

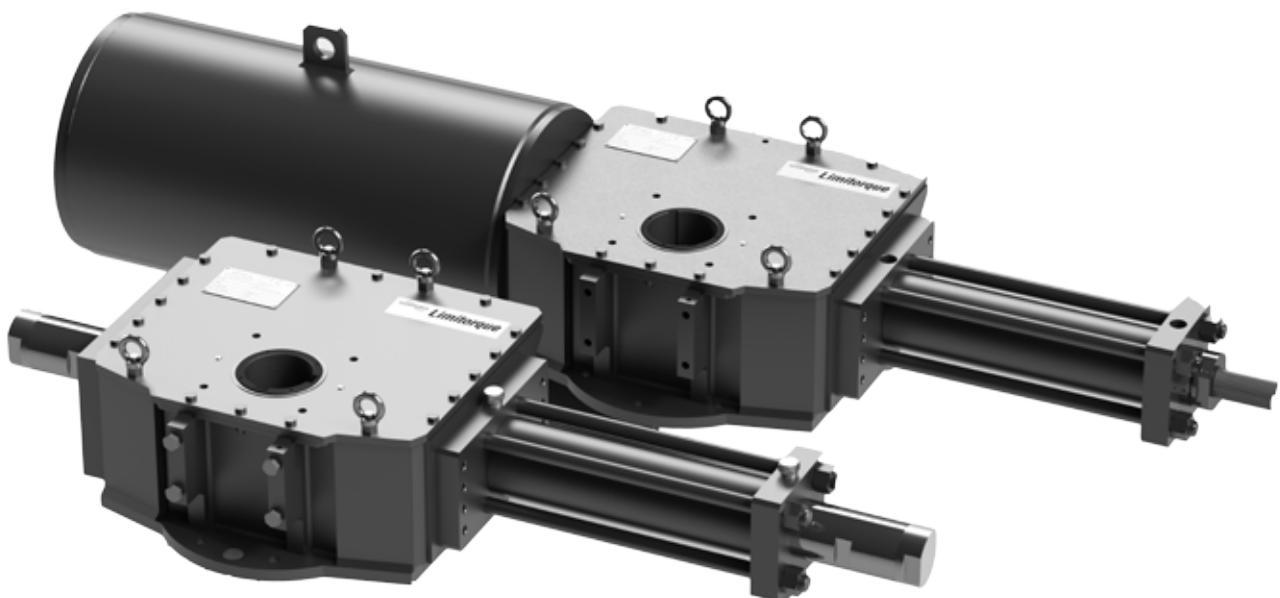


TECHNICAL BULLETIN

Limitorque™

LHS Hydraulic Heavy-Duty Actuator Series

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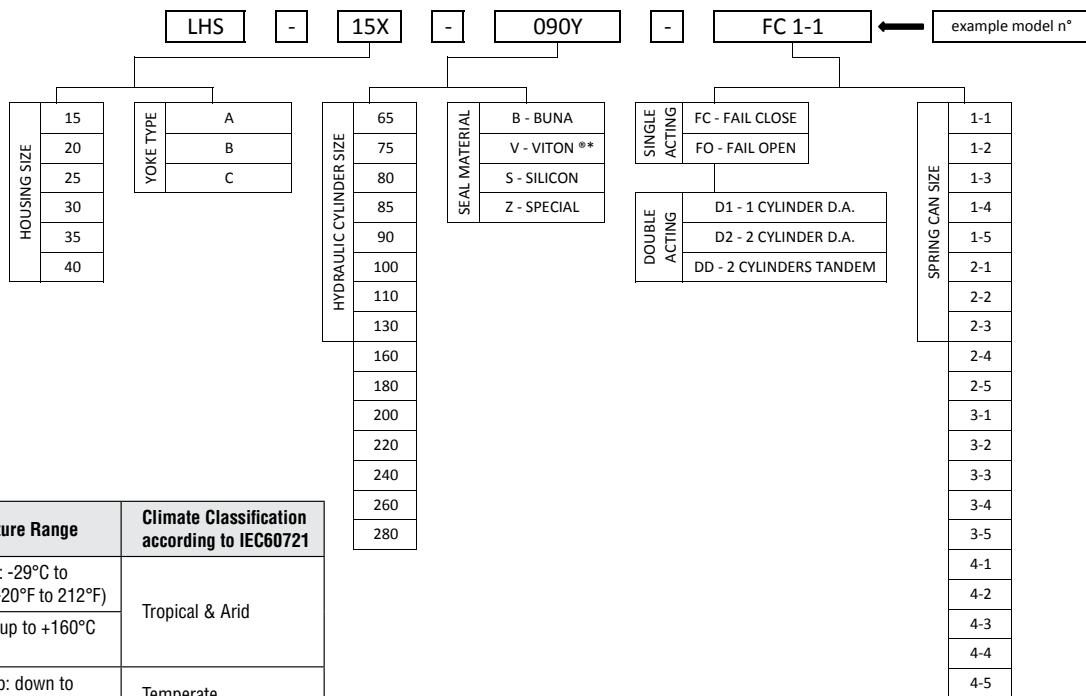
LHS Series Hydraulic Heavy-Duty Actuator Specifications

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).

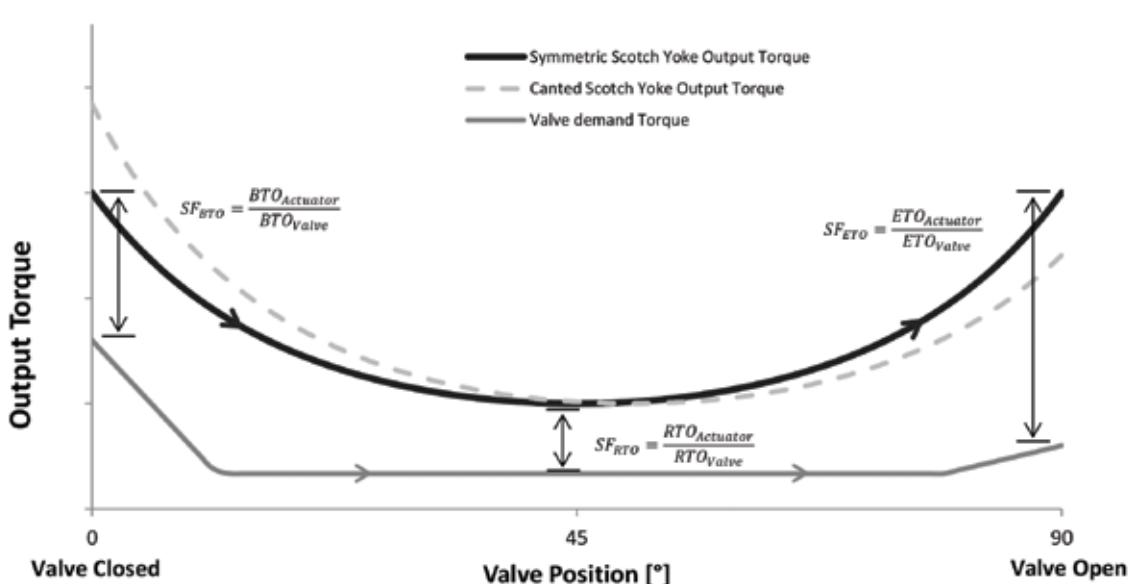


Figure 1: Actuator OPEN (by hydraulic) Torque Curve: Single Acting Spring Return – Fail Close (CW)

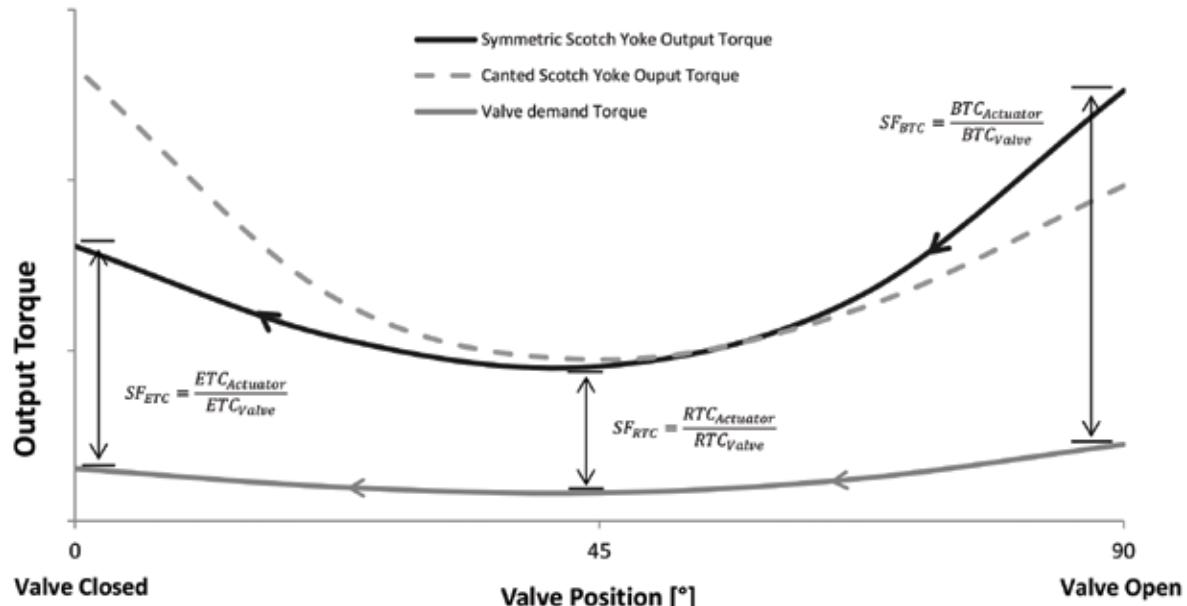


Figure 2: Actuator CLOSE (by spring) Torque Curve: Single Acting Spring Return – Fail Close (CW)

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:

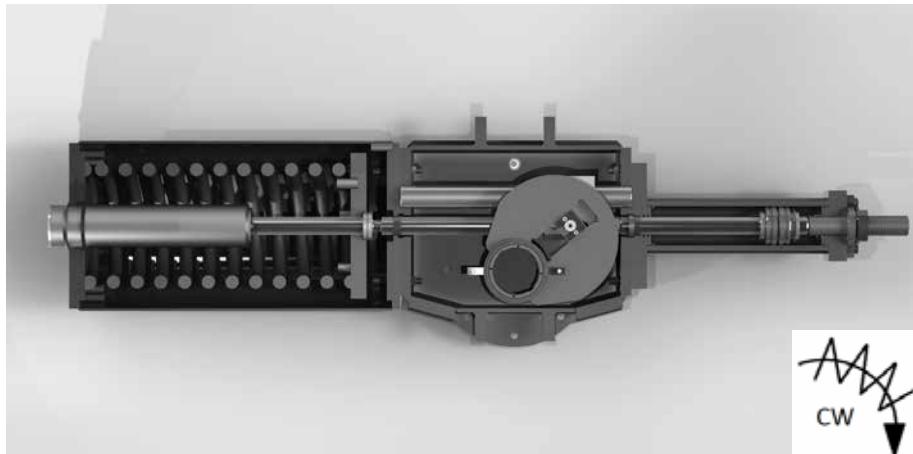


Figure 3: Single Acting Actuator Configuration: Fail Close – Fail Clockwise

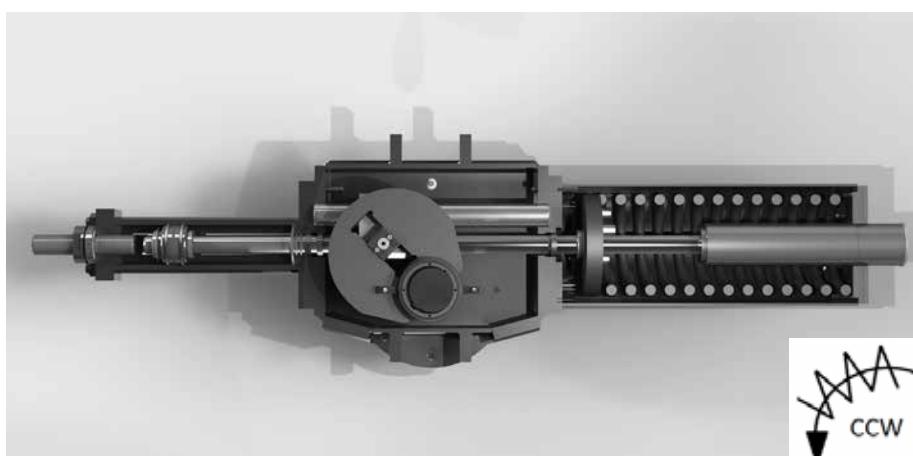


Figure 4: Single Acting Actuator Configuration: Fail Open – Fail Counterclockwise

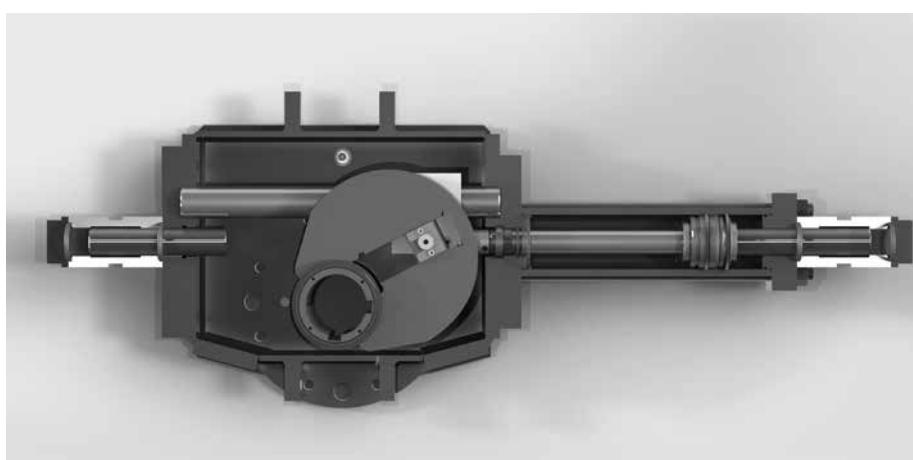


Figure 5: Double Acting Actuator Configuration – Close Position

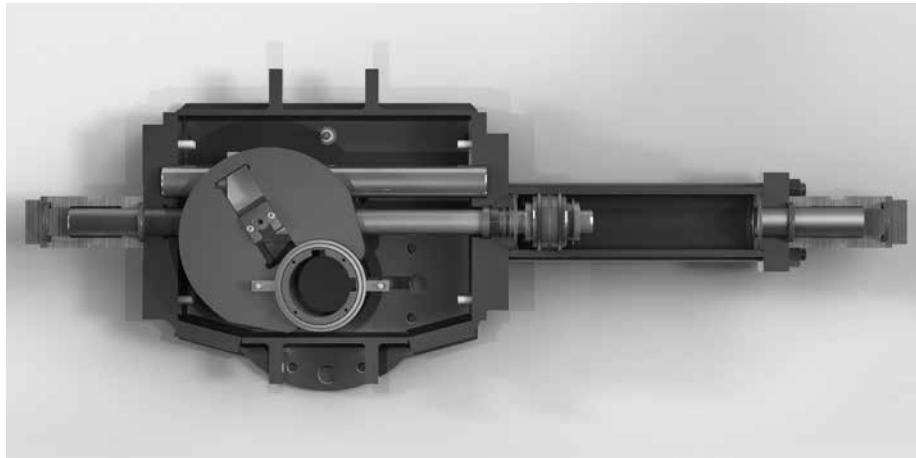


Figure 6: Double Acting Actuator Configuration – Open Position

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.

