

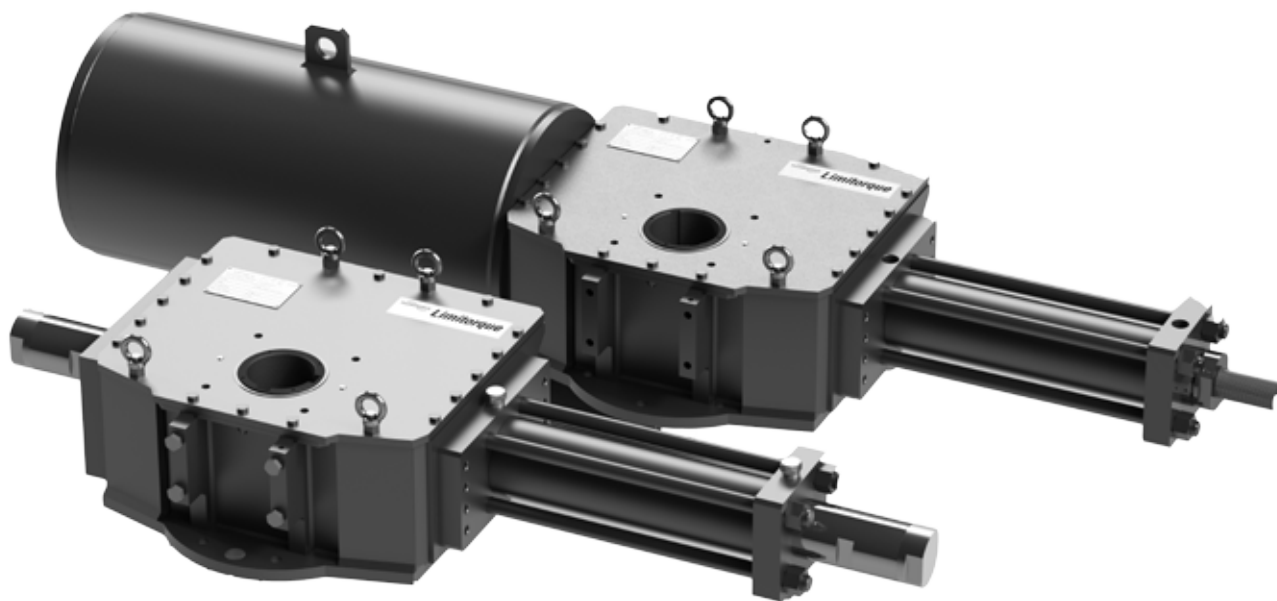


TECHNICAL BULLETIN

Limitorque™

LHS Hydraulic Heavy-Duty Actuator Series

FCD LFENTB0003-00-A4 - (11/14)



Contents

LHS Series Hydraulic Heavy-Duty Actuator Specifications4

Actuator Selection Table6

Actuator Selection Guidance.....6

 1 Scope.....6

 2 General Definitions/Terms Used6

 3 Inputs for Sizing Hydraulic Scotch Yoke Actuators7

 4 Selection8

 5 Single Action and Double Action Configurations10

 6 Performance Data.....11

 7 Dimensions.....11

 8 Disclaimer.....11

Torque Charts – Single Acting Fail Close - Imperial and Metric12

Torque Charts – Single Acting Fail Open - Imperial and Metric28

Torque Charts – Double Acting - Imperial and Metric.....36

Dimensional Data and Weights – Single Acting39

Dimensional Data and Weights – Double Acting.....50

Mounting Interface Dimensions.....52

Service Kits.....53

Tables

Torque Charts — Single Acting Fail Close — Imperial and Metric

LHS-15A – Symmetric 12–13

LHS-15C – Canted 14–15

LHS-20A – Symmetric 16–17

LHS-20C – Canted 18–19

LHS-25A – Symmetric 20–23

LHS-25C – Canted 24–27

Torque Charts — Single Acting — Imperial and Metric

LHS-15A – Symmetric 28–29

LHS-20A – Symmetric 30–31

LHS-25A – Symmetric 32–35

Torque Charts — Double Acting — Imperial and Metric

LHS-15A – Symmetric36

LHS-15C – Canted36

LHS-20A – Symmetric37

LHS-20C – Canted37

LHS-25A – Symmetric38

LHS-25C – Canted38

Torque Data and Weights — Single Acting 39–49

Torque Data and Weights — Double Acting 50–51

Mounting Interface Dimensions.....52

Service Kits..... 53–55

Figures

Figure 1: Actuator OPEN (by hydraulic) Torque Curve:
Single Acting Spring Return – Fail Close (CW)7

Figure 2: Actuator CLOSE (by spring) Torque Curve:
Single Acting Spring Return – Fail Close (CW)8

Figure 3: Single Acting Actuator Configuration:
Fail Close – Fail Clockwise10

Figure 4: Single Acting Actuator Configuration:
Fail Open – Fail Counterclockwise10

Figure 5:
Double Acting Actuator Configuration – Close Position10

Figure 6:
Double Acting Actuator Configuration – Open Position11

Figure 7:
Dimensional Data – Single Acting – Sym/Cant – Fail Close39

Figure 8:
Dimensional Data — Single Acting — Sym/Cant — Fail Open39

Figure 9: Dimensional Data – Double Acting – Sym/Cant50

Figure 10: Single Acting Actuator53

Figure 11: Spring Can Exploded View53

Figure 12: Exploded View of Hydraulic Cylinder54

Figure 13: Exploded View of Housing55

Figure 14: Exploded View of Adaptor Kit.....55

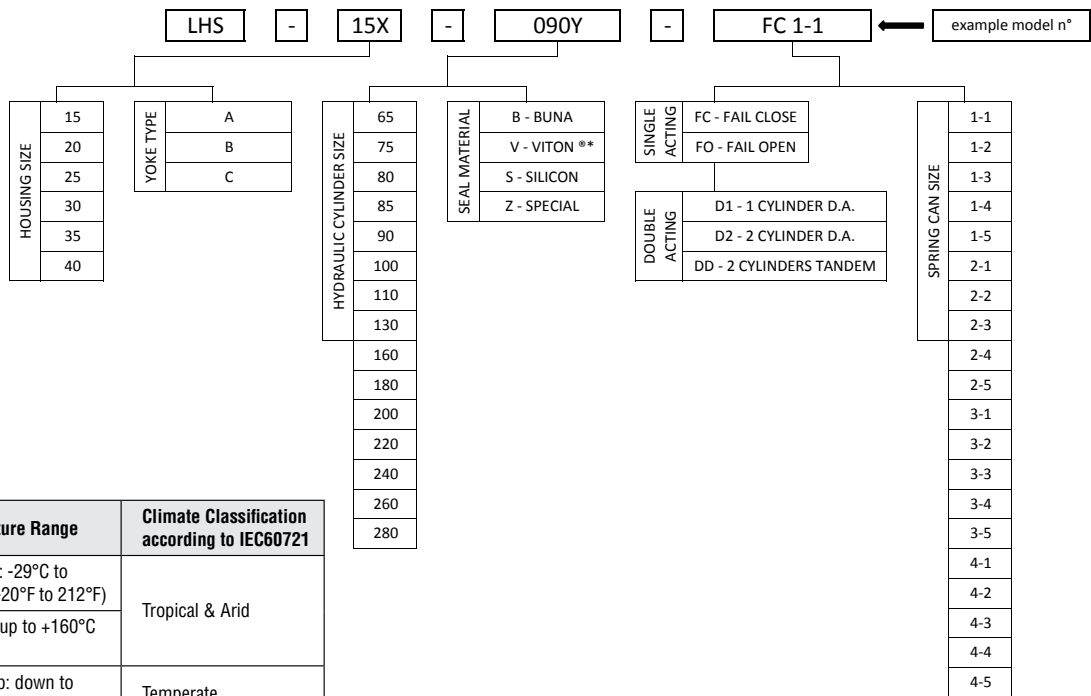
LHS Series Hydraulic Heavy-Duty Actuator Specifications

1. The LHS range of Limitorque Hydraulic Actuators is a robust, modular scotch yoke design, available in both spring return and double acting configurations. It is suitable for actuating ball, butterfly and plug valves or any other quarter-turn application.
2. LHS Hydraulic actuators deliver up to 250 kNm* (184 000 ft-lb) of precisely controlled torque. LHS Limitorque Hydraulic Actuator is enlarging the recent Limitorque Fluid Power Systems family of heavy-duty scotch yoke actuators. The same design philosophy introduced on heavy-duty LPS actuators has been adopted for the LHS range, bringing enhanced performance and reliability.
3. LHS actuators are complemented by a comprehensive range of accessories, such as lockout modules, manual overrides and controls, like hydraulic power units, accumulator racks, self-contained units and other electro-hydraulic solutions. The Limitorque engineering team can also design custom solutions for the largest and most complex customer requirements.
4. Limitorque provides engineering design services for mounting hardware, ensuring that your actuation solution is ready to handle the toughest challenges.
5. The LHS actuator is designed to provide a 25-year design life, depending on service conditions, proper installation, operation and maintenance. In order to achieve this industry-leading design life, in-field maintenance is prescribed to be performed every 6 years of operation. For high-cycle applications, such as control valve operation, more frequent maintenance of replaceable wear surfaces, as outlined in EN 15714, may be required.
6. Suitable for use in on/off, modulating and control valve application in general service, protective service and safety applications such as ESD or HIPPS.
7. Available valve interface in compliance with **ISO 5211** or **MSS SP-101**, upon request as an option.
8. Manufactured and tested in compliance with **EN 15714-4** and **ISO 12490**.
9. Spring components are designed in compliance with **EN 13906-1**.
10. Surface coating and corrosion protection in compliance with **ISO 12944-2** up to and including **C5-M** if requested.
11. Environmental resistance has been certified to meet or exceed the requirements of **IEC 60529** up to and including **IP-67M**.
12. The LHS actuator is suitable for use in Safety Integrated Systems in accordance with **IEC 61508** up to and including **SIL Level 3**.
13. The actuators in the LHS series meet the requirements of **ISO 5599-2**.
14. LHS actuators are available in accordance with **ATEX 94/9/EC Ex II 2GD c IIC T6**, as it relates to mechanical actuators.
15. Actuators are available in compliance with **NACE** specification **MR0175** for sour gas applications
16. Shaft-driven accessories/devices are directly mounted to **VDE VDI 3845 NAMUR** compliant mounting locations.
17. The actuator is manufactured and tested in compliance with an **ISO 9001** Quality Assurance Program.
18. Integral travel stops provide **90°±5°** of stroke adjustment and are designed for the **MAWP** of the actuator up to **207 barg (3000 psig)**. **MAWP 345 barg (5000 psig)** version upon request.
19. The materials of construction and seals of the LHS family of actuators are available for a wide range of service temperatures, including **Tropical, Arid, Temperate, Cold and Polar** regions in accordance with **IEC 60721**.
20. The hydraulic cylinder design features proven and reliable external tie rods suitable for continuous duty service at the maximum rated pressure. Wear and corrosion protection of all components is ensured with suitable treatments and coatings. **ENP** (electro less nickel plating) is the standard for the internal surface of the hydraulic cylinder to ensure complete sealing and superior corrosion resistance. Other coatings for the internal surface of the cylinder are available upon request. The LHS actuator cylinders are capable of being independently tested prior to assembly.
21. Pressure modules are available in compliance with:
 - a. **Pressure Equipment Directive 97/23/EC**
 - b. **ASME BPVC Sec. VIII, Div. 1**
 - c. **EN 13445-3, Part 3 for Unfired Pressure Vessels**
22. All actuators and modules meet acceptance criteria defined by Flowserve test specifications.
23. The actuator is provided with two full-length key slots in the yoke suitable for mounting in alternate orientations (horizontally or vertically – parallel or perpendicular to the piping system).

* contact factory for larger sizes and higher output torques

24. The LHS is available with either a symmetric or canted scotch yoke. Scotch yoke cants are available from 1° to 15° upon request, pending on application.
25. All modules align and mate with close-tolerance machined flanges with no exposed threaded connections.
26. The high-strength, heat-treated alloy steel guide bar is hard chrome plated for wear and corrosion protection.
27. Piston rods are designed to handle lateral loads to effectively minimize deflection. The piston rod is detachable from the torque module without special tools and does not require module disassembly.
28. Pressure seals utilize O-rings, quad-rings or V-rings as appropriate to eliminate environmental ingress. No gaskets are used in pressurized regions of the actuator.
29. The push-to-compress springs are safely enclosed and welded and are positively retained on the torque module under all load conditions. No external tie rods/braces are required to contain the springs. Springs are designed in accordance with **EN 13906-1** and combined and positioned to eliminate potential contact with the container or each other in the case of multiple springs. Springs are shot peened for maximum life and are painted and permanently lubricated coated prior to assembly to eliminate corrosion.
30. The spring and spring guide are self-centered and bearing guided within the spring module. The spring rod is guided in a self-lubricating bearing and connected to the torque module through a large pinned connection designed for safe operation at all load conditions. Installation and removal of the spring module does not require special tools.
31. Maintenance-free, self-lubricating bearings are used to minimize friction of the yoke, yoke-pins and slider blocks in the yoke slots for low friction and to minimize contact stresses in order to provide the longest possible service life.
32. Retention of the yoke pin is by a single plate to permit easy removal of the yoke pin and slider blocks while the actuator is mounted in the valve. No specialized tools are required.

Actuator Selection Table



Seals Material

Code	Material	Temperature Range	Climate Classification according to IEC60721
B	Buna	Std Temp: -29°C to +100°C (-20°F to 212°F)	Tropical & Arid
V	Viton®	Hi Temp: up to +160°C (320°F)	
S	Silicon	Low Temp: down to -40°C (-40°F)	Temperate
Z	Other	Special Applications: Consult Factory	Cold & Polar

Actuator Selection Guidance

1. Scope

This section provides guidance for the selection of the proper LHS actuator to suit specific operational requirements. A basic understanding of scotch yoke actuators and the typical applications in which they are used is provided in order to assist in selection of the most suitable actuator. While the selection procedures and product data contained herein cover many applications, due to the

wide range of applications in which the LHS actuators can be used, this information will not cover every set of operational requirements. The Limitorque applications team is always available to assess specific applications and help with selection of the appropriate LHS actuators. Please contact your local office for assistance.

2. General Definitions/Terms Used

Quarter-turn	A device that rotates by a nominal 90°. LHS series actuators rotate ± 5° more than the nominal 90°.
Position	The degree of rotation describing an actuator's current location, the zero being referred from complete counter-clockwise position of the yoke. The mid-position of the actuator is at 45° and 90° being the end of clockwise stroke.
CW	Clockwise rotation.
CCW	Counter-clockwise rotation.
Stroke	A continuous, 90° rotation of a quarter-turn actuator.
Cycle	Two strokes, one clockwise (CW) rotation and other counter-clockwise (CCW) rotation, constitute one cycle of operation of the actuator.

*Viton is a registered trademarks of E. I. du Pont de Nemours

Safety Factor	A factor multiplied by the valve's basic required torque value to increase the amount of torque required to meet safety requirements in a given application. When the valve's torque requirements are not known with certainty, or due to other application demands, use of a safety factor is required in the selection process in order to meet the worst-case torque requirements.
Hydraulic Break Torque	Output torque when the actuator is in the position to start the pressure stroke. [The torque required to initiate the pressure stroke.]
Hydraulic End Torque	Output torque at the end limit of the pressure stroke. [The torque required to seat the valve at the end of the pressure stroke.]
Run Torque	The output torque recorded while the actuator is in the mid-position of the pressure stroke (45°). For symmetrical yoke double-acting actuators, this is the minimum torque output obtained during the complete stroke.
Spring Break Torque	The output torque when the actuator is in the position to start the spring stroke. [The torque required to initiate the spring stroke.] The spring is fully compressed at this position and generates the maximum spring force.
Spring End Torque	The output torque when the actuator has reached the end limit of spring stroke. [The torque required to seat the valve at the end of the spring stroke.] The spring is fully extended at this position and generates the minimum spring force.
Minimum Torque	The output torque at an intermediate position of the spring stroke, where the output torque of the actuator is at its lowest value.
MOP	Maximum operating pressure of an actuator

3. Inputs for Sizing Hydraulic Scotch Yoke Actuators

Due to the scotch yoke mechanism, LHS actuators have a particular U-shaped output torque curve whether powered by a fixed supply pressure or the spring.

For a proper actuator model selection, the safety factors between actuator output torque and valve torque requirement shall be calculated at least in six points along the valve stroke. In addition a final check is necessary to guarantee that actuator Maximum Output Torque does not exceed valve Maximum Allowable Stem Torque (MAST).

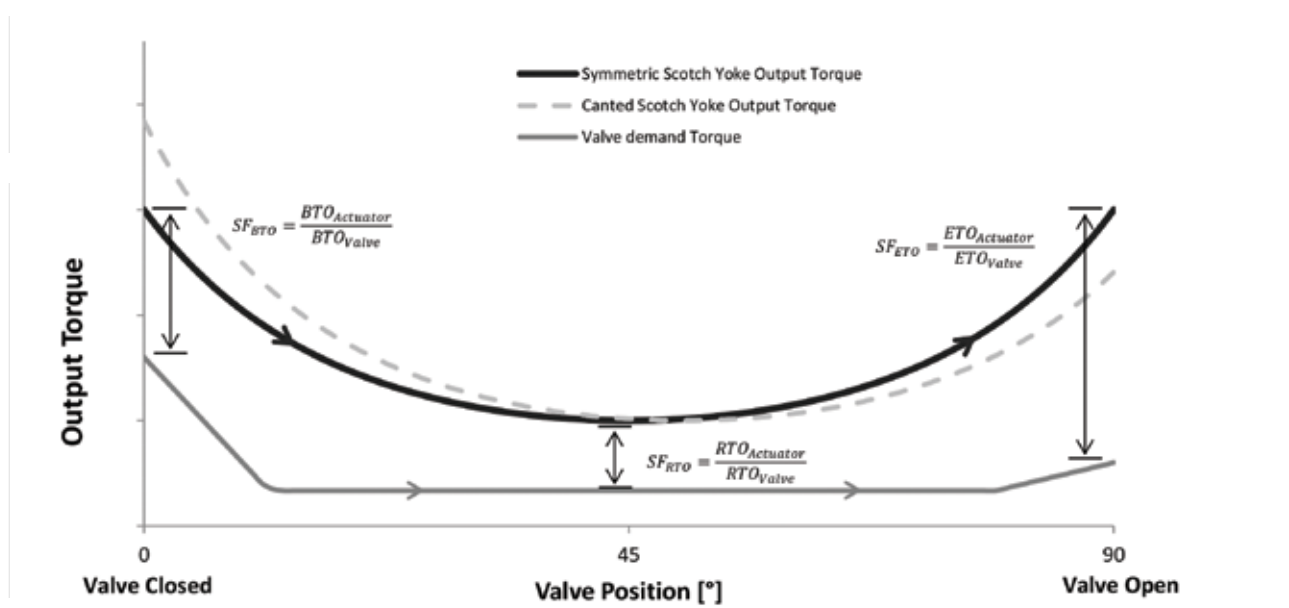


Figure 1: Actuator OPEN (by hydraulic) Torque Curve: Single Acting Spring Return – Fail Close (CW)

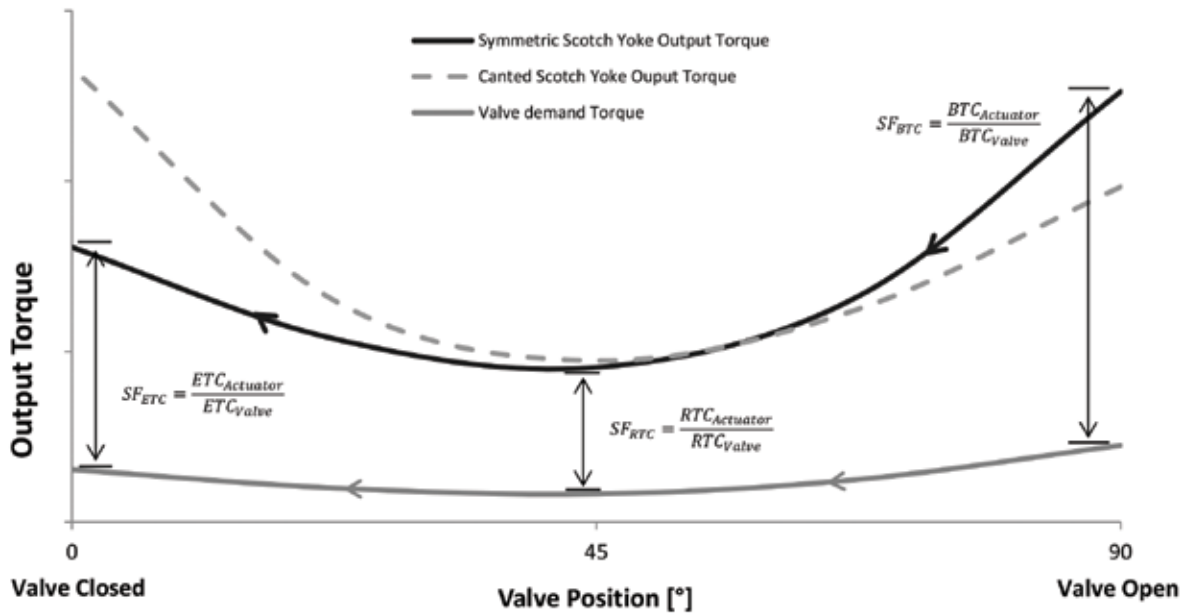


Figure 2: Actuator CLOSE (by spring) Torque Curve: Single Acting Spring Return – Fail Close (CW)

Note: Detailed Output Torque graphs covering the full valve stroke for both Single Acting Fail Open (CCW) and Double Acting actuators are available upon request.

