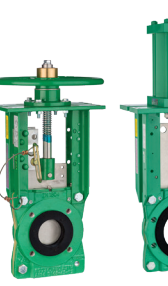
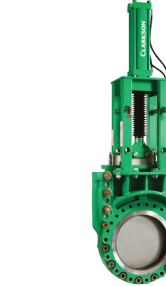


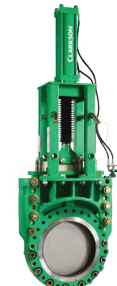
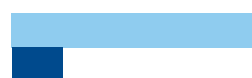
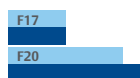
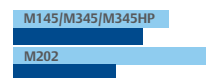
Knife Gate Valve Portfolio Overview - Metric

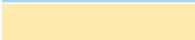
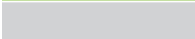
	CONVENTIONAL					SLURRY					SEVERE SERVICE					SPECIALTY				
BRAND MODEL																				
	CLARKSON F952 METAL SEATED	CLARKSON PCS17 PERIMETER SEAL	CLARKSON SU10R POLYURETHANE SEATED	CLARKSON KGD SLEEVED	CLARKSON KGA+ SLEEVED	CLARKSON KGF/KGH SLEEVED	CLARKSON KS1 ASME CLASS 150	CLARKSON KS3 ASME CLASS 300	CLARKSON ZP300 ASME CLASS 300	CLARKSON F955/956 SLIDE GATE	CLARKSON F969 HOPPER VALVE	CLARKSON F215 SLIDE GATE								
RECOMMENDED MAX SOLIDS % PARTICLE SIZE																				
PRESSURE (CWP)	DN 50 - 600:10 bar	DN 50 - 600: 10.3 bar DN 750: 6.90 bar	DN 50 - 600: 10 bar	DN 50 - 400: 10 bar DN 450 - 600: 6 bar Contact factory for higher	DN 80 - 600: 7 bar DN 650 - 1050: 5 bar DN 1200 - 1350: 3.5 bar DN 1500: 2 bar Contact factory for higher	KGF: DN 80 - 900: 20 bar KGH: DN 80 - 900: 51 bar	DN 50 - 750: ASME Class 150	DN 80 - 750: ASME Class 300 (750 psi at ambient)	DN 50 - 1200: ASME Class 300	DN 50 - 400: 16 bar DN 450 - 600: 10 bar DN 700 - 750: 6 bar	DN 100 - 500: 10 bar	DN 50 - 600: 10 bar								
TEMPERATURE	UP TO 230 °C	UP TO 200 °C	LIQUID: 50 °C DRY: 80 °C	UP TO 150 °C	UP TO 200 °C	UP TO 150 °C	UP TO 205 °C	UP TO 205 °C	UP TO 200 °C	UP TO 120 °C	UP TO 230 °C	UP TO 260 °C								
SEAT MATERIAL	316 S/S	EPDM: 150 °C NBR: 120 °C FKM: 205 °C	POLYURETHANE	NAT RUBBER: 82 °C EPDM-HTP: 150 °C NBR: 135 °C	NAT RUBBER: 82 °C EPDM-HTP: 150 °C NBR: 135 °C	NAT RUBBER: 82 °C EPDM-HTP: 150 °C NBR: 135 °C	NAT RUBBER: 80 °C EPDM: 150 °C HNBR: 150 °C FKM: 205 °C	NAT RUBBER: 80 °C EPDM: 150 °C HNBR: 150 °C FKM: 205 °C	URETHANE Contact factory for more	EPDM: 120 °C NAT RUBBER: 120 °C POLY U: 60 °C	S.G IRON: 230 °C 316 S/S: 230 °C	304 S/S 316 S/S 317L S/S								
BODY MATERIAL	316 S/S	CARBON STEEL 316 S/S	S.G. IRON (ASTM A395-60)	DUCTILE IRON	DUCTILE IRON CARBON STEEL	WCB	WCB/LCB/WCC/LCC A439 D2 Ni-Resist Contact factory for more	WCB/LCB/WCC/LCC A439 D2 Ni-Resist Contact factory for more	CF8M, WCB/LCB Contact factory for more	S.G. IRON (RILSAN COATED)	S.G. IRON 316 S/S	304, 316 OR 317L S/S CARBON STEEL								
END CONNECTIONS	AS 2129 - Table C,D,E BS 4504 PN 10,16 JIS B2210 Table 5,10 DIN 2501 Table10,16	AS 2129 - Table E	AS 2129 - Table C,D,E BS 4504 PN 10,16 JIS B2210 Table 5,10 DIN 2501 Table 10,16	Contact factory for more	AS 2129 - Table D,E BS 4504 PN 10,16 DIN 2501 Table 10,16	Contact factory for more	AS 2129 – Table D, E BS 4504 PN 10, 16, 20 SANS T1600	AS 2129 – Table H BS 4504 PN 50	ASME B16.5 Class 300	AS 2129 - Table C,D,E JIS B2210 Table 5,10 DIN 2501 Table 10,16	ASME B16.5 Class 150	AS 2129 - Table C,D,E DIN 2501 Table 10								
FLOW DIRECTION	UNI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	UNI-DIRECTIONAL	UNI-DIRECTIONAL								
SHUTOFF	MSS SP-81	Zero Leakage	Zero Leakage	Zero Leakage	Zero Leakage	Zero Leakage	Zero Leakage	Zero Leakage	ANSI Class V	Zero Leakage	Zero Leakage	MSS SP-81								
SIZE AVAILABILITY DN	50 65 80 100 125	50 65 80 100 125	50 65 80 100 125	50 65 80 100 125	50 65 80 100 125	50 65 80 100 125	50 65 80 100 125	50 65 80 100 125	50 65 80 100 125	50 65 80 100 125	50 65 80 100 125	50 65 80 100 125								