Torque Charts – Single Acting Fail Close – Imperial and Metric

Table 1: Torque Table – LHS-15A – Single Acting – Spring Return Fail Close – 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												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)	L	
LHS-15A-050X-FC1-2	start	619 (457)	771 (569)	969 (715)	1166 (860)	1364 (1006)	1562 (1152)	1759 (1298)	1957 (1443)	2352 (1735)	2748 (2026)	3143 (2318)	3538 (2610)	3676 (2712)	
	run	279 (206)	357 (264)	469 (346)	580 (427)	691 (509)	802 (591)	913 (673)	1024 (755)	1246 (919)	1468 (1083)	1690 (1246)	1912 (1410)	1990 (1468)	
	end	402 (370)	699 (516)	897 (606)	1094 (807)	1292 (953)	1490 (999)	1681 (1245)	2083 (1550)	2474 (1824)	2893 (2119)	3269 (2411)	3407 (2513)		
LHS-15A-055X-FC1-2	start	619 (557)	1020 (752)	1259 (929)	1488 (1105)	1730 (1282)	1931 (1458)	2214 (1648)	2455 (1841)	2933 (2164)	3294 (2245)	3589 (2352)	3838 (2322)	4056 (2345)	
	run	279 (206)	404 (347)	561 (370)	716 (506)	836 (591)	1038 (673)	1160 (623)	1304 (651)	1527 (714)	1784 (755)	2014 (813)	2242 (824)	2466 (844)	
	end	375 (277)	751 (554)	990 (730)	1229 (906)	1468 (1093)	1707 (1259)	1946 (1436)	2185 (1612)	2360 (1670)	2409 (3023)	2471 (3146)			
LHS-15A-060X-FC1-2	start	619 (457)	1293 (954)	1578 (1164)	1862 (1373)	2147 (1583)	2431 (1793)	2716 (2003)	3001 (2213)	3570 (2633)	4129 (3063)	4708 (3473)	5277 (3892)	5477 (4039)	
	run	279 (206)	651 (480)	811 (598)	970 (716)	1130 (834)	1290 (952)	1450 (1070)	1610 (1187)	1930 (1423)	2250 (1659)	2569 (1895)	2889 (2131)	3001 (2213)	
	end	375 (277)	1023 (755)	1308 (965)	1593 (1175)	1877 (1385)	2162 (1594)	2446 (1804)	2731 (2014)	3200 (2434)	3869 (2854)	4439 (3274)	5008 (3694)	5207 (3841)	
LHS-15A-065X-FC1-2	start	619 (457)	1589 (1172)	1923 (1419)	2257 (1665)	2591 (1911)	2925 (2146)	3259 (2404)	3593 (2650)	4262 (3143)	4920 (3636)				177 (2570)
	run	279 (206)	817 (603)	1005 (741)	1192 (880)	1380 (1018)	1568 (1156)	1755 (1295)	1943 (1433)	2138 (1710)	2694 (1987)				
	end	375 (277)	1320 (973)	1654 (1220)	1988 (1466)	2322 (1713)	2656 (1952)	2990 (2025)	3224 (2452)	3992 (2944)	4660 (3437)				
LHS-15A-075X-FC1-2	start	619 (457)	2253 (1662)	2698 (1990)	3143 (2318)	3588 (2646)	4032 (2974)	4477 (3102)	4922 (3630)						133 (1930)
	run	279 (206)	1190 (878)	1440 (1062)	1690 (1246)	1940 (1431)	2190 (1615)	2439 (1799)	2689 (1983)						0.7
	end	375 (277)	1984 (1463)	2429 (1791)	2873 (2119)	3318 (2447)	3763 (2775)	4207 (3103)	4652 (3431)						
LHS-15A-085X-FC1-2	start	619 (457)	3012 (2222)	3584 (2643)	4155 (3064)	4726 (3486)	5297 (3907)	5792 (4200)	6200 (4519)						104 (1502)
	run	279 (206)	1617 (1192)	1938 (1429)	2258 (1666)	2743 (2273)	3314 (2444)	3885 (2770)	4456 (3086)						0.9
	end	375 (277)													
LHS-15A-090X-FC1-2	start	619 (457)	3427 (2528)	4068 (3000)	4709 (3467)	5349 (3945)									92 (1340)
	run	279 (206)	1850 (1364)	2210 (1630)	2569 (1895)	2929 (2160)									1.0
	end	375 (277)	3158 (2329)	3798 (2801)	4439 (3274)	5079 (3746)									
LHS-15A-050X-FC1-3	start	759 (560)	657 (485)	855 (630)	1052 (776)	1250 (922)	1448 (1068)	1645 (1214)	1843 (1359)	2238 (1651)	2634 (1942)	3029 (2234)	3424 (2525)	3562 (2628)	
	run	348 (256)	282 (208)	393 (290)	504 (372)	615 (454)	726 (536)	837 (618)	948 (699)	1170 (863)	1392 (1027)	1614 (1191)	1837 (1355)	1914 (1412)	
	end	478 (353)	347 (256)	545 (402)	742 (548)	940 (693)	1138 (839)	1335 (985)	1533 (1131)	1928 (1422)	2323 (1714)	2719 (2005)	3252 (2399)		
LHS-15A-055X-FC1-3	start	759 (560)	906 (668)	1145 (845)	1384 (1021)	1624 (1197)	1863 (1374)	2102 (1550)	2341 (1727)	2819 (2079)	3298 (2432)	3776 (2785)	4254 (3138)	4422 (3261)	
	run	348 (256)	422 (311)	556 (410)	691 (509)	825 (608)	959 (708)	1094 (807)	1228 (906)	1497 (1104)	1765 (1302)	2034 (1500)	2303 (1699)	2397 (1768)	
	end	478 (353)	596 (440)	835 (616)	1074 (792)	1314 (969)	1553 (1145)	1792 (1322)	2019 (1488)	2509 (1851)	2988 (2204)	3466 (2556)	3944 (2909)	4112 (3033)	
LHS-15A-060X-FC1-3	start	759 (560)	1179 (869)	1463 (1079)	1748 (1289)	2033 (1499)	2317 (1709)	2602 (1919)	2886 (2129)	3456 (2549)	4025 (2969)	4594 (3388)	5163 (3808)	5363 (3955)	
	run	348 (256)	575 (424)	735 (542)	895 (666)	1055 (778)	1215 (896)	1375 (1014)	1535 (1132)	1854 (1368)	2174 (1604)	2494 (1839)	2814 (2075)	2926 (2158)	
	end	478 (353)	869 (641)	1153 (851)	1438 (1081)	1723 (1271)	2007 (1480)	2292 (1690)	2576 (1900)	3146 (2320)	3715 (2740)	4284 (3160)	4853 (3580)	5053 (3727)	
LHS-15A-065X-FC1-3	start	759 (560)	1475 (1088)	1809 (1343)	2143 (1581)	2477 (1827)	2813 (2024)	3145 (2320)	3479 (2566)	4147 (3059)	4815 (3552)	5484 (4044)			180 (2618)
	run	348 (256)	742 (547)	929 (685)	1117 (824)	1365 (962)	1492 (1101)	1680 (1239)	1861 (1378)	2243 (1654)	2618 (1931)	2994 (2208)			0.5
	end	478 (353)	1115 (822)	1365 (1007)	1614 (1191)	1864 (1375)	2114 (1559)	2364 (1744)	2614 (1928)	3053 (2323)	3697 (2738)	4055 (3323)	4517 (3816)		
LHS-15A-075X-FC1-3	start	759 (560)	2139 (1576)	2584 (1880)	3034 (2234)	3493 (2542)	3910 (2890)	4363 (3128)	4808 (3546)						136 (1968)
	run	348 (256)	346 (256)	507 (375)	662 (427)	811 (568)	978 (722)	1160 (848)	1359 (981)	1787 (1333)	2169 (1551)	2573 (1841)	3076 (2131)	3276 (2166)	
	end	478 (353)	2189 (1349)	2747 (1677)	3113 (1677)	3729 (2155)	4203 (2372)	4302 (3173)	4873 (3594)	5174 (3816)					
LHS-15A-085X-FC1-3	start	759 (560)	2898 (2138)	3470 (2559)	4040 (2980)	4612 (3402)	5183 (3823)								106 (1532)
	run	348 (256)	1541 (1372)	1862 (1372)	2182 (1610)	2504 (1847)	2825 (2083)	3483 (2893)							
	end	478 (353)	2589 (1909)	3160 (2320)	3721 (2752)	4302 (3173)	4873 (3594)								
LHS-15A-090X-FC1-3	start	759 (560)	3313 (2444)	3954 (2916)	4594 (3388)	5234 (3861)									94 (1366)
	run	348 (256)	1774 (1309)	2134 (1574)	2494 (1839)	2854 (2105)	3424 (2962)	4284 (3160)							1.0
	end	478 (353)	3003 (2215)	3644 (2687)	4284 (3160)										
LHS-15A-050X-FC2-1	start	1204 (888)													0.3
	run	553 (408)													0.4
	end	765 (564)													
LHS-15A-055X-FC2-1	start	1204 (888)	863 (636)	1147 (846)	1432 (1056)	1716 (1266)	2001 (1476)	2286 (1686)	2570 (1896)	3139 (2136)	3717 (2317)	4273 (2592)	4847 (3155)	5046 (3722)	
	run	553 (408)	329 (257)	464 (342)	598 (441)	728 (504)	867 (639)	1001 (738)	1270 (937)	1539 (1135)	1807 (1333)	2076 (1531)	2376 (1660)	2761 (2036)	
	end	765 (564)	377 (278)	662 (488)	947 (698)	1291 (808)	1800 (1288)	2108 (1558)	2654 (1958)	3085 (2337)	3278 (2797)	3462 (3547)	3974 (2194)	4345 (2547)	
LHS-15A-060X-FC2-1	start	1204 (888)	1159 (855)	1493 (1101)	1827 (1348)	2161 (1594)	2495 (1840)	2829 (2087)	3163 (2333)	3831 (2826)	4499 (3318)	5167 (3811)			190 (2757)
	run	553 (408)	510 (385)	703 (518)	890 (657)	1078 (795)	1265 (935)	1453 (1072)	1641 (1210)	2016 (1487)	2619 (1764)	3076 (2041)			0.5
	end	765 (564)	674 (479)	1008 (743)	1676 (1236)	2672 (2727)	3157 (2329)	3602 (2657)	4047 (2985)	4491 (3131)	5381 (3699)	6246 (4014)			
LHS-15A-075X-FC2-1	start	1204 (888)	2268 (1673)	2713 (2001)	3223 (2326)	3724 (2747)	4296 (3168)	4867 (3590)	5438 (4011)						143 (2070)
	run	553 (408)	388 (326)	464 (342)	598 (441)	728 (504)	867 (639)	1001 (738)	1270 (937)	1539 (1135)	1807 (1333)	2076 (1531)			0.9
	end	765 (564)	338 (256)	413 (304)	577 (393)	761 (812)	908 (722)	1061 (808)	1317 (929)	1536 (1027)	2006 (1295)				
LHS-15A-085X-FC2-1	start	1204 (888)	297 (2211)	3638 (2683)	4278 (3155)	4918 (3628)									111 (1611)
	run	553 (408)	1547 (1141)	196 (140)	2267 (1672)	2627 (1937)									1.0
	end	765 (564)	2512 (1855)	3152 (2325)	3793 (2797)	4443 (3270)									
LHS-15A-050X-FC2-2	start	1832 (1344)													0.3
	run	832 (614)													0.4
	end	1140 (841)													
LHS-15A-055X-FC2-2	start	1832 (1344)													0.4
	run	832 (614													

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)
LHS-15A-050X-FC3-1	start	1829 (1349)											
	run	856 (632)											
	end	1220 (899)											
LHS-15A-055X-FC3-1	start	1829 (1349)											
	run	856 (632)											
	end	1220 (899)											
LHS-15A-060X-FC3-1	start	1829 (1349)											
	run	856 (632)											
	end	1220 (899)											
LHS-15A-065X-FC3-1	start	1829 (1349)											
	run	856 (632)											
	end	1220 (899)											
LHS-15A-075X-FC3-1	start	1829 (1349)											
	run	856 (632)											
	end	1220 (899)											
LHS-15A-085X-FC3-1	start	1829 (1534)	1765 (1302)	2210 (1630)	2654 (1958)	3099 (2386)	3544 (2614)	3888 (2942)	4876 (3598)				
	run	856 (632)	802 (592)	1052 (776)	1302 (960)	1552 (1145)	1802 (1329)	2051 (1513)	2551 (1882)				
	end	1220 (899)	1405 (1036)	1091 (805)	1536 (1123)	1980 (1661)	2425 (1789)	2870 (2117)	4204 (3101)				
LHS-15A-090X-FC3-1	start	1829 (1349)	2494 (1840)	3135 (2312)	3275 (2784)	4415 (3257)	5056 (3729)						
	run	856 (632)	1212 (894)	1572 (1159)	1931 (1425)	2291 (1690)	2651 (1955)						
	end	1220 (899)	1820 (1343)	2461 (1815)	3101 (2287)	3741 (2760)	4382 (3232)						
LHS-15A-050X-FC3-2	start	2448 (1806)	1136 (838)	1595 (1176)									
	run	1136 (838)	670 (494)	721 (532)									
	end	1595 (1176)											
LHS-15A-055X-FC3-2	start	2448 (1806)	1136 (838)	1595 (1176)									
	run	1136 (838)	652 (407)	754 (374)									
	end	1595 (1176)											
LHS-15A-060X-FC3-2	start	2448 (1806)	1136 (838)	1595 (1176)									
	run	1136 (838)	652 (407)	754 (374)									
	end	1595 (1176)											
LHS-15A-065X-FC3-2	start	2448 (1806)	1136 (838)	1595 (1176)									
	run	1136 (838)	652 (407)	754 (374)									
	end	1595 (1176)											
LHS-15A-075X-FC3-2	start	2448 (1806)	1136 (838)	1595 (1176)									
	run	1136 (838)	652 (407)	754 (374)									
	end	1595 (1176)											
LHS-15A-085X-FC3-2	start	2448 (1806)	1136 (838)	1595 (1176)	2236 (1649)	2807 (2070)	3378 (2492)	3949 (2913)	4520 (3334)	5092 (3755)			
	run	1136 (838)	670 (494)	721 (532)	991 (731)	1312 (968)	1633 (1204)	1954 (1441)	2275 (1678)	2595 (1914)			
	end	1595 (1176)			1292 (953)	1863 (1374)	2435 (1796)	3006 (2217)	3577 (2638)	4148 (3059)			
LHS-15A-090X-FC3-2	start	2448 (1806)	1136 (838)	1595 (1176)	2080 (1534)	2720 (2006)	3360 (2478)	4001 (2951)	4641 (3423)	5281 (3895)			
	run	1136 (838)	903 (666)	1263 (932)	1623 (1197)	1983 (1462)	2342 (1728)	2702 (1993)					
	end	1595 (1176)		1136 (838)		2417 (1783)	3057 (2255)	3698 (2727)	4338 (3199)				
LHS-15A-050X-FC3-3	start	2588 (1909)	1204 (888)	1698 (1252)									
	run	1204 (888)	670 (494)	721 (532)									
	end	1698 (1252)											
LHS-15A-055X-FC3-3	start	2588 (1909)	1204 (888)	1698 (1252)									
	run	1204 (888)	670 (494)	721 (532)									
	end	1698 (1252)											
LHS-15A-060X-FC3-3	start	2588 (1909)	1204 (888)	1698 (1252)									
	run	1204 (888)	670 (494)	721 (532)									
	end	1698 (1252)											
LHS-15A-065X-FC3-3	start	2588 (1909)	1204 (888)	1698 (1252)									
	run	1204 (888)	670 (494)	721 (532)									
	end	1698 (1252)											
LHS-15A-075X-FC3-3	start	2588 (1909)	1204 (888)	1698 (1252)									
	run	1204 (888)	670 (494)	721 (532)									
	end	1698 (1252)											
LHS-15A-085X-FC3-3	start	2588 (1909)	1204 (888)	1698 (1252)	1681 (1240)	2122 (1568)	2570 (1896)	3015 (2242)	3460 (2552)	4349 (3208)	5238 (3864)		
	run	1204 (888)	670 (494)	721 (532)	916 (675)	1236 (912)	1557 (1149)	1878 (1385)	2199 (1622)	2520 (1859)	3815 (2814)	4015 (2961)	
	end	1698 (1252)			1138 (839)	1709 (1260)	1686 (1170)	2851 (2103)	3422 (2524)	3994 (2946)	4978 (3671)	5353 (3948)	
LHS-15A-090X-FC3-3	start	2588 (1909)	1204 (888)	1698 (1252)	1550 (1144)	2122 (1565)	2663 (1986)	3264 (2407)	4406 (3250)	4978 (3671)			
	run	1204 (888)	670 (494)	721 (532)	916 (675)	1236 (912)	1557 (1149)	1878 (1385)	2199 (1622)	2520 (1859)			
	end	1698 (1252)			1138 (839)	1709 (1260)	1686 (1170)	2851 (2103)	3422 (2524)	3994 (2946)			