The minimum set of parameters and features necessary for an optimized actuator selection:

- Valve torques, or at least the unseating torque (BTO), and valve MAST
- Type of actuator:
 - Single Acting/Spring Return: Fail Safe Close (CW) or Fail Safe Open (CCW)
 - Double Acting configuration for Fail Last or Fail As Is
- Minimum, Normal and Maximum Hydraulic Supply Pressure to the actuator
- Safety Factors requested by the project or by a specific application
- Working Temperature range
- Open/Close stroking times
- Additional options (manual override, control panel, limit switch box, positioner, ...)

Definitions:

- BTO = Break to Open torque
- BTC = Break to Close torque
- RTO = Running to Open torque
- RTC = Running to Close torque
- ETO = End to Open torque
- ETC = End to Close torque
- MAST = Maximum Allowable Stem Torque
- SF = Safety Factor

4. Selection

The most common application of clockwise rotation to close a valve is considered for these selection examples.

The start to open or hydraulic break torque of the valve (BTO) is considered the maximum required torque by the valve. An actuator shall exceed the valve torque requirement at all positions of the rotation. The start/end and minimum torque output for a double-acting actuator are given in the charts. For spring-return actuators, the spring and the hydraulic strokes' lowest start/minimum/end output torque values are given in the charts.

4.1. Double-Acting Actuator Selection

- 4.1.1. Select the operating pressure column that is equal to or less than the known minimum operating pressure. Look up the start/end and minimum torque values, under the selected pressure column, that exceed the valve's maximum requirements.
- 4.1.2. Locate the actuator model corresponding to the selection.
- 4.1.3. Refer the performance data table to ensure the maximum supply pressure to the actuator does not exceed the MOP of the actuator.
- 4.1.4. If the maximum supply pressure exceeds the MOP, it may be required to use a pressure-regulating device at the inlet to the actuator or an alternate actuator model may be selected that is rated for a higher MOP.

4.2. Spring-Return, Fail-CW Actuator Selection

- 4.2.1. From the spring torque column, locate the spring end torque value that exceeds the valve's maximum seating torque requirement.
- 4.2.2. Moving to the right along that row, locate the column corresponding to the minimum operating pressure available to the actuator and read the pressure stroke start torque.
- 4.2.3. The pressure stroke start torque at the minimum pressure must be higher than the valve's unseating torque requirement.
- 4.2.4. The hydraulic end torque must exceed the valve's torque requirement at this stroke end position to open the valve fully in the CCW direction.

- 4.2.5. Refer the performance data table to ensure the maximum supply pressure to the actuator does not exceed the MOP of the actuator.
- 4.2.6. If the maximum supply pressure exceeds the MOP, it may be required to use a pressure-regulating device at the inlet to the actuator or an alternate actuator model may be selected that is rated for a higher MOP.

4.3. Spring-Return, Fail-CCW Actuator Selection

- 4.3.1. From the spring torque column, locate the spring start torque value that exceeds the valve's maximum unseating torque requirement (Fail-Open application).
- 4.3.2. Moving to the right along that row, locate the column corresponding to the minimum operating pressure available to the actuator and read the pressure stroke end torque.
- 4.3.3. The hydraulic end torque at the minimum available pressure must be higher than the valve's seating torque requirement (torque to fully close the valve).
- 4.3.4. The hydraulic start torque must exceed the valve's torque requirement at this position to close the valve in the CW direction.
- 4.3.5. Refer to the performance data table to ensure the maximum supply pressure to the actuator does not exceed the MOP of the actuator.
- 4.3.6. If the maximum supply pressure exceeds the MOP, it may be required to use a pressure-regulating device at the inlet to the actuator or an alternate actuator model may be selected that is rated for a higher MOP.

5. Single Action and Double Action Configurations

The LHS actuator is designed for work in both single acting (fail open and fail close) and double acting configurations:

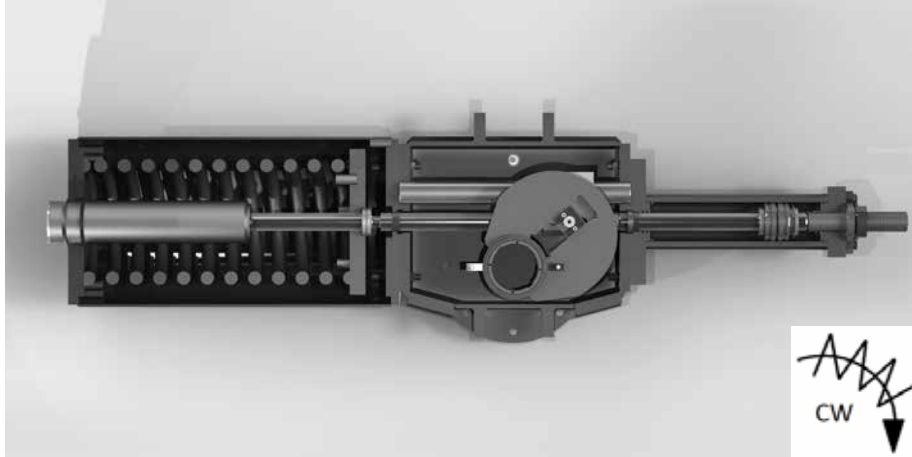


Figure 3: Single Acting Actuator Configuration: Fail Close – Fail Clockwise

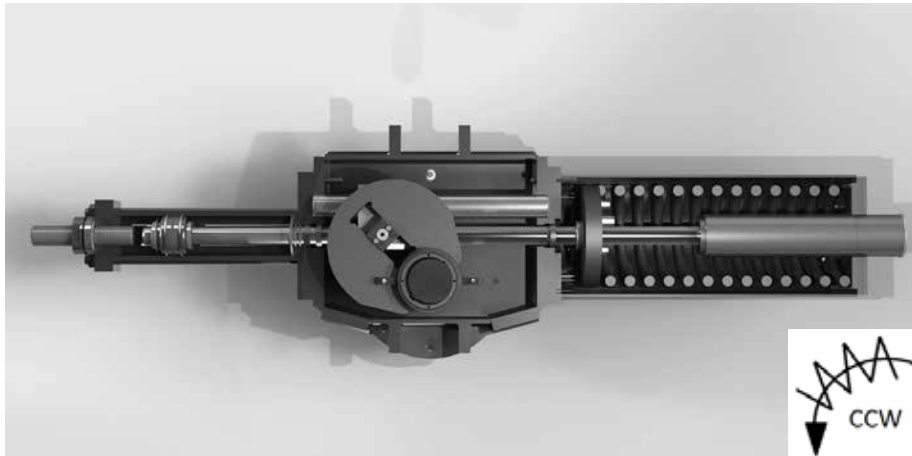


Figure 4: Single Acting Actuator Configuration: Fail Open – Fail Counterclockwise

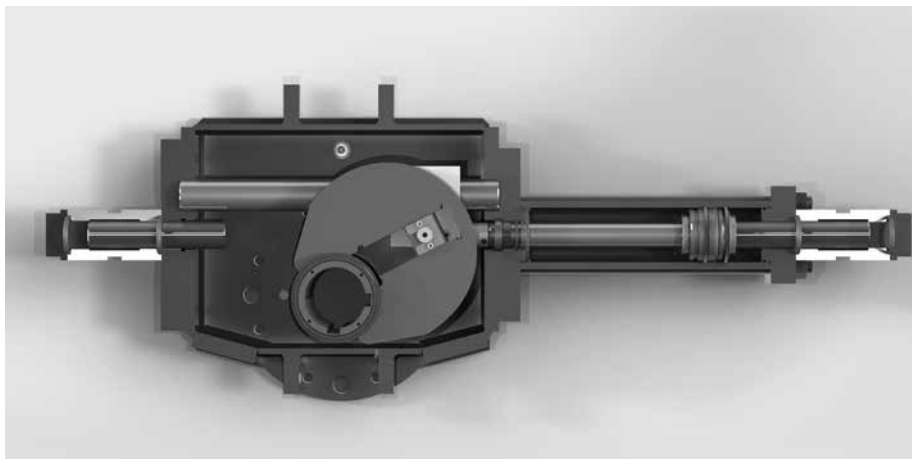


Figure 5: Double Acting Actuator Configuration – Close Position

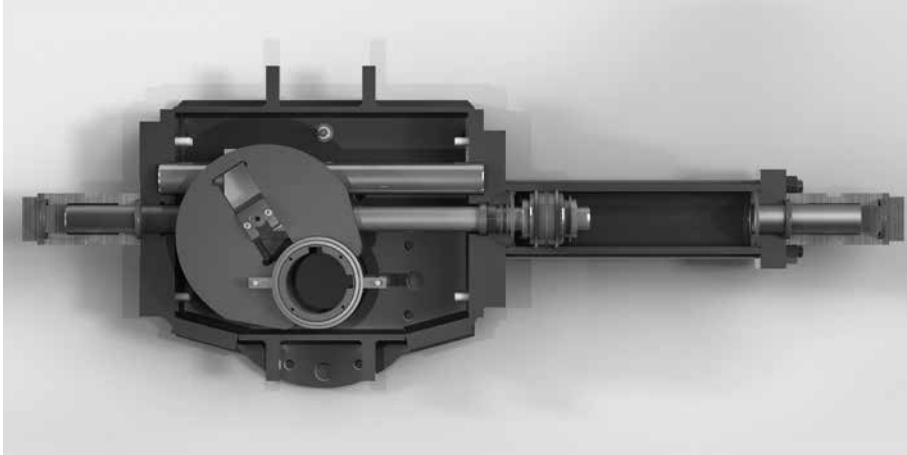


Figure 6: Double Acting Actuator Configuration – Open Position

6. Performance Data

The following performance data chart provides the following:

- Maximum Operating Torque (MOT)
- Maximum Operating Pressure (MOP) that can be applied to the actuator
- Maximum allowable working pressure (MAWP) that can be applied to the static actuator at the stroke end against travel stops
- Swept Volume required to stroke the actuator

Note: provided performance data may be subject to variations due to continuous improvement of LHS products. For latest data please contact Flowserve and/or refer to technical documentation transmitted along with the quotes.

7. Dimensions

The following Dimensions & Weight tables include main external dimensions referred to the relevant pictures included in each section. The overall lengths, the weights, the mounting dimension details, the interface dimensions and the tolerances are included as a guide for actuator selection.

The stated dimensions and weights include the actuators only, without any optional features, like the spool pieces, manual overrides, control panels, etc.

8. Disclaimer

This publication is presented for information purposes only, with an effort to ensure the accuracy, the contents are not to be construed as warranties or guarantees, expressed or implied, regarding the products or services described herein or their use or applicability. The right to modify or improve the designs or specifications of our products at any time without notice is reserved.



Table 2: Torque Table – LHS-15A – Single Acting – Spring Return Fail Close – Symmetric (continued)

MOT (Maximum Operating Torque): 5500 Nm (4057 ft-lb)

MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Actuator Model	LHS-15A SYMMETRIC ACTUATOR (continued)													Max Operating Pressure	Swept Volume	
	Spring Torque	Output Torque Nm (ft-lb) @ supply pressure														
		60 (870)	70 (1015)	80 (1160)	90 (1305)	100 (1450)	110 (1595)	120 (1740)	140 (2031)	160 (2321)	180 (2611)	200 (2901)	207 (3000)			
	Nm (ft-lb)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	L



Limitorque LHS Hydraulic Heavy-Duty Actuator Series FCD LFENTB0003-00-AQ - 11/14

Table 3: Torque Table – LHS-15C – Single Acting – Spring Return Fail Close – Canted

MOT (Maximum Operating Torque): 5500 Nm (4057 ft-lb)

MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Table with columns for Actuator Model, Spring Torque, Output Torque Nm (ft-lb) @ supply pressure (60 to 3000 barg), Max Operating Pressure, and Swept Volume. The table is titled 'LHS-15C CANTED ACTUATOR' and contains multiple rows of data for various actuator models.



Table 4: Torque Table – LHS-15C – Single Acting – Spring Return Fail Close – Canted (continued)

MOT (Maximum Operating Torque): 5500 Nm (4057 ft-lb)

MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Actuator Model	LHS-15C CANTED ACTUATOR (continued)													Max Operating Pressure	Swept Volume					
	Spring Torque	Output Torque Nm (ft-lb) @ supply pressure																		
		60 (870)	70 (1015)	80 (1160)	90 (1305)	100 (1450)	110 (1595)	120 (1740)	140 (2031)	160 (2321)	180 (2611)	200 (2901)	207 (3000)							
		Nm (ft-lb)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)							
LHS-15C-050X-FC3-1	start run end	1490 (1099) 878 (647) 1815 (1338)															207 (3000)	0.3		
LHS-15C-055X-FC3-1	start run end	1490 (1099) 878 (647) 1815 (1338)						1999 (1475) 508 (375) 496 (366)	2364 (1743) 642 (474) 911 (672)	3092 (2280) 807 (595) 607 (448)	3820 (2817) 1180 (870) 1470 (1084)	4548 (3355) 1448 (1068) 1717 (1266)	5276 (3892) 1717 (1266) 2249 (1659)				206 (2992)	0.4		
LHS-15C-060X-FC3-1	start run end	1490 (1099) 878 (647) 1815 (1338)				1894 (1397) 469 (346) 440 (324)	2327 (1717) 629 (464) 671 (495)	2761 (2036) 789 (582) 903 (666)	3194 (2356) 949 (700) 1135 (837)	4061 (2995) 1268 (936) 1599 (1179)	4927 (3634) 1588 (1171) 2062 (1521)						174 (2518)	0.5		
LHS-15C-065X-FC3-1	start run end	1490 (1099) 878 (647) 1815 (1338)		2063 (1521) 531 (392) 530 (391)	2571 (1896) 719 (530) 802 (591)	3080 (2271) 907 (669) 1074 (792)	3588 (2647) 1094 (807) 1346 (993)	4097 (3022) 1282 (945) 1618 (1193)	5114 (3772) 1657 (1222) 2162 (1595)								148 (2144)	0.5		
LHS-15C-075X-FC3-1	start run end	1490 (1099) 878 (647) 1815 (1338)	2057 (1517) 529 (390) 527 (388)	2734 (2016) 779 (574) 889 (656)	3411 (2516) 1029 (759) 1251 (923)	4088 (3015) 1278 (943) 1613 (1190)	4765 (3514) 1528 (1127) 1976 (1457)	5442 (4014) 1778 (1311) 2338 (1724)									111 (1608)	0.7		
LHS-15C-085X-FC3-1	start run end	1490 (1099) 878 (647) 1815 (1338)	2057 (1517) 529 (390) 527 (388)	2734 (2016) 779 (574) 889 (656)	3411 (2516) 1029 (759) 1251 (923)	4088 (3015) 1278 (943) 1613 (1190)	4765 (3514) 1528 (1127) 1976 (1457)	5442 (4014) 1778 (1311) 2338 (1724)									86 (1254)	0.9		
LHS-15C-090X-FC3-1	start run end	1490 (1099) 878 (647) 1815 (1338)	3844 (2835) 1189 (877) 1483 (1094)	4819 (3554) 1548 (1142) 2005 (1478)													77 (1120)	1.0		
LHS-15C-050X-FC3-2	start run end	1994 (1471) 1165 (860) 2369 (1747)										2798 (2064) 711 (524) 933 (688)	3400 (2507) 933 (688) 1010 (745)	3610 (2663) 1010 (745) 1128 (832)			207 (3000)	0.3		
LHS-15C-055X-FC3-2	start run end	1994 (1471) 1165 (860) 2369 (1747)										3207 (2365) 862 (635) 1130 (834)	3935 (2903) 1302 (960) 1399 (1032)	4663 (3440) 1493 (1101) 1828 (1348)			207 (3000)	0.4		
LHS-15C-060X-FC3-2	start run end	1994 (1471) 1165 (860) 2369 (1747)										2581 (1904) 631 (465) 578 (426)	3448 (2543) 950 (701) 1041 (768)	4314 (3182) 1270 (937) 1590 (1173)			188 (2721)	0.5		
LHS-15C-065X-FC3-2	start run end	1994 (1471) 1165 (860) 2369 (1747)										2975 (2195) 776 (572) 789 (582)	3484 (2570) 964 (711) 1339 (988)	4501 (3320) 1605 (1184)			160 (2326)	0.5		
LHS-15C-075X-FC3-2	start run end	1994 (1471) 1165 (860) 2369 (1747)										2798 (2064) 711 (524) 933 (688)	3475 (2563) 960 (708) 1056 (779)	4152 (3062) 1210 (893) 1418 (1046)	4829 (3562) 1460 (1077) 1780 (1313)			120 (1744)	0.7	
LHS-15C-085X-FC3-2	start run end	1994 (1471) 1165 (860) 2369 (1747)	2599 (1917) 637 (470) 587 (433)	3469 (2559) 958 (707) 1053 (776)	4339 (3200) 1279 (943) 1518 (1120)	5208 (3841) 1600 (1180) 1983 (1463)											93 (1356)	0.9		
LHS-15C-090X-FC3-2	start run end	1994 (1471) 1165 (860) 2369 (1747)	3231 (2383) 870 (642) 925 (683)	4206 (3102) 1230 (907) 1447 (1067)	5181 (3821) 1590 (1173) 1969 (1452)												83 (1209)	1.0		
LHS-15C-050X-FC3-3	start run end	2108 (1555) 1235 (911) 2524 (1861)															3229 (2381) 856 (631) 890 (656)	3439 (2537) 934 (689) 1002 (739)	207 (3000)	0.3
LHS-15C-055X-FC3-3	start run end	2108 (1555) 1235 (911) 2524 (1861)															3036 (2239) 785 (579) 1053 (777)	3764 (2777) 1322 (975) 1416 (1045)	207 (3000)	0.4
LHS-15C-060X-FC3-3	start run end	2108 (1555) 1235 (911) 2524 (1861)															3277 (2417) 4144 (3056) 874 (644)	4144 (3056) 5010 (3695) 1193 (880)	192 (2780)	0.5
LHS-15C-065X-FC3-3	start run end	2108 (1555) 1235 (911) 2524 (1861)															3277 (2417) 4144 (3056) 874 (644)	4144 (3056) 5010 (3695) 1193 (880)	163 (2366)	0.5
LHS-15C-075X-FC3-3	start run end	2108 (1555) 1235 (911) 2524 (1861)															2805 (2069) 699 (516) 887 (654)	3313 (2444) 887 (654) 935 (689)	123 (1777)	0.7
LHS-15C-085X-FC3-3	start run end	2108 (1555) 1235 (911) 2524 (1861)															4658 (3436) 5335 (3935) 1479 (1091)	5335 (3935) 1637 (1208) 2023 (1492)	96 (1385)	0.9
LHS-15C-090X-FC3-3	start run end	2108 (1555) 1235 (911) 2524 (1861)	3060 (2257) 794 (585) 800 (590)	4035 (2976) 1153 (851) 1321 (974)	5010 (3695) 1513 (1116) 1843 (1359)													85 (1236)	1.0	



Table 6: Torque Table – LHS-20A – Single Acting – Spring Return Fail Close – Symmetric (continued)

MOT (Maximum Operating Torque): 11 000 Nm (8113 ft-lb)

MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Actuator Model		LHS-20A SYMMETRIC ACTUATOR (continued)											Max Operating Pressure	Swept Volume		
		Spring Torque	Output Torque Nm (ft-lb) @ supply pressure													
			60 (870)	70 (1015)	80 (1160)	90 (1305)	100 (1450)	110 (1595)	120 (1740)	140 (2031)	160 (2321)	180 (2611)			200 (2901)	207 (3000)
Nm (ft-lb)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)			
LHS-20A-055X-FC2-4	start	4870 (3592)												3147 (2321)	207 (3000)	0.5
	end	2232 (1647)												1211 (893)		
LHS-20A-065X-FC2-4	start	4870 (3592)												3668 (2705)	207 (3000)	0.7
	end	2232 (1647)												1504 (1109)		
LHS-20A-075X-FC2-4	start	4870 (3592)												3668 (2705)	207 (3000)	0.9
	end	2232 (1647)												1504 (1109)		
LHS-20A-080X-FC2-4	start	4870 (3592)												3668 (2705)	207 (3000)	1.0
	end	2232 (1647)												1504 (1109)		
LHS-20A-090X-FC2-4	start	4870 (3592)												3668 (2705)	170 (2470)	1.3
	end	2232 (1647)												1504 (1109)		
LHS-20A-100X-FC2-4	start	4870 (3592)												3668 (2705)	138 (2004)	1.6
	end	2232 (1647)												1504 (1109)		
LHS-20A-110X-FC2-4	start	4870 (3592)												3668 (2705)	114 (1652)	1.9
	end	2232 (1647)												1504 (1109)		
LHS-20A-120X-FC2-4	start	4870 (3592)												3668 (2705)	96 (1389)	2.3
	end	2232 (1647)												1504 (1109)		
LHS-20A-055X-FC3-1	start	4914 (3624)												2982 (2200)	207 (3000)	0.5
	end	2286 (1686)												1151 (849)		
LHS-20A-065X-FC3-1	start	4914 (3624)												3503 (2584)	207 (3000)	0.7
	end	2286 (1686)												1444 (1065)		
LHS-20A-075X-FC3-1	start	4914 (3624)												3503 (2584)	207 (3000)	0.9
	end	2286 (1686)												1444 (1065)		
LHS-20A-080X-FC3-1	start	4914 (3624)												3503 (2584)	207 (3000)	1.0
	end	2286 (1686)												1444 (1065)		
LHS-20A-090X-FC3-1	start	4914 (3624)												3503 (2584)	172 (2499)	1.3
	end	2286 (1686)												1444 (1065)		
LHS-20A-100X-FC3-1	start	4914 (3624)												3503 (2584)	140 (2028)	1.6
	end	2286 (1686)												1444 (1065)		
LHS-20A-110X-FC3-1	start	4914 (3624)												3503 (2584)	115 (1671)	1.9
	end	2286 (1686)												1444 (1065)		
LHS-20A-120X-FC3-1	start	4914 (3624)												3503 (2584)	97 (1405)	2.3
	end	2286 (1686)												1444 (1065)		
LHS-20A-065X-FC3-2	start	5877 (4334)												3766 (2777)	207 (3000)	0.7
	end	2715 (2002)												1467 (1082)		
LHS-20A-075X-FC3-2	start	5877 (4334)												3766 (2777)	207 (3000)	0.9
	end	2715 (2002)												1467 (1082)		
LHS-20A-080X-FC3-2	start	5877 (4334)												3766 (2777)	207 (3000)	1.0
	end	2715 (2002)												1467 (1082)		
LHS-20A-090X-FC3-2	start	5877 (4334)												3766 (2777)	180 (2609)	1.3
	end	2715 (2002)												1467 (1082)		
LHS-20A-100X-FC3-2	start	5877 (4334)												3766 (2777)	145 (2109)	1.6
	end	2715 (2002)												1467 (1082)		
LHS-20A-110X-FC3-2	start	5877 (4334)												3766 (2777)	120 (1741)	1.9
	end	2715 (2002)												1467 (1082)		
LHS-20A-120X-FC3-2	start	5877 (4334)												3766 (2777)	101 (1463)	2.3
	end	2715 (2002)												1467 (1082)		
LHS-20A-065X-FC3-3	start	6518 (4808)												4748 (3502)	207 (3000)	0.7
	end	3016 (2224)												1954 (1441)		
LHS-20A-075X-FC3-3	start	6518 (4808)												4748 (3502)	207 (3000)	0.9
	end	3016 (2224)												1954 (1441)		
LHS-20A-080X-FC3-3	start	6518 (4808)												4748 (3502)	207 (3000)	1.0
	end	3016 (2224)												1954 (1441)		
LHS-20A-090X-FC3-3	start	6518 (4808)												4748 (3502)	185 (2684)	1.3
	end	3016 (2224)												1954 (1441)		
LHS-20A-100X-FC3-3	start	6518 (4808)												4748 (3502)	150 (2177)	1.6
	end	3016 (2224)												1954 (1441)		
LHS-20A-110X-FC3-3	start	6518 (4808)												4748 (3502)	124 (1797)	1.9
	end	3016 (2224)												1954 (1441)		
LHS-20A-120X-FC3-3	start	6518 (4808)												4748 (3502)	104 (1510)	2.3
	end	3016 (2224)												1954 (1441)		



Table 8: Torque Table – LHS-20C – Single Acting – Spring Return Fail Close – Canted (continued)

MOT (Maximum Operating Torque): 11 000 Nm (8113 ft-lb)

MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Actuator Model	LHS-20C CANTED ACTUATOR (continued)													Max Operating Pressure	Swept Volume				
	Spring Torque	Output Torque Nm (ft-lb) @ supply pressure																	
		60 (870)	70 (1015)	80 (1160)	90 (1305)	100 (1450)	110 (1595)	120 (1740)	140 (2031)	160 (2321)	180 (2611)	200 (2901)	207 (3000)						
Nm (ft-lb)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	L				
LHS-20C-065X-FC2-4	start run end	3967 (2926) 2295 (1693) 4561 (3364)											5721 (4219) 1435 (1058) 1373 (1013)	7066 (5212) 1931 (1425) 2095 (1544)	8411 (6204) 2428 (1791) 2813 (2075)	8882 (6551) 2602 (1919) 3065 (2261)	207 (3000)	0.7	
LHS-20C-075X-FC2-4	start run end	3967 (2926) 2295 (1693) 4561 (3364)						5705 (4208) 1429 (1054) 1365 (1007)	7496 (5529) 2090 (1542) 2323 (1714)	9287 (6850) 2751 (2029) 3282 (2420)							180 (2608)	0.9	
LHS-20C-080X-FC2-4	start run end	3967 (2926) 2295 (1693) 4561 (3364)						6167 (4548) 1599 (1180) 1612 (1189)	7186 (5300) 1975 (1457) 2157 (1591)	9223 (6803) 2727 (2012) 3248 (2395)							158 (2292)	1.1	
LHS-20C-090X-FC2-4	start run end	3967 (2926) 2295 (1693) 4561 (3364)				6565 (4842) 1746 (1288) 1825 (1346)	7854 (5793) 2222 (1639) 2515 (1855)	9144 (6744) 2698 (1990) 3205 (2364)	10433 (7695) 3174 (2341) 3895 (2873)								125 (1806)	1.4	
LHS-20C-100X-FC2-4	start run end	3967 (2926) 2295 (1693) 4561 (3364)	6103 (4501) 1578 (1164) 2430 (1792)	7695 (5676) 2163 (1596) 2430 (1792)	9287 (6850) 2751 (2029) 3282 (2420)	10879 (8024) 3338 (2462) 4133 (3049)											101 (1462)	1.7	
LHS-20C-110X-FC2-4	start run end	3967 (2926) 2295 (1693) 4561 (3364)	6517 (4807) 1729 (1275) 1799 (1327)	8443 (6227) 2440 (1799) 2830 (2087)	10370 (7648) 3150 (2324) 3861 (2848)												83 (1209)	2.0	
LHS-20C-120X-FC2-4	start run end	3967 (2926) 2295 (1693) 4561 (3364)	8714 (6427) 2539 (1873) 2975 (2194)															70 (1020)	2.4
LHS-20C-065X-FC3-1	start run end	4003 (2952) 2345 (1730) 4795 (3537)											5462 (4029) 1379 (1017) 1334 (984)	6808 (5021) 1876 (1383) 2054 (1515)	8153 (6013) 2372 (1750) 2774 (2046)	8624 (6360) 2546 (1878) 3026 (2232)	207 (3000)	0.7	
LHS-20C-075X-FC3-1	start run end	4003 (2952) 2345 (1730) 4795 (3537)						5446 (4017) 1373 (1013) 1326 (978)	7237 (5338) 2034 (1500) 2284 (1685)	10820 (7980) 2695 (1988) 3356 (2475)							182 (2641)	0.9	
LHS-20C-080X-FC3-1	start run end	4003 (2952) 2345 (1730) 4795 (3537)						5908 (4358) 1544 (1139) 1573 (1160)	6927 (5109) 1920 (1416) 2118 (1562)	8965 (6612) 2672 (1971) 3208 (2366)							161 (2331)	1.1	
LHS-20C-090X-FC3-1	start run end	4003 (2952) 2345 (1730) 4795 (3537)			5016 (3700) 1215 (896) 1096 (808)	6306 (4651) 1691 (1247) 1786 (1317)	7596 (5602) 2167 (1598) 2476 (1826)	8885 (6553) 2642 (1949) 3166 (2335)	10175 (7505) 3118 (2300) 3856 (2844)								127 (1836)	1.4	
LHS-20C-100X-FC3-1	start run end	4003 (2952) 2345 (1730) 4795 (3537)	5844 (4311) 1520 (1121) 1539 (1135)	7436 (5485) 2108 (1555) 2391 (1763)	9028 (6659) 2695 (1988) 3243 (2392)	10621 (7853) 3283 (2421) 4094 (3020)											102 (1486)	1.7	
LHS-20C-110X-FC3-1	start run end	4003 (2952) 2345 (1730) 4795 (3537)	6258 (4616) 1673 (1234) 1760 (1298)	8185 (6037) 2384 (1758) 2791 (2059)	10111 (7458) 3095 (2283) 3822 (2819)												85 (1229)	2.0	
LHS-20C-120X-FC3-1	start run end	4003 (2952) 2345 (1730) 4795 (3537)	8455 (6236) 2484 (1832) 2936 (2165)	10748 (7927) 3330 (2456) 4162 (3070)														71 (1032)	2.4
LHS-20C-065X-FC3-2	start run end	4787 (3531) 2787 (2056) 5623 (4148)													7238 (5338) 1883 (1389) 1907 (1407)	7708 (5685) 2057 (1517) 2159 (1592)	207 (3000)	0.7	
LHS-20C-075X-FC3-2	start run end	4787 (3531) 2787 (2056) 5623 (4148)											6322 (4663) 1546 (1140) 1417 (1045)	8113 (5984) 2206 (1627) 2376 (1752)	9904 (7305) 2867 (2115) 3334 (2459)		193 (2795)	0.9	
LHS-20C-080X-FC3-2	start run end	4787 (3531) 2787 (2056) 5623 (4148)											8049 (5937) 2183 (1610) 2341 (1727)	10087 (7440) 2935 (2165) 3432 (2531)			169 (2455)	1.1	
LHS-20C-090X-FC3-2	start run end	4787 (3531) 2787 (2056) 5623 (4148)											6680 (4927) 1678 (1237) 1609 (1187)	7970 (5878) 2154 (1588) 2299 (1696)	9259 (6829) 2629 (1939) 2989 (2204)		134 (1944)	1.4	
LHS-20C-100X-FC3-2	start run end	4787 (3531) 2787 (2056) 5623 (4148)			6521 (4810) 1619 (1194) 1524 (1124)	8113 (5984) 2206 (1627) 2376 (1752)	9705 (7158) 2794 (2061) 3227 (2380)										108 (1573)	1.7	
LHS-20C-110X-FC3-2	start run end	4787 (3531) 2787 (2056) 5623 (4148)			7269 (5362) 1895 (1398) 1924 (1419)	9196 (6782) 2606 (1922) 2955 (2179)												90 (1302)	2.0
LHS-20C-120X-FC3-2	start run end	4787 (3531) 2787 (2056) 5623 (4148)	7540 (5561) 1995 (1471) 2069 (1526)	9833 (7252) 2841 (2095) 3296 (2431)														75 (1092)	2.4
LHS-20C-065X-FC3-3	start run end	5310 (3916) 3096 (2283) 6264 (4620)															7000 (5163) 1716 (1266) 1581 (1166)	207 (3000)	0.7
LHS-20C-075X-FC3-3	start run end	5310 (3916) 3096 (2283) 6264 (4620)											7405 (5461) 1865 (1376) 1798 (1326)	9196 (6782) 2526 (1863) 2756 (2033)	10987 (8103) 3187 (2351) 3715 (2740)		200 (2903)	0.9	
LHS-20C-080X-FC3-3	start run end	5310 (3916) 3096 (2283) 6264 (4620)											7341 (5414) 1842 (1359) 1764 (1301)	9379 (6917) 2594 (1913) 2854 (2105)			177 (2561)	1.1	
LHS-20C-090X-FC3-3	start run end	5310 (3916) 3096 (2283) 6264 (4620)											7261 (5356) 1813 (1337) 1721 (1270)	8551 (6307) 2288 (1688) 2411 (1778)			140 (2028)	1.4	
LHS-20C-100X-FC3-3	start run end	5310 (3916) 3096 (2283) 6264 (4620)				7405 (5461) 1865 (1376) 1798 (1326)	8997 (6636) 2453 (1809) 2650 (1954)	10589 (7810) 3040 (2242) 3502 (2583)									113 (1634)	1.7	
LHS-20C-110X-FC3-3	start run end	5310 (3916) 3096 (2283) 6264 (4620)			8487 (6260) 2265 (1671) 2377 (1753)	10414 (7681) 2976 (2195) 3408 (2514)												93 (1351)	2.0
LHS-20C-120X-FC3-3	start run end	5310 (3916) 3096 (2283) 6264 (4620)	6832 (5039) 1654 (1220) 1491 (1100)	9124 (6730) 2500 (1844) 2718 (2005)														79 (1139)	2.4



Limitorque LHS Hydraulic Heavy-Duty Actuator Series FCD LFENTB0003-00-AQ - 11/14

Table 9: Torque Table – LHS-25A – Single Acting – Spring Return Fail Close – Symmetric

MOT (Maximum Operating Torque): 19 000 Nm (14 014 ft-lb)

MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Table with columns: Actuator Model, Spring Torque, Output Torque Nm (ft-lb) @ supply pressure (60-3000 barg/PSIG), Max Operating Pressure, Swept Volume. Rows include models like LHS-25A-075X-FC1-1, LHS-25A-085X-FC1-1, etc.



Limitorque LHS Hydraulic Heavy-Duty Actuator Series FCD LFENTB0003-00-AQ - 11/14

Table 11: Torque Table – LHS-25A – Single Acting – Spring Return Fail Close – Symmetric (continued)

MOT (Maximum Operating Torque): 19 000 Nm (14 014 ft-lb)

MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Actuator Model	Spring Torque Nm (ft-lb)	LHS-25A SYMMETRIC ACTUATOR (continued)													Max Operating Pressure barg (PSIG)	Swept Volume l		
		Output Torque Nm (ft-lb) @ supply pressure																
		60 (870)	70 (1015)	80 (1160)	90 (1305)	100 (1450)	110 (1595)	120 (1740)	140 (2031)	160 (2321)	180 (2611)	200 (2901)	207 (3000)					
		barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)		



Limitorque LHS Hydraulic Heavy-Duty Actuator Series FCD LFENTB0003-00-AQ - 11/14

Table 14: Torque Table – LHS-25C – Single Acting – Spring Return Fail Close – Canted (continued)

MOT (Maximum Operating Torque): 19 000 Nm (14 014 ft-lb)

MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Table with columns: Actuator Model, Spring Torque, Output Torque Nm (ft-lb) @ supply pressure (60 to 207 barg), Max Operating Pressure, Swept Volume. Includes sub-header LHS-25C CANTED ACTUATOR (continued).

Table 15: Torque Table – LHS-25C – Single Acting – Spring Return Fail Close – Canted (continued)

MOT (Maximum Operating Torque): 19 000 Nm (14 014 ft-lb)
MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Table with columns: Actuator Model, Spring Torque, Output Torque Nm (ft-lb) @ supply pressure (60, 70, 80, 90, 100, 110, 120, 140, 160, 180, 200, 207 barg), Max Operating Pressure, Swept Volume.



Table 16: Torque Table – LHS-25C – Single Acting – Spring Return Fail Close – Canted (continued)

MOT (Maximum Operating Torque): 19 000 Nm (14 014 ft-lb)

MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Actuator Model	LHS-25C CANTED ACTUATOR (continued)														Max Operating Pressure	Swept Volume	
	Spring Torque	Output Torque Nm (ft-lb) @ supply pressure												barg (PSIG)			L
		60 (870)	70 (1015)	80 (1160)	90 (1305)	100 (1450)	110 (1595)	120 (1740)	140 (2031)	160 (2321)	180 (2611)	200 (2901)	207 (3000)				
		Nm (ft-lb)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)				
LHS-25C-075X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)													12381 (9132) 13156 (9703) 3151 (2331) 3447 (2542) 3111 (2294)	207 (3000)	1.2
LHS-25C-080X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)												12912 (9524) 15430 (11380) 3357 (2476) 4286 (3161) 3395 (2504) 4742 (3497)	207 (3000)	1.3	
LHS-25C-085X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)												12991 (9582) 15833 (11678) 3386 (2497) 4435 (3271) 3437 (2535) 4957 (3656)	202 (2935)	1.5	
LHS-25C-090X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)												12558 (9263) 15744 (11612) 3226 (2380) 4402 (3247) 3205 (2364) 4910 (3621)	180 (2617)	1.7	
LHS-25C-100X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)												11890 (8769) 13856 (10220) 2980 (2198) 3705 (2753) 2848 (2100) 3900 (2876) 6004 (4429)	146 (2123)	2.1	
LHS-25C-110X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)												11673 (8610) 14053 (10365) 2900 (2139) 3778 (2786) 2732 (2015) 4005 (2954)	121 (1752)	2.5	
LHS-25C-120X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)												12912 (9524) 15744 (11612) 3357 (2476) 4402 (3247) 3395 (2504) 4910 (3621)	102 (1473)	3.0	
LHS-25C-130X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)												13522 (9973) 16846 (12425) 3582 (2642) 4808 (3546) 3721 (2744) 5499 (4056)	87 (1258)	3.5	
LHS-25C-140X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)												13384 (9872) 17239 (12715) 3531 (2604) 4953 (3654) 3647 (2690) 5710 (4211)	75 (1084)	4.1	
LHS-25C-080X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)													14139 (10428) 15020 (11078) 3664 (2702) 3989 (2942) 3687 (2720) 4159 (3067)	207 (3000)	1.3
LHS-25C-085X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)													14542 (10725) 17384 (12821) 3813 (2812) 4861 (3585) 3903 (2879) 5424 (4000)	207 (3000)	1.5
LHS-25C-090X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)													14453 (10660) 17639 (13010) 3780 (2788) 4956 (3655) 3856 (2844) 5560 (4101)	189 (2739)	1.7
LHS-25C-100X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)													12565 (9268) 16499 (12169) 3083 (2274) 4535 (3345) 2845 (2099) 4950 (3651)	153 (2222)	2.1
LHS-25C-110X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)													12762 (9413) 15142 (11168) 3156 (2328) 4034 (2975) 2951 (2176) 4224 (3115) 5497 (4055)	126 (1834)	2.5
LHS-25C-120X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)													14453 (10660) 17285 (12749) 3780 (2788) 4825 (3559) 3856 (2844) 5371 (3961)	106 (1542)	3.0
LHS-25C-130X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)													12231 (9021) 15555 (11472) 2960 (2183) 4186 (3088) 2667 (1967) 4445 (3278) 5413 (3992) 6223 (4590)	90 (1311)	3.5
LHS-25C-140X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)													15948 (11763) 17239 (12715) 4331 (3195) 4655 (3434)	78 (1135)	4.1
LHS-25C-080X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)													13068 (9638) 13949 (10288) 3226 (2379) 3551 (2619) 3008 (2219) 3480 (2566)	207 (3000)	1.3
LHS-25C-085X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)													13471 (9936) 16313 (12032) 3375 (2489) 4424 (3263) 3224 (2378) 4745 (3499)	207 (3000)	1.5
LHS-25C-090X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)													13382 (9870) 16568 (12220) 3342 (2465) 4518 (3332) 3177 (2343) 4881 (3600)	196 (2841)	1.7
LHS-25C-100X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)													15428 (11379) 17307 (12765) 4097 (3022) 4271 (3150)	159 (2305)	2.1
LHS-25C-110X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)													14071 (10378) 16450 (12133) 3596 (2652) 4474 (3300) 3545 (2615) 4818 (3554)	131 (1902)	2.5
LHS-25C-120X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)													13382 (9870) 16214 (11959) 3342 (2465) 4387 (3236) 3177 (2343) 4692 (3461)	110 (1599)	3.0
LHS-25C-130X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)													14484 (10683) 17807 (13134) 3749 (2765) 4975 (3669) 3766 (2778) 5544 (4089)	94 (1359)	3.5
LHS-25C-140X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)													14877 (10973) 18732 (13816) 3894 (2872) 5316 (3921) 3976 (2933) 6039 (4454)	71 (1024)	4.1



Limiterque LHS Hydraulic Heavy-Duty Actuator Series FCD LFENTB0003-00-AQ - 11/14

Table 19: Torque Table – LHS-20A – Single Acting – Spring Return Fail Open – Symmetric

MOT (Maximum Operating Torque): 11 000 Nm (8113 ft-lb)

MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Table with columns: Actuator Model, Spring Torque, Output Torque Nm (ft-lb) @ supply pressure (60 to 207 barg), Max Operating Pressure, Swept Volume. Title: LHS-20A SYMMETRIC ACTUATOR



Table 20: Torque Table – LHS-20A – Single Acting – Spring Return Fail Open – Symmetric (continued)

MOT (Maximum Operating Torque): 11 000 Nm (8113 ft-lb)

MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Actuator Model		LHS-20A SYMMETRIC ACTUATOR (continued)													Max Operating Pressure	Swept Volume	
		Spring Torque	Output Torque Nm (ft-lb) @ supply pressure														
			60 (870)	70 (1015)	80 (1160)	90 (1305)	100 (1450)	110 (1595)	120 (1740)	140 (2031)	160 (2321)	180 (2611)	200 (2901)	207 (3000)			
Nm (ft-lb)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)			
LHS-20A-055X-F02-4	start	4870 (3592)													3147 (2321)	207 (3000)	0.5
	end	2232 (1647)													1211 (893)		
LHS-20A-065X-F02-4	start	4870 (3592)													3668 (2705)	207 (3000)	0.7
	end	2232 (1647)													1504 (1109)		
LHS-20A-075X-F02-4	start	4870 (3592)													6010 (4433)	207 (3000)	0.9
	end	2232 (1647)													2820 (2080)		
LHS-20A-080X-F02-4	start	4870 (3592)													7307 (5389)	207 (3000)	1.0
	end	2232 (1647)													3548 (2617)		
LHS-20A-090X-F02-4	start	4870 (3592)													10151 (7487)	170 (2470)	1.3
	end	2232 (1647)													4781 (3527)		
LHS-20A-100X-F02-4	start	4870 (3592)													14101 (10385)	138 (2004)	1.6
	end	2232 (1647)													6475 (4776)		
LHS-20A-110X-F02-4	start	4870 (3592)													18101 (13345)	114 (1652)	1.9
	end	2232 (1647)													8169 (6025)		
LHS-20A-120X-F02-4	start	4870 (3592)													22101 (16285)	96 (1389)	2.3
	end	2232 (1647)													9819 (7242)		
LHS-20A-055X-F03-1	start	4914 (3624)													2982 (2200)	207 (3000)	0.5
	end	2286 (1686)													1151 (849)		
LHS-20A-065X-F03-1	start	4914 (3624)													3503 (2584)	207 (3000)	0.7
	end	2286 (1686)													1444 (1065)		
LHS-20A-075X-F03-1	start	4914 (3624)													4387 (3236)	207 (3000)	0.9
	end	2286 (1686)													1941 (1431)		
LHS-20A-080X-F03-1	start	4914 (3624)													5270 (3887)	207 (3000)	1.0
	end	2286 (1686)													2437 (1797)		
LHS-20A-090X-F03-1	start	4914 (3624)													6159 (4541)	172 (2499)	1.3
	end	2286 (1686)													2611 (1926)		
LHS-20A-100X-F03-1	start	4914 (3624)													7041 (5179)	140 (2028)	1.6
	end	2286 (1686)													3405 (2512)		
LHS-20A-110X-F03-1	start	4914 (3624)													8198 (6047)	115 (1671)	1.9
	end	2286 (1686)													3405 (2512)		
LHS-20A-120X-F03-1	start	4914 (3624)													9819 (7242)	97 (1405)	2.3
	end	2286 (1686)													4241 (3128)		
LHS-20A-065X-F03-2	start	5877 (4334)													3766 (2777)	207 (3000)	0.7
	end	2715 (2002)													1467 (1082)		
LHS-20A-075X-F03-2	start	5877 (4334)													4649 (3429)	207 (3000)	0.9
	end	2715 (2002)													1964 (1448)		
LHS-20A-080X-F03-2	start	5877 (4334)													5511 (4094)	207 (3000)	1.0
	end	2715 (2002)													2341 (1727)		
LHS-20A-090X-F03-2	start	5877 (4334)													6401 (4721)	180 (2609)	1.3
	end	2715 (2002)													3609 (2661)		
LHS-20A-100X-F03-2	start	5877 (4334)													7307 (5389)	145 (2109)	1.6
	end	2715 (2002)													3504 (2584)		
LHS-20A-110X-F03-2	start	5877 (4334)													8198 (6047)	120 (1741)	1.9
	end	2715 (2002)													4842 (3572)		
LHS-20A-120X-F03-2	start	5877 (4334)													9819 (7242)	101 (1463)	2.3
	end	2715 (2002)													4241 (3128)		
LHS-20A-065X-F03-3	start	6518 (4808)													4173 (3078)	207 (3000)	0.7
	end	3016 (2224)													1632 (1204)		
LHS-20A-075X-F03-3	start	6518 (4808)													5041 (3691)	207 (3000)	0.9
	end	3016 (2224)													2341 (1727)		
LHS-20A-080X-F03-3	start	6518 (4808)													5935 (4370)	207 (3000)	1.0
	end	3016 (2224)													2611 (1926)		
LHS-20A-090X-F03-3	start	6518 (4808)													6825 (5041)	185 (2684)	1.3
	end	3016 (2224)													3405 (2512)		
LHS-20A-100X-F03-3	start	6518 (4808)													7719 (5691)	150 (2177)	1.6
	end	3016 (2224)													3405 (2512)		
LHS-20A-110X-F03-3	start	6518 (4808)													8611 (6331)	124 (1797)	1.9
	end	3016 (2224)													4241 (3128)		
LHS-20A-120X-F03-3	start	6518 (4808)													9503 (6983)	104 (1510)	2.3
	end	3016 (2224)													4241 (3128)		



Table 23: Torque Table – LHS-25A – Single Acting – Spring Return Fail Open – Symmetric (continued)

MOT (Maximum Operating Torque): 19 000 Nm (14 014 ft-lb)

MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

LHS-25A SYMMETRIC ACTUATOR (continued) table with columns for Actuator Model, Spring Torque, Output Torque Nm (ft-lb) @ supply pressure (60, 70, 80, 90, 100, 110, 120, 140, 160, 180, 200, 207 barg/PSIG), Max Operating Pressure, and Swept Volume. It lists various actuator models like LHS-25A-075X-F03-3, LHS-25A-080X-F03-3, etc.



Table 24: Torque Table – LHS-25A – Single Acting – Spring Return Fail Open – Symmetric (continued)

MOT (Maximum Operating Torque): 19 000 Nm (14 014 ft-lb)

MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Table with columns: Actuator Model, Spring Torque, Output Torque Nm (ft-lb) @ supply pressure (60, 70, 80, 90, 100, 110, 120, 140, 160, 180, 200, 207), Max Operating Pressure, Swept Volume. The table contains detailed torque data for various LHS-25A actuator models.



Torque Charts – Double Acting – Imperial and Metric

Table 25: Torque Table – LHS-15A – Double Acting – Symmetric

MOT (Maximum Operating Torque): 5500 Nm (4057 ft-lb)
 MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Actuator Model		LHS-15A SYMMETRIC ACTUATOR											
		Output Torque Nm (ft-lb) @ supply pressure											
		60 (870)	70 (1015)	80 (1160)	90 (1305)	100 (1450)	110 (1595)	120 (1740)	140 (2031)	160 (2321)	180 (2611)	200 (2901)	207 (3000)
		barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	
LHS-15A-050X-D1	start	759 (560)	885 (653)	1012 (746)	1138 (840)	1265 (933)	1391 (1026)	1518 (1120)	1771 (1306)	2024 (1493)	2277 (1679)	2530 (1866)	2618 (1931)
	run	426 (314)	497 (367)	569 (419)	640 (472)	711 (524)	782 (577)	853 (629)	995 (734)	1137 (839)	1279 (943)	1421 (1048)	1471 (1085)
	end	759 (560)	885 (653)	1012 (746)	1138 (840)	1265 (933)	1391 (1026)	1518 (1120)	1771 (1306)	2024 (1493)	2277 (1679)	2530 (1866)	2618 (1931)
LHS-15A-055X-D1	start	1008 (743)	1176 (867)	1344 (991)	1512 (1115)	1680 (1239)	1848 (1363)	2016 (1487)	2352 (1735)	2688 (1983)	3024 (2230)	3360 (2478)	3478 (2565)
	run	566 (418)	661 (487)	755 (557)	849 (627)	944 (696)	1038 (766)	1133 (835)	1321 (975)	1510 (1114)	1699 (1253)	1888 (1392)	1954 (1441)
	end	1008 (743)	1176 (867)	1344 (991)	1512 (1115)	1680 (1239)	1848 (1363)	2016 (1487)	2352 (1735)	2688 (1983)	3024 (2230)	3360 (2478)	3478 (2565)
LHS-15A-060X-D1	start	1281 (945)	1494 (1102)	1708 (1259)	1921 (1417)	2135 (1574)	2348 (1732)	2561 (1889)	2988 (2204)	3415 (2519)	3842 (2834)	4269 (3149)	4419 (3259)
	run	720 (531)	839 (619)	959 (708)	1079 (796)	1199 (884)	1319 (973)	1439 (1061)	1679 (1238)	1919 (1415)	2159 (1592)	2398 (1769)	2482 (1831)
	end	1281 (945)	1494 (1102)	1708 (1259)	1921 (1417)	2135 (1574)	2348 (1732)	2561 (1889)	2988 (2204)	3415 (2519)	3842 (2834)	4269 (3149)	4419 (3259)
LHS-15A-065X-D1	start	1577 (1163)	1840 (1357)	2103 (1551)	2366 (1745)	2629 (1939)	2892 (2133)	3154 (2327)	3680 (2714)	4206 (3102)	4732 (3490)	5257 (3878)	5441 (4013)
	run	886 (654)	1034 (762)	1181 (871)	1329 (980)	1477 (1089)	1624 (1198)	1772 (1307)	2067 (1525)	2363 (1743)	2658 (1961)	2954 (2178)	3057 (2255)
	end	1577 (1163)	1840 (1357)	2103 (1551)	2366 (1745)	2629 (1939)	2892 (2133)	3154 (2327)	3680 (2714)	4206 (3102)	4732 (3490)	5257 (3878)	5441 (4013)
LHS-15A-075X-D1	start	2241 (1653)	2615 (1929)	2988 (2204)	3362 (2480)	3735 (2755)	4109 (3031)	4483 (3306)	5230 (3857)				
	run	1259 (929)	1469 (1083)	1679 (1238)	1889 (1393)	2099 (1548)	2308 (1703)	2518 (1857)	2938 (2167)				
	end	2241 (1653)	2615 (1929)	2988 (2204)	3362 (2480)	3735 (2755)	4109 (3031)	4483 (3306)	5230 (3857)				
LHS-15A-085X-D1	start	3000 (2213)	3500 (2582)	4000 (2950)	4500 (3319)	5000 (3688)							
	run	1686 (1243)	1966 (1450)	2247 (1658)	2528 (1865)	2809 (2072)							
	end	3000 (2213)	3500 (2582)	4000 (2950)	4500 (3319)	5000 (3688)							
LHS-15A-090X-D1	start	3415 (2519)	3984 (2939)	4554 (3359)	5123 (3778)								
	run	1919 (1415)	2238 (1651)	2558 (1887)	2878 (2123)								
	end	3415 (2519)	3984 (2939)	4554 (3359)	5123 (3778)								

Table 26: Torque Table – LHS-15C – Double Acting – Canted

MOT (Maximum Operating Torque): 5500 Nm (4057 ft-lb)
 MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Actuator Model		LHS-15A SYMMETRIC ACTUATOR											
		Output Torque Nm (ft-lb) @ supply pressure											
		60 (870)	70 (1015)	80 (1160)	90 (1305)	100 (1450)	110 (1595)	120 (1740)	140 (2031)	160 (2321)	180 (2611)	200 (2901)	207 (3000)
		barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	
LHS-15A-050X-D1	start	759 (560)	885 (653)	1012 (746)	1138 (840)	1265 (933)	1391 (1026)	1518 (1120)	1771 (1306)	2024 (1493)	2277 (1679)	2530 (1866)	2618 (1931)
	run	426 (314)	497 (367)	569 (419)	640 (472)	711 (524)	782 (577)	853 (629)	995 (734)	1137 (839)	1279 (943)	1421 (1048)	1471 (1085)
	end	759 (560)	885 (653)	1012 (746)	1138 (840)	1265 (933)	1391 (1026)	1518 (1120)	1771 (1306)	2024 (1493)	2277 (1679)	2530 (1866)	2618 (1931)
LHS-15A-055X-D1	start	1008 (743)	1176 (867)	1344 (991)	1512 (1115)	1680 (1239)	1848 (1363)	2016 (1487)	2352 (1735)	2688 (1983)	3024 (2230)	3360 (2478)	3478 (2565)
	run	566 (418)	661 (487)	755 (557)	849 (627)	944 (696)	1038 (766)	1133 (835)	1321 (975)	1510 (1114)	1699 (1253)	1888 (1392)	1954 (1441)
	end	1008 (743)	1176 (867)	1344 (991)	1512 (1115)	1680 (1239)	1848 (1363)	2016 (1487)	2352 (1735)	2688 (1983)	3024 (2230)	3360 (2478)	3478 (2565)
LHS-15A-060X-D1	start	1281 (945)	1494 (1102)	1708 (1259)	1921 (1417)	2135 (1574)	2348 (1732)	2561 (1889)	2988 (2204)	3415 (2519)	3842 (2834)	4269 (3149)	4419 (3259)
	run	720 (531)	839 (619)	959 (708)	1079 (796)	1199 (884)	1319 (973)	1439 (1061)	1679 (1238)	1919 (1415)	2159 (1592)	2398 (1769)	2482 (1831)
	end	1281 (945)	1494 (1102)	1708 (1259)	1921 (1417)	2135 (1574)	2348 (1732)	2561 (1889)	2988 (2204)	3415 (2519)	3842 (2834)	4269 (3149)	4419 (3259)
LHS-15A-065X-D1	start	1577 (1163)	1840 (1357)	2103 (1551)	2366 (1745)	2629 (1939)	2892 (2133)	3154 (2327)	3680 (2714)	4206 (3102)	4732 (3490)	5257 (3878)	5441 (4013)
	run	886 (654)	1034 (762)	1181 (871)	1329 (980)	1477 (1089)	1624 (1198)	1772 (1307)	2067 (1525)	2363 (1743)	2658 (1961)	2954 (2178)	3057 (2255)
	end	1577 (1163)	1840 (1357)	2103 (1551)	2366 (1745)	2629 (1939)	2892 (2133)	3154 (2327)	3680 (2714)	4206 (3102)	4732 (3490)	5257 (3878)	5441 (4013)
LHS-15A-075X-D1	start	2241 (1653)	2615 (1929)	2988 (2204)	3362 (2480)	3735 (2755)	4109 (3031)	4483 (3306)	5230 (3857)				
	run	1259 (929)	1469 (1083)	1679 (1238)	1889 (1393)	2099 (1548)	2308 (1703)	2518 (1857)	2938 (2167)				
	end	2241 (1653)	2615 (1929)	2988 (2204)	3362 (2480)	3735 (2755)	4109 (3031)	4483 (3306)	5230 (3857)				
LHS-15A-085X-D1	start	3000 (2213)	3500 (2582)	4000 (2950)	4500 (3319)	5000 (3688)							
	run	1686 (1243)	1966 (1450)	2247 (1658)	2528 (1865)	2809 (2072)							
	end	3000 (2213)	3500 (2582)	4000 (2950)	4500 (3319)	5000 (3688)							
LHS-15A-090X-D1	start	3415 (2519)	3984 (2939)	4554 (3359)	5123 (3778)								
	run	1919 (1415)	2238 (1651)	2558 (1887)	2878 (2123)								
	end	3415 (2519)	3984 (2939)	4554 (3359)	5123 (3778)								



Table 27: Torque Table – LHS-20A – Double Acting – Symmetric

MOT (Maximum Operating Torque): 11 000 Nm (8113 ft-lb)
 MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Actuator Model		LHS-20A SYMMETRIC ACTUATOR											Max Operating Pressure	Swept Volume			
		Output Torque Nm (ft-lb) @ supply pressure															
		60 (870)	70 (1015)	80 (1160)	90 (1305)	100 (1450)	110 (1595)	120 (1740)	140 (2031)	160 (2321)	180 (2611)	200 (2901)			207 (3000)		
		barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	L
LHS-20A-050X-D1	start run end	800 (590) 449 (331) 800 (590)	933 (688) 524 (387) 933 (688)	1067 (787) 599 (442) 1067 (787)	1200 (885) 674 (497) 1200 (885)	1333 (983) 749 (552) 1333 (983)	1467 (1082) 824 (608) 1467 (1082)	1600 (1180) 899 (663) 1600 (1180)	1867 (1377) 1049 (773) 1867 (1377)	2133 (1573) 1198 (884) 2133 (1573)	2400 (1770) 1348 (994) 2400 (1770)	2667 (1967) 1498 (1105) 2667 (1967)	2760 (2036) 1551 (1144) 2760 (2036)	207 (3000)	0.4		
LHS-20A-055X-D1	start run end	1129 (833) 634 (468) 1129 (833)	1318 (972) 740 (546) 1318 (972)	1506 (1111) 846 (624) 1506 (1111)	1694 (1249) 952 (702) 1694 (1249)	1882 (1388) 1057 (780) 1882 (1388)	2071 (1527) 1163 (858) 2071 (1527)	2259 (1666) 1269 (936) 2259 (1666)	2635 (1944) 1480 (1092) 2635 (1944)	3012 (2221) 1692 (1248) 3012 (2221)	3388 (2499) 1903 (1404) 3388 (2499)	3765 (2777) 2115 (1560) 3765 (2777)	3896 (2874) 2189 (1614) 3896 (2874)	207 (3000)	0.5		
LHS-20A-065X-D1	start run end	1882 (1388) 1057 (780) 1882 (1388)	2196 (1620) 1234 (910) 2196 (1620)	2510 (1851) 1410 (1040) 2510 (1851)	2823 (2082) 1586 (1170) 2823 (2082)	3137 (2314) 1762 (1300) 3137 (2314)	3451 (2545) 1939 (1430) 3451 (2545)	3765 (2777) 2115 (1560) 3765 (2777)	4392 (3239) 2467 (1820) 4392 (3239)	5019 (3702) 2820 (2080) 5019 (3702)	5647 (4165) 3172 (2340) 5647 (4165)	6274 (4628) 3525 (2600) 6274 (4628)	6494 (4790) 3648 (2691) 6494 (4790)	207 (3000)	0.7		
LHS-20A-075X-D1	start run end	2761 (2036) 1551 (1144) 2761 (2036)	3221 (2376) 1809 (1335) 3221 (2376)	3681 (2715) 2068 (1525) 3681 (2715)	4141 (3054) 2326 (1716) 4141 (3054)	4601 (3394) 2585 (1907) 4601 (3394)	5061 (3733) 2843 (2097) 5061 (3733)	5521 (4072) 3102 (2268) 5521 (4072)	6442 (4751) 3619 (2669) 6442 (4751)	7362 (5430) 4136 (3050) 7362 (5430)	8282 (6109) 4653 (3432) 8282 (6109)	9202 (6787) 5170 (3813) 9202 (6787)	9524 (7025) 5351 (3947) 9524 (7025)	207 (3000)	0.9		
LHS-20A-080X-D1	start run end	3247 (2395) 1824 (1345) 3247 (2395)	3788 (2794) 2128 (1570) 3788 (2794)	4329 (3193) 2432 (1794) 4329 (3193)	4870 (3592) 2736 (2018) 4870 (3592)	5412 (3991) 3040 (2242) 5412 (3991)	5953 (4390) 3344 (2467) 5953 (4390)	6494 (4790) 3648 (2691) 6494 (4790)	7576 (5588) 4256 (3139) 7576 (5588)	8658 (6386) 4864 (3588) 8658 (6386)	9741 (7184) 5472 (4036) 9741 (7184)	10823 (7983) 6080 (4485) 10823 (7983)		203 (2948)	1.0		
LHS-20A-090X-D1	start run end	4314 (3182) 2423 (1787) 4314 (3182)	5032 (3712) 2827 (2085) 5032 (3712)	5751 (4242) 3231 (2383) 5751 (4242)	6470 (4772) 3635 (2681) 6470 (4772)	7189 (5303) 4039 (2979) 7189 (5303)	7908 (5833) 4443 (3277) 7908 (5833)	8627 (6363) 4847 (3575) 8627 (6363)	10065 (7424) 5654 (4171) 10065 (7424)					153 (2219)	1.3		
LHS-20A-100X-D1	start run end	5506 (4061) 3093 (2281) 5506 (4061)	6423 (4738) 3609 (2662) 6423 (4738)	7341 (5414) 4124 (3042) 7341 (5414)	8258 (6091) 4640 (3422) 8258 (6091)	9176 (6768) 5155 (3802) 9176 (6768)	10094 (7445) 5671 (4182) 10094 (7445)							120 (1739)	1.6		
LHS-20A-110X-D1	start run end	6823 (5033) 3833 (2827) 6823 (5033)	7960 (5871) 4472 (3299) 7960 (5871)	9098 (6710) 5111 (3770) 9098 (6710)	10235 (7549) 5750 (4241) 10235 (7549)									97 (1403)	1.9		
LHS-20A-120X-D1	start run end	8266 (6097) 4644 (3425) 8266 (6097)	9644 (7113) 5418 (3996) 9644 (7113)											80 (1158)	2.3		

Table 28: Torque Table – LHS-20C – Double Acting – Canted

MOT (Maximum Operating Torque): 11 000 Nm (8113 ft-lb)
 MAWP (Maximum Allowable Working Pressure): 207 barg (3000 PSIG)

