPERATURES UP TO 500'F 2 STAGE REGULATORS	•		•		•
316 SS, 316L.  MONEL®,HASTELLOY® C, HASTELLOY® B, BRASS, 6MO,  DUPLEX, SUPER DUPLEX, TITANIUM, INC 625, INC 825	INLET PRESSURES UP TO 6,000 PSIG CONTROL PRESSURES FROM 10 TO 500 PSIG CV'S FROM .025 TO 0.5 MAX TEMPERATURES UP TO 500'F 2 STAGE REGULATORS	•		•		•
316 SS, 316L. MONEL®,HASTELLOY® C, HASTELLOY® B, BRASS, 6MO, DUPLEX, SUPER DUPLEX, TITANIUM, INC 625, INC 825	INLET PRESSURES UP TO 6,000 PSIG CONTROL PRESSURES FROM 10 TO 1000 PSIG CV'S FROM .025 TO 0.2 MAX TEMPERATURES UP TO 500'F STEAM AND ELECTRICAL HEATED	•		•		•
316 SS, 316L. MONEL®,HASTELLOY® C, HASTELLOY® B, BRASS, 6MO, DUPLEX, SUPER DUPLEX, TITANIUM, INC 625, INC 825	CONTROL PRESSURES FROM 1–30 PSIA TO 10,000 PSIG CV'S FROM .005 TO 3.0 MAX TEMPERATURES UP TO 500'F VAPORIZING VERSION.	•		•		•
316SS, 6MO, MONEL®, DUPLEX 2205 SS, SUPER-DUPLEX 2507 SS, INCONEL®, INCOLOY® 825, HASTELLOY® C	SPRING RETURN HANDLE, LOCKABLE HANDLE, PIPE STAND, SAMPLE COOLER, STEAM STERILIZING CAP, WELDED CONNECTIONS, CONTINUOUS NEEDLE PURGE, FLOW METER, BLOCK VALVE	•		•		•
316SS, 6MO, MONEL®, DUPLEX 2205 SS, SUPER-DUPLEX 2507 SS, INCONEL®, INCOLOY® 825, HASTELLOY® C	SPRING RETURN HANDLE, LOCKABLE HANDLE, PIPE STAND, SAMPLE COOLER, STEAM STERILIZING CAP, WELDED CONNECTIONS, CONTINUOUS NEEDLE PURGE, FLOW METER, BLOCK VALVE	•		•		•

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#### **Automation**

Crane is your integrated, global partner for assembly, testing and calibration of process valves and automation equipment. We offer a broad range of pneumatic, hydraulic, and electric quarter-turn and linear actuation products to meet your valve automation needs.

Our fully-integrated automation products for bare-stem ball, butterfly, plug, lined, cryogenic and high-temperature valves offer full bus connectivity for consistently superior performance in demanding applications. Crane factories and service centers maintain fully-equipped valve automation cells including complete machining and fabrication equipment. Our expert staff and state-of-theart facilities provide comprehensive services that range from valve rebuild to complete redesign with customized assemblies to fit your exact service requirements.

Using a variety of industry standard fieldbus networks, our automated valve packages can connect to central DCS systems and report valve monitoring and control feedback as well as diagnostic information, a function that has become highly desirable in today's process control systems.

	ТҮРЕ	BRAND	SIZES	TORQUE	SPECIFICATIONS	APPLICATIONS
AUTOMATION	PNEUMATIC RACK & PINION	REVO®/ XOMOX®	1/4" - 48"	DOUBLE ACTING: 30IN-LB - 107,531 IN-LBS SPRING RETURN: 8 IN-LBS - 60,639 IN-LBS	90°-180° ROTATION, CW/CCW SPRING RETURN, SPECIAL CONFIGURATIONS & PE COATINGS	FOR QUARTER-TURN BUTTERFLY, BALL, AND PLUG VALVES
	ELECTRIC	CRANE®	1/2" - 24"	347 IN-LBS - 17,359 IN-LBS	AC VOLTAGE: 24,120 OR 240 1 PHASE,  DC VOLTAGE: 12 OR 24, SPECIAL CONFIGURATIONS, ON-OFF MODULATING SERVICE	FOR SMALL TO MEDIUM DIAMETER VALVES IN HIGH-FREQUENCY APPLICATIONS
	SCOTCH YOKE	CRANE®AIR	16" - 48"	SPRING RETURN: 230 IN-LBS - 53,000 FT-LBS, DOUBLE ACTING: 612 IN-LBS - 184,440 FT-LBS	90° ROTATION, SPRING RETURN OR DOUBLE ACTING AND PE COATINGS. <b>TEMPERATURE:</b> -4°F - 176°F	FOR VALVES THAT REQUIRE TORQUE IN EXCESS OF 60,000 IN-LB
	VANE	MATRYX	1/4" - 16"	DOUBLE ACTING 210 IN-LBS - 36,000 IN-LBS	<b>PRESSURE:</b> 40 - 120 PSI,	FOR ANY ROTARY OPERATION
					<b>TEMPERATURE:</b> 0°F - 225°F / -17°C- 107°C,	
					<b>EXTERNAL TRAVEL STOPS:</b> +/- 10 AT EACH END OF STROKE,	
					<b>OPERATING MEDIA:</b> AIR OR ANY NON-CORROSIVE GAS	