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)

Actuator Model	LHS-15C CANTED ACTUATOR													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)	L		
LHS-15C-050X-FC1-2	start run end	504 (372) 288 (212) 554 (409)	1094 (880) 348 (257) 409 (301)	1170 (1092) 570 (421) 731 (539)	2095 (1545) 681 (502) 892 (658)	2396 (1523) 792 (584) 1053 (776)	2697 (1989) 903 (666) 1214 (895)	2998 (2211) 1013 (748) 1375 (1014)	3600 (2655) 1236 (912) 1458 (1076)	4202 (3099) 1458 (1076) 1697 (1251)	4803 (3543) 1681 (1240) 2341 (1726)	5405 (3987) 1903 (1403) 2663 (1964)			203 (2947)	0.3	
LHS-15C-055X-FC1-2	start run end	504 (372) 288 (212) 554 (409)	1572 (1159) 488 (360) 611 (451)	1936 (1428) 622 (459) 806 (595)	2300 (1696) 757 (558) 1001 (738)	2664 (1965) 891 (657)	3028 (2233) 1025 (756)	3392 (2502) 1160 (855)	3756 (2771) 1294 (955)	4485 (3380) 1563 (1153)	5213 (3845) 1832 (1351)			168 (2436)	0.4		
LHS-15C-060X-FC1-2	start run end	504 (372) 288 (212) 554 (409)	1987 (1466) 641 (473) 1054 (609)	2420 (1785) 801 (591) 1065 (786)	2854 (2105) 1121 (827) 1297 (951)	3287 (2424) 1281 (944) 1511 (1281)	3720 (2744) 1441 (1063)	4154 (3063) 1601 (1181)	4587 (3383) 1920 (1416)	5453 (4022) 2226 (1983)				141 (2046)	0.5		
LHS-15C-065X-FC1-2	start run end	504 (372) 288 (212) 554 (409)	2438 (1798) 898 (734) 1075 (793)	2930 (1694) 1183 (873) 1619 (1194)	3469 (2499) 959 (734) 1347 (994)	3472 (3299) 1271 (1011)	4981 (3674)	5490 (4049)						120 (1743)	0.5		
LHS-15C-075X-FC1-2	start run end	504 (372) 288 (212) 554 (409)	3440 (2544) 1181 (671) 1616 (1192)	4126 (3044) 1431 (1055) 2341 (1726)	4803 (3543) 1681 (1240) 1978 (1459)	5481 (4042) 1930 (1424) 2436 (1796)								90 (1310)	0.7		
LHS-15C-085X-FC1-2	start run end	504 (372) 288 (212) 554 (409)	4605 (3396) 1607 (1385) 2224 (1649)	5475 (4038) 1928 (1422) 2700 (1991)										70 (1020)	0.9		
LHS-15C-090X-FC1-2	start run end	504 (372) 288 (212) 554 (409)	5237 (3862) 1840 (1357) 2572 (1897)											63 (910)	1.0		
LHS-15C-050X-FC1-3	start run end	618 (456) 357 (264) 709 (523)	1022 (754) 271 (200) 283 (209)	1333 (976) 382 (282) 444 (327)	1624 (1197) 493 (364) 605 (446)	1924 (1419) 715 (528) 766 (565)	2225 (1641) 826 (610) 1088 (802)	2526 (1863) 937 (691) 1249 (921)	2827 (2085) 1160 (855)	3429 (2529) 1382 (1019)	4031 (2973) 1604 (1183)	4633 (3417) 1826 (1347)	5234 (3861) 2649 (1954)	5445 (4016) 207 (3000)	0.3		
LHS-15C-055X-FC1-3	start run end	618 (456) 357 (264) 709 (523)	1401 (1033)	1765 (302)	2129 (1570)	2493 (1839)	2857 (2107)	3221 (2376)	3585 (2645)	4314 (3182)	5042 (3719)			173 (2505)	0.4		
LHS-15C-060X-FC1-3	start run end	618 (456) 357 (264) 709 (523)	1816 (1340) 411 (303) 708 (522)	2683 (1659) 546 (402) 680 (502)	3116 (2298) 814 (601) 875 (646)	3288 (2128) 949 (700) 1070 (789)	3549 (2618) 1083 (799) 1460 (1077)	3983 (2937) 1217 (889) 1654 (1220)	4416 (3257) 1083 (799)	5283 (3896) 1486 (1096)				145 (2104)	0.5		
LHS-15C-065X-FC1-3	start run end	618 (456) 357 (264) 709 (523)	2268 (1672) 731 (539) 949 (700)	2776 (2048) 1106 (816) 1222 (901)	3285 (2423) 1294 (954) 1493 (1102)	4302 (3173) 1086 (1093) 1766 (1302)	4810 (3548)	5319 (3923)						124 (1793)	0.5		
LHS-15C-075X-FC1-3	start run end	618 (456) 357 (264) 709 (523)	3279 (2418) 1104 (814) 1490 (1099)	3956 (2917) 1354 (999) 1852 (1366)	4633 (3417) 1604 (1183) 2215 (1634)	5044 (3197) 1854 (1367) 2577 (1901)								93 (1347)	0.7		
LHS-15C-085X-FC1-3	start run end	618 (456) 357 (264) 709 (523)	4434 (3270) 1530 (1129) 2108 (1555)	5304 (3912) 1851 (1365) 2574 (1898)										72 (1048)	0.9		
LHS-15C-090X-FC1-3	start run end	618 (456) 357 (264) 709 (523)	5066 (3736) 1764 (1301) 2447 (1805)											65 (936)	1.0		
LHS-15C-050X-FC2-1	start run end	980 (723) 568 (419) 1134 (836)			1455 (1073)	1756 (1295) 371 (274) 365 (269)	2057 (1517) 593 (438) 687 (507)	2358 (1739) 705 (520) 848 (626)	2960 (2183) 927 (683) 1170 (863)	3561 (2627) 1149 (847)	4163 (3071) 1492 (1101)	4765 (3515) 1814 (1318)	4976 (3670) 2249 (1659)	207 (3000)	0.3		
LHS-15C-055X-FC2-1	start run end	980 (723) 568 (419) 1134 (836)		1660 (1224)	2024 (1493)	2388 (1761) 581 (429) 670 (494)	2752 (2030)	3116 (2298) 850 (627) 864 (638)	3844 (2835) 984 (726) 1059 (781)	4573 (3372) 1253 (924)	5301 (3910) 1522 (1122)	186 (2692)			186 (2692)	0.4	
LHS-15C-060X-FC2-1	start run end	980 (723) 568 (419) 1134 (836)	1347 (993)	1780 (1313)	2213 (1633)	2647 (1952) 811 (598) 1003 (740)	3080 (2272) 971 (716) 1131 (834)	3513 (2591) 1235 (911)	3947 (2911) 1291 (952)	4813 (3550)				156 (2265)	0.5		
LHS-15C-065X-FC2-1	start run end	980 (723) 568 (419) 1134 (836)	498 (360) 498 (405) 521 (460)	1798 (1326) 606 (506) 1093 (809)	2307 (1701) 3362 (1511) 1365 (1007)	3832 (2827) 873 (646) 1061 (704)	4341 (3202) 1249 (921)	4849 (3577)						133 (1930)	0.5		
LHS-15C-075X-FC2-1	start run end	980 (723) 568 (419) 1134 (836)	2809 (2072) 871 (642) 1124 (827)	3486 (2571) 871 (642) 1124 (827)	4163 (3071) 1371 (1011) 1621 (1195)	4840 (3570) 1090 (804) 1452 (1071)	5187 (2613) 1814 (1338)	2177 (1605)						100 (1449)	0.7		
LHS-15C-085X-FC2-1	start run end	980 (723) 568 (419) 1134 (836)	3965 (3924) 1297 (957) 1708 (1260)	4834 (3566)										78 (1129)	0.9		
LHS-15C-090X-FC2-1	start run end	980 (723) 568 (419) 1134 (836)	4597 (3390) 1531 (1219) 2046 (1509)											69 (1007)	1.0		
LHS-15C-050X-FC2-2	start run end	1485 (1095) 856 (631) 1688 (1245)															
LHS-15C-055X-FC2-2	start run end	1485 (1095) 856 (631) 1688 (1245)													202 (2935)	0.4	
LHS-15C-060X-FC2-2	start run end	1485 (1095) 856 (631) 1688 (1245)													170 (2469)	0.5	
LHS-15C-065X-FC2-2	start run end	1485 (1095) 856 (631) 1688 (1245)													145 (2103)	0.5	
LHS-15C-075X-FC2-2	start run end	1485 (1095) 856 (631) 1688 (1245)													109 (1581)	0.7	
LHS-15C-085X-FC2-2	start run end	1485 (1095) 856 (631) 1688 (1245)													85 (1230)	0.9	
LHS-15C-090X-FC2-2	start run end	1485 (1095) 856 (631) 1688 (1245)													76 (1098)	1.0	
LHS-15C-050X-FC2-3	start run end	1599 (1179) 925 (683) 1843 (1359)															
LHS-15C-055X-FC2-3	start run end	1599 (1179) 925 (683) 1843 (1359)													174 (2529)	0.5	
LHS-15C-060X-FC2-3	start run end	1599 (1179) 925 (683) 1843 (1359)															
LHS-15C-065X-FC2-3	start run end	1599 (1179) 925 (683) 1843 (1359)															
LHS-15C-075X-FC2-3	start run end	1599 (1179) 925 (683) 1843 (1359)															
LHS-15C-085X-FC2-3	start run end	1599 (1179) 925 (683) 1843 (1359)															
LHS-15C-090X-FC2-3	start run end	1599 (1179) 925 (683) 1843 (1359)															
LHS-15C-050X-FC2-3	start run end	1599 (1179) 925 (683) 1843 (1359)															
LHS-15C-055X-FC2-3	start run end	1599 (1179) 925 (683) 1843 (1359)															
LHS-15C-060X-FC2-3	start run end	1599 (1179) 925 (683) 1843 (1359)															
LHS-15C-065X-FC2-3	start run end	1599 (1179) 925 (683) 1843 (1359)															
LHS-15C-075X-FC2-3	start run end	1599 (1179) 925 (683) 1843 (1359)															
LHS-15C-085X-FC2-3	start run end	1599 (1179) 925 (683) 1843 (1359)															
LHS-15C-090X-FC2-3	start run end	1599 (1179) 925 (683) 1843 (1359)															

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)	barg (PSIG)
LHS-15C-050X-FC3-1	start run end	1490 (1099) 878 (647) 1815 (1338)											
LHS-15C-055X-FC3-1	start run end	1490 (1099) 878 (647) 1815 (1338)											
LHS-15C-060X-FC3-1	start run end	1490 (1099) 878 (647) 1815 (1338)											
LHS-15C-065X-FC3-1	start run end	1490 (1099) 878 (647) 1815 (1338)											
LHS-15C-075X-FC3-1	start run end	1490 (1099) 878 (647) 1815 (1338)											
LHS-15C-085X-FC3-1	start run end	1490 (1099) 878 (647) 1815 (1338)											
LHS-15C-090X-FC3-1	start run end	1490 (1099) 878 (647) 1815 (1338)											
LHS-15C-050X-FC3-2	start run end	1994 (1471) 1165 (860) 2369 (1747)											
LHS-15C-055X-FC3-2	start run end	1994 (1471) 1165 (860) 2369 (1747)											
LHS-15C-060X-FC3-2	start run end	1994 (1471) 1165 (860) 2369 (1747)											
LHS-15C-065X-FC3-2	start run end	1994 (1471) 1165 (860) 2369 (1747)											
LHS-15C-075X-FC3-2	start run end	1994 (1471) 1165 (860) 2369 (1747)											
LHS-15C-085X-FC3-2	start run end	1994 (1471) 1165 (860) 2369 (1747)											
LHS-15C-090X-FC3-2	start run end	1994 (1471) 1165 (860) 2369 (1747)											
LHS-15C-050X-FC3-3	start run end	2108 (1555) 1235 (911) 2524 (1861)											
LHS-15C-055X-FC3-3	start run end	2108 (1555) 1235 (911) 2524 (1861)											
LHS-15C-060X-FC3-3	start run end	2108 (1555) 1235 (911) 2524 (1861)											
LHS-15C-065X-FC3-3	start run end	2108 (1555) 1235 (911) 2524 (1861)											
LHS-15C-075X-FC3-3	start run end	2108 (1555) 1235 (911) 2524 (1861)											
LHS-15C-085X-FC3-3	start run end	2108 (1555) 1235 (911) 2524 (1861)											
LHS-15C-090X-FC3-3	start run end	2108 (1555) 1235 (911) 2524 (1861)											