Actuator Model		LHS-20C CANTED ACTUATOR											Max Operating Pressure	Swept Volume		
		Output Torque Nm (ft-lb) @ supply pressure														
		60 (870)	70 (1015)	80 (1160)	90 (1305)	100 (1450)	110 (1595)	120 (1740)	140 (2031)	160 (2321)	180 (2611)	200 (2901)			207 (3000)	
		barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	L
LHS-20C-050X-D1	start run end	1218 (898) 449 (331) 652 (481)	1421 (1048) 524 (387) 760 (561)	1624 (1198) 599 (442) 869 (641)	1827 (1347) 674 (497) 977 (721)	2030 (1497) 749 (552) 1086 (801)	2233 (1647) 824 (608) 1195 (881)	2436 (1797) 899 (663) 1303 (961)	2842 (2096) 1049 (773) 1521 (1121)	3248 (2395) 1198 (884) 1738 (1282)	3654 (2695) 1348 (994) 1955 (1442)	4060 (2994) 1498 (1105) 2172 (1602)	4201 (3099) 1551 (1144) 2248 (1658)	207 (3000)	0.4	
LHS-20C-055X-D1	start run end	1719 (1268) 634 (468) 920 (679)	2006 (1480) 740 (546) 1073 (792)	2293 (1691) 846 (624) 1227 (905)	2579 (1902) 952 (702) 1380 (1018)	2866 (2114) 1057 (780) 1533 (1131)	3152 (2325) 1163 (858) 1687 (1244)	3439 (2536) 1269 (936) 1840 (1357)	4012 (2959) 1480 (1092) 2147 (1583)	4585 (3382) 1692 (1248) 2453 (1809)	5158 (3805) 1903 (1404) 2760 (2036)	5731 (4227) 2115 (1560) 3067 (2262)	5932 (4375) 2189 (1614) 3174 (2341)	207 (3000)	0.5	
LHS-20C-065X-D1	start run end	2866 (2114) 1057 (780) 1533 (1131)	3343 (2466) 1234 (910) 1789 (1319)	3821 (2818) 1410 (1040) 2044 (1508)	4299 (3170) 1586 (1170) 2300 (1696)	4776 (3523) 1762 (1300) 2556 (1885)	5254 (3875) 1939 (1430) 2811 (2073)	5731 (4227) 2115 (1560) 3067 (2262)	6687 (4932) 2467 (1820) 3578 (2639)	7642 (5636) 2820 (2080) 4089 (3016)	8597 (6341) 3172 (2340) 4600 (3393)	9552 (7045) 3525 (2600) 5111 (3770)	9887 (7292) 3648 (2691) 5290 (3902)	207 (3000)	0.7	
LHS-20C-075X-D1	start run end	4203 (3100) 1551 (1144) 2249 (1659)	4904 (3617) 1809 (1335) 2624 (1935)	5604 (4133) 2068 (1525) 2998 (2212)	6305 (4650) 2326 (1716) 3373 (2488)	7005 (5167) 2585 (1907) 3748 (2764)	7706 (5683) 2843 (2097) 4123 (3041)	8406 (6200) 3102 (2268) 4498 (3317)	9807 (7233) 4498 (3317) 5247 (3870)					157 (2278)	0.9	
LHS-20C-080X-D1	start run end	4943 (3646) 1824 (1345) 2645 (1951)	5767 (4254) 2128 (1570) 3086 (2276)	6591 (4861) 2432 (1794) 3527 (2601)	7415 (5469) 2736 (2018) 3967 (2926)	8239 (6077) 3040 (2242) 4408 (3251)	9063 (6684) 3344 (2467) 4849 (3577)	9887 (7292) 3648 (2691) 5290 (3902)						134 (1936)	1.1	
LHS-20C-090X-D1	start run end	6567 (4844) 2423 (1787) 3514 (2592)	7662 (5651) 2827 (2085) 4099 (3024)	8756 (6458) 3231 (2383) 4685 (3456)	9851 (7266) 3635 (2681) 5271 (3888)	10945 (8073) 4039 (2979) 5856 (4319)								100 (1458)	1.4	
LHS-20C-100X-D1	start run end	8382 (6182) 3093 (2281) 4485 (3308)	9779 (7213) 3609 (2662) 5232 (3859)											79 (1142)	1.7	
LHS-20C-110X-D1	start run end	10388 (7662) 3833 (2827) 5558 (4100)												64 (921)	2.0	

Dimensional Data and Weights – Single Acting

Figure 7: Dimensional Data – Single Acting – Sym/Cant – Fail Close

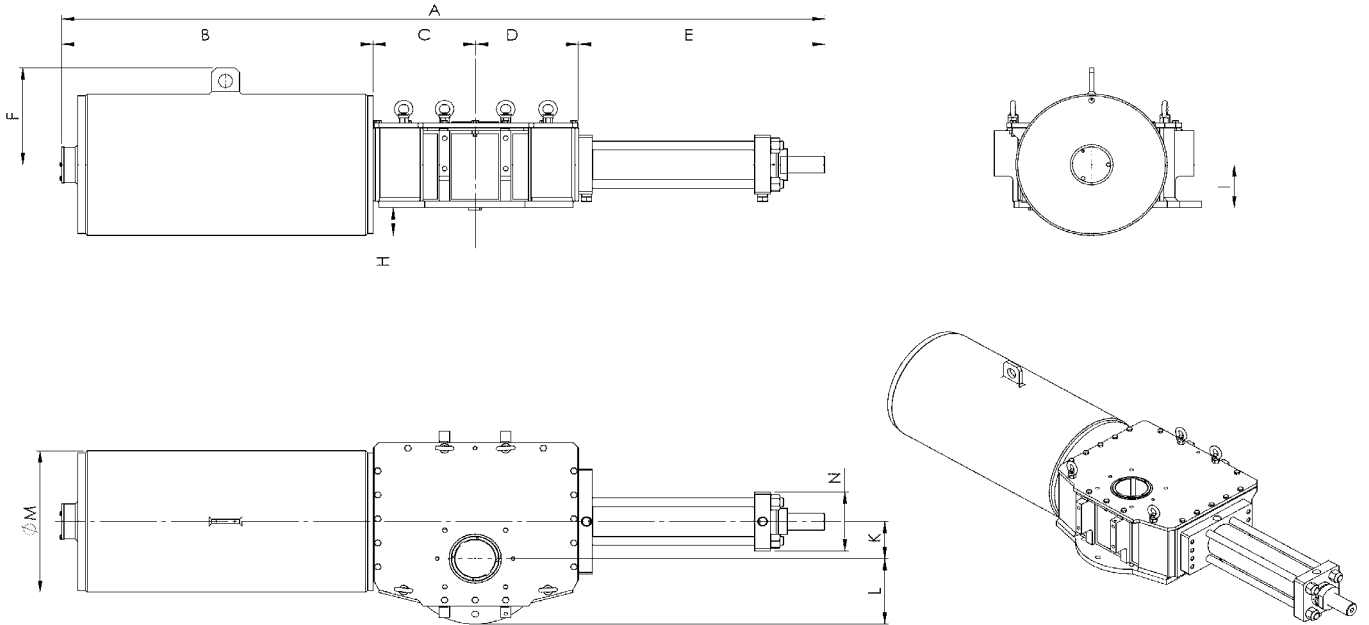


Figure 8: Dimensional Data – Single Acting – Sym/Cant – Fail Open

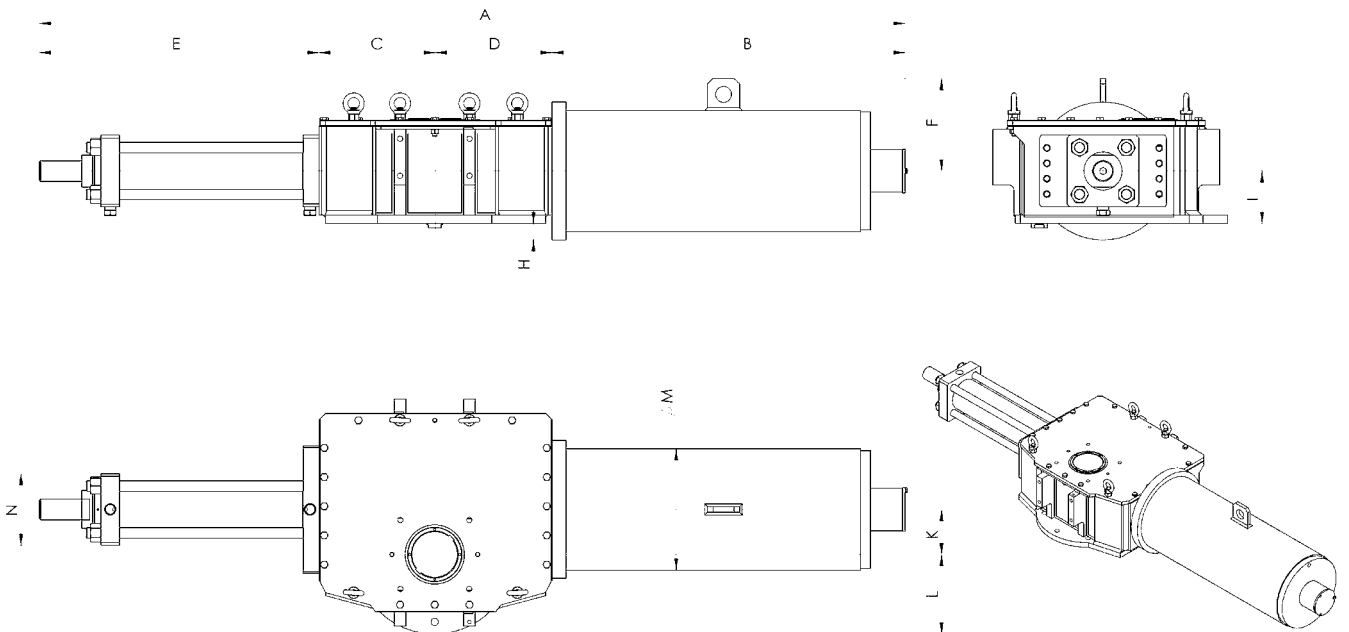




Table 31: Dimensions & Weights – LHS-15 Sym/Cant – Single Acting – Fail Close/Fail Open

TOLERANCE ±10% TO BE CONSIDERED ON DIMENSIONS

Fail Close Model	Fail Open Model	Dimensions mm (in) - Kg (lbs)													'N' NPT PORT	Weight
		A	B	C	D	E	F	H	I	K	L	ØM	N			
LHS-15X-050Y-FC1-2	LHS-15X-050Y-FO1-2	1691	759	164	174	594	222	19	92	65	120	316	145	1/2"	*	
		66.57	29.88	6.46	6.85	23.39	8.74	0.75	3.60	2.56	4.72	12.44	5.71		*	
LHS-15X-055Y-FC1-2	LHS-15X-055Y-FO1-2	1691	759	164	174	594	222	19	92	65	120	316	145	1/2"	*	
		66.57	29.88	6.46	6.85	23.39	8.74	0.75	3.60	2.56	4.72	12.44	5.71		*	
LHS-15X-060Y-FC1-2	LHS-15X-060Y-FO1-2	1691	759	164	174	594	222	19	92	65	120	316	145	1/2"	*	
		66.57	29.88	6.46	6.85	23.39	8.74	0.75	3.60	2.56	4.72	12.44	5.71		*	
LHS-15X-065Y-FC1-2	LHS-15X-065Y-FO1-2	1691	759	164	174	594	222	19	92	65	120	316	145	1/2"	123	
		66.57	29.88	6.46	6.85	23.39	8.74	0.75	3.60	2.56	4.72	12.44	5.71		272	
LHS-15X-075Y-FC1-2	LHS-15X-075Y-FO1-2	1691	759	164	174	594	222	19	92	65	120	316	145	1/2"	*	
		66.57	29.88	6.46	6.85	23.39	8.74	0.75	3.60	2.56	4.72	12.44	5.71		*	
LHS-15X-085Y-FC1-2	LHS-15X-085Y-FO1-2	1691	759	164	174	594	222	19	92	65	120	316	150	1/2"	127	
		66.57	29.88	6.46	6.85	23.39	8.74	0.75	3.60	2.56	4.72	12.44	5.91		281	
LHS-15X-090Y-FC1-2	LHS-15X-090Y-FO1-2	1691	759	164	174	594	222	19	92	65	120	316	160	1/2"	129	
		66.57	29.88	6.46	6.85	23.39	8.74	0.75	3.60	2.56	4.72	12.44	6.30		285	
LHS-15X-050Y-FC1-3	LHS-15X-050Y-FO1-3	1691	759	164	174	594	222	19	92	65	120	316	145	1/2"	*	
		66.57	29.88	6.46	6.85	23.39	8.74	0.75	3.60	2.56	4.72	12.44	5.71		*	
LHS-15X-055Y-FC1-3	LHS-15X-055Y-FO1-3	1691	759	164	174	594	222	19	92	65	120	316	145	1/2"	*	
		66.57	29.88	6.46	6.85	23.39	8.74	0.75	3.60	2.56	4.72	12.44	5.71		*	
LHS-15X-060Y-FC1-3	LHS-15X-060Y-FO1-3	1691	759	164	174	594	222	19	92	65	120	316	145	1/2"	*	
		66.57	29.88	6.46	6.85	23.39	8.74	0.75	3.60	2.56	4.72	12.44	5.71		*	
LHS-15X-065Y-FC1-3	LHS-15X-065Y-FO1-3	1691	759	164	174	594	222	19	92	65	120	316	145	1/2"	122	
		66.57	29.88	6.46	6.85	23.39	8.74	0.75	3.60	2.56	4.72	12.44	5.71		270	
LHS-15X-075Y-FC1-3	LHS-15X-075Y-FO1-3	1691	759	164	174	594	222	19	92	65	120	316	145	1/2"	*	
		66.57	29.88	6.46	6.85	23.39	8.74	0.75	3.60	2.56	4.72	12.44	5.71		*	
LHS-15X-085Y-FC1-3	LHS-15X-085Y-FO1-3	1691	759	164	174	594	222	19	92	65	120	316	150	1/2"	126	
		66.57	29.88	6.46	6.85	23.39	8.74	0.75	3.60	2.56	4.72	12.44	5.91		282	
LHS-15X-090Y-FC1-3	LHS-15X-090Y-FO1-3	1691	759	164	174	594	222	19	92	65	120	316	160	1/2"	128	
		66.57	29.88	6.46	6.85	23.39	8.74	0.75	3.60	2.56	4.72	12.44	6.30		283	
LHS-15X-050Y-FC2-1	LHS-15X-050Y-FO2-1	1392	460	164	174	594	170	66	92	65	120	235	145	1/2"	*	
		54.80	18.11	6.46	6.85	23.39	6.69	2.61	3.60	2.56	4.72	9.25	5.71		*	
LHS-15X-055Y-FC2-1	LHS-15X-055Y-FO2-1	1392	460	164	174	594	170	66	92	65	120	235	145	1/2"	*	
		54.80	18.11	6.46	6.85	23.39	6.69	2.61	3.60	2.56	4.72	9.25	5.71		*	
LHS-15X-060Y-FC2-1	LHS-15X-060Y-FO2-1	1392	460	164	174	594	170	66	92	65	120	235	145	1/2"	*	
		54.80	18.11	6.46	6.85	23.39	6.69	2.61	3.60	2.56	4.72	9.25	5.71		*	
LHS-15X-065Y-FC2-1	LHS-15X-065Y-FO2-1	1392	460	164	174	594	170	66	92	65	120	235	145	1/2"	150	
		54.80	18.11	6.46	6.85	23.39	6.69	2.61	3.60	2.56	4.72	9.25	5.71		332	
LHS-15X-075Y-FC2-1	LHS-15X-075Y-FO2-1	1392	460	164	174	594	170	66	92	65	120	235	145	1/2"	*	
		54.80	18.11	6.46	6.85	23.39	6.69	2.61	3.60	2.56	4.72	9.25	5.71		*	
LHS-15X-085Y-FC2-1	LHS-15X-085Y-FO2-1	1392	460	164	174	594	170	66	92	65	120	235	150	1/2"	154	
		54.80	18.11	6.46	6.85	23.39	6.69	2.61	3.60	2.56	4.72	9.25	5.91		340	
LHS-15X-090Y-FC2-1	LHS-15X-090Y-FO2-1	1392	460	164	174	594	170	66	92	65	120	235	160	1/2"	156	
		54.80	18.11	6.46	6.85	23.39	6.69	2.61	3.60	2.56	4.72	9.25	6.30		345	
LHS-15X-050Y-FC2-2	LHS-15X-050Y-FO2-2	1588	656	164	174	594	222	66	92	65	120	316	145	1/2"	*	
		62.52	25.83	6.46	6.85	23.39	8.74	2.61	3.60	2.56	4.72	12.44	5.71		*	
LHS-15X-055Y-FC2-2	LHS-15X-055Y-FO2-2	1588	656	164	174	594	222	66	92	65	120	316	145	1/2"	*	
		62.52	25.83	6.46	6.85	23.39	8.74	2.61	3.60	2.56	4.72	12.44	5.71		*	
LHS-15X-060Y-FC2-2	LHS-15X-060Y-FO2-2	1588	656	164	174	594	222	66	92	65	120	316	145	1/2"	*	
		62.52	25.83	6.46	6.85	23.39	8.74	2.61	3.60	2.56	4.72	12.44	5.71		*	
LHS-15X-065Y-FC2-2	LHS-15X-065Y-FO2-2	1588	656	164	174	594	222	66	92	65	120	316	145	1/2"	158	
		62.52	25.83	6.46	6.85	23.39	8.74	2.61	3.60	2.56	4.72	12.44	5.71		349	
LHS-15X-075Y-FC2-2	LHS-15X-075Y-FO2-2	1588	656	164	174	594	222	66	92	65	120	316	145	1/2"	*	
		62.52	25.83	6.46	6.85	23.39	8.74	2.61	3.60	2.56	4.72	12.44	5.71		*	
LHS-15X-085Y-FC2-2	LHS-15X-085Y-FO2-2	1588	656	164	174	594	222	66	92	65	120	316	150	1/2"	162	
		62.52	25.83	6.46	6.85	23.39	8.74	2.61	3.60	2.56	4.72	12.44	5.91		358	
LHS-15X-090Y-FC2-2	LHS-15X-090Y-FO2-2	1588	656	164	174	594	222	66	92	65	120	316	160	1/2"	164	
		62.52	25.83	6.46	6.85	23.39	8.74	2.61	3.60	2.56	4.72	12.44	6.30		362	

* Under development. Please contact Flowserve for more information.



Table 32: Dimensions & Weights – LHS-15 Sym/Cant – Single Acting – Fail Close/Fail Open (continued)

TOLERANCE ±10% TO BE CONSIDERED ON DIMENSIONS

Model		Dimensions mm (in) - Kg (lbs)												'N' NPT PORT	Weight
		A	B	C	D	E	F	G	I	K	L	ØM	N		
LHS-15X-050Y-FC2-3	LHS-15X-050Y-FO2-3	1588	656	164	174	594	222	66	92	65	120	316	145	1/2"	*
		62.52	25.83	6.46	6.85	23.39	8.74	2.61	3.60	2.56	4.72	12.44	5.71		*
LHS-15X-055Y-FC2-3	LHS-15X-055Y-FO2-3	1588	656	164	174	594	222	66	92	65	120	316	145	1/2"	*
		62.52	25.83	6.46	6.85	23.39	8.74	2.61	3.60	2.56	4.72	12.44	5.71		*
LHS-15X-060Y-FC2-3	LHS-15X-060Y-FO2-3	1588	656	164	174	594	222	66	92	65	120	316	145	1/2"	*
		62.52	25.83	6.46	6.85	23.39	8.74	2.61	3.60	2.56	4.72	12.44	5.71		*
LHS-15X-065Y-FC2-3	LHS-15X-065Y-FO2-3	1588	656	164	174	594	222	66	92	65	120	316	145	1/2"	156
		62.52	25.83	6.46	6.85	23.39	8.74	2.61	3.60	2.56	4.72	12.44	5.71		345
LHS-15X-075Y-FC2-3	LHS-15X-075Y-FO2-3	1588	656	164	174	594	222	66	92	65	120	316	145	1/2"	*
		62.52	25.83	6.46	6.85	23.39	8.74	2.61	3.60	2.56	4.72	12.44	5.71		*
LHS-15X-085Y-FC2-3	LHS-15X-085Y-FO2-3	1588	656	164	174	594	222	66	92	65	120	316	150	1/2"	160
		62.52	25.83	6.46	6.85	23.39	8.74	2.61	3.60	2.56	4.72	12.44	5.91		354
LHS-15X-090Y-FC2-3	LHS-15X-090Y-FO2-3	1588	656	164	174	594	222	66	92	65	120	316	160	1/2"	162
		62.52	25.83	6.46	6.85	23.39	8.74	2.61	3.60	2.56	4.72	12.44	6.30		358
LHS-15X-050Y-FC3-1	LHS-15X-050Y-FO3-1	1392	460	164	174	594	210	66	92	65	120	315	145	1/2"	*
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.71		*
LHS-15X-055Y-FC3-1	LHS-15X-055Y-FO3-1	1392	460	164	174	594	210	66	92	65	120	315	145	1/2"	*
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.71		*
LHS-15X-060Y-FC3-1	LHS-15X-060Y-FO3-1	1392	460	164	174	594	210	66	92	65	120	315	145	1/2"	*
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.71		*
LHS-15X-065Y-FC3-1	LHS-15X-065Y-FO3-1	1392	460	164	174	594	210	66	92	65	120	315	145	1/2"	143
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.71		316
LHS-15X-075Y-FC3-1	LHS-15X-075Y-FO3-1	1392	460	164	174	594	210	66	92	65	120	315	145	1/2"	*
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.71		*
LHS-15X-085Y-FC3-1	LHS-15X-085Y-FO3-1	1392	460	164	174	594	210	66	92	65	120	315	150	1/2"	147
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.91		325
LHS-15X-090Y-FC3-1	LHS-15X-090Y-FO3-1	1392	460	164	174	594	210	66	92	65	120	315	160	1/2"	149
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	6.30		329
LHS-15Y-050Y-FC3-2	LHS-15Y-050Y-FO3-2	1392	460	164	174	594	210	66	92	65	120	315	145	1/2"	*
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.71		*
LHS-15Y-055Y-FC3-2	LHS-15Y-055Y-FO3-2	1392	460	164	174	594	210	66	92	65	120	315	145	1/2"	*
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.71		*
LHS-15X-060Y-FC3-2	LHS-15X-060Y-FO3-2	1392	460	164	174	594	210	66	92	65	120	315	145	1/2"	*
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.71		*
LHS-15X-065Y-FC3-2	LHS-15X-065Y-FO3-2	1392	460	164	174	594	210	66	92	65	120	315	145	1/2"	150
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.71		332
LHS-15X-075Y-FC3-2	LHS-15X-075Y-FO3-2	1392	460	164	174	594	210	66	92	65	120	315	145	1/2"	*
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.71		*
LHS-15X-085Y-FC3-2	LHS-15X-085Y-FO3-2	1392	460	164	174	594	210	66	92	65	120	315	150	1/2"	154
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.91		340
LHS-15X-090Y-FC3-2	LHS-15X-090Y-FO3-2	1392	460	164	174	594	210	66	92	65	120	315	160	1/2"	156
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	6.30		345
LHS-15X-050Y-FC3-3	LHS-15X-050Y-FO3-3	1392	460	164	174	594	210	66	92	65	120	315	145	1/2"	*
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.71		*
LHS-15X-055Y-FC3-3	LHS-15X-055Y-FO3-3	1392	460	164	174	594	210	66	92	65	120	315	145	1/2"	*
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.71		*
LHS-15X-060Y-FC3-3	LHS-15X-060Y-FO3-3	1392	460	164	174	594	210	66	92	65	120	315	145	1/2"	*
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.71		*
LHS-15X-065Y-FC3-3	LHS-15X-065Y-FO3-3	1392	460	164	174	594	210	66	92	65	120	315	145	1/2"	148
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.71		327
LHS-15X-075Y-FC3-3	LHS-15X-075Y-FO3-3	1392	460	164	174	594	210	66	92	65	120	315	145	1/2"	*
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.71		*
LHS-15X-085Y-FC3-3	LHS-15X-085Y-FO3-3	1392	460	164	174	594	210	66	92	65	120	315	150	1/2"	152
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	5.91		336
LHS-15X-090Y-FC3-3	LHS-15X-090Y-FO3-3	1392	460	164	174	594	210	66	92	65	120	315	160	1/2"	154
		54.80	18.11	6.46	6.85	23.39	8.27	2.61	3.60	2.56	4.72	12.40	6.30		340

* Under development. Please contact Flowserve for more information.