### Regional Service & Support

Crane is determined to become faster, better and easier to do business with tomorrow, next month, and next year (and in perpetuity). Its business is an extension of its customer's business as Crane is an enabler and a partner working toward the common goal of managing and optimizing its customers' fluid handling needs. Crane ChemPharma & Energy has a global network of Service & Distribution Centers that offer the following capabilities:

#### **Factory-trained Technicians**

Service Center personnel receive the same rigorous training and evaluation as the factory personnel who manufacture our valves. In addition, they are specially trained in valve automation and repair. Our experienced personnel can provide design and engineering assistance upon request.

#### **On-site Inventories - Fast Response**

We maintain inventories of valves, repair parts, and control accessories on-site to ensure fast response.

#### **Field Repair Service Options**

Our technicians are available for field repair and emergency

service at your site.

#### **Genuine Quality Parts**

All parts used in automation, modification, and repair are factory authorized and fully conform to our manufacturing specifications. Don't accept any third-party parts to maintain your warranty.

#### **Other Services**

Other services offered include product specification, engineering support, system design, MRO, spare parts, training, and testing.



#### **Flow Expertise**

Crane has remained committed to application expertise since its early days. One such example was demonstrated in early 1940s by its introduction of the Crane Technical Handbook TP410 - long since and still today recognized as the leading guide to principles aiding in the design of fluid-handling systems. This guide has recently been updated and the company has developed a companion website **www.TP410.com** that offers real-time online calculation capabilities to solve necessary fluid handling equations. By developing specialized expertise over many years, Crane is better positioned to understand the unique needs of each of its focus industries, and devise more effective application solutions.



### **Project Packages**

#### One Stop Solution

Crane's success is measured and earned by making its customers successful. As an integrated fluid handling solutions provider, Crane is well equipped to deal with complex global projects and all requirements related to those projects. Our extensive product portfolio enables Crane to offer product packages and timely proposals to simplify our customers' supply chain on a local level worldwide, at competitive market pricing.

Whatever the application or project requiring valves for flow control of media that may be demanding, toxic, corrosive, liquid, gas, or slurries, Crane is there to help. From the largest to the simplest, from a single valve to a complex project requiring engineering to get it just right, Crane has the

resources and dedicated staff to provide solutions to meet your daily needs and make your projects and MRO initiatives work.

With its extensive network of worldwide locations the company is able to use its global project management processes to coordinate and link all activities from feasibility through design, procurement, start-up, and final documentation.

Wherever the location of those activities might be, Crane's processes link all teams throughout the world to present its customers with a single face (and interface) – that of Crane.





### **Quality Assurance & Certifications**

At Crane, quality is assured at each stage of our manufacturing process, where safety, reliability and performance cannot be compromised. Our procedures and manufacturing facilities are regularly audited by the industry recognized authorities, resulting in the following certifications, among others:

- ASME 16.34, 16.10, 16.5, 16.25, 16.42
- API 607, 609
- MSS SP 67, 68, 72
- ISO 9001: 2000 (Det Norske Veritas, TÜV)
- ISO 14001:2005 (TÜV Nord)
- Zertifikat DGRL Certificate PED (TÜV Nord)
- Directive 97/56/EG
- API 6D
- QS Certificate of Assessment PED (Det Norske Veritas)
- Technical Standards & Safety Authority
- Laboratorio De Pruebas De Equipos Y Materiales
- Welding Procedure Approval (Det Norske Veritas)
- Russian TR
- Water Regulation Advisory Scheme
- Design Assessement (American

- Bureau of Shipping)
- Konformitätserklärung ATEX -Declaration of Conformity ATEX
- DVGW Baumuster-Prüfzertifikat Gasversorgung (DVGW Zertifizierungsstelle)
- Certificate of Recognition (Bureau Veritas)
- AD 2000-Merkblatt HP 0/TRD 201/ GGVE/ GGVS
- AD 2000-Merkblatt A4
- Shipbuilding approval according to MODE IBV/Mode II
- EN 729-2
- KTA 1401
- TA Luft 2000
- · API 622 emissions testing
- EPA Method 21 emissions testing
- · (F
- 10CFR50 Appendix B
- ASME N45.2

- ASME N-Stamp N-2 899
- ASME NPT Stamp N-2900
- ASME NCA-4000
- ASME NB Registration
- Repair and Testing of Valves and Actuators in Compliance with 10CFR.50 Appendix B and ASME NOA-1
- "NR"- Field Repair or Replacement of Class 1, 2, & 3 Line Valves and Section III Class 1, 2 and 3 Pressure Relief Devices
- "VR"- Field Repair of ASME Section
   I, III and VIII PRV
- UL Listed



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