Table 5: Torque Table – LHS-20A – Single Acting – Spring Return Fail Close – 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			
	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)					
LHS-20A-050X-FC1-1	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)	L			
LHS-20A-050X-FC1-1	start	1604 (1183)	730 (538)	993 (732)		1516 (926)	1517 (1119)	1779 (1312)	2044 (1505)	2563 (1890)	3086 (2276)	3609 (2662)	4131 (3047)	4314 (3182)	207 (3000)	0.4		
LHS-20A-055X-FC1-1	start	1604 (1183)	730 (538)	993 (732)		1117 (824)	1433 (1057)	1784 (1291)	2066 (1552)	2382 (1757)	2699 (1995)	3334 (2457)	3899 (2824)	4567 (3290)	5227 (3687)	207 (3000)	0.5	
LHS-20A-065X-FC1-1	start	1604 (1183)	730 (538)	993 (732)		1117 (824)	1433 (1057)	1784 (1291)	2066 (1552)	2382 (1757)	2699 (1995)	3334 (2457)	3899 (2824)	4567 (3290)	5227 (3687)	207 (3000)	0.5	
LHS-20A-075X-FC1-1	start	1604 (1183)	730 (538)	993 (732)		1554 (1146)	1996 (1472)	2437 (1798)	2879 (2124)	3221 (2449)	3763 (2775)	4205 (3101)	5088 (3753)	5972 (4405)	6855 (5056)	7729 (5708)	9048 (5936)	
LHS-20A-075X-FC1-1	run end	730 (538)	878 (647)	1319 (973)		682 (504)	921 (687)	1179 (870)	1428 (1053)	1676 (1236)	1924 (1419)	2172 (1602)	2669 (1968)	3165 (2334)	3661 (2067)	4158 (3067)	4332 (3195)	
LHS-20A-080X-FC1-1	start	1604 (1183)	730 (538)	993 (732)		1176 (868)	1507 (1111)	1837 (1355)	2168 (1599)	2498 (1843)	2829 (2086)	3159 (2330)	4122 (3254)	5296 (3906)	6179 (4585)	7063 (5209)	206 (2984)	0.9
LHS-20A-080X-FC1-1	run end	730 (538)	1244 (1729)	1566 (1245)		1450 (1069)	1826 (1346)	2128 (1624)	2578 (1901)	2954 (2178)	3300 (2456)	3706 (2733)	4191 (3288)	5285 (3898)	6179 (4585)	7063 (5209)	206 (2984)	0.9
LHS-20A-090X-FC1-1	start	1604 (1183)	730 (538)	993 (732)		2918 (2152)	3588 (2646)	4257 (3140)	4926 (3633)	5595 (4127)	6265 (4621)	6934 (5114)	8272 (6101)	9611 (7089)	10499 (8079)	10667 (7868)	1240 (2119)	
LHS-20A-090X-FC1-1	run end	730 (538)	1244 (1729)	1566 (1245)		3459 (2511)	4170 (3075)	4880 (3600)	5581 (4261)	6258 (4615)	6934 (5114)	8272 (6101)	9611 (7089)	10499 (8079)	10667 (7868)	1240 (2119)	1.0	
LHS-20A-100X-FC1-1	start	1604 (1183)	730 (538)	993 (732)		3049 (1511)	2525 (1862)	3001 (2213)	3476 (2564)	3952 (2915)	4428 (3266)	4904 (3617)	5856 (4319)	8391 (6189)	10085 (7438)	143 (2072)	1.3	
LHS-20A-100X-FC1-1	run end	730 (538)	3309 (2440)	4156 (3065)		5003 (2063)	5850 (4315)	6579 (4813)	7373 (5438)	8220 (6063)	9067 (6688)	10761 (7937)	1220 (1512)	1616 (1512)	181 (2622)	1.3		
LHS-20A-100X-FC1-1	start	1604 (1183)	730 (538)	993 (732)		5171 (3818)	6223 (4590)	7269 (5361)	8314 (6132)	9360 (6904)	10406 (7675)	1267 (1523)	1616 (1512)	181 (2622)	116 (1679)	1.6		
LHS-20A-100X-FC1-1	run end	730 (538)	4501 (3320)	5547 (4091)		6592 (4862)	7638 (5634)	8684 (6405)	9615 (7091)	9730 (7176)						116 (1679)	1.6	
LHS-20A-110X-FC1-1	start	1604 (1183)	730 (538)	993 (732)		6495 (4790)	7760 (5723)	9025 (6557)	10291 (7590)						96 (1387)	1.9		
LHS-20A-110X-FC1-1	run end	730 (538)	8459 (2511)	9170 (3075)		8459 (2511)	9170 (3075)	9880 (3600)	1019 (751)						96 (1387)	1.9		
LHS-20A-120X-FC1-1	start	1604 (1183)	730 (538)	993 (732)		7938 (5855)	9444 (6965)	10949 (8076)	11561 (9097)	12023 (1097)	12608 (1297)	13203 (1497)	13808 (1687)	14411 (1877)	15008 (2065)	80 (1165)	2.3	
LHS-20A-120X-FC1-1	run end	730 (538)	4270 (3149)	5115 (3773)		7262 (5356)	8767 (6467)	10273 (7577)								80 (1165)	2.3	
LHS-20A-050X-FC2-1	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-055X-FC2-1	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-065X-FC2-1	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-075X-FC2-1	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-080X-FC2-1	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-090X-FC2-1	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-100X-FC2-1	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-110X-FC2-1	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-120X-FC2-1	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-050X-FC2-2	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-055X-FC2-2	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-065X-FC2-2	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-075X-FC2-2	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-080X-FC2-2	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-090X-FC2-2	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-100X-FC2-2	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-110X-FC2-2	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-120X-FC2-2	start	1517 (853)	1517 (853)	1606 (1184)												207 (3000)	0.4	
LHS-20A-050X-FC2-2	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-055X-FC2-2	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-065X-FC2-2	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-075X-FC2-2	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-080X-FC2-2	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-090X-FC2-2	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-100X-FC2-2	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-110X-FC2-2	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-120X-FC2-2	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-055X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-065X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-075X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-080X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-090X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-100X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-110X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-120X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-055X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-065X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-075X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-080X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-090X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-100X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-110X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-120X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-055X-FC2-3	start	1503 (1109)	1503 (1109)	2085 (1538)												207 (3000)	0.4	
LHS-20A-065																		

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	3570 (3592)													
	run	2232 (1647)													
	end	3065 (2207)													
LHS-20A-065X-FC2-4	start	3570 (3592)													
	run	2232 (1647)													
	end	3077 (2270)													
LHS-20A-075X-FC2-4	start	4870 (3592)													
	run	2232 (1647)													
	end	3077 (2270)													
LHS-20A-080X-FC2-4	start	4870 (3592)													
	run	2232 (1647)													
	end	3077 (2270)													
LHS-20A-090X-FC2-4	start	4870 (3592)													
	run	2232 (1647)													
	end	3077 (2270)													
LHS-20A-100X-FC2-4	start	4870 (3592)													
	run	2232 (1647)													
	end	3077 (2270)													
LHS-20A-110X-FC2-4	start	4870 (3592)													
	run	2232 (1647)													
	end	3077 (2270)													
LHS-20A-120X-FC2-4	start	4870 (3592)													
	run	2232 (1647)													
	end	3077 (2270)													
LHS-20A-055X-FC3-1	start	4914 (3624)													
	run	2286 (1686)													
	end	3226 (2379)													
LHS-20A-065X-FC3-1	start	4914 (3624)													
	run	2286 (1686)													
	end	3226 (2379)													
LHS-20A-075X-FC3-1	start	4914 (3624)													
	run	2286 (1686)													
	end	3226 (2379)													
LHS-20A-080X-FC3-1	start	4914 (3624)													
	run	2286 (1686)													
	end	3226 (2379)													
LHS-20A-090X-FC3-1	start	4914 (3624)													
	run	2286 (1686)													
	end	3226 (2379)													
LHS-20A-110X-FC3-1	start	4914 (3624)													
	run	2286 (1686)													
	end	3226 (2379)													
LHS-20A-120X-FC3-1	start	4914 (3624)													
	run	2286 (1686)													
	end	3226 (2379)													
LHS-20A-055X-FC3-2	start	3210 (2368)													
	run	1280 (944)													
	end	3226 (2379)													
LHS-20A-065X-FC3-2	start	3754 (2769)													
	run	1585 (1169)													
	end	3226 (2379)													
LHS-20A-075X-FC3-2	start	4800 (3540)													
	run	2286 (1686)													
	end	3226 (2379)													
LHS-20A-080X-FC3-2	start	3127 (2306)													
	run	1233 (909)													
	end	3226 (2379)													
LHS-20A-090X-FC3-2	start	3210 (2368)													
	run	1280 (944)													
	end	3226 (2379)													
LHS-20A-100X-FC3-2	start	3754 (2769)													
	run	1585 (1169)													
	end	3226 (2379)													
LHS-20A-110X-FC3-1	start	4026 (2969)	5291 (3930)	6557 (4836)	7822 (5769)	9087 (6702)	10353 (7636)	1273 (2018)	1885 (1464)	2737 (2018)	3489 (2573)	4241 (3128)	4993 (3682)	5256 (3876)	5954 (5867)
	run	1738 (1282)	2449 (1806)	3160 (2330)	3926 (2855)	4581 (3379)	5292 (3903)	7222 (5327)	8487 (6260)	9804 (4281)	1744 (2018)	2421 (3128)	3211 (3862)	4023 (4871)	4842 (5212)
	end	2161 (1594)	3426 (2527)	4692 (3460)	5957 (4394)	7270 (5327)	8487 (6260)	9804 (4281)	1744 (2018)	2421 (3128)	3211 (3862)	4023 (4871)	4842 (5212)	5621 (4190)	6475 (4975)
LHS-20A-120X-FC3-1	start	4914 (3624)	5469 (4034)	6975 (5144)	8481 (6255)	9987 (7366)	10871 (8018)								
	run	2286 (1686)	3595 (2548)	3395 (2504)	4241 (3128)	5087 (3752)	6116 (4879)	8121 (5990)							
	end	3226 (2379)	4604 (3625)	5110 (3769)	6116 (4879)	8121 (5990)									
LHS-20A-055X-FC3-2	start	5877 (4334)													
	run	2715 (2002)													
	end	3788 (2794)													
LHS-20A-065X-FC3-2	start	5877 (4334)													
	run	2715 (2002)													
	end	3788 (2794)													
LHS-20A-075X-FC3-2	start	5877 (4334)													
	run	2715 (2002)													
	end	3788 (2794)													
LHS-20A-080X-FC3-2	start	5877 (4334)													
	run	2715 (2002)													
	end	3788 (2794)													
LHS-20A-090X-FC3-2	start	5877 (4334)													
	run	2715 (2002)													
	end	3788 (2794)													
LHS-20A-100X-FC3-2	start	5877 (4334)													
	run	2715 (2002)													
	end	3788 (2794)													
LHS-20A-110X-FC3-2	start	5877 (4334)													
	run	2715 (2002)													
	end	3788 (2794)													
LHS-20A-120X-FC3-2	start	5877 (4334)													
	run	2715 (2002)													
	end	3788 (2794)													
LHS-20A-065X-FC3-3	start	6518 (4808)	3016 (2224)	4219 (3112)											
	run	1642 (1211)	2353 (1736)	2918 (2152)	3434 (2533)	4280 (3157)	5126 (3781)	6348 (4682)	7854 (5793)						
	end	1653 (1219)	2353 (1736)	2918 (2152)	3434 (2533)	4280 (3157)	5126 (3781)	6348 (4682)	7854 (5793)						
LHS-20A-075X-FC3-3	start	6518 (4808)	3016 (2224)	4219 (3112)											
	run	1642 (1211)	2353 (1736)	2918 (2152)	3434 (2533)	4280 (3157)	5126 (3781)	6348 (4682)	7854 (5793)						
	end	1653 (1219)	2353 (1736)	2918 (2152)	3434 (2533)	4280 (3157)	5126 (3781)	6348 (4682)	7854 (5793)						
LHS-20A-080X-FC3-3	start	6518 (4808)	3016 (2224)	4219 (3112)											
	run	1642 (1211)	2353 (1736)	2918 (2152)	3434 (2533)	4280 (3157)	5126 (3781)	6348 (4682)	7854 (5793)						
	end	1653 (1219)	2353 (1736)	2918 (2152)	3434 (2533)	4280 (3157)	5126 (3781)	6348 (4682)	7854 (5793)						
LHS-20A-090X-FC3-3	start	6518 (4808)	3016 (2224)	4219 (3112)											
	run	1642 (1211)	2353 (1736)	2918 (2152)	3434 (2533)	4280 (3157)	5126 (3781)	6348 (4682)	7854 (5793)						
	end	1653 (1219)	2353 (1736)	2918 (2152)	3434 (2533)	4280 (3157)	5126 (3781)	6348 (4682)	7854 (5793)						
LHS-20A-100X-FC3-3	start	6518 (4808)													