Table 33: Dimensions & Weights – LHS-20 Sym/Cant – Single Acting – Fail Close/Fail Open

TOLERANCE ±10% TO BE CONSIDERED ON DIMENSIONS

		Dimensions mm (in) - Kg (lbs)													'N' NPT PORT	Weight
Fail Close Model	Fail Open Model	A	B	C	D	E	F	H	I	K	L	ØM	N			
LHS-20X-050Y-FC1-1	LHS-20X-050Y-FO1-1	1706	672	219	222	594	175	27	103	85	150	260	145	1/2"	*	
		67.15	26.44	8.60	8.72	23.39	6.87	1.06	4.06	3.35	5.91	10.24	5.71		*	
LHS-20X-055Y-FC1-1	LHS-20X-055Y-FO1-1	1706	672	219	222	594	175	27	103	85	150	260	145	1/2"	*	
		67.15	26.44	8.60	8.72	23.39	6.87	1.06	4.06	3.35	5.91	10.24	5.71		*	
LHS-20X-065Y-FC1-1	LHS-20X-065Y-FO1-1	1706	672	219	222	594	175	27	103	85	150	260	145	1/2"	180	
		67.15	26.44	8.60	8.72	23.39	6.87	1.06	4.06	3.35	5.91	10.24	5.71		398	
LHS-20X-075Y-FC1-1	LHS-20X-075Y-FO1-1	1706	672	219	222	594	175	27	103	85	150	260	145	1/2"	182	
		67.15	26.44	8.60	8.72	23.39	6.87	1.06	4.06	3.35	5.91	10.24	5.71		402	
LHS-20X-080Y-FC1-1	LHS-20X-080Y-FO1-1	1706	672	219	222	594	175	27	103	85	150	260	150	1/2"	*	
		67.15	26.44	8.60	8.72	23.39	6.87	1.06	4.06	3.35	5.91	10.24	5.91		*	
LHS-20X-090Y-FC1-1	LHS-20X-090Y-FO1-1	1706	672	219	222	594	175	27	103	85	150	260	160	1/2"	189	
		67.15	26.44	8.60	8.72	23.39	6.87	1.06	4.06	3.35	5.91	10.24	6.30		418	
LHS-20X-100Y-FC1-1	LHS-20X-100Y-FO1-1	1706	672	219	222	594	175	27	103	85	150	260	170	1/2"	*	
		67.15	26.44	8.60	8.72	23.39	6.87	1.06	4.06	3.35	5.91	10.24	6.69		*	
LHS-20X-110Y-FC1-1	LHS-20X-110Y-FO1-1	1706	672	219	222	594	175	27	103	85	150	260	180	1/2"	195	
		67.15	26.44	8.60	8.72	23.39	6.87	1.06	4.06	3.35	5.91	10.24	7.09		431	
LHS-20X-120Y-FC1-1	LHS-20X-120Y-FO1-1	1726	672	219	222	614	175	27	103	85	150	260	190	1/2"	203	
		67.93	26.44	8.60	8.72	24.17	6.87	1.06	4.06	3.35	5.91	10.24	7.48		449	
LHS-20X-050Y-FC2-1	LHS-20X-050Y-FO2-1	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		*	
LHS-20X-055Y-FC2-1	LHS-20X-055Y-FO2-1	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		*	
LHS-20X-065Y-FC2-1	LHS-20X-065Y-FO2-1	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	239	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		528	
LHS-20X-075Y-FC2-1	LHS-20X-075Y-FO2-1	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	241	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		533	
LHS-20X-080Y-FC2-1	LHS-20X-080Y-FO2-1	1690	656	219	222	594	222	59	103	85	150	316	150	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.91		*	
LHS-20X-090Y-FC2-1	LHS-20X-090Y-FO2-1	1690	656	219	222	594	222	59	103	85	150	316	160	1/2"	248	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	6.30		548	
LHS-20X-100Y-FC2-1	LHS-20X-100Y-FO2-1	1690	656	219	222	594	222	59	103	85	150	316	170	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	6.69		*	
LHS-20X-110Y-FC2-1	LHS-20X-110Y-FO2-1	1690	656	219	222	594	222	59	103	85	150	316	180	1/2"	254	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	7.09		561	
LHS-20X-120Y-FC2-1	LHS-20X-120Y-FO2-1	1710	656	219	222	614	222	59	103	85	150	316	190	1/2"	262	
		67.32	25.83	8.60	8.72	24.17	8.74	2.32	4.06	3.35	5.91	12.44	7.48		579	
LHS-20X-050Y-FC2-2	LHS-20X-050Y-FO2-2	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		*	
LHS-20X-055Y-FC2-2	LHS-20X-055Y-FO2-2	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		*	
LHS-20X-065Y-FC2-2	LHS-20X-065Y-FO2-2	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	241	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		533	
LHS-20X-075Y-FC2-2	LHS-20X-075Y-FO2-2	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	243	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		537	
LHS-20X-080Y-FC2-2	LHS-20X-080Y-FO2-2	1690	656	219	222	594	222	59	103	85	150	316	150	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.91		*	
LHS-20X-090Y-FC2-2	LHS-20X-090Y-FO2-2	1690	656	219	222	594	222	59	103	85	150	316	160	1/2"	250	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	6.30		553	
LHS-20X-100Y-FC2-2	LHS-20X-100Y-FO2-2	1690	656	219	222	594	222	59	103	85	150	316	170	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	6.69		*	
LHS-20X-110Y-FC2-2	LHS-20X-110Y-FO2-2	1690	656	219	222	594	222	59	103	85	150	316	180	1/2"	256	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	7.09		566	
LHS-20X-120Y-FC2-2	LHS-20X-120Y-FO2-2	1710	656	219	222	614	222	59	103	85	150	316	190	1/2"	264	
		67.32	25.83	8.60	8.72	24.17	8.74	2.32	4.06	3.35	5.91	12.44	7.48		583	

* Under development. Please contact Flowserve for more information.



Table 34: Dimensions & Weights – LHS-20 Sym/Cant – Single Acting – Fail Close/Fail Open (continued)

TOLERANCE ±10% TO BE CONSIDERED ON DIMENSIONS

		Dimensions mm (in) - Kg (lbs)													'N' NPT PORT	Weight
Fail Close Model	Fail Open Model	A	B	C	D	E	F	H	I	K	L	ØM	N			
LHS-20X-050Y-FC2-3	LHS-20X-050Y-FO2-3	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		*	
LHS-20X-055Y-FC2-3	LHS-20X-055Y-FO2-3	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		*	
LHS-20X-065Y-FC2-3	LHS-20X-065Y-FO2-3	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	257	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		568	
LHS-20X-075Y-FC2-3	LHS-20X-075Y-FO2-3	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	259	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		572	
LHS-20X-080Y-FC2-3	LHS-20X-080Y-FO2-3	1690	656	219	222	594	222	59	103	85	150	316	150	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.91		*	
LHS-20X-090Y-FC2-3	LHS-20X-090Y-FO2-3	1690	656	219	222	594	222	59	103	85	150	316	160	1/2"	266	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	6.30		588	
LHS-20X-100Y-FC2-3	LHS-20X-100Y-FO2-3	1690	656	219	222	594	222	59	103	85	150	316	170	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	6.69		*	
LHS-20X-110Y-FC2-3	LHS-20X-110Y-FO2-3	1690	656	219	222	594	222	59	103	85	150	316	180	1/2"	272	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	7.09		601	
LHS-20X-120Y-FC2-3	LHS-20X-120Y-FO2-3	1710	656	219	222	614	222	59	103	85	150	316	190	1/2"	280	
		67.32	25.83	8.60	8.72	24.17	8.74	2.32	4.06	3.35	5.91	12.44	7.48		619	
LHS-20X-050Y-FC2-4	LHS-20X-050Y-FO2-4	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		*	
LHS-20X-055Y-FC2-4	LHS-20X-055Y-FO2-4	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		*	
LHS-20X-065Y-FC2-4	LHS-20X-065Y-FO2-4	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	248	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		548	
LHS-20X-075Y-FC2-4	LHS-20X-075Y-FO2-4	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	250	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.71		553	
LHS-20X-080Y-FC2-4	LHS-20X-080Y-FO2-4	1690	656	219	222	594	222	59	103	85	150	316	150	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	5.91		*	
LHS-20X-090Y-FC2-4	LHS-20X-090Y-FO2-4	1690	656	219	222	594	222	59	103	85	150	316	160	1/2"	257	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	6.30		568	
LHS-20X-100Y-FC2-4	LHS-20X-100Y-FO2-4	1690	656	219	222	594	222	59	103	85	150	316	170	1/2"	*	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	6.69		*	
LHS-20X-110Y-FC2-4	LHS-20X-110Y-FO2-4	1690	656	219	222	594	222	59	103	85	150	316	180	1/2"	263	
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	7.09		581	
LHS-20X-120Y-FC2-4	LHS-20X-120Y-FO2-4	1710	656	219	222	614	222	59	103	85	150	316	190	1/2"	271	
		67.32	25.83	8.60	8.72	24.17	8.74	2.32	4.06	3.35	5.91	12.44	7.48		599	
LHS-20X-050Y-FC3-1	LHS-20X-050Y-FO3-1	1696	662	219	222	594	251	88	103	85	150	373	145	1/2"	*	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	5.71		*	
LHS-20X-055Y-FC3-1	LHS-20X-055Y-FO3-1	1696	662	219	222	594	251	88	103	85	150	373	145	1/2"	*	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	5.71		*	
LHS-20X-065Y-FC3-1	LHS-20X-065Y-FO3-1	1696	662	219	222	594	251	88	103	85	150	373	145	1/2"	289	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	5.71		639	
LHS-20X-075Y-FC3-1	LHS-20X-075Y-FO3-1	1696	662	219	222	594	251	88	103	85	150	373	145	1/2"	291	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	5.71		643	
LHS-20X-080Y-FC3-1	LHS-20X-080Y-FO3-1	1696	662	219	222	594	251	88	103	85	150	373	150	1/2"	*	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	5.91		*	
LHS-20X-090Y-FC3-1	LHS-20X-090Y-FO3-1	1696	662	219	222	594	251	88	103	85	150	373	160	1/2"	298	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	6.30		659	
LHS-20X-100Y-FC3-1	LHS-20X-100Y-FO3-1	1696	662	219	222	594	251	88	103	85	150	373	170	1/2"	*	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	6.69		*	
LHS-20X-110Y-FC3-1	LHS-20X-110Y-FO3-1	1696	662	219	222	594	251	88	103	85	150	373	180	1/2"	304	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	7.09		672	
LHS-20X-120Y-FC3-1	LHS-20X-120Y-FO3-1	1716	662	219	222	614	251	88	103	85	150	373	190	1/2"	312	
		67.56	26.06	8.60	8.72	24.17	9.86	3.44	4.06	3.35	5.91	14.69	7.48		690	

* Under development. Please contact Flowserve for more information.

Table 35: Dimensions & Weights – LHS-20 Sym/Cant – Single Acting – Fail Close/Fail Open (continued)

TOLERANCE ±10% TO BE CONSIDERED ON DIMENSIONS

		Dimensions mm (in) - Kg (lbs)													'N' NPT PORT	Weight
Fail Close Model	Fail Open Model	A	B	C	D	E	F	H	I	K	L	ØM	N			
LHS-20X-050Y-FC3-2	LHS-20X-050Y-FO3-2	1696	662	219	222	594	251	88	103	85	150	373	145	1/2"	*	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	5.71		*	
LHS-20X-055Y-FC3-2	LHS-20X-055Y-FO3-2	1696	662	219	222	594	251	88	103	85	150	373	145	1/2"	*	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	5.71		*	
LHS-20X-065Y-FC3-2	LHS-20X-065Y-FO3-2	1696	662	219	222	594	251	88	103	85	150	373	145	1/2"	306	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	5.71		676	
LHS-20X-075Y-FC3-2	LHS-20X-075Y-FO3-2	1696	662	219	222	594	251	88	103	85	150	373	145	1/2"	308	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	5.71		681	
LHS-20X-080Y-FC3-2	LHS-20X-080Y-FO3-2	1696	662	219	222	594	251	88	103	85	150	373	150	1/2"	*	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	5.91		*	
LHS-20X-090Y-FC3-2	LHS-20X-090Y-FO3-2	1696	662	219	222	594	251	88	103	85	150	373	160	1/2"	315	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	6.30		696	
LHS-20X-100Y-FC3-2	LHS-20X-100Y-FO3-2	1696	662	219	222	594	251	88	103	85	150	373	170	1/2"	*	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	6.69		*	
LHS-20X-110Y-FC3-2	LHS-20X-110Y-FO3-2	1696	662	219	222	594	251	88	103	85	150	373	180	1/2"	321	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	7.09		709	
LHS-20X-120Y-FC3-2	LHS-20X-120Y-FO3-2	1716	662	219	222	614	251	88	103	85	150	373	190	1/2"	329	
		67.56	26.06	8.60	8.72	24.17	9.86	3.44	4.06	3.35	5.91	14.69	7.48		727	
LHS-20X-050Y-FC3-3	LHS-20X-050Y-FO3-3	1696	662	219	222	594	251	88	103	85	150	373	145	1/2"	*	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	5.71		*	
LHS-20X-055Y-FC3-3	LHS-20X-055Y-FO3-3	1696	662	219	222	594	251	88	103	85	150	373	145	1/2"	*	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	5.71		*	
LHS-20X-065Y-FC3-3	LHS-20X-065Y-FO3-3	1696	662	219	222	594	251	88	103	85	150	373	145	1/2"	296	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	5.71		654	
LHS-20X-075Y-FC3-3	LHS-20X-075Y-FO3-3	1696	662	219	222	594	251	88	103	85	150	373	145	1/2"	298	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	5.71		659	
LHS-20X-080Y-FC3-3	LHS-20X-080Y-FO3-3	1696	662	219	222	594	251	88	103	85	150	373	150	1/2"	*	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	5.91		*	
LHS-20X-090Y-FC3-3	LHS-20X-090Y-FO3-3	1696	662	219	222	594	251	88	103	85	150	373	160	1/2"	305	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	6.30		674	
LHS-20X-100Y-FC3-3	LHS-20X-100Y-FO3-3	1696	662	219	222	594	251	88	103	85	150	373	170	1/2"	*	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	6.69		*	
LHS-20X-110Y-FC3-3	LHS-20X-110Y-FO3-3	1696	662	219	222	594	251	88	103	85	150	373	180	1/2"	311	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	7.09		687	
LHS-20X-120Y-FC3-3	LHS-20X-120Y-FO3-3	1716	662	219	222	614	251	88	103	85	150	373	190	1/2"	319	
		67.56	26.06	8.60	8.72	24.17	9.86	3.44	4.06	3.35	5.91	14.69	7.48		705	

* Under development. Please contact Flowserve for more information.



Table 36: Dimensions & Weights – LHS-25 Sym/Cant – Single Acting – Fail Close/Fail Open

TOLERANCE ±10% TO BE CONSIDERED ON DIMENSIONS

Fail Close Model	Fail Open Model	Dimensions mm (in) - Kg (lbs)													'N' NPT PORT	Weight
		A	B	C	D	E	F	H	I	K	L	ØM	N			
LHS-25X-075Y-FC1-1	LHS-25X-075Y-FO1-1	1868	759	249	267	594	222	44	118	105	188	316	145	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	5.71		*	
LHS-25X-080Y-FC1-1	LHS-25X-080Y-FO1-1	1868	759	249	267	594	222	44	118	105	188	316	150	1/2"	283	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	5.91		625	
LHS-25X-085Y-FC1-1	LHS-25X-085Y-FO1-1	1868	759	249	267	594	222	44	118	105	188	316	155	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.10		*	
LHS-25X-090Y-FC1-1	LHS-25X-090Y-FO1-1	1868	759	249	267	594	222	44	118	105	188	316	160	1/2"	287	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.30		634	
LHS-25X-100Y-FC1-1	LHS-25X-100Y-FO1-1	1868	759	249	267	594	222	44	118	105	188	316	170	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.69		*	
LHS-25X-110Y-FC1-1	LHS-25X-110Y-FO1-1	1868	759	249	267	594	222	44	118	105	188	316	180	1/2"	294	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	7.09		650	
LHS-25X-120Y-FC1-1	LHS-25X-120Y-FO1-1	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	304	
		74.33	29.88	9.78	10.49	24.17	8.74	1.73	4.65	4.13	7.40	12.44	7.48		672	
LHS-25X-130Y-FC1-1	LHS-25X-130Y-FO1-1	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	313	
		74.33	29.88	9.78	10.49	24.17	8.74	1.73	4.65	4.13	7.40	12.44	7.48		692	
LHS-25X-140Y-FC1-1	LHS-25X-140Y-FO1-1	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	*	
		74.33	29.88	9.78	10.49	24.17	8.74	1.73	4.65	4.13	7.40	12.44	7.48		*	
LHS-25X-075Y-FC1-2	LHS-25X-075Y-FO1-2	1868	759	249	267	594	222	44	118	105	188	316	145	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	5.71		*	
LHS-25X-080Y-FC1-2	LHS-25X-080Y-FO1-2	1868	759	249	267	594	222	44	118	105	188	316	150	1/2"	314	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	5.91		694	
LHS-25X-085Y-FC1-2	LHS-25X-085Y-FO1-2	1868	759	249	267	594	222	44	118	105	188	316	155	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.10		*	
LHS-25X-090Y-FC1-2	LHS-25X-090Y-FO1-2	1868	759	249	267	594	222	44	118	105	188	316	160	1/2"	318	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.30		703	
LHS-25X-100Y-FC1-2	LHS-25X-100Y-FO1-2	1868	759	249	267	594	222	44	118	105	188	316	170	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.69		*	
LHS-25X-110Y-FC1-2	LHS-25X-110Y-FO1-2	1868	759	249	267	594	222	44	118	105	188	316	180	1/2"	325	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	7.09		718	
LHS-25X-120Y-FC1-2	LHS-25X-120Y-FO1-2	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	335	
		74.33	29.88	9.78	10.49	24.17	8.74	1.73	4.65	4.13	7.40	12.44	7.48		740	
LHS-25X-130Y-FC1-2	LHS-25X-130Y-FO1-2	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	344	
		74.33	29.88	9.78	10.49	24.17	8.74	1.73	4.65	4.13	7.40	12.44	7.48		760	
LHS-25X-140Y-FC1-2	LHS-25X-140Y-FO1-2	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	*	
		74.33	29.88	9.78	10.49	24.17	8.74	1.73	4.65	4.13	7.40	12.44	7.48		*	
LHS-25X-075Y-FC3-1	LHS-25X-075Y-FO3-1	1868	759	249	267	594	251	73	118	105	188	374	145	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.71		*	
LHS-25X-080Y-FC3-1	LHS-25X-080Y-FO3-1	1868	759	249	267	594	251	73	118	105	188	374	150	1/2"	364	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.91		804	
LHS-25X-085Y-FC3-1	LHS-25X-085Y-FO3-1	1868	759	249	267	594	251	73	118	105	188	374	155	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.10		*	
LHS-25X-090Y-FC3-1	LHS-25X-090Y-FO3-1	1868	759	249	267	594	251	73	118	105	188	374	160	1/2"	368	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.30		813	
LHS-25X-100Y-FC3-1	LHS-25X-100Y-FO3-1	1868	759	249	267	594	251	73	118	105	188	374	170	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.69		*	
LHS-25X-110Y-FC3-1	LHS-25X-110Y-FO3-1	1868	759	249	267	594	251	73	118	105	188	374	180	1/2"	375	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	7.09		829	
LHS-25X-120Y-FC3-1	LHS-25X-120Y-FO3-1	1888	759	249	267	614	251	73	118	105	188	374	190	1/2"	385	
		74.33	29.88	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		851	
LHS-25X-130Y-FC3-1	LHS-25X-130Y-FO3-1	1888	759	249	267	614	251	73	118	105	188	374	190	1/2"	394	
		74.33	29.88	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		871	
LHS-25X-140Y-FC3-1	LHS-25X-140Y-FO3-1	1888	759	249	267	614	251	73	118	105	188	374	190	1/2"	*	
		74.33	29.88	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		*	

* Under development. Please contact Flowserve for more information.