	150 200 250 300 350	150 200 250 300 350	150 200 250 300 350	150 200 250 300 350	150 200 250 300 350	150 200 250 300 350	150 200 250 300 350	150 200 250 300 350	150 200 250 300 350	150 200 250 300 350	150 200 250 300 350	150 200 250 300 350								
	400 450 500 550 600	400 450 500 550 600	400 450 500 550 600	400 450 500 550 600	400 450 500 550 600	400 450 500 550 600	400 450 500 550 600	400 450 500 550 600	400 450 500 550 600	400 450 500 550 600	400 450 500 550 600	400 450 500 550 600								
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	1400 1450 1500 1650 1800	1400 1450 1500 1650 1800	1400 1450 1500 1650 1800	1400 1450 1500 1650 1800	1400 1450 1500 1650 1800	1400 1450 1500 1650 1800	1400 1450 1500 1650 1800	1400 1450 1500 1650 1800	1400 1450 1500 1650 1800	1400 1450 1500 1650 1800	1400 1450 1500 1650 1800	1400 1450 1500 1650 1800	1400 1450 1500 1650 1800							
ASSEMBLY	RENO, BRISBANE	RENO, BRISBANE	RENO, BRISBANE	RENO, BRISBANE, PUNE	RENO, BRISBANE, PUNE	RENO	RENO	RENO	RENO	BRISBANE	BRISBANE	RENO								
DESIGN AUTHORITY	BRISBANE	RENO	BRISBANE	RENO	RENO	RENO	RENO	RENO	RENO	BRISBANE	BRISBANE	RENO								
SUITABLE FOR	F952 metal seated can be sold into higher solids like fly ash where there is no water presence but the valve must include a deflector cone to prevent wear and buildup on the seat or mounted in reverse flow with backing ring. Otherwise it can be applied in clean or dirty water where drip tight isolation is acceptable.	Designed for clean/dirty water, light slurries. Provides bi-directional zero leakage shutoff.	Made for slurries applications if particulate size is fine. As particles get larger sleeves are not able to pass larger media. Requires flushing and packing wears in high cycle applications.	40% is the recommended cut off for a KGD, however if particulate size is fine, then the valve can be installed in higher % solid applications.	Designed with a wide face to face allowing larger % solids to be passed through sleeves and able to handle larger particulate size.	Designed with a wide face to face allowing larger % solids to be passed through sleeves and able to handle larger particulate size at higher pressures (300 - 740 psi), limited cycle life compared to KGA/KGD valves because of the higher pressure rating.	Designed for severe service in Class 150 pressures. Heavy cross-section elastomer seat and standard dual wear rings extend service life. Full round port minimizes disruption to flow in the downstream pipe.	Designed for severe service in Class 300 pressures. Heavy cross-section elastomer seat and standard dual wear rings extend service life. Full round port minimizes disruption to flow in the downstream pipe.	Designed for highly abrasive, high pressure applications. The Zero Pocket prevents build-up of media. No disruption to flow in the downstream pipe. Limits apply to closing against pressure when pipe ID matched in valve port. Minimal disruption to flow in downstream pipe. Gate supports used in flow rings to achieve closing under full rated pressure.	Made for slurries applications if particulate size is fine. As particles get larger sleeves are not able to pass larger media. Requires flushing and packing wears in high cycle applications.	Designed for hopper usage where traditional KGVs jam. Unique seat design, keeps valve clean and free from jamming. Not as suited for closing on a static column as a F215.	Designed to move static columns out of the pipeline and isolate them when it opens, it will carry the product back into the pipeline.								