Table 7: Torque Table – LHS-20C – Single Acting – Spring Return Fail Close – 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		
	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)			
LHS-20C-050X-FC1-1	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)	L		
LHS-20C-055X-FC1-1	start run end	1307 (964) 751 (554) 1469 (1084)			1958 (1444) 492 (363) 472 (348)	2356 (1738) 639 (471) 888 (625)	2751 (2032) 786 (580) 1110 (740)	3152 (2325) 933 (688) 1337 (1134)	3948 (2912) 4745 (3499) 5541 (4086)	6337 (4674) 1226 (1121) 1814 (1388)	6615 (4639) 2210 (1650) 2815 (2076)	207 (3000)	0.4			
LHS-20C-055X-FC1-1	start run end	1307 (964) 751 (554) 1469 (1084)		2229 (1644) 592 (437) 617 (455)	2711 (1999) 770 (568) 1132 (835)	3674 (2710) 1125 (830) 1390 (1025)	4155 (3065) 1303 (961) 1649 (1215)	5109 (3764) 1658 (1223) 2163 (1595)	6082 (4486) 2014 (1485) 2678 (1975)	7045 (5169) 2369 (1747) 3194 (2356)	8008 (5907) 2724 (2009) 3709 (2736)	8345 (6155) 2849 (2101) 3889 (2869)	207 (3000)	0.5		
LHS-20C-065X-FC1-1	start run end	1307 (964) 751 (554) 1469 (1084)	2412 (1779) 659 (496) 1075 (793)	3085 (2275) 1156 (859) 1435 (1058)	3757 (2771) 1404 (1036) 1795 (1324)	5103 (3764) 1652 (1219) 2155 (1589)	5775 (4260) 1900 (1402) 2514 (1855)	6448 (4756) 2149 (1585) 2874 (1210)	7793 (5748) 3142 (2317) 3594 (2651)	10484 (7733) 3034 (2171) 5034 (3713)			188 (2723)	0.7		
LHS-20C-075X-FC1-1	start run end	1307 (964) 751 (554) 1469 (1084)	3749 (2765) 1153 (850) 1430 (1055)	4641 (3426) 5541 (4086) 617 (455)	6436 (4747) 7332 (5408) 2868 (2115)	8227 (6068) 9123 (6729) 3826 (2822)	9123 (6729) 3136 (2131) 4305 (3176)	10914 (8050) 3797 (2800) 5264 (3882)					141 (2045)	0.9		
LHS-20C-080X-FC1-1	start run end	1307 (964) 751 (554) 1469 (1084)	4490 (3311) 1426 (1052) 1827 (1347)	5509 (4063) 2178 (1329) 2372 (1749)	6528 (4815) 2554 (1884) 3462 (2553)	7547 (5566) 2930 (2161) 4552 (3358)	8565 (6318) 3306 (2438) 5098 (3760)	9584 (7069) 3682 (2716) 5098 (3760)	10603 (7821) 2977 (2196)				124 (1798)	1.1		
LHS-20C-090X-FC1-1	start run end	1307 (964) 751 (554) 1469 (1084)	6114 (4509) 2025 (1494) 2695 (1988)	7403 (5460) 2501 (1845) 3385 (2497)	8693 (6411) 2977 (2196)	9982 (7363) 3435 (2547)							98 (1421)	1.4		
LHS-20C-100X-FC1-1	start run end	1307 (964) 751 (554) 1469 (1084)	7929 (5848) 2695 (1988) 3667 (2704)	9521 (7022) 3283 (2421) 4518 (3333)									79 (1152)	1.7		
LHS-20C-110X-FC1-1	start run end	1307 (964) 751 (554) 1469 (1084)	9935 (7327) 3435 (2534) 4740 (3496)										66 (952)	2.0		
LHS-20C-050X-FC2-1	start run end	2047 (1510) 1188 (876) 2382 (1757)											2940 (2168)	3736 (2755)		
LHS-20C-055X-FC2-1	start run end	2047 (1510) 1188 (876) 2382 (1757)											4152 (3231) 819 (604) 830 (612)	4532 (3342) 1345 (845)		
LHS-20C-065X-FC2-1	start run end	2047 (1510) 1188 (876) 2382 (1757)			2748 (2027) 672 (496) 977 (720)	3421 (2523) 920 (679) 1327 (986)	4094 (3019) 1169 (862) 1697 (1251)	4766 (3516) 1417 (1045) 2057 (1517)	5430 (4012) 1665 (1228) 2776 (2048)	6784 (5004) 2161 (1594) 3496 (2579)	8130 (5966) 2658 (1960) 4216 (3110)	9475 (6988) 3154 (2326) 4936 (3640)	10820 (7981)	203 (2940)	0.7	
LHS-20C-075X-FC2-1	start run end	2047 (1510) 1188 (876) 2382 (1757)	3741 (2021) 613 (452) 1092 (805)	4532 (3342) 5427 (4003) 1571 (1159)	6523 (4663)	7218 (5324)	8114 (5984)	9905 (7035)						152 (2212)	0.9	
LHS-20C-080X-FC2-1	start run end	2047 (1510) 1188 (876) 2382 (1757)	3841 (2567) 942 (695) 2099 (1146)	5519 (4070) 1318 (972) 2099 (1450)	6538 (4822) 1694 (1250) 2644 (1950)	8575 (5573) 2822 (2082) 3189 (2352)	9594 (7076) 1697 (1556) 3735 (2755)	743 (548) 2126 (1723) 4446 (3279)	6784 (5004) 2161 (1594) 4446 (3279)	8130 (5966) 2658 (1960) 4216 (3110)	9475 (6988) 3154 (2326) 4936 (3640)	10820 (7981)	203 (2940)	0.7		
LHS-20C-090X-FC2-1	start run end	2047 (1510) 1188 (876) 2382 (1757)	5105 (3765) 1542 (1137) 1878 (1385)	6394 (4716) 2493 (1888) 2528 (2403)	7684 (5667) 2969 (2190) 3948 (2912)	8973 (6618) 3445 (2541) 4638 (3421)	10263 (7570)							106 (1535)	1.4	
LHS-20C-100X-FC2-1	start run end	2047 (1510) 1188 (876) 2382 (1757)	6920 (5104) 2211 (1631) 2849 (2101)	8511 (6278) 2799 (2064) 3386 (2498)	10104 (7452) 3701 (2729)	1232 (1225) 2529 (1866) 3008 (2219)	1991 (1469) 2322 (1712) 3189 (2352)	4722 (3516) 2822 (2082) 4280 (3157)	5430 (4012) 1665 (1228) 2776 (2048)	6784 (5004) 2161 (1594) 3496 (2579)	8130 (5966) 2658 (1960) 4216 (3110)	9475 (6988) 3154 (2326) 4936 (3640)	10820 (7981)	203 (2940)	0.7	
LHS-20C-110X-FC2-1	start run end	2047 (1510) 1188 (876) 2382 (1757)	8926 (6583) 2952 (2177) 3922 (2893)	10852 (8004) 3662 (2701) 4953 (3653)										71 (1027)	2.0	
LHS-20C-050X-FC2-2	start run end	2660 (1962) 1544 (1139) 3092 (2281)											3747 (2763) 937 (691)	4543 (3350)		
LHS-20C-055X-FC2-2	start run end	2660 (1962) 1544 (1139) 3092 (2281)											4821 (3556) 1334 (984)	207 (3000)	0.4	
LHS-20C-065X-FC2-2	start run end	2660 (1962) 1544 (1139) 3092 (2281)											4288 (3163) 5251 (3873)	6214 (4583)	207 (3000)	0.5
LHS-20C-075X-FC2-2	start run end	2660 (1962) 1544 (1139) 3092 (2281)			3747 (2763)	4642 (3424)	5538 (4084)	6433 (4745)	7329 (5405)	5999 (4425) 1272 (938) 1379 (1017)	8690 (6409) 2265 (1670) 2098 (1548)	10035 (7402) 2761 (2037) 3538 (2609)	10506 (7749) 3431 (2531) 4510 (3262)	207 (3000)	0.7	
LHS-20C-080X-FC2-2	start run end	2660 (1962) 1544 (1139) 3092 (2281)	3715 (2740)	4734 (3491)	5753 (4243)	6771 (4994)	7790 (5746)	8809 (6497)	10847 (8000)	7345 (5157) 1768 (1304) 2018 (2079)			161 (2335)	0.9		
LHS-20C-090X-FC2-2	start run end	2660 (1962) 1544 (1139) 3092 (2281)	4320 (3186)	5609 (4137)	6899 (5088)	8188 (6039)	9478 (6991)	10768 (7942)		5999 (4425) 1272 (938) 1379 (1017)	8690 (6409) 2265 (1670) 2098 (1548)	10035 (7402) 2761 (2037) 3538 (2609)	10506 (7749) 3431 (2531) 4510 (3262)	207 (3000)	0.7	
LHS-20C-100X-FC2-2	start run end	2660 (1962) 1544 (1139) 3092 (2281)	6135 (4525)	7727 (5699)	9319 (6873)	10911 (8047)							3747 (2763) 937 (691)	4543 (3350)	207 (3000)	0.4
LHS-20C-110X-FC2-2	start run end	2660 (1962) 1544 (1139) 3092 (2281)	8445 (2541)	1818 (1341)	2406 (1774)	2993 (2208)	3581 (2641)	4726 (3486)					3747 (2763) 937 (691)	4543 (3350)	207 (3000)	0.4
LHS-20C-055X-FC2-3	start run end	3445 (2541) <td>1866 (1465)<td>3092 (2282)</td><td>3725 (5699)</td><td>4642 (3424)</td><td>5538 (4084)</td><td>6433 (4745)</td><td>7329 (5405)</td><td>5999 (4425) 1272 (938) 1379 (1017)</td><td>8690 (6409) 2265 (1670) 2098 (1548)</td><td>10035 (7402) 2761 (2037) 3538 (2609)</td><td>10506 (7749) 3431 (2531) 4510 (3262)</td><td>207 (3000)</td><td>0.5</td></td>	1866 (1465) <td>3092 (2282)</td> <td>3725 (5699)</td> <td>4642 (3424)</td> <td>5538 (4084)</td> <td>6433 (4745)</td> <td>7329 (5405)</td> <td>5999 (4425) 1272 (938) 1379 (1017)</td> <td>8690 (6409) 2265 (1670) 2098 (1548)</td> <td>10035 (7402) 2761 (2037) 3538 (2609)</td> <td>10506 (7749) 3431 (2531) 4510 (3262)</td> <td>207 (3000)</td> <td>0.5</td>	3092 (2282)	3725 (5699)	4642 (3424)	5538 (4084)	6433 (4745)	7329 (5405)	5999 (4425) 1272 (938) 1379 (1017)	8690 (6409) 2265 (1670) 2098 (1548)	10035 (7402) 2761 (2037) 3538 (2609)	10506 (7749) 3431 (2531) 4510 (3262)	207 (3000)	0.5	
LHS-20C-065X-FC2-3	start run end	3445 (2541) <td>1866 (1465)<td>3092 (2282)</td><td>4837 (3568)</td><td>5856 (4319)</td><td>6875 (5071)</td><td>7894 (5822)</td><td>9932 (7325)</td><td>5084 (3750) 1291 (944)</td><td>6429 (4742) 1776 (1310)</td><td>7775 (5734) 2272 (1676)</td><td>9120 (6726) 2943 (2170)</td><td>207 (3000)</td><td>0.5</td></td>	1866 (1465) <td>3092 (2282)</td> <td>4837 (3568)</td> <td>5856 (4319)</td> <td>6875 (5071)</td> <td>7894 (5822)</td> <td>9932 (7325)</td> <td>5084 (3750) 1291 (944)</td> <td>6429 (4742) 1776 (1310)</td> <td>7775 (5734) 2272 (1676)</td> <td>9120 (6726) 2943 (2170)</td> <td>207 (3000)</td> <td>0.5</td>	3092 (2282)	4837 (3568)	5856 (4319)	6875 (5071)	7894 (5822)	9932 (7325)	5084 (3750) 1291 (944)	6429 (4742) 1776 (1310)	7775 (5734) 2272 (1676)	9120 (6726) 2943 (2170)	207 (3000)	0.5	
LHS-20C-075X-FC2-3	start run end	3445 (2541) <td>1866 (1465)<td>3092 (2282)</td><td>6811 (5024)</td><td>8403 (6198)</td><td>9996 (7372)</td><td></td><td></td><td></td><td></td><td></td><td>5084 (3750) 1291 (944)</td><td>6429 (4742) 1776 (1310)</td><td>207 (3000)</td><td>0.5</td></td>	1866 (1465) <td>3092 (2282)</td> <td>6811 (5024)</td> <td>8403 (6198)</td> <td>9996 (7372)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5084 (3750) 1291 (944)</td> <td>6429 (4742) 1776 (1310)</td> <td>207 (3000)</td> <td>0.5</td>	3092 (2282)	6811 (5024)	8403 (6198)	9996 (7372)						5084 (3750) 1291 (944)	6429 (4742) 1776 (1310)	207 (3000)	0.5
LHS-20C-080X-FC2-3	start run end	3445 (2541) <td>1866 (1465)<td>3092 (2282)</td><td>1136 (838)</td><td>1611 (1189)</td><td>2087 (1540)</td><td>2563 (1890)</td><td>3039 (2281)</td><td>5856 (4319) 1291 (944)</td><td>6429 (4742) 1776 (1310)</td><td>7775 (5734) 2272 (1676)</td><td>9120 (6726) 2943 (2170)</td><td>207 (3000)</td><td>0.5</td></td>	1866 (1465) <td>3092 (2282)</td> <td>1136 (838)</td> <td>1611 (1189)</td> <td>2087 (1540)</td> <td>2563 (1890)</td> <td>3039 (2281)</td> <td>5856 (4319) 1291 (944)</td> <td>6429 (4742) 1776 (1310)</td> <td>7775 (5734) 2272 (1676)</td> <td>9120 (6726) 2943 (2170)</td> <td>207 (3000)</td> <td>0.5</td>	3092 (2282)	1136 (838)	1611 (1189)	2087 (1540)	2563 (1890)	3039 (2281)	5856 (4319) 1291 (944)	6429 (4742) 1776 (1310)	7775 (5734) 2272 (1676)	9120 (6726) 2943 (2170)	207 (3000)	0.5	
LHS-20C-090X-FC2-3	start run end	3445 (2541) <td>1866 (1465)<td>3092 (2282)</td><td>1304 (962)</td><td>2156 (1590)</td><td>2403 (1772)</td><td>3093 (2281)</td><td>3783 (2790)</td><td>5856 (4319) 1291 (944)</td><td>6429 (4742) 1776 (1310)</td><td>7775 (5734) 2272 (1676)</td><td>9120 (6726) 2943 (2170)</td><td>207 (3000)</td><td>0.5</td></td>	1866 (1465) <td>3092 (2282)</td> <td>1304 (962)</td> <td>2156 (1590)</td> <td>2403 (1772)</td> <td>3093 (2281)</td> <td>3783 (2790)</td> <td>5856 (4319) 1291 (944)</td> <td>6429 (4742) 1776 (1310)</td> <td>7775 (5734) 2272 (1676)</td> <td>9120 (6726) 2943 (2170)</td> <td>207 (3000)</td> <td>0.5</td>	3092 (2282)	1304 (962)	2156 (1590)	2403 (1772)	3093 (2281)	3783 (2790)	5856 (4319) 1291 (944)	6429 (4742) 1776 (1310)	7775 (5734) 2272 (1676)	9120 (6726) 2943 (2170)	207 (3000)	0.5	
LHS-20C-100X-FC2-3	start run end	3445 (2541) <td>1866 (1465)<td>3092 (2282)</td><td>7225 (5329)</td><td>9152 (6750)</td><td></td><td></td><td></td><td></td><td></td><td></td><td>5084 (3750) 1291 (944)</td><td>6429 (4742) 1776 (1310)</td><td>207 (3000)</td><td>0.5</td></td>	1866 (1465) <td>3092 (2282)</td> <td>7225 (5329)</td> <td>9152 (6750)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5084 (3750) 1291 (944)</td> <td>6429 (4742) 1776 (1310)</td> <td>207 (3000)</td> <td>0.5</td>	3092 (2282)	7225 (5329)	9152 (6750)							5084 (3750) 1291 (944)	6429 (4742) 1776 (1310)	207 (3000)	0.5
LHS-20C-110X-FC2-3	start run end	3445 (2541) <td>1866 (1465)<td>3092 (2282)</td><td>2377 (1753)</td><td>3408 (2513)</td><td></td><td></td><td></td><td></td><td></td><td></td><td>5084 (3750) 1291 (944)</td><td>6429 (4742) 1776 (1310)</td><td>207 (3000)</td><td>0.5</td></td>	1866 (1465) <td>3092 (2282)</td> <td>2377 (1753)</td> <td>3408 (2513)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5084 (3750) 1291 (944)</td> <td>6429 (4742) 1776 (1310)</td> <td>207 (3000)</td> <td>0.5</td>	3092 (2282)	2377 (1753)	3408 (2513)							5084 (3750) 1291 (944)	6429 (4742) 1776 (1310)	207 (3000)	0.5
LHS-20C-120X-FC2-3	start run end	3445 (2541) <td>1866 (1465)<td>3092 (2282)</td><td>9422 (6950)</td><td>2880 (2124)</td><td></td><td></td><td></td><td></td><td></td><td></td><td>5084 (3750) 1291 (944)</td><td>6429 (4742) 1776 (1310)</td><td>207 (3000)</td><td>0.5</td></td>	1866 (1465) <td>3092 (2282)</td> <td>9422 (6950)</td> <td>2880 (2124)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5084 (3750) 1291 (944)</td> <td>6429 (4742) 1776 (1310)</td> <td>207 (3000)</td> <td>0.5</td>	3092 (2282)	9422 (6950)	2880 (2124)							5084 (3750) 1291 (944)	6429 (4742) 1776 (1310)	207 (3000)	0.5
LHS-20C-055X-FC2-3	start run end	3445 (2541) <td>1866 (1465)<td>3092 (2282)</td><td>3553 (2620)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>5084 (3750) 1291 (944)</td><td>6429 (4742) 1776 (1310)</td><td>207 (3000)</td><td>0.5</td></td>	1866 (1465) <td>3092 (2282)</td> <td>3553 (2620)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5084 (3750) 1291 (944)</td> <td>6429 (4742) 1776 (1310)</td> <td>207 (3000)</td> <td>0.5</td>	3092 (2282)	3553 (2620)								5084 (3750) 1291 (944)	6429 (4742) 1776 (1310)	207 (3000)	0.5
LHS-20C-065X-FC2-3	start run end	3445 (2541) <td>1866 (1465)<td>3092 (2282)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>5084 (3750) 1291 (944)</td><td>6429 (4742) 1776 (1310)</td><td>207 (3000)</td><td>0.5</td></td>	1866 (1465) <td>3092 (2282)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5084 (3750) 1291 (944)</td> <td>6429 (4742) 1776 (1310)</td> <td>207 (3000)</td> <td>0.5</td>	3092 (2282)									5084 (3750) 1291 (944)	6429 (4742) 1776 (1310)	207 (3000)	0.5
LHS-20C-075X-FC2-3	start run end	3445 (2541) <td>1866 (1465)<td>3092 (2282)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>5084 (3750) 1291 (944)</td><td>6429 (4742) 1776 (1310)</td><td>207 (3000)</td><td>0.5</td></td>	1866 (1465) <td>3092 (2282)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5084 (3750) 1291 (944)</td> <td>6429 (4742) 1776 (1310)</td> <td>207 (3000)</td> <td>0.5</td>	3092 (2282)									5084 (3750) 1291 (944)	6429 (4742) 1776 (1310)	207 (3000)	0.5
LHS-20C-080X-FC2-3	start run end	3445 (2541) <td>1866 (1465)<td>3092 (2282)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>5084 (3750) 1291 (944)</td><td>6429 (4742) 1776 (1310)</td><td>207 (3000)</td><td>0.5</td></td>	1866 (1465) <td>3092 (2282)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5084 (3750) 1291 (944)</td> <td>6429 (4742) 1776 (1310)</td> <td>207 (3000)</td> <td>0.5</td>	3092 (2282)									5084 (3750) 1291 (944)	6429 (4742) 1776 (1310)	207 (3000)	0.5
LHS-20C-090X-FC2-3	start run end	3445 (2541) <td>1866 (1465)<td>3092 (2282)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>5084 (3750) 1291 (944)</td><td>6429 (4742) 1776 (1310)</td><td>207 (3000)</td><td>0.5</td></td>	1866 (1465) <td>3092 (2282)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5084 (3750) 1291 (944)</td> <td>6429 (4742) 1776 (1310)</td> <td>207 (3000)</td> <td>0.5</td>	3092 (2282)									5084 (3750) 1291 (944)	6429 (4742) 1776 (1310)	207 (3000)	0.5
LHS-20C-100X-FC2-3	start run end	3445 (2541) <td>1866 (1465)<td>3092 (2282)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>5084 (3750) 1291 (944)</td><td>6429 (4742) 1776 (1310)</td><td>207 (3000)</td><td>0.5</td></td>	1866 (1465) <td>3092 (2282)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5084 (3750) 1291 (944)</td> <td>6429 (4742) 1776 (1310)</td> <td>207 (3000)</td> <td>0.5</td>	3092 (2282)									5084 (3750) 1291 (944)	6429 (4742) 1776 (1310)	207 (3000)	0.5
LHS-20C-110X-FC2-3	start run end	3445 (2541) <td>1866 (1465)<td>3092</td></td>	1866 (1465) <td>3092</td>	3092												