Table 37: Dimensions & Weights – LHS-25 Sym/Cant – Single Acting – Fail Close/Fail Open (continued)

TOLERANCE ±10% TO BE CONSIDERED ON DIMENSIONS

		Dimensions mm (in) - Kg (lbs)													'N' NPT PORT	Weight
Fail Close Model	Fail Open Model	A	B	C	D	E	F	H	I	K	L	ØM	N			
LHS-25X-075Y-FC1-3	LHS-25X-075Y-FO1-3	1868	759	249	267	594	222	44	118	105	188	316	145	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	5.71		*	
LHS-25X-080Y-FC1-3	LHS-25X-080Y-FO1-3	1868	759	249	267	594	222	44	118	105	188	316	150	1/2"	329	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	5.91		727	
LHS-25X-085Y-FC1-3	LHS-25X-085Y-FO1-3	1868	759	249	267	594	222	44	118	105	188	316	155	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.10		*	
LHS-25X-090Y-FC1-3	LHS-25X-090Y-FO1-3	1868	759	249	267	594	222	44	118	105	188	316	160	1/2"	333	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.30		736	
LHS-25X-100Y-FC1-3	LHS-25X-100Y-FO1-3	1868	759	249	267	594	222	44	118	105	188	316	170	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.69		*	
LHS-25X-110Y-FC1-3	LHS-25X-110Y-FO1-3	1868	759	249	267	594	222	44	118	105	188	316	180	1/2"	340	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	7.09		751	
LHS-25X-120Y-FC1-3	LHS-25X-120Y-FO1-3	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	350	
		74.33	29.88	9.78	10.49	24.17	8.74	1.73	4.65	4.13	7.40	12.44	7.48		774	
LHS-25X-130Y-FC1-3	LHS-25X-130Y-FO1-3	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	359	
		74.33	29.88	9.78	10.49	24.17	8.74	1.73	4.65	4.13	7.40	12.44	7.48		793	
LHS-25X-140Y-FC1-3	LHS-25X-140Y-FO1-3	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	*	
		74.33	29.88	9.78	10.49	24.17	8.74	1.73	4.65	4.13	7.40	12.44	7.48		*	
LHS-25X-075Y-FC1-4	LHS-25X-075Y-FO1-4	1868	759	249	267	594	222	44	118	105	188	316	145	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	5.71		*	
LHS-25X-080Y-FC1-4	LHS-25X-080Y-FO1-4	1868	759	249	267	594	222	44	118	105	188	316	150	1/2"	319	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	5.91		705	
LHS-25X-085Y-FC1-4	LHS-25X-085Y-FO1-4	1868	759	249	267	594	222	44	118	105	188	316	155	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.10		*	
LHS-25X-090Y-FC1-4	LHS-25X-090Y-FO1-4	1868	759	249	267	594	222	44	118	105	188	316	160	1/2"	323	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.30		714	
LHS-25X-100Y-FC1-4	LHS-25X-100Y-FO1-4	1868	759	249	267	594	222	44	118	105	188	316	170	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.69		*	
LHS-25X-110Y-FC1-4	LHS-25X-110Y-FO1-4	1868	759	249	267	594	222	44	118	105	188	316	180	1/2"	330	
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	7.09		729	
LHS-25X-120Y-FC1-4	LHS-25X-120Y-FO1-4	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	340	
		74.33	29.88	9.78	10.49	24.17	8.74	1.73	4.65	4.13	7.40	12.44	7.48		751	
LHS-25X-130Y-FC1-4	LHS-25X-130Y-FO1-4	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	349	
		74.33	29.88	9.78	10.49	24.17	8.74	1.73	4.65	4.13	7.40	12.44	7.48		771	
LHS-25X-140Y-FC1-4	LHS-25X-140Y-FO1-4	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	*	
		74.33	29.88	9.78	10.49	24.17	8.74	1.73	4.65	4.13	7.40	12.44	7.48		*	
LHS-25X-075Y-FC2-1	LHS-25X-075Y-FO2-1	1868	759	249	267	594	251	73	118	105	188	374	145	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.71		*	
LHS-25X-080Y-FC2-1	LHS-25X-080Y-FO2-1	1868	759	249	267	594	251	73	118	105	188	374	150	1/2"	319	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.91		705	
LHS-25X-085Y-FC2-1	LHS-25X-085Y-FO2-1	1868	759	249	267	594	251	73	118	105	188	374	155	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.10		*	
LHS-25X-090Y-FC2-1	LHS-25X-090Y-FO2-1	1868	759	249	267	594	251	73	118	105	188	374	160	1/2"	323	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.30		714	
LHS-25X-100Y-FC2-1	LHS-25X-100Y-FO2-1	1868	759	249	267	594	251	73	118	105	188	374	170	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.69		*	
LHS-25X-110Y-FC2-1	LHS-25X-110Y-FO2-1	1868	759	249	267	594	251	73	118	105	188	374	180	1/2"	330	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	7.09		729	
LHS-25X-120Y-FC2-1	LHS-25X-120Y-FO2-1	1888	759	249	267	614	251	73	118	105	188	374	190	1/2"	340	
		74.33	29.88	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		751	
LHS-25X-130Y-FC2-1	LHS-25X-130Y-FO2-1	1888	759	249	267	614	251	73	118	105	188	374	190	1/2"	349	
		74.33	29.88	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		771	
LHS-25X-140Y-FC2-1	LHS-25X-140Y-FO2-1	1888	759	249	267	614	251	73	118	105	188	374	190	1/2"	*	
		74.33	29.88	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		*	

* Under development. Please contact Flowserve for more information.



Table 38: Dimensions & Weights – LHS-25 Sym/Cant – Single Acting – Fail Close/Fail Open (continued)

TOLERANCE ±10% TO BE CONSIDERED ON DIMENSIONS

Fail Close Model	Fail Open Model	Dimensions mm (in) - Kg (lbs)													'N' NPT PORT	Weight
		A	B	C	D	E	F	H	I	K	L	ØM	N			
LHS-25X-075Y-FC3-2	LHS-25X-075Y-FO3-2	1907	798	249	267	594	251	73	118	105	188	374	145	1/2"	*	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.71		*	
LHS-25X-080Y-FC3-2	LHS-25X-080Y-FO3-2	1907	798	249	267	594	251	73	118	105	188	374	150	1/2"	325	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.91		718	
LHS-25X-085Y-FC3-2	LHS-25X-085Y-FO3-2	1907	798	249	267	594	251	73	118	105	188	374	155	1/2"	*	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.10		*	
LHS-25X-090Y-FC3-2	LHS-25X-090Y-FO3-2	1907	798	249	267	594	251	73	118	105	188	374	160	1/2"	329	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.30		727	
LHS-25X-100Y-FC3-2	LHS-25X-100Y-FO3-2	1907	798	249	267	594	251	73	118	105	188	374	170	1/2"	*	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.69		*	
LHS-25X-110Y-FC3-2	LHS-25X-110Y-FO3-2	1907	798	249	267	594	251	73	118	105	188	374	180	1/2"	336	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	7.09		743	
LHS-25X-120Y-FC3-2	LHS-25X-120Y-FO3-2	1927	798	249	267	614	251	73	118	105	188	374	190	1/2"	346	
		75.87	31.42	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		765	
LHS-25X-130Y-FC3-2	LHS-25X-130Y-FO3-2	1927	798	249	267	614	251	73	118	105	188	374	190	1/2"	355	
		75.87	31.42	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		785	
LHS-25X-140Y-FC3-2	LHS-25X-140Y-FO3-2	1927	798	249	267	614	251	73	118	105	188	374	190	1/2"	*	
		75.87	31.42	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		*	
LHS-25X-075Y-FC2-2	LHS-25X-075Y-FO2-2	1868	759	249	267	594	251	73	118	105	188	374	150	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.91		*	
LHS-25X-080Y-FC2-2	LHS-25X-080Y-FO2-2	1868	759	249	267	594	251	73	118	105	188	374	150	1/2"	335	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.91		740	
LHS-25X-085Y-FC2-2	LHS-25X-085Y-FO2-2	1868	759	249	267	594	251	73	118	105	188	374	150	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.91		*	
LHS-25X-090Y-FC2-2	LHS-25X-090Y-FO2-2	1868	759	249	267	594	251	73	118	105	188	374	160	1/2"	339	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.30		749	
LHS-25X-100Y-FC2-2	LHS-25X-100Y-FO2-2	1868	759	249	267	594	251	73	118	105	188	374	170	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.69		*	
LHS-25X-110Y-FC2-2	LHS-25X-110Y-FO2-2	1868	759	249	267	594	251	73	118	105	188	374	180	1/2"	346	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	7.09		765	
LHS-25X-120Y-FC2-2	LHS-25X-120Y-FO2-2	1888	759	249	267	614	251	73	118	105	188	374	190	1/2"	356	
		74.33	29.88	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		787	
LHS-25X-130Y-FC2-2	LHS-25X-130Y-FO2-2	1888	759	249	267	614	251	73	118	105	188	374	190	1/2"	365	
		74.33	29.88	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		807	
LHS-25X-140Y-FC2-2	LHS-25X-140Y-FO2-2	1888	759	249	267	614	251	73	118	105	188	374	190	1/2"	*	
		74.33	29.88	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		*	
LHS-25X-075Y-FC3-3	LHS-25X-075Y-FO3-3	1907	798	249	267	594	251	73	118	105	188	374	145	1/2"	*	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.71		*	
LHS-25X-080Y-FC3-3	LHS-25X-080Y-FO3-3	1907	798	249	267	594	251	73	118	105	188	374	150	1/2"	335	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.91		740	
LHS-25X-085Y-FC3-3	LHS-25X-085Y-FO3-3	1907	798	249	267	594	251	73	118	105	188	374	155	1/2"	*	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.10		*	
LHS-25X-090Y-FC3-3	LHS-25X-090Y-FO3-3	1907	798	249	267	594	251	73	118	105	188	374	160	1/2"	339	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.30		749	
LHS-25X-100Y-FC3-3	LHS-25X-100Y-FO3-3	1907	798	249	267	594	251	73	118	105	188	374	170	1/2"	*	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.69		*	
LHS-25X-110Y-FC3-3	LHS-25X-110Y-FO3-3	1907	798	249	267	594	251	73	118	105	188	374	180	1/2"	346	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	7.09		765	
LHS-25X-120Y-FC3-3	LHS-25X-120Y-FO3-3	1927	798	249	267	614	251	73	118	105	188	374	190	1/2"	356	
		75.87	31.42	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		787	
LHS-25X-130Y-FC3-3	LHS-25X-130Y-FO3-3	1927	798	249	267	614	251	73	118	105	188	374	190	1/2"	365	
		75.87	31.42	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		807	
LHS-25X-140Y-FC3-3	LHS-25X-140Y-FO3-3	1927	798	249	267	614	251	73	118	105	188	374	190	1/2"	*	
		75.87	31.42	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		*	

* Under development. Please contact Flowserve for more information.



Table 39: Dimensions & Weights – LHS-25 Sym/Cant – Single Acting – Fail Close/Fail Open (continued)

TOLERANCE ±10% TO BE CONSIDERED ON DIMENSIONS

		Dimensions mm (in) - Kg (lbs)													'N' NPT PORT	Weight
Fail Close Model	Fail Open Model	A	B	C	D	E	F	H	I	K	L	ØM	N			
LHS-25X-075Y-FC2-3	LHS-25X-075Y-FO2-3	1868	759	249	267	594	251	73	118	105	188	374	145	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.71		*	
LHS-25X-080Y-FC2-3	LHS-25X-080Y-FO2-3	1868	759	249	267	594	251	73	118	105	188	374	150	1/2"	325	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.91		718	
LHS-25X-085Y-FC2-3	LHS-25X-085Y-FO2-3	1868	759	249	267	594	251	73	118	105	188	374	155	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.10		*	
LHS-25X-090Y-FC2-3	LHS-25X-090Y-FO2-3	1868	759	249	267	594	251	73	118	105	188	374	160	1/2"	329	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.30		727	
LHS-25X-100Y-FC2-3	LHS-25X-100Y-FO2-3	1868	759	249	267	594	251	73	118	105	188	374	170	1/2"	*	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.69		*	
LHS-25X-110Y-FC2-3	LHS-25X-110Y-FO2-3	1868	759	249	267	594	251	73	118	105	188	374	180	1/2"	336	
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	7.09		743	
LHS-25X-120Y-FC2-3	LHS-25X-120Y-FO2-3	1888	759	249	267	614	251	73	118	105	188	374	190	1/2"	346	
		74.33	29.88	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		765	
LHS-25X-130Y-FC2-3	LHS-25X-130Y-FO2-3	1888	759	249	267	614	251	73	118	105	188	374	190	1/2"	355	
		74.33	29.88	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		785	
LHS-25X-140Y-FC2-3	LHS-25X-140Y-FO2-3	1888	759	249	267	614	251	73	118	105	188	374	190	1/2"	*	
		74.33	29.88	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		*	
LHS-25X-075Y-FC4-1	LHS-25X-075Y-FO4-1	1937	828	249	267	594	270	92	118	105	188	411	145	1/2"	*	
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	5.71		*	
LHS-25X-080Y-FC4-1	LHS-25X-080Y-FO4-1	1937	828	249	267	594	270	92	118	105	188	411	150	1/2"	352	
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	5.91		778	
LHS-25X-085Y-FC4-1	LHS-25X-085Y-FO4-1	1937	828	249	267	594	270	92	118	105	188	411	155	1/2"	*	
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	6.10		*	
LHS-25X-090Y-FC4-1	LHS-25X-090Y-FO4-1	1937	828	249	267	594	270	92	118	105	188	411	160	1/2"	356	
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	6.30		787	
LHS-25X-100Y-FC4-1	LHS-25X-100Y-FO4-1	1937	828	249	267	594	270	92	118	105	188	411	170	1/2"	*	
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	6.69		*	
LHS-25X-110Y-FC4-1	LHS-25X-110Y-FO4-1	1937	828	249	267	594	270	92	118	105	188	411	180	1/2"	363	
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	7.09		802	
LHS-25X-120Y-FC4-1	LHS-25X-120Y-FO4-1	1957	828	249	267	614	270	92	118	105	188	411	190	1/2"	373	
		77.05	32.60	9.78	10.49	24.17	10.61	3.60	4.65	4.13	7.40	16.18	7.48		824	
LHS-25X-130Y-FC4-1	LHS-25X-130Y-FO4-1	1957	828	249	267	614	270	92	118	105	188	411	190	1/2"	382	
		77.05	32.60	9.78	10.49	24.17	10.61	3.60	4.65	4.13	7.40	16.18	7.48		844	
LHS-25X-140Y-FC4-1	LHS-25X-140Y-FO4-1	1957	828	249	267	614	270	92	118	105	188	411	190	1/2"	*	
		77.05	32.60	9.78	10.49	24.17	10.61	3.60	4.65	4.13	7.40	16.18	7.48		*	
LHS-25X-075Y-FC3-4	LHS-25X-075Y-FO3-4	1907	798	249	267	594	251	73	118	105	188	374	145	1/2"	*	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.71		*	
LHS-25X-080Y-FC3-4	LHS-25X-080Y-FO3-4	1907	798	249	267	594	251	73	118	105	188	374	150	1/2"	336	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.91		743	
LHS-25X-085Y-FC3-4	LHS-25X-085Y-FO3-4	1907	798	249	267	594	251	73	118	105	188	374	155	1/2"	*	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.10		*	
LHS-25X-090Y-FC3-4	LHS-25X-090Y-FO3-4	1907	798	249	267	594	251	73	118	105	188	374	160	1/2"	340	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.30		751	
LHS-25X-100Y-FC3-4	LHS-25X-100Y-FO3-4	1907	798	249	267	594	251	73	118	105	188	374	170	1/2"	*	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.69		*	
LHS-25X-110Y-FC3-4	LHS-25X-110Y-FO3-4	1907	798	249	267	594	251	73	118	105	188	374	180	1/2"	347	
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	7.09		767	
LHS-25X-120Y-FC3-4	LHS-25X-120Y-FO3-4	1927	798	249	267	614	251	73	118	105	188	374	190	1/2"	357	
		75.87	31.42	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		789	
LHS-25X-130Y-FC3-4	LHS-25X-130Y-FO3-4	1927	798	249	267	614	251	73	118	105	188	374	190	1/2"	366	
		75.87	31.42	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		809	
LHS-25X-140Y-FC3-4	LHS-25X-140Y-FO3-4	1927	798	249	267	614	251	73	118	105	188	374	190	1/2"	*	
		75.87	31.42	9.78	10.49	24.17	9.86	2.85	4.65	4.13	7.40	14.72	7.48		*	

* Under development. Please contact Flowserve for more information.



Table 40: Dimensions & Weights – LHS-25 Sym/Cant – Single Acting – Fail Close/Fail Open (continued)

TOLERANCE ±10% TO BE CONSIDERED ON DIMENSIONS

Fail Close Model	Fail Open Model	Dimensions mm (in) - Kg (lbs)												'N' NPT PORT	Weight
		A	B	C	D	E	F	H	I	K	L	ØM	N		
LHS-25X-075Y-FC4-2	LHS-25X-075Y-FO4-2	1937	828	249	267	594	270	92	118	105	188	411	145	1/2"	*
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	5.71		*
LHS-25X-080Y-FC4-2	LHS-25X-080Y-FO4-2	1937	828	249	267	594	270	92	118	105	188	411	150	1/2"	366
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	5.91		809
LHS-25X-085Y-FC4-2	LHS-25X-085Y-FO4-2	1937	828	249	267	594	270	92	118	105	188	411	155	1/2"	*
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	6.10		*
LHS-25X-090Y-FC4-2	LHS-25X-090Y-FO4-2	1937	828	249	267	594	270	92	118	105	188	411	160	1/2"	370
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	6.30		818
LHS-25X-100Y-FC4-2	LHS-25X-100Y-FO4-2	1937	828	249	267	594	270	92	118	105	188	411	170	1/2"	*
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	6.69		*
LHS-25X-110Y-FC4-2	LHS-25X-110Y-FO4-2	1937	828	249	267	594	270	92	118	105	188	411	180	1/2"	377
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	7.09		833
LHS-25X-120Y-FC4-2	LHS-25X-120Y-FO4-2	1957	828	249	267	614	270	92	118	105	188	411	190	1/2"	387
		77.05	32.60	9.78	10.49	24.17	10.61	3.60	4.65	4.13	7.40	16.18	7.48		855
LHS-25X-130Y-FC4-2	LHS-25X-130Y-FO4-2	1957	828	249	267	614	270	92	118	105	188	411	190	1/2"	396
		77.05	32.60	9.78	10.49	24.17	10.61	3.60	4.65	4.13	7.40	16.18	7.48		875
LHS-25X-140Y-FC4-2	LHS-25X-140Y-FO4-2	1957	828	249	267	614	270	92	118	105	188	411	190	1/2"	*
		77.05	32.60	9.78	10.49	24.17	10.61	3.60	4.65	4.13	7.40	16.18	7.48		*
LHS-25X-075Y-FC4-3	LHS-25X-075Y-FO4-3	1937	828	249	267	594	270	92	118	105	188	411	145	1/2"	*
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	5.71		*
LHS-25X-080Y-FC4-3	LHS-25X-080Y-FO4-3	1937	828	249	267	594	270	92	118	105	188	411	150	1/2"	369
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	5.91		815
LHS-25X-085Y-FC4-3	LHS-25X-085Y-FO4-3	1937	828	249	267	594	270	92	118	105	188	411	155	1/2"	*
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	6.10		*
LHS-25X-090Y-FC4-3	LHS-25X-090Y-FO4-3	1937	828	249	267	594	270	92	118	105	188	411	160	1/2"	373
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	6.30		824
LHS-25X-100Y-FC4-3	LHS-25X-100Y-FO4-3	1937	828	249	267	594	270	92	118	105	188	411	170	1/2"	*
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	6.69		*
LHS-25X-110Y-FC4-3	LHS-25X-110Y-FO4-3	1937	828	249	267	594	270	92	118	105	188	411	180	1/2"	380
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	7.09		840
LHS-25X-120Y-FC4-3	LHS-25X-120Y-FO4-3	1957	828	249	267	614	270	92	118	105	188	411	190	1/2"	390
		77.05	32.60	9.78	10.49	24.17	10.61	3.60	4.65	4.13	7.40	16.18	7.48		862
LHS-25X-130Y-FC4-3	LHS-25X-130Y-FO4-3	1957	828	249	267	614	270	92	118	105	188	411	190	1/2"	399
		77.05	32.60	9.78	10.49	24.17	10.61	3.60	4.65	4.13	7.40	16.18	7.48		882
LHS-25X-140Y-FC4-3	LHS-25X-140Y-FO4-3	1957	828	249	267	614	270	92	118	105	188	411	190	1/2"	*
		77.05	32.60	9.78	10.49	24.17	10.61	3.60	4.65	4.13	7.40	16.18	7.48		*
LHS-25X-075Y-FC4-4	LHS-25X-075Y-FO4-4	1937	828	249	267	594	270	92	118	105	188	411	145	1/2"	*
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	5.71		*
LHS-25X-080Y-FC4-4	LHS-25X-080Y-FO4-4	1937	828	249	267	594	270	92	118	105	188	411	150	1/2"	366
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	5.91		809
LHS-25X-085Y-FC4-4	LHS-25X-085Y-FO4-4	1937	828	249	267	594	270	92	118	105	188	411	155	1/2"	*
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	6.10		*
LHS-25X-090Y-FC4-4	LHS-25X-090Y-FO4-4	1937	828	249	267	594	270	92	118	105	188	411	160	1/2"	370
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	6.30		818
LHS-25X-100Y-FC4-4	LHS-25X-100Y-FO4-4	1937	828	249	267	594	270	92	118	105	188	411	170	1/2"	*
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	6.69		*
LHS-25X-110Y-FC4-4	LHS-25X-110Y-FO4-4	1937	828	249	267	594	270	92	118	105	188	411	180	1/2"	377
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	7.09		833
LHS-25X-120Y-FC4-4	LHS-25X-120Y-FO4-4	1957	828	249	267	614	270	92	118	105	188	411	190	1/2"	387
		77.05	32.60	9.78	10.49	24.17	10.61	3.60	4.65	4.13	7.40	16.18	7.48		855
LHS-25X-130Y-FC4-4	LHS-25X-130Y-FO4-4	1957	828	249	267	614	270	92	118	105	188	411	190	1/2"	396
		77.05	32.60	9.78	10.49	24.17	10.61	3.60	4.65	4.13	7.40	16.18	7.48		875
LHS-25X-140Y-FC4-4	LHS-25X-140Y-FO4-4	1957	828	249	267	614	270	92	118	105	188	411	190	1/2"	*
		77.05	32.60	9.78	10.49	24.17	10.61	3.60	4.65	4.13	7.40	16.18	7.48		*

* Under development. Please contact Flowserve for more information.

