HYDROMINE™
PROJECTS INTERNATIONAL

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COMPANY NO: 135791 C1/GBL (MAURITIUS)
JURISTAX LTD, LEVEL 3, EBENE HOUSE, HOTEL AVENUE,
33 CYBERCITY, EBENE, 72201, REPUBLIC OF MAURITIUS

HYDROMINE™ LFC_1B Electrically Actuated Isolation Valve

Overview:

The HYDROMINE™ LFC_1B Electrically actuated Isolating valves were designed to be energy efficient with a low flow co-efficient (Cv), simple and easy to operate.

Due to the hydraulically balanced design and low torque requirements the valve requires a relatively small electrical actuator with no external gearbox. This feature saves capital and long-term maintenance costs. Any make of electrical actuator can be fitted on the HYDROMINE™ LFC_1B electrically actuated isolation valve. The HYDROMINE™ LFC_1B electrically actuated isolation valves are generally used in pump discharge control, PLC regulated control or any other automated applications.

Low Operating Torque:

The HYDROMINE™ LFC_1B Electrically actuated isolating valve is hydrostatically balanced to enable easy opening and closing at any pressure and differential conditions. It does not require the use of a gearbox or a by-pass valve to balance pressure between the inlet and outlet. The differential pressures do not affect the operating torque which results in a relatively flat torque curve allowing for the fitment of smaller actuators.

Cv Value & Energy Effeciency Reduced Operating Costs):

One of the primary costs after the initial capital outlay is running costs, especially in a pump station. A valve's Cv refers to the number of US gallons of water per minute at 60F that will flow through a valve with a pressure drop of one psi and is indirectly proportional to the amount of energy consumed to drive water through the valve. Cv should therefore be factored into the running cost of the system as it directly affects pumping cost and energy expense incurred to achieve the pumping volume requirements. Valves with better Cv values offer quantifiable energy savings over time.

Operating Conditions:

These valves are designed to operate in systems with relatively clean media like water or other liquids with a low percentage of suspended solids and chlorides. The valve's operating pH range is 2 - 14 pH.

Simplicity:

The HYDROMINE™ LFC_1B valve is designed to minimize wearing parts and in effect only has one moving part called the plug. The plug is a piston that is engineered to be balanced. The balanced plug uses the inline fluid pressure to remove the influence of differential pressure on operating torque. As such, the valve operating torque is the torque required to overcome the sum of the friction forces generated between the valve seals and the sleeve plus the weight of the plug (depending on the installation configuration). This torque requirement is not affected by inline pressure variants and as such makes the balanced valves extremely good for actuation applications as well as for isolation valves where manual operation is required. Removal of gearboxes reduces maintenance requirements and improves troubleshooting times.

Face To Face Dimensions:

Unit	Face to face dimensions (ANSI B16.10)								Height	
	#300		#600		#900		#1500		Centre line to Top & bottom	
	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)	(mm)	(inch)
DN50 / 2"	267	10 1/2	292	11 1/2	368	14 1/2	368	14 1/2		
DN80 / 3"	318	12 1/2	356	14	381	15	470	18 1/2		
DN100 / 4"	356	14	432	17	457	18	546	21 1/2		
DN150 / 6"	445	17 1/2	559	22	610	24	705	27 3/4		
DN200 / 8"	559	22	660	26	737	29	832	32 3/4		
DN250 / 10"	622	24 1/2	787	31	838	33	991	39		
DN300 / 12"	711	28	838	33	965	38	1130	44 1/2		
DN350 / 14"	762	30	889	35	1029	41	1257	49 1/2		
DN400 / 16"	838	33	991	39	1130	44	1384	45 1/2		

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Materials Of Construction:

Part Name	Material Specification
Body - DN50 to DN100	Casting - 431 S/Steel
Body - DN150 to DN400	Casting - BS3100 Gr. A2
Body seat - #1	431 S/Steel
Body seat - #2	F6
Body seat - #3	F12
Flanges	ASTM A105
Plug	431 S/Steel
Plug Seat - #1	UHMWPE
Plug Seat holder - #1	431 or 304 S/Steel
Plug Seat - #2	431 S/Steel
Seal clamp	431 or 304 S/Steel
Sleeve - DN150 to DN400	431 or 304 S/Steel
Top cover	Carbon steel
Spindle	431 S/Steel
Bush holder	Carbon steel
Tripod rods	Carbon steel
Plug Seals	Polyurethane
Shaft Seal	Polyurethane
Wiper Seal	Polyurethane
O-Rings	Nitrile (Buna)

Flow Rates:

Flow (ℓ/sec)		5	10	25	35	50	60	100	150	200	250
Pressure drop (kPa)	DN50	17	81								
	DN80	3	10	27	80						
	DN100		2,2	14,3	53	76	91				
	DN150			2,5	4,5	10	13	38	87		
	DN200					3,4	4,5	14	32	55	
	DN250							7	17	27	42
	DN300							5	11	18	28
Flow US gallon / min		79,25	158,50	396,26	554,76	792,52	951,018	1585,03	2377,545	3170,06	3962,575
Pressure drop (psi)	2"	2,47	11,75								
	3"	0,44	1,45	3,92	11,60						
	4"		0,32	2,07	7,69	11,02	13,20				
	6"			0,36	0,65	1,45	1,89	5,51	12,62		
	8"					0,49	0,65	2,03	4,64	7,98	
	10"							1,02	2,47	3,92	6,09
	12"							0,73	1,60	2,61	4,06

Kv / Cv VALUES		
Unit	Kv	Cv
DN50 / 2"	42	49
DN80 / 3"	140	162
DN100 / 4"	237	274
DN150 / 6"	579	669
DN200 / 8"	969	1120
DN250 / 10"	1382	1599
DN300 / 12"	2688	3118

Low Maintenance Requirement:

All the moving parts of the HYDROMINE™ LFC_1B Electrically actuated manual isolation valves are manufactured from stainless steel which increases reliability and durability. The HYDROMINE™ LFC_1B Electrically actuated manual isolation valve requires minimal maintenance, the majority of which, can be conducted with the valve remaining in situ.

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Design & Manufacturing Standards:

The HYDROMINE™ LFC_1B electrically actuated valve has been designed in accordance with various international standards as set out below:

ASME Boilers and pressure vessels design code

ANSI B16.10 API 598
ANSI B16.34 ANSI B16.37
ANSI B16.5 ANSI N278.1

Available sizes: DN50 / 2" to DN400 / 16"
Pressure rating: up to 25MPa / 3 626 psi
Face to face dimensions: ANSI B16.10

Available end connections: ANSI B16.5, BS4504, BS10, AS/NZS 4331.1 (ISO 7005-1) DIN, All makes of grooved or ring joint couplings, HYDROMINE™ HMP U-Coupling, HYDROMINE™ HMP -TE tapered couplings and other as per clients requirement.