	Design exists and available to quote (core range)
	Design does not exist but may be considered if market requirement is justified
	Design exists and available to quote. However some pressures are only available in special material and/or limited locations (contact factory)
	No design or tooling exists



Knife Gate Valve Portfolio Overview - Imperial

	CONVENTIONAL					SLURRY					SEVERE SERVICE					SPECIALTY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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PRESSURE (CWP)	NPS 2 - 24: 150 psi	NPS 2 - 24: 150 psi NPS 30: 100 psi	NPS 2 - 24: 150 psi	NPS 2 - 16: 150 psi NPS 18 - 24: 90 psi Contact factory for higher	NPS 3 - 24: 100 psi NPS 26 - 42: 75 psi NPS 48 - 54: 50 psi NPS 60: 30 psi Contact factory for higher	KGF: NPS 3 - 36: 300 psi KGH: NPS 3 - 36: 740 psi	NPS 2 - 30: ASME Class 150	NPS 3 - 30: ASME Class 300 (51 bar at ambient)	NPS 3 - 48: ASME Class 300	NPS 2 - 16: 230 psi NPS 18 - 24: 150 psi NPS 28 - 30: 90 psi	NPS 2 - 24: 150 psi	NPS 2 - 24: 150 psi (STD) NPS 144 (custom)	NPS 2 - 16:150 psi NPS 18 - 24: 90 psi	NPS 2 - 24 M145: 150 psi M202: 150 psi M345: 300 psi M345-HP: 900 psi																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
TEMPERATURE	UP TO 445 °F	UP TO 400 °F	LIQUID: 120 °F DRY: 175 °F	UP TO 300 °F	UP TO 400 °F	UP TO 300 °F	UP TO 400 °F	UP TO 400 °F	UP TO 390 °F	UP TO 250 °F	UP TO 500 °F	UP TO 1200 °F	UP TO 300 °F	UP TO 350 °F																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
SEAT MATERIAL	316 S/S	EPDM: 300 °F NBR: 250 °F FKM: 400 °F	POLYURETHANE	NAT RUBBER: 180 °F EPDM-HTP: 300 °F NBR: 275 °F	NAT RUBBER: 180 °F EPDM-HTP: 300 °F NBR: 275 °F	NAT RUBBER:180 °F EPDM-HTP: 300 °F NBR: 275 °F	NAT RUBBER: 175 °F EPDM: 300 °F HNBR: 300 °F FKM: 400 °F	NAT RUBBER: 175 °F EPDM: 300 °F HNBR: 300 °F FKM: 400 °F	URETHANE Contact factory for more	EPDM: 250 °F NAT RUBBER: 250 °F POLY U: 140 °F	304 S/S 316 S/S 317L S/S	HYCAR 304 S/S 316 S/S 317L S/S	NAT RUBBER	UHMWPE:180 °F PTFE: 350 °F POLYPROPYLENE: 225 °F																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
BODY MATERIAL	316 S/S	CARBON STEEL 316 S/S	S.G. IRON (ASTM A395 - 60)	DUCTILE IRON	DUCTILE IRON CARBON STEEL	WCB	WCB/LCB/WCC/LCC A439 D2 Ni-Resist Contact factory for more	WCB/LCB/WCC/LCC A439 D2 Ni-Resist Contact factory for more	CF8M, WCB/LCB Contact factory for more	S.G. IRON (RILSAN COATED)	304, 316 OR 317L S/S CARBON STEEL	304 S/S 316 S/S 317L S/S	DUCTILE IRON	CARBON STEEL (FAB)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
END CONNECTIONS	ASME B16.5 Class 125,150	ASME B16.5 Class 150	ASME B16.5 Class 125,150	ASME B16.5 Class 150 Contact factory for more	ASME B16.5 Class 150	ASME B16.5 Class 150, 300	ASME B16.5 Class 150	ASME B16.5 Class 300	ASME B16.5 Class 300	ASME B16.5 Class 125,150	ASME B16.5 Class 150	ASME B16.5 Class 150	ASME B16.5 Class 150 Contact factory for more	ASME B16.5 Class 150, 300																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
FLOW DIRECTION	UNI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL	UNI-DIRECTIONAL	UNI/BI-DIRECTIONAL	BI-DIRECTIONAL	BI-DIRECTIONAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