Dimensional Data and Weights – Double Acting

Figure 9: Dimensional Data – Double Acting – Sym/Cant

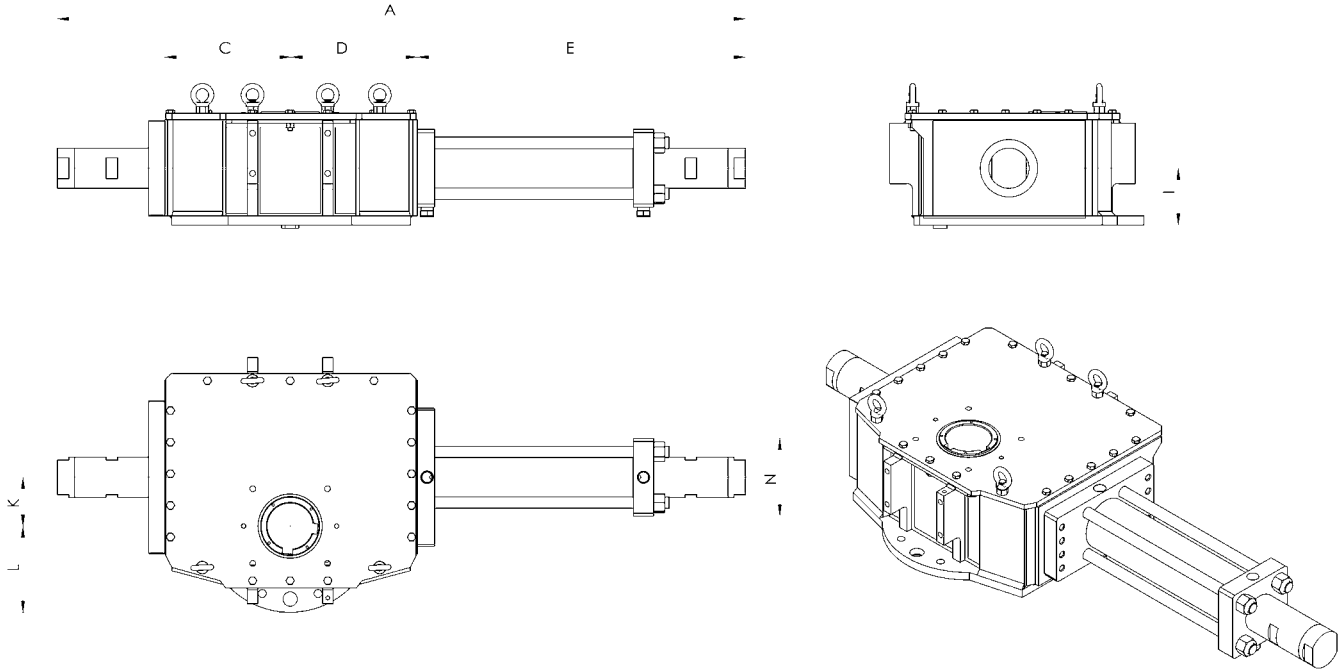


Table 41: Dimensions & Weights – LHS-15 Sym/Cant – Double Acting

TOLERANCE $\pm 10\%$ TO BE CONSIDERED ON DIMENSIONS

Dimensions mm (in) - Kg (lbs)										
Model	A	C	D	E	I	K	L	N	'N' NPT PORT	Weight
LHS-15X-050Y-D1	932	164	174	594	92	65	120	145	1/2"	*
	36.69	6.46	6.85	23.39	3.60	2.56	4.72	5.71		*
LHS-15X-055Y-D1	932	164	174	594	92	65	120	145	1/2"	*
	36.69	6.46	6.85	23.39	3.60	2.56	4.72	5.71		*
LHS-15X-060Y-D1	932	164	174	594	92	65	120	145	1/2"	*
	36.69	6.46	6.85	23.39	3.60	2.56	4.72	5.71		*
LHS-15X-065Y-D1	932	164	174	594	92	65	120	145	1/2"	74
	36.69	6.46	6.85	23.39	3.60	2.56	4.72	5.71		164
LHS-15X-075Y-D1	932	164	174	594	92	65	120	145	1/2"	*
	36.69	6.46	6.85	23.39	3.60	2.56	4.72	5.71		*
LHS-15X-085Y-D1	932	164	174	594	92	65	120	150	1/2"	78
	36.69	6.46	6.85	23.39	3.60	2.56	4.72	5.91		172
LHS-15X-090Y-D1	932	164	174	594	92	65	120	160	1/2"	80
	36.69	6.46	6.85	23.39	3.60	2.56	4.72	6.30		177

* Under development. Please contact Flowserve for more information.

Table 42: Dimensions & Weights – LHS-20 Sym/Cant – Double Acting

TOLERANCE ±10% TO BE CONSIDERED ON DIMENSIONS

Dimensions mm (in) - Kg (lbs)										
Model	A	C	D	E	I	K	L	N	'N' NPT PORT	Weight
LHS-20X-050Y-D1	1034	219	222	594	103	85	150	145	1/2"	*
	40.71	8.60	8.72	23.39	4.06	3.35	5.91	5.71		*
LHS-20X-055Y-D1	1034	219	222	594	103	85	150	145	1/2"	*
	40.71	8.60	8.72	23.39	4.06	3.35	5.91	5.71		*
LHS-20X-065Y-D1	1034	219	222	594	103	85	150	145	1/2"	127
	40.71	8.60	8.72	23.39	4.06	3.35	5.91	5.71		281
LHS-20X-075Y-D1	1034	219	222	594	103	85	150	145	1/2"	129
	40.71	8.60	8.72	23.39	4.06	3.35	5.91	5.71		285
LHS-20X-080Y-D1	1034	219	222	594	103	85	150	150	1/2"	*
	40.71	8.60	8.72	23.39	4.06	3.35	5.91	5.91		*
LHS-20X-090Y-D1	1034	219	222	594	103	85	150	160	1/2"	136
	40.71	8.60	8.72	23.39	4.06	3.35	5.91	6.30		301
LHS-20X-100Y-D1	1034	219	222	594	103	85	150	170	1/2"	*
	40.71	8.60	8.72	23.39	4.06	3.35	5.91	6.69		*
LHS-20X-110Y-D1	1034	219	222	594	103	85	150	180	1/2"	142
	40.71	8.60	8.72	23.39	4.06	3.35	5.91	7.09		314
LHS-20X-120Y-D1	1054	219	222	614	103	85	150	190	1/2"	150
	41.50	8.60	8.72	24.17	4.06	3.35	5.91	7.48		332

* Under development. Please contact Flowserve for more information.

Table 43: Dimensions & Weights – LHS-25 Sym/Cant – Double Acting

TOLERANCE ±10% TO BE CONSIDERED ON DIMENSIONS

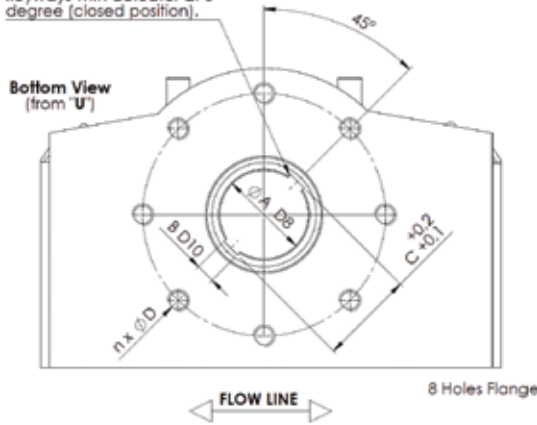
Dimensions mm (in) - Kg (lbs)										
Model	A	C	D	E	I	K	L	N	'N' NPT PORT	Weight
LHS-25X-075Y-D1	1109	249	267	594	118	105	188	145	1/2"	*
	43.66	9.78	10.49	23.39	4.65	4.13	7.40	5.71		*
LHS-25X-080Y-D1	1109	249	267	594	118	105	188	150	1/2"	182
	43.66	9.78	10.49	23.39	4.65	4.13	7.40	5.91		402
LHS-25X-085Y-D1	1109	249	267	594	118	105	188	155	1/2"	*
	43.66	9.78	10.49	23.39	4.65	4.13	7.40	6.10		*
LHS-25X-090Y-D1	1109	249	267	594	118	105	188	160	1/2"	186
	43.66	9.78	10.49	23.39	4.65	4.13	7.40	6.30		411
LHS-25X-100Y-D1	1109	249	267	594	118	105	188	170	1/2"	*
	43.66	9.78	10.49	23.39	4.65	4.13	7.40	6.69		*
LHS-25X-110Y-D1	1109	249	267	594	118	105	188	180	1/2"	193
	43.66	9.78	10.49	23.39	4.65	4.13	7.40	7.09		427
LHS-25X-120Y-D1	1129	249	267	614	118	105	188	190	1/2"	203
	44.45	9.78	10.49	24.17	4.65	4.13	7.40	7.48		449
LHS-25X-130Y-D1	1129	249	267	614	118	105	188	190	1/2"	212
	44.45	9.78	10.49	24.17	4.65	4.13	7.40	7.48		469
LHS-25X-140Y-D1	1129	249	267	614	118	105	188	190	1/2"	*
	44.45	9.78	10.49	24.17	4.65	4.13	7.40	7.48		*

* Under development. Please contact Flowserve for more information.

Mounting Interface Dimensions

Actuator Size	ISO 5211 Flange Interface (reference)	No. of Holes	Hole Diameter	P.C.D. [mm (inch)]	Notes
LHS-15	F16	4	M20	165 (6,50)	<ul style="list-style-type: none"> Holes in-line with axis of actuator (NOT off-center) Flange torque different from ISO 5211 specification
LHS-20	F25	8	M16	254 (10)	<ul style="list-style-type: none"> Holes in-line with axis of actuator (NOT off-center) Flange torque different from ISO 5211 specification
LHS-25	F30	8	M20	298 (11,73)	<ul style="list-style-type: none"> Holes in-line with axis of actuator (NOT off-center) Flange torque different from ISO 5211 specification
LHS-30	F35	8	M30	356 (14,02)	<ul style="list-style-type: none"> Holes in-line with axis of actuator (NOT off-center) Flange torque different from ISO 5211 specification
LHS-35	F40	8	M36	406 (15,98)	<ul style="list-style-type: none"> Holes in-line with axis of actuator (NOT off-center) Flange torque different from ISO 5211 specification
LHS-40	F48	12	M36	483 (19,02)	<ul style="list-style-type: none"> Holes in-line with axis of actuator (NOT off-center) Flange torque different from ISO 5211 specification

IMPORTANT: Position of the keyways with actuator at 0° degree (closed position).

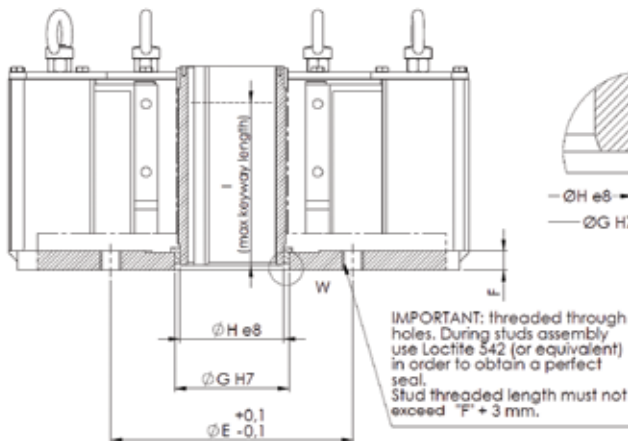
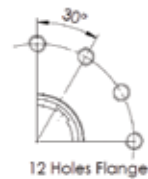


LHS Series Coupling Dimensions

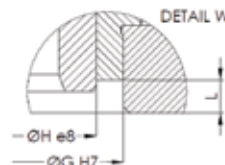
Model	ØA	B	C	n	ØD	E	F	ØG	ØH	I	L
LHS 15	65	10	70.6	4	M20	165	18	86	78	161	8
LHS 20	86	12	91.6	8	M16	254	16	130	112	178	4.5
LHS 25	100	18	108.8	8	M20	298	18	150	133	201	6

Note: the number of threaded holes (n), their size (Ø"D") and P.C.D. (Ø"E") are in accordance to ISO 5211 standard.

ATTENTION: The angular positions of the holes are rotated with respect to indications of ISO 5211. The holes are on centerlines.

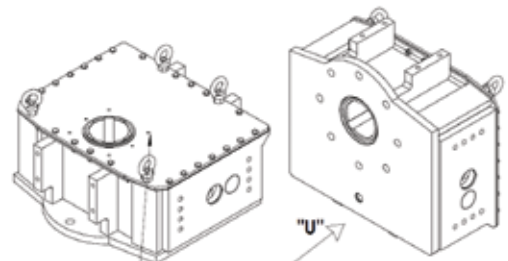


Note: Dimensions are in [mm].



IMPORTANT: threaded through holes. During studs assembly use Loctite 542 (or equivalent) in order to obtain a perfect seal. Stud threaded length must not exceed "F" + 3 mm.

IMPORTANT: threaded through holes. During studs assembly use Loctite 342 (or equivalent) in order to obtain a perfect seal. Stud threaded length must not exceed 3 mm.



Service Kits

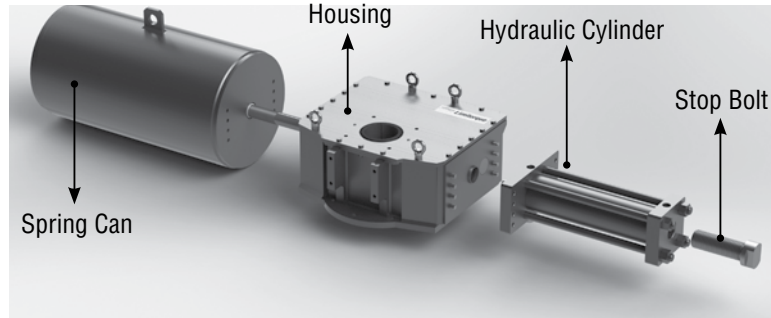


Figure 10: Single Acting Actuator

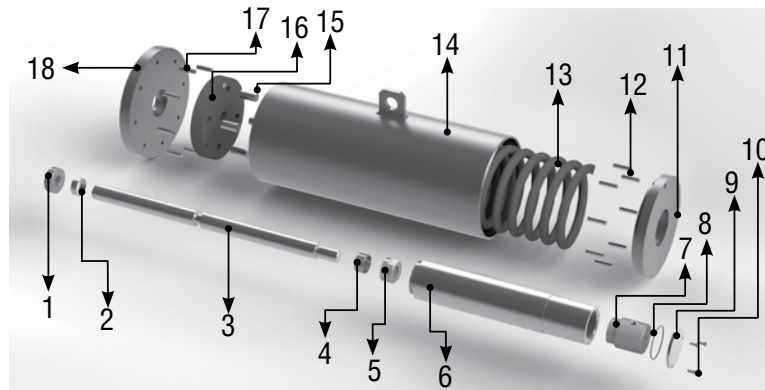


Figure 11: Spring Can Exploded View

Number	Description	Number	Description
1	Split Ring	10	Hex Screw
2	Bushing	11	Spring Can End Flange
3	Spring Rod	12	Bar Pin
4	Bushing	13	Spring
5	Spring Rod End Nut	14	Spring Can
6	Spring Guide	15	Bar Pin
7	Spring Stop Bolt	16	Spring Plate
8	O-Ring	17	Bar Pin
9	Stop Bolt Cap	18	Spring Can Head Flange

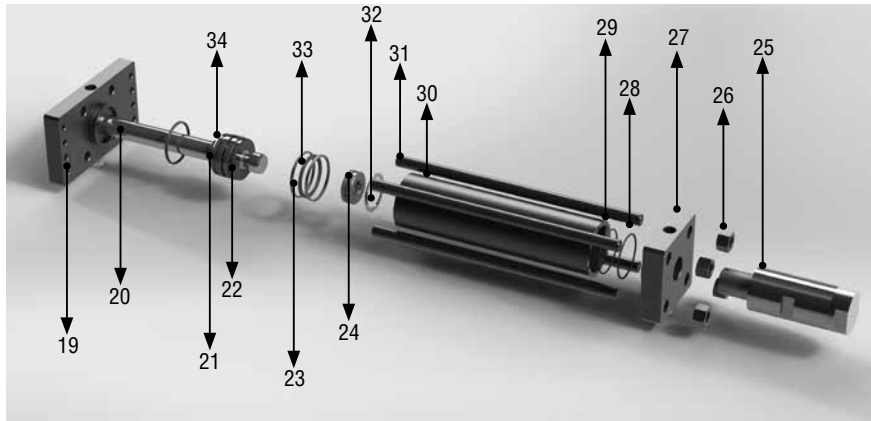


Figure 12: Exploded View of Hydraulic Cylinder

Number	Description	Spare Parts*	Number	Description	Spare Parts*
19	Cylinder Head Flange		27	Cylinder End Flange	
20	Piston Rod		28	O-Ring (x2)	X
21	O-Ring	X	29	Parback Ring (x2)	X
22	Piston		30	Tube	
23	Guide Ring	X	31	Tie Rod	
24	Split Ring		32	Spiral Retaining Shaft Ring	
25	Stop Bolt Assembly		33	O-Ring	X
26	Hex Nut (High)		34	Split Ring	

*Standard Maintenance Spare Parts for On/Off Application

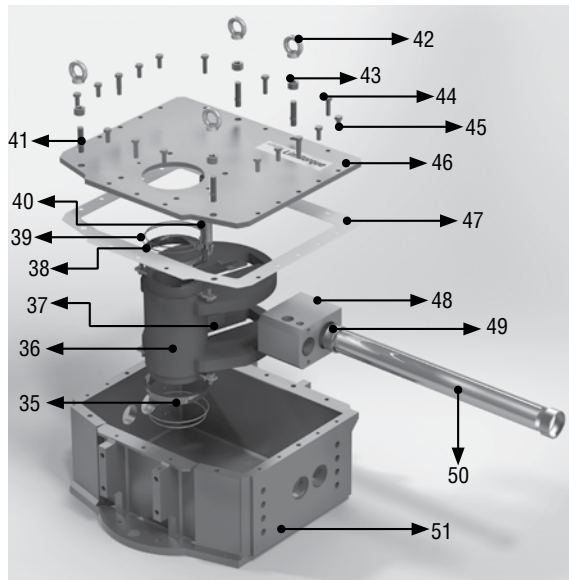


Figure 13: Exploded View of Housing

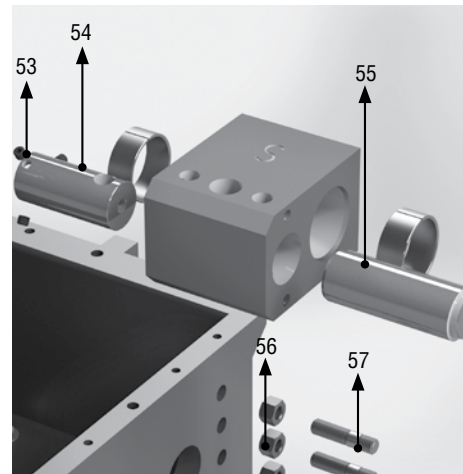


Figure 14: Exploded View of Adaptor Kit

Number	Description	Spare Parts*	Number	Description	Spare Parts*
35	Bushing		48	Guide Block	
36	Scotch Yoke		49	Bushing	
37	Slider Block (x2)		50	Guide Bar	
38	O-Ring	X	51	Housing	
39	O-Ring	X	52	Center Ring	
40	Guide Pin		53	Grub Screw	
41	Stud		54	Cylinder Adaptor	
42	Eyebolt		55	Spring Adaptor	
43	Hex nut (High)		56	Hex Nut (High)	
44	Hex Head Shoulder Bolt		57	Stud	
45	Hex Head Screw		58	Guide Adaptor Pin ¹	
46	Cover		59	Hex Head Screw ¹	
47	Cover Gasket	X			

*Standard Maintenance Spare Parts for On/Off Application

¹Only in the double acting actuators

CW/CCW Conversion Kit Sample

Number	Description
49	Bushing
54	Cylinder Adaptor
55	Spring Adaptor
56	Hex Nut (High)
57	Studs



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