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)
LHS-20C-065X-FC2-4	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)
LHS-20C-065X-FC2-4	start	3967 (2926)											
LHS-20C-065X-FC2-4	run	2295 (1693)											
LHS-20C-065X-FC2-4	end	4561 (3364)											
LHS-20C-075X-FC2-4	start	3967 (2926)											
LHS-20C-075X-FC2-4	run	2295 (1693)											
LHS-20C-075X-FC2-4	end	4561 (3364)											
LHS-20C-080X-FC2-4	start	3967 (2926)											
LHS-20C-080X-FC2-4	run	2295 (1693)											
LHS-20C-080X-FC2-4	end	4561 (3364)											
LHS-20C-090X-FC2-4	start	3967 (2926)											
LHS-20C-090X-FC2-4	run	2295 (1693)											
LHS-20C-090X-FC2-4	end	4561 (3364)											
LHS-20C-100X-FC2-4	start	3967 (2926)											
LHS-20C-100X-FC2-4	run	2295 (1693)											
LHS-20C-100X-FC2-4	end	4561 (3364)											
LHS-20C-110X-FC2-4	start	3967 (2926)	6517 (4807)	8443 (6227)	10370 (7648)	1240 (1799)	1729 (1275)	2440 (1799)	3150 (2324)	4133 (3049)			
LHS-20C-110X-FC2-4	run	2295 (1693)	1799 (1327)	2830 (2087)	3861 (2848)								
LHS-20C-110X-FC2-4	end	4561 (3364)											
LHS-20C-120X-FC2-4	start	3967 (2926)	8714 (6427)	2539 (1873)	2975 (2194)								
LHS-20C-120X-FC2-4	run	2295 (1693)											
LHS-20C-120X-FC2-4	end	4561 (3364)											
LHS-20C-065X-FC3-1	start	4003 (2926)	2345 (1730)	4795 (3537)									
LHS-20C-065X-FC3-1	run	2345 (1730)	4795 (3537)										
LHS-20C-065X-FC3-1	end	4795 (3537)											
LHS-20C-075X-FC3-1	start	4003 (2926)	2345 (1730)	4795 (3537)									
LHS-20C-075X-FC3-1	run	2345 (1730)	4795 (3537)										
LHS-20C-075X-FC3-1	end	4795 (3537)											
LHS-20C-080X-FC3-1	start	4003 (2926)	2345 (1730)	4795 (3537)									
LHS-20C-080X-FC3-1	run	2345 (1730)	4795 (3537)										
LHS-20C-080X-FC3-1	end	4795 (3537)											
LHS-20C-090X-FC3-1	start	4003 (2926)	2345 (1730)	4795 (3537)									
LHS-20C-090X-FC3-1	run	2345 (1730)	4795 (3537)										
LHS-20C-090X-FC3-1	end	4795 (3537)											
LHS-20C-100X-FC3-1	start	4003 (2926)	2345 (1730)	4795 (3537)									
LHS-20C-100X-FC3-1	run	2345 (1730)	4795 (3537)										
LHS-20C-100X-FC3-1	end	4795 (3537)											
LHS-20C-110X-FC3-1	start	4003 (2926)	2345 (1730)	4795 (3537)									
LHS-20C-110X-FC3-1	run	2345 (1730)	4795 (3537)										
LHS-20C-110X-FC3-1	end	4795 (3537)											
LHS-20C-120X-FC3-1	start	4003 (2926)	2345 (1730)	4795 (3537)									
LHS-20C-120X-FC3-1	run	2345 (1730)	4795 (3537)										
LHS-20C-120X-FC3-1	end	4795 (3537)											
LHS-20C-065X-FC3-2	start	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-065X-FC3-2	run	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-065X-FC3-2	end	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-075X-FC3-2	start	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-075X-FC3-2	run	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-075X-FC3-2	end	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-080X-FC3-2	start	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-080X-FC3-2	run	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-080X-FC3-2	end	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-090X-FC3-2	start	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-090X-FC3-2	run	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-090X-FC3-2	end	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-110X-FC3-2	start	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-110X-FC3-2	run	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-110X-FC3-2	end	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-120X-FC3-2	start	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-120X-FC3-2	run	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-120X-FC3-2	end	4787 (3531)	2787 (2056)	5623 (4148)									
LHS-20C-065X-FC3-3	start	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-065X-FC3-3	run	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-065X-FC3-3	end	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-075X-FC3-3	start	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-075X-FC3-3	run	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-075X-FC3-3	end	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-080X-FC3-3	start	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-080X-FC3-3	run	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-080X-FC3-3	end	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-090X-FC3-3	start	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-090X-FC3-3	run	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-090X-FC3-3	end	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-100X-FC3-3	start	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-100X-FC3-3	run	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-100X-FC3-3	end	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-110X-FC3-3	start	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-110X-FC3-3	run	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-110X-FC3-3	end	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-120X-FC3-3	start	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-120X-FC3-3	run	5310 (3916)	3096 (2283)	6264 (4620)									
LHS-20C-120X-FC3-3	end	5310 (3916)	3096 (2283)	6264 (4620)									

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)

Actuator Model	LHS-25A SYMMETRIC ACTUATOR													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)	L			
LHS-25A-075X-FC1-1	start	2595 (1914)	2666 (1966)	3392 (2502)	4845 (3038)	5417 (4110)	6299 (4646)	7025 (5182)	8478 (6253)	9932 (7325)	11385 (8397)	12838 (9469)	13347 (9844)	13347 (9844)	207 (3000)	1.1		
	run	1160 (859)	1168 (861)	1578 (1162)	1984 (1274)	2392 (1764)	2801 (2069)	3209 (2467)	3617 (2660)	4433 (3270)	5250 (3872)	6066 (4474)	6883 (5076)	7168 (5287)				
	end	1523 (1131)	1630 (1140)	2028 (1632)	2361 (2172)	3610 (2708)	3618 (2844)	5125 (3561)	5000 (3561)	7380 (5231)	8758 (5601)	10220 (6331)	11400 (6803)	12173 (8593)				
LHS-25A-080X-FC1-1	start	2595 (1914)	2666 (2406)	4099 (3038)	4920 (3629)	5746 (4126)	6317 (4489)	7227 (5068)	9880 (6253)	11387 (7325)	13347 (9844)	14840 (10946)	15347 (11273)	15347 (11273)	207 (3000)	1.3		
	run	1160 (855)	1505 (1110)	1970 (1493)	2434 (1791)	2691 (2138)	3363 (3287)	3827 (2823)	4292 (3166)	5221 (3851)	6150 (4536)	7079 (5231)	8088 (5906)	8333 (6146)				
	end	1523 (1131)	2025 (1543)	2019 (2153)	3746 (2763)	4572 (3772)	5399 (3982)	6226 (4592)	7053 (5202)	8706 (6421)	10350 (7641)	12013 (8860)	13666 (10980)	14245 (10507)				
LHS-25A-085X-FC1-1	start	2595 (1914)	3906 (2881)	4839 (3569)	5772 (4257)	6706 (4946)	7639 (5634)	8572 (6322)	9505 (7011)	11372 (8388)	13339 (9764)	15105 (11141)	16972 (12518)	17625 (13000)	207 (3000)	1.4		
	run	1160 (855)	1864 (1375)	2389 (1762)	2913 (2149)	3437 (2535)	3962 (2922)	4486 (3209)	5010 (3695)	6059 (4468)	7108 (5242)	8156 (6016)	9205 (6789)	9572 (7060)				
	end	1523 (1131)	2722 (2015)	3665 (2703)	4598 (2391)	5531 (4080)	6465 (4768)	7298 (5457)	8231 (6145)	10198 (7525)	12065 (8898)	12931 (10275)	15798 (11652)	16451 (12134)				
LHS-25A-090X-FC1-1	start	2595 (1914)	4584 (3381)	5630 (4153)	6676 (4924)	7723 (5696)	8769 (6468)	9815 (7239)	10862 (8011)	12954 (9555)	15047 (11098)	17140 (12642)	198 (2871)	198 (2871)	1.6			
	run	1160 (855)	2245 (1656)	2833 (2090)	3421 (2523)	4009 (2957)	4597 (3390)	5185 (3824)	5772 (4257)	6948 (5125)	8124 (5922)	9299 (6859)	10566 (11776)					
	end	1523 (1131)	3410 (2515)	4582 (3287)	5502 (4802)	6549 (4830)	7858 (6459)	10049 (7412)	11341 (8365)	12633 (9318)	15216 (11223)	17800 (13129)						
LHS-25A-100X-FC1-1	start	2595 (1914)	6056 (4467)	7348 (5240)	8640 (6372)	9932 (7325)	11223 (8278)	12515 (9231)	13807 (10183)	15047 (11098)	17062 (12584)	16390 (12089)	18874 (13994)	18874 (13994)	160 (2324)	2.0		
	run	1160 (855)	3073 (2266)	3798 (2802)	4337 (3255)	5250 (4407)	5976 (4407)	6701 (4943)	7427 (5478)	8878 (6548)	10330 (7619)	12018 (8745)						
	end	1523 (1131)	6174 (4554)	7466 (5507)	8758 (6459)	10049 (7412)	14325 (10566)	15263 (9318)	15888 (11718)									
LHS-25A-110X-FC1-1	start	2595 (1914)	7684 (5667)	9247 (6820)	10810 (1216)	13936 (1126)	15499 (11432)	17062 (12584)								133 (1922)	2.4	
	run	1160 (855)	8971 (2941)	4865 (3588)	5743 (4236)	6621 (4984)	7500 (5531)	8378 (6179)	9256 (6827)									
	end	1523 (1131)	6510 (4802)	7093 (5954)	11199 (8260)	12762 (9413)	14325 (10566)	15263 (9318)	15888 (11718)									
LHS-25A-120X-FC1-1	start	2595 (1914)	9467 (6982)	11327 (8354)	13187 (9726)	15047 (10109)	16907 (12470)	18767 (13842)								111 (1614)	2.9	
	run	1160 (855)	4989 (3679)	6034 (4550)	7079 (5221)	8124 (5992)	9169 (6762)	10214 (7533)										
	end	1523 (1131)	8293 (6116)	10153 (7488)	12013 (8860)	13873 (10232)	15733 (11604)	17593 (12976)										
LHS-25A-130X-FC1-1	start	2595 (1914)	11404 (8411)	13587 (10022)	15770 (11632)	17954 (13242)										95 (1375)	3.3	
	run	1160 (855)	6077 (4482)	7304 (5387)	8530 (6291)	9756 (7196)												
	end	1523 (1131)	10230 (7545)	12431 (9156)	14596 (10766)	16779 (12376)												
LHS-25A-140X-FC1-1	start	2595 (1914)	13495 (9995)	16029 (11822)	18561 (13690)											82 (1186)	3.9	
	run	1160 (855)	7253 (5349)	8675 (6398)	10098 (7448)													
	end	1523 (1131)	12323 (9089)	14855 (10956)	17387 (12824)													
LHS-25A-075X-FC1-2	start	4034 (2976)	3346 (2468)	4073 (3004)	4799 (3540)	5526 (4076)	6253 (4612)	7706 (5684)	9159 (6755)	10012 (7827)	12066 (8899)	12574 (9274)				207 (3000)	1.1	
	run	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)			
	end	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)			
LHS-25A-080X-FC1-2	start	4034 (2976)	3200 (2449)	4147 (3059)	4974 (3669)	5801 (4278)	6457 (4888)	7454 (5498)	9107 (6573)	10763 (7397)	12414 (9156)	14068 (10376)	14647 (10803)			207 (3000)	1.3	
	run	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)			
	end	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)			
LHS-25A-085X-FC1-2	start	4034 (2976)	3133 (2311)	4065 (3990)	5000 (3688)	5933 (4276)	6866 (5064)	7890 (5753)	9132 (6441)	10350 (7573)	12466 (9194)	14323 (10571)	16199 (13949)	16852 (13240)	16852 (13240)	207 (3000)	1.4	
	run	1760 (1298)	1201 (885)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)			
	end	2232 (1646)	1141 (841)	2074 (1520)	3007 (2218)	3941 (2906)	4795 (3559)	5807 (4207)	6741 (4972)	8607 (6248)	10474 (7725)	12340 (9102)	14207 (10478)					
LHS-25A-090X-FC1-2	start	4034 (2976)	3811 (2811)	4855 (3583)	5904 (5054)	6950 (5126)	7987 (5988)	9043 (6670)	10089 (7441)	12182 (8985)	14275 (10528)	16367 (12072)	18460 (13615)			205 (2976)	1.6	
	run	1760 (1298)	1582 (1166)	2169 (1600)	2757 (2044)	3345 (2467)	3933 (2901)	4521 (3344)	5108 (3678)	6286 (4635)	8191 (5200)	10190 (7518)	12022 (8959)	14375 (10602)	16468 (12146)			
	end	2232 (1646)	1819 (1342)	2625 (2113)	3985 (2492)	4958 (4533)	6004 (4429)	7051 (5201)	8097 (5009)	9071 (5753)	10218 (6864)	12018 (8864)	12507 (9291)					
LHS-25A-100X-FC1-2	start	4034 (2976)	6576 (4850)	7867 (5803)	9159 (6755)	10451 (7708)	11743 (8661)	13034 (9614)	15181 (11519)	18201 (13425)						166 (2411)	2.0	
	run	1760 (1298)	2409 (1777)	3280 (2428)	3860 (4282)	4586 (4382)	5295 (4338)	6176 (5286)	7051 (6293)	8076 (6594)	9071 (7191)	11042 (8144)						
	end	2232 (1646)	2458 (3380)	3587 (4333)	5167 (5286)	6548 (6230)	7167 (5286)	8049 (5399)	9054 (5986)	10508 (5205)	11721 (6425)	13056 (6864)	15204 (8861)					
LHS-25A-110X-FC1-2	start	4034 (2976)	1233 (2451)	4201 (3099)	5079 (3746)	5958 (4394)	6906 (5187)	7294 (5761)	8001 (5244)	8345 (5245)	9205 (5240)	10241 (5241)	11849 (5237)	13548 (6992)	14125 (10419)		138 (1995)	2.4
	run	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)	1760 (1298)				
	end	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)	2232 (1646)				
LHS-25A-120X-FC1-2	start	4034 (2976)	1212 (7482)	14988 (10422)	17181 (12672)	19336 (13278)										98 (1428)	3.3	
	run	1760 (1298)	1232 (1646)	1801 (5909)	9434 (6958)	10306 (11650)										85 (1231)	3.9	
	end	2232 (1646)	10732 (7916)	13264 (9783)	17268 (12736)	19271 (16309)												
LHS-25A-140X-FC1-2	start	4086 (3104)	3456 (2616)	4056 (4466)	5347 (5193)	8639 (6372)	9931 (7352)	11223 (8277)	12514 (9230)	15098 (11098)	17681 (13041)					170 (2471)	2.0	
	run	1907 (1406)	2247 (1657)	2972 (1929)	3658 (2129)	4424 (3263)	5149 (3798)	5875 (4333)	6601 (4868)	7209 (5123)	8041 (6196)	9095 (8102)	13568 (11007)	16152 (11913)				