SHUTOFF	MSS SP-81	Zero Leakage	Zero Leakage	Zero Leakage	Zero Leakage	Zero Leakage	Zero Leakage	Zero Leakage	ANSI Class V	Zero Leakage	MSS SP-81	MSS SP-81	Zero Leakage	Up to ANSI Class V																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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SUITABLE FOR	F952 metal seated can be sold into higher solids like fly ash where there is no water presence but the valve must include a deflector cone to prevent wear and buildup on the seat or mounted in reverse flow with backing ring. Otherwise it can be applied in clean or dirty water where drip tight isolation is acceptable.	Designed for clean/dirty water, light slurries. Provides bi directional zero leakage shutoff.	Made for slurries applications if particulate size is fine. As particles get larger sleeves are not able to pass larger media. Requires flushing and packing wears in high cycle applications.	40% is the recommended cut off for a KGD, however if particulate size is fine, then the valve can be installed in higher % solid applications.	Designed with a wide face to face allowing larger % solids to be passed through sleeves and able to handle larger particulate size.	Designed with a wide face to face allowing larger % solids to be passed through sleeves and able to handle larger particulate size at higher pressures (300 - 740 psi), limited cycle life compared to KGA/KGD valves because of the higher pressure rating.	Designed for severe service in Class 150 pressures. Heavy cross-section elastomer seat and standard dual wear rings extend service life. Full round port minimizes disruption to flow in the downstream pipe.	Designed for severe service in Class 300 pressures. Heavy cross-section elastomer seat and standard dual wear rings extend service life. Full round port minimizes disruption to flow in the downstream pipe.	Designed for highly abrasive, high pressure applications. The Zero Pocket prevents build-up of media. No disruption to flow in the downstream pipe. Limits apply to closing against pressure when pipe ID matched in valve port. Minimal disruption to flow in downstream pipe. Gate supports used in flow rings to achieve closing under full rated pressure.	Made for slurries applications if particulate size is fine. As particles get larger sleeves are not able to pass larger media. Requires flushing and packing wears in high cycle applications.	Designed to move static columns out of the pipeline and isolate them when it opens, it will carry the product back into the pipeline.	Standard and custom fabricated knife gates available in any weldable alloy and in many configurations. F17 Resilient seated F20 Metal seated	Wafer style linear line blind offers value, high performance and safety in a compact package. Visual confirmation of the blank from all sides. Standard with closed position dual-function lock-out assembly. Detachable pin removes potential energy from actuator. Lock-out pin prevents unwanted blind movement.	Fabricated valves with three-piece replaceable polymer liner offer reliability and long life in a wide variety of tough applications.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

	Design exists and available to quote (core range)
	Design does not exist but may be considered if market requirement is justified
	Design exists and available to quote. However some pressures are only available in special material and/or limited locations (contact factory)
	No design or tooling exists