Table 10: 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	LHS-25A 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-25A-075X-FC1-4	start run end	6016 (4437) 2611 (5926) 3280 (2419)																
LHS-25A-080X-FC1-4	start run end	6016 (4437) 2611 (5926) 3280 (2419)																
LHS-25A-085X-FC1-4	start run end	6016 (4437) 2611 (5926) 3280 (2419)																
LHS-25A-090X-FC1-4	start run end	6016 (4437) 2611 (5926) 3280 (2419)																
LHS-25A-100X-FC1-4	start run end	6016 (4437) 2611 (5926) 3280 (2419)																
LHS-25A-110X-FC1-4	start run end	6016 (4437) 2611 (5926) 3280 (2419)																
LHS-25A-120X-FC1-4	start run end	6016 (4437) 2611 (5926) 3280 (2419)																
LHS-25A-130X-FC1-4	start run end	6016 (4437) 2611 (5926) 3280 (2419)																
LHS-25A-140X-FC1-4	start run end	6016 (4437) 2611 (5926) 3280 (2419)																
LHS-25A-075X-FC2-1	start run end	6016 (4437) 2611 (5926) 3280 (2419)																
LHS-25A-080X-FC2-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)																
LHS-25A-085X-FC2-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)																
LHS-25A-090X-FC2-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)																
LHS-25A-100X-FC2-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)																
LHS-25A-110X-FC2-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)																
LHS-25A-120X-FC2-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)																
LHS-25A-130X-FC2-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)																
LHS-25A-140X-FC2-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)																
LHS-25A-075X-FC3-2	start run end	5516 (4068) 2299 (1696) 3495 (2578)	7079 (5211) 3177 (2343) 4232 (3122)	4058 (3325) 4055 (2991) 5795 (4274)	6584 (4374) 4933 (3639) 7358 (5427)	10205 (7527) 2312 (7172) 2708 (1997)	5554 (4097) 4040 (3774) 3754 (2769)	6601 (4686) 5913 (4369) 4801 (3541)	6747 (5640) 4933 (4369) 7358 (5427)	8653 (6412) 6058 (5688) 7274 (5636)	10786 (7859) 6058 (4468) 5900 (4356)	14459 (10665) 9365 (6907) 11018 (9127)	12074 (12570) 12672 (9346) 14019 (10340)	15040 (11093) 7600 (5606) 12016 (8863)	15694 (11575) 7967 (5876) 12670 (9345)	11415 (8420) 6552 (4832) 8232 (6028)	13468 (9948) 6728 (4962) 8985 (7291)	10464 (7718)
LHS-25A-080X-FC3-2	start run end	5180 (3820) 2110 (1557) 3234 (1721)	6471 (4773) 2836 (2092) 3625 (2674)	5763 (7526) 3562 (6267) 4917 (3627)	7763 (7526) 2887 (6176) 6209 (4579)	10059 (6679) 10422 (10187) 10374 (7631)	5231 (3885) 2139 (1578) 5393 (2066)	6058 (3885) 6260 (1921) 5353 (2066)	6508 (3885) 5391 (3976) 4462 (3291)	7712 (5688) 6365 (6907) 8724 (5365)	9365 (6907) 11018 (9127) 11762 (11559)	11876 (8759) 12107 (8930) 15233 (11235)	13116 (9674) 11023 (6130) 15208 (11217)	17301 (12761) 8870 (6542) 18033 (13301)	15694 (11575) 7967 (5876) 12670 (9345)	10464 (7718)	10464 (7718)	10464 (7718)
LHS-25A-085X-FC3-2	start run end	5180 (3820) 2110 (1557) 3234 (1721)	6471 (4773) 2836 (2092) 3625 (2674)	5763 (7526) 3562 (6267) 4917 (3627)	7763 (7526) 2887 (6176) 6209 (4579)	10059 (6679) 10422 (10187) 10374 (7631)	5231 (3885) 2139 (1578) 5393 (2066)	6058 (3885) 6260 (1921) 5353 (2066)	6508 (3885) 5391 (3976) 4462 (3291)	7712 (5688) 6365 (6907) 8724 (5365)	9365 (6907) 11018 (9127) 11762 (11559)	11876 (8759) 12107 (8930) 15233 (11235)	13116 (9674) 11023 (6130) 15208 (11217)	17301 (12761) 8870 (6542) 18033 (13301)	15694 (11575) 7967 (5876) 12670 (9345)	10464 (7718)	10464 (7718)	10464 (7718)
LHS-25A-090X-FC3-2	start run end	5180 (3820) 2110 (1557) 3234 (1721)	6471 (4773) 2836 (2092) 3625 (2674)	5763 (7526) 3562 (6267) 4917 (3627)	7763 (7526) 2887 (6176) 6209 (4579)	10059 (6679) 10422 (10187) 10374 (7631)	5231 (3885) 2139 (1578) 5393 (2066)	6058 (3885) 6260 (1921) 5353 (2066)	6508 (3885) 5391 (3976) 4462 (3291)	7712 (5688) 6365 (6907) 8724 (5365)	9365 (6907) 11018 (9127) 11762 (11559)	11876 (8759) 12107 (8930) 15233 (11235)	13116 (9674) 11023 (6130) 15208 (11217)	17301 (12761) 8870 (6542) 18033 (13301)	15694 (11575) 7967 (5876) 12670 (9345)	10464 (7718)	10464 (7718)	10464 (7718)
LHS-25A-100X-FC3-2	start run end	5180 (3820) 2110 (1557) 3234 (1721)	6471 (4773) 2836 (2092) 3625 (2674)	5763 (7526) 3562 (6267) 4917 (3627)	7763 (7526) 2887 (6176) 6209 (4579)	10059 (6679) 10422 (10187) 10374 (7631)	5231 (3885) 2139 (1578) 5393 (2066)	6058 (3885) 6260 (1921) 5353 (2066)	6508 (3885) 5391 (3976) 4462 (3291)	7712 (5688) 6365 (6907) 8724 (5365)	9365 (6907) 11018 (9127) 11762 (11559)	11876 (8759) 12107 (8930) 15233 (11235)	13116 (9674) 11023 (6130) 15208 (11217)	17301 (12761) 8870 (6542) 18033 (13301)	15694 (11575) 7967 (5876) 12670 (9345)	10464 (7718)	10464 (7718)	10464 (7718)
LHS-25A-110X-FC3-2	start run end	5180 (3820) 2110 (1557) 3234 (1721)	6471 (4773) 2836 (2092) 3625 (2674)	5763 (7526) 3562 (6267) 4917 (3627)	7763 (7526) 2887 (6176) 6209 (4579)	10059 (6679) 10422 (10187) 10374 (7631)	5231 (3885) 2139 (1578) 5393 (2066)	6058 (3885) 6260 (1921) 5353 (2066)	6508 (3885) 5391 (3976) 4462 (3291)	7712 (5688) 6365 (6907) 8724 (5365)	9365 (6907) 11018 (9127) 11762 (11559)	11876 (8759) 12107 (8930) 15233 (11235)	13116 (9674) 11023 (6130) 15208 (11217)	17301 (12761) 8870 (6542) 18033 (13301)	15694 (11575) 7967 (5876) 12670 (9345)	10464 (7718)	10464 (7718)	10464 (7718)
LHS-25A-120X-FC3-2	start run end	5180 (3820) 2110 (1557) 3234 (1721)	6471 (4773) 2836 (2092) 3625 (2674)	5763 (7526) 3562 (6267) 4917 (3627)	7763 (7526) 2887 (6176) 6209 (4579)	10059 (6679) 10422 (10187) 10374 (7631)	5231 (3885) 2139 (1578) 5393 (2066)	6058 (3885) 6260 (1921) 5353 (2066)	6508 (3885) 5391 (3976) 4462 (3291)	7712 (5688) 6365 (6907) 8724 (5365)	9365 (6907) 11018 (9127) 11762 (11559)	11876 (8759) 12107 (8930) 15233 (11235)	13116 (9674) 11023 (6130) 15208 (11217)	17301 (12761) 8870 (6542) 18033 (13301)	15694 (11575) 7967 (5876) 12670 (9345)	10464 (7718)	10464 (7718)	10464 (7718)
LHS-25A-130X-FC3-2	start run end	5180 (3820) 2110 (1557) 3234 (1721)	6471 (4773) 2836 (2092) 3625 (2674)	5763 (7526) 3562 (6267) 4917 (3627)	7763 (7526) 2887 (6176) 6209 (4579)	10059 (6679) 10422 (10187) 10374 (7631)	5231 (3885) 2139 (1578) 5393 (2066)	6058 (3885) 6260 (1921) 5353 (2066)	6508 (3885) 5391 (3976) 4462 (3291)	7712 (5688) 6365 (6907) 8724 (5365)	9365 (6907) 11018 (9127) 11762 (11559)	11876 (8759) 12107 (8930) 15233 (11235)	13116 (9674) 11023 (6130) 15208 (11217)	17301 (12761) 8870 (6542) 18033 (13301)	15694 (11575) 7967 (5876) 12670 (9345)	10464 (7718)	10464 (7718)	10464 (7718)
LHS-25A-140X-FC3-2	start run end	5180 (3820) 2110 (1557) 3234 (1721)	6471 (4773) 2836 (2092) 3625 (2674)	5763 (7526) 3562 (6267) 4917 (3627)	7763 (7526) 2887 (6176) 6209 (4579)	10059 (6679) 10422 (10187) 10374 (7631)	5231 (3885) 2139 (1578) 5393 (2066)	6058 (3885) 6260 (1921) 5353 (2066)	6508 (3885) 5391 (3976) 4462 (3291)	7712 (5688) 6365 (6907) 8724 (5365)	9365 (6907) 11018 (9127) 11762 (11559)	11876 (8759) 12107 (8930) 15233 (11235)	13116 (9674) 11023 (6130) 15208 (11217)	17301 (12761) 8870 (6542) 18033 (13301)	15694 (11575) 7967 (5876) 12670 (9345)	10464 (7718)	10464 (7718)	10464 (7718)
LHS-25A-075X-FC2-2	start run end	5929 (4373) 2706 (1996) 3705 (2722)	6471 (4773) 2836 (2092) 3625 (2674)	5763 (7526) 3562 (6267) 4917 (3627)	7763 (7526) 2887 (6176) 6209 (4579)	10059 (6679) 10422 (10187) 10374 (7631)	5231 (3885) 2139 (1578) 5393 (2066)	6058 (3885) 6260 (1921) 5353 (2066)	6508 (3885) 5391 (3976) 4462 (3291)	7712 (5688) 6365 (6907) 8724 (5365)	9365 (6907) 11018 (9127) 11762 (11559)	11876 (8759) 12107 (8930) 15233 (11235)	13116 (9674) 11023 (6130) 15208 (11217)	17301 (12761) 8870 (6542) 18033 (13301)	15694 (11575) 7967 (5876) 12670 (9345)	10464 (7718)	10464 (7718)	10464 (7718)
LHS-25A-080X-FC2-2	start run end	5929 (4373) 2706 (1996) 3705 (2722)	6471 (4773) 2836 (2092) 3625 (2674)	5763 (7526) 3562 (6267) 4917 (3627)	7763 (7526) 2887 (6176) 6209 (4579)	10059 (6679) 10422 (10187) 10374 (7631)	5231 (3885) 2139 (1578) 5393 (2066)	6058 (3885) 6260 (1921) 5353 (2066)	6508 (3885) 5391 (3976) 4462 (3291)	7712 (5688) 6365 (6907) 8724 (5365)	9365 (6907) 11018 (9127) 11762 (11559)	11876 (8759) 12107 (8930) 15233 (11235)	13116 (9674) 11023 (6130) 15208 (11217)	17301 (12761) 8870 (6542) 18033 (13301)	15694 (11575) 7967 (5876) 12670 (9345)	10464 (7718)	10464 (7718)	10464 (7718)
LHS-25A-085X-FC2-2	start run end	5929 (4373) 2706 (1996) 3705 (2722)	6471 (4773) 2836 (2092) 3625 (2674)	5763 (7526) 3562 (6267) 4917 (3627)	7763 (7526) 2887 (6176) 6209 (4579)	10059 (6679) 10422 (10187) 10374 (7631)	5231 (3885) 2139 (1578) 5393 (2066)	6058 (3885) 6260 (1921) 5353 (2066)	6508 (3885) 5391 (3976) 4462 (3291)	7712 (5688) 6365 (6907) 8724 (5365)	9365 (6907) 11018 (9127) 11762 (11559)	11876 (8759) 12107 (8930) 15233 (11235)	13116 (9674) 11023 (6130) 15208 (11217)	17301 (12761) 8870 (6542) 18033 (13301)	15694 (115			

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	LHS-25A 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)		
LHS-25A-075X-FC3-3	start run end	7353 (5423) 3316 (2446) 4453 (3284)												10120 (7464) 9611 (7089) 6405 (5510)	
LHS-25A-080X-FC3-3	start run end	7353 (5423) 3316 (2446) 4453 (3284)												207 (3000) 1.1	
LHS-25A-085X-FC3-3	start run end	7353 (5423) 3316 (2446) 4453 (3284)												1.3	
LHS-25A-090X-FC3-3	start run end	7353 (5423) 3316 (2446) 4453 (3284)												207 (3000) 1.4	
LHS-25A-100X-FC3-3	start run end	7353 (5423) 3316 (2446) 4453 (3284)												185 (2687) 2.0	
LHS-25A-110X-FC3-3	start run end	7353 (5423) 3316 (2446) 4453 (3284)	6020 (4440) 2482 (1830)	9146 (7646) 3360 (2478)	10709 (7899) 4238 (3126)	12272 (9051) 5994 (4221)	13835 (10204) 10580 (7903)	16961 (12510) 8782 (5069)	18330 (13250) 13163 (9709)	13745 (10137) 9398 (6631)	14398 (10619) 7188 (5302)			153 (2224) 2.4	
LHS-25A-120X-FC3-3	start run end	7353 (5423) 3316 (2446) 4453 (3284)	6239 (4602) 2605 (1921) 3034 (2238)	9960 (7346) 4695 (3463) 6754 (4982)	11820 (8718) 5740 (4234) 8614 (6354)	15540 (11462) 10475 (7726)	17400 (12834) 12335 (9098)	1875 (6546) 14195 (10470)						129 (1868) 2.9	
LHS-25A-130X-FC3-3	start run end	7353 (5423) 3316 (2446) 4453 (3284)	8177 (6031) 4920 (3629) 4972 (3667)	10360 (7641) 6146 (5433) 9338 (6887)	14726 (10862) 4318 (3184)	16909 (12472) 8599 (6342)								110 (1592) 3.3	
LHS-25A-140X-FC3-3	start run end	7353 (5423) 3316 (2446) 4453 (3284)	10270 (7575)	12802 (9442)	15333 (11309)	17865 (13177)								95 (1372) 3.9	
LHS-25A-075X-FC2-3	start run end	8052 (5939) 3538 (2609)	4869 (3591)	6292 (4640)	7714 (5689)	9136 (6739)								1.1	
LHS-25A-080X-FC2-3	start run end	8052 (5939) 3538 (2609)	5956 (3551)	1202 (5120)	11765 (8945)	14660 (10813)								1.3	
LHS-25A-085X-FC2-3	start run end	8052 (5939) 3538 (2609)	3538 (3551)											1.4	
LHS-25A-090X-FC2-3	start run end	8052 (5939) 3538 (2609)	4543 (3551)											1.6	
LHS-25A-100X-FC2-3	start run end	8052 (5939) 3538 (2609)	5956 (3551)	5920 (4366)	7483 (5519)	9046 (6672)	10609 (7825)	12172 (8978)	13735 (10130)	15647 (11540)	18230 (13446)	14238 (10945)		1.8 (2699) 2.0	
LHS-25A-110X-FC2-3	start run end	8052 (5939) 3538 (2609)	5956 (3551)	2236 (1649)	3115 (2297)	3993 (2945)	4871 (3592)	5749 (4240)	6627 (4888)	16861 (12436)	18380 (13446)	15905 (11731)		154 (2233) 2.4	
LHS-25A-120X-FC2-3	start run end	8052 (5939) 3538 (2609)	5956 (3551)	2360 (1740)	3405 (2511)	4450 (3282)	5495 (4053)	6540 (5284)	7585 (5594)	8630 (6365)	10206 (7567)	12912 (11876)		129 (1876) 2.9	
LHS-25A-130X-FC2-3	start run end	8052 (5939) 3538 (2609)	5956 (3551)	3448 (2543)	4675 (3448)	5901 (4353)	7128 (5257)	10426 (10788)	16809 (12398)	18992 (14008)	19581 (7066)	9185 (6725)		110 (1596) 3.3	
LHS-25A-140X-FC2-3	start run end	8052 (5939) 3538 (2609)	5956 (3551)	4199 (3097)	6382 (4707)	8565 (6317)	10748 (7928)							95 (1378) 3.9	
LHS-25A-075X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.1	
LHS-25A-080X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.3	
LHS-25A-085X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.4	
LHS-25A-090X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.6	
LHS-25A-100X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.8 (2784) 2.0	
LHS-25A-110X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2804) 2.1	
LHS-25A-120X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2804) 2.1	
LHS-25A-130X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2804) 2.1	
LHS-25A-140X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2804) 2.1	
LHS-25A-075X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.1	
LHS-25A-080X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.3	
LHS-25A-085X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.4	
LHS-25A-090X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.6	
LHS-25A-095X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.8 (2878) 2.0	
LHS-25A-100X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-110X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-120X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-130X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-140X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-075X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.1	
LHS-25A-080X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.3	
LHS-25A-085X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.4	
LHS-25A-090X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.6	
LHS-25A-095X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.8 (2878) 2.0	
LHS-25A-100X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-110X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-120X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-130X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-140X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-075X-FC4-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.1	
LHS-25A-080X-FC4-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.3	
LHS-25A-085X-FC4-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.4	
LHS-25A-090X-FC4-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.6	
LHS-25A-095X-FC4-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.8 (2878) 2.0	
LHS-25A-100X-FC4-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-110X-FC4-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-120X-FC4-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-130X-FC4-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-140X-FC4-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-075X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.1	
LHS-25A-080X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.3	
LHS-25A-085X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.4	
LHS-25A-090X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.6	
LHS-25A-095X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.8 (2878) 2.0	
LHS-25A-100X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-110X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-120X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-130X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-140X-FC3-4	start run end	8269 (6069) 3787 (2793)	5212 (3844)											1.9 (2878) 2.1	
LHS-25A-075X-FC4-1	start run end	8269 (6069) 3787 (2793)	5212 (38												

Table 12: 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	LHS-25A 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-25A-075X-FC4-2	start run end	9693 (7149) 4397 (3243) 5960 (4396)													
LHS-25A-080X-FC4-2	start run end	9693 (7149) 4397 (3243) 5960 (4396)													
LHS-25A-085X-FC4-2	start run end	9693 (7149) 4397 (3243) 5960 (4396)													
LHS-25A-090X-FC4-2	start run end	9693 (7149) 4397 (3243) 5960 (4396)													
LHS-25A-100X-FC4-2	start run end	9693 (7149) 4397 (3243) 5960 (4396)													
LHS-25A-110X-FC4-2	start run end	9693 (7149) 4397 (3243) 5960 (4396)													
LHS-25A-120X-FC4-2	start run end	6434 (4746) 2455 (1811) 5960 (4396)	8294 (6118) 3500 (2582) 4167 (3074)	10154 (7489) 4545 (3353) 6027 (4446)	7623 (5622) 3123 (2303) 3496 (2578)	8914 (6575) 3849 (2839) 4787 (3531)	10481 (10386) 5300 (3909) 7371 (5436)	16665 (12291) 8203 (6050) 12538 (9247)						199 (2880)	
LHS-25A-130X-FC4-2	start run end	9693 (7149) 4397 (3243) 5960 (4396)	2385 (1759) 4568 (3369)	7480 (5517) 3043 (2245) 3354 (2473)	9043 (6670) 3921 (2892) 4917 (3626)	10606 (7823) 4799 (3540) 6086 (4779)	12170 (8976) 5678 (4188) 7044 (5932)	15296 (11281) 7434 (5483) 11169 (8238)	18422 (13587) 9190 (6778) 14295 (10543)					164 (2376)	
LHS-25A-140X-FC4-2	start run end	9693 (7149) 4397 (3243) 5960 (4396)	3675 (2710) 4477 (3302)	11136 (8214) 5097 (3759) 7009 (5170)	13668 (10081) 6319 (4808) 9541 (7057)	17200 (11948) 7942 (5858) 12073 (8904)	18732 (13816) 9364 (6907) 14605 (10772)	15735 (11605) 8043 (5932)						138 (2002)	
LHS-25A-075X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	6512 (4803) 2499 (1843) 2385 (1759)	8695 (6143) 3725 (2748) 6751 (4979)	10878 (8023) 4952 (3652) 8934 (6589)	13061 (9633) 6178 (4557) 11117 (8199)	15244 (11243) 7405 (5461) 8631 (6366)	17427 (12853) 8631 (6366)						117 (1703)	
LHS-25A-080X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-085X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-090X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-100X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-110X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-120X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-130X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-140X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-150X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-160X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-170X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-180X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-190X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-200X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-210X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-220X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-230X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-240X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-250X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-260X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-270X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-280X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-290X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-300X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-310X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-320X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-330X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-340X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)	8604 (6346) 3675 (2710)	11136 (8214) 5097 (3759)	13668 (10081) 6319 (4808)	17200 (11948) 7942 (5858)	18732 (13816) 9364 (6907)	15735 (11605) 8043 (5932)						101 (1466)	
LHS-25A-350X-FC4-3	start run end	9693 (7149) 4397 (3243) 5960 (4396)													

Table 13: Torque Table – LHS-25C – Single Acting – Spring Return Fail Close – Canted

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													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)	L		
LHS-25C-075X-FC1-1	start run end	2114 (1559) 1196 (882) 2260 (1667)	2139 (3053) 1217 (831) 2215 (1607)	2426 (3869) 1535 (1132) 2229 (1607)	7458 (5501) 1943 (1481) 2229 (1607)	8586 (6317) 2352 (1734) 2229 (1607)	9670 (7133) 2760 (2035) 2229 (1607)	3168 (2337) 3576 (2638) 3550 (2022)	10777 (7948) 4393 (3240) 4765 (3516)	12989 (9580) 5209 (3842) 5951 (4142)	15202 (11212) 6025 (4444) 7134 (5262)	17414 (12264) 8318 (6135)			195 (2821)	1.2	
LHS-25C-080X-FC1-1	start run end	2114 (1559) 1196 (882) 2260 (1667)	5053 (3727) 1149 (4656) 1704 (1257)	5219 (5584) 7571 (5584) 2378 (1754)	8830 (5512) 3393 (1763) 3051 (2550)	8088 (7441) 3322 (2450) 3725 (3747)	11347 (8369) 3787 (2793) 5072 (3741)	15123 (11154) 4251 (3211) 5745 (4237)	17640 (3011) 6109 (4506) 7092 (5231)	171 (2479)	1.3						
LHS-25C-085X-FC1-1	start run end	2114 (1559) 1196 (882) 2260 (1667)	6027 (4445) 1824 (1345) 2225 (1641)	7448 (5493) 2872 (1123) 2746 (2763)	8869 (6541) 10290 (7589) 4506 (2322)	11711 (8637) 13132 (9686) 5266 (3884)	14553 (10734) 4970 (3279) 6018 (4439)	17395 (12830) 6787 (5096) 8307 (6127)			151 (2196)	1.5					
LHS-25C-090X-FC1-1	start run end	2114 (1559) 1196 (882) 2260 (1667)	7060 (5207) 2205 (1626) 2778 (2049)	8653 (6382) 2792 (2060) 3380 (2493)	10246 (7557) 3754 (2771) 5029 (3710)	13432 (9907) 4483 (3075) 6082 (4486)	15025 (11082) 5144 (3794) 7039 (5192)	16618 (12257) 5732 (4227) 7892 (5821)			135 (1960)	1.7					
LHS-25C-100X-FC1-1	start run end	2114 (1559) 1196 (882) 2260 (1667)	9302 (6861) 1196 (882) 3977 (2933)	11268 (8311) 12325 (9762) 5029 (3710)	15202 (11212) 17168 (12663) 7134 (5262)	17168 (12663) 5935 (4377) 8186 (6038)					109 (1587)	2.1					
LHS-25C-110X-FC1-1	start run end	2114 (1559) 1196 (882) 2260 (1667)	11780 (8688) 2946 (2911) 5303 (3911)	14159 (10443) 4824 (3558) 6576 (4850)	16539 (12199) 5702 (4206) 9123 (6729)	18919 (13954) 6581 (4854)					90 (1310)	2.5					
LHS-25C-120X-FC1-1	start run end	2114 (1559) 1196 (882) 2260 (1667)	14494 (10690) 4948 (3649) 6755 (4982)	17328 (12779) 5994 (4420) 8271 (6100)							76 (1102)	3.0					
LHS-25C-130X-FC1-1	start run end	2114 (1559) 1196 (882) 2260 (1667)	17444 (12866) 6036 (4452) 8334 (6147)								65 (939)	3.5					
LHS-25C-075X-FC1-2	start run end	3286 (2424) 1823 (1344) 3273 (2414)			6338 (4675)	7445 (5491)	8551 (6307)	9657 (7123)	11870 (8754)	14082 (10386)	16295 (12018)	18507 (13650)	205 (2966)	1.2			
LHS-25C-080X-FC1-2	start run end	3286 (2424) 1823 (1344) 3273 (2414)			6451 (4758)	7710 (5687)	8946 (6615)	10227 (7543)	11488 (8472)	14003 (10328)	16521 (12185)	18844 (13781)	180 (2611)	1.3			
LHS-25C-085X-FC1-2	start run end	3286 (2424) 1823 (1344) 3273 (2414)			6528 (4668)	7749 (5716)	9170 (5764)	10591 (7612)	12012 (8660)	13434 (9988)	16279 (12004)	17143 (5268)		160 (2314)	1.5		
LHS-25C-090X-FC1-2	start run end	3286 (2424) 1823 (1344) 3273 (2414)			6628 (4668)	7749 (5716)	9170 (5764)	10591 (7612)	12012 (8660)	13434 (9988)	16279 (12004)	17143 (5268)		142 (2060)	1.7		
LHS-25C-090X-FC1-2	start run end	3286 (2424) 1823 (1344) 3273 (2414)			6716 (4673)	7749 (5716)	9170 (5764)	10591 (7612)	12012 (8660)	13434 (9988)	16279 (12004)	17143 (5268)		115 (1669)	2.1		
LHS-25C-100X-FC1-2	start run end	3286 (2424) 1823 (1344) 3273 (2414)			6812 (4673)	7749 (5716)	9170 (5764)	10591 (7612)	12012 (8660)	13434 (9988)	16279 (12004)	17143 (5268)		95 (1380)	2.5		
LHS-25C-110X-FC1-2	start run end	3286 (2424) 1823 (1344) 3273 (2414)			6910 (4673)	7749 (5716)	9170 (5764)	10591 (7612)	12012 (8660)	13434 (9988)	16279 (12004)	17143 (5268)		80 (1161)	3.0		
LHS-25C-120X-FC1-2	start run end	3286 (2424) 1823 (1344) 3273 (2414)			7008 (4673)	7749 (5716)	9170 (5764)	10591 (7612)	12012 (8660)	13434 (9988)	16279 (12004)	17143 (5268)		68 (989)	3.5		
LHS-25C-075X-FC3-1	start run end	3329 (2455) 1955 (1442) 4019 (2964)			4408 (3251)	5515 (4067)	6621 (4883)	7727 (5699)	8833 (6515)	11046 (8147)	13258 (9779)	15471 (11411)	17683 (13042)	18458 (13614)	207 (3000)	1.2	
LHS-25C-080X-FC3-1	start run end	3329 (2455) 1955 (1442) 4019 (2964)			4369 (3222)	5628 (4151)	6886 (5079)	8145 (6007)	9404 (6936)	10663 (7864)	13180 (9721)	15697 (11577)	18214 (13434)	186 (2703)	1.3		
LHS-25C-085X-FC3-1	start run end	3329 (2455) 1955 (1442) 4019 (2964)			5505 (4060)	6926 (5158)	8347 (6156)	9675 (7204)	11188 (8252)	12600 (9300)	15451 (11396)	18219 (13492)	186 (2703)	165 (2394)	1.5		
LHS-25C-090X-FC3-1	start run end	3329 (2455) 1955 (1442) 4019 (2964)			5599 (4060)	6926 (5158)	8347 (6156)	9675 (7204)	11188 (8252)	12600 (9300)	15451 (11396)	18219 (13492)	186 (2703)	147 (2136)	1.7		
LHS-25C-090X-FC3-1	start run end	3329 (2455) 1955 (1442) 4019 (2964)			5616 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	207 (3000)	1.2			
LHS-25C-100X-FC3-1	start run end	3329 (2455) 1955 (1442) 4019 (2964)			5715 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	119 (1731)	2.1		
LHS-25C-110X-FC3-1	start run end	3329 (2455) 1955 (1442) 4019 (2964)			5814 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	99 (1431)	2.5		
LHS-25C-120X-FC3-1	start run end	3329 (2455) 1955 (1442) 4019 (2964)			5913 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	83 (1201)	3.0		
LHS-25C-130X-FC3-1	start run end	3329 (2455) 1955 (1442) 4019 (2964)			6012 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	71 (1023)	3.5		
LHS-25C-140X-FC3-1	start run end	3329 (2455) 1955 (1442) 4019 (2964)			6111 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	61 (882)	4.1		
LHS-25C-075X-FC1-3	start run end	3329 (2455) 1955 (1442) 4011 (3032)			6155 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	83 (1201)	3.0		
LHS-25C-080X-FC1-3	start run end	3329 (2455) 1955 (1442) 4011 (3032)			6260 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	71 (1023)	3.5		
LHS-25C-085X-FC1-3	start run end	3329 (2455) 1955 (1442) 4011 (3032)			6365 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	61 (882)	4.1		
LHS-25C-090X-FC1-3	start run end	3329 (2455) 1955 (1442) 4011 (3032)			6470 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	50 (788)	1.2		
LHS-25C-100X-FC1-3	start run end	3329 (2455) 1955 (1442) 4011 (3032)			6575 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	40 (748)	1.0		
LHS-25C-110X-FC1-3	start run end	3329 (2455) 1955 (1442) 4011 (3032)			6680 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	30 (708)	0.8		
LHS-25C-120X-FC1-3	start run end	3329 (2455) 1955 (1442) 4011 (3032)			6785 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	20 (668)	0.7		
LHS-25C-130X-FC1-3	start run end	3329 (2455) 1955 (1442) 4011 (3032)			6890 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	10 (628)	0.6		
LHS-25C-140X-FC1-3	start run end	3329 (2455) 1955 (1442) 4011 (3032)			6995 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	0 (588)	0.5		
LHS-25C-075X-FC1-3	start run end	3411 (1726) 4011 (3032)			7098 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	83 (1201)	3.0		
LHS-25C-080X-FC1-3	start run end	3411 (1726) 4011 (3032)			7203 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	71 (1023)	3.5		
LHS-25C-085X-FC1-3	start run end	3411 (1726) 4011 (3032)			7308 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	61 (882)	4.1		
LHS-25C-090X-FC1-3	start run end	3411 (1726) 4011 (3032)			7413 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	50 (748)	1.2		
LHS-25C-100X-FC1-3	start run end	3411 (1726) 4011 (3032)			7518 (4774)	8302 (6123)	9887 (7296)	11488 (8473)	13081 (9649)	14674 (10823)	17929 (13173)	19929 (14145)	186 (2703)	40 (708)	1.0		
LHS-2																	


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)

Actuator Model	LHS-25C 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)	
LHS-25C-075X-FC1-4	start run end	4901 (3615) 2706 (1996) 4805 (3544)												
LHS-25C-080X-FC1-4	start run end	4901 (3615) 2706 (1996) 4805 (3544)												
LHS-25C-085X-FC1-4	start run end	4901 (3615) 2706 (1996) 4805 (3544)												
LHS-25C-090X-FC1-4	start run end	4901 (3615) 2706 (1996) 4805 (3544)												
LHS-25C-100X-FC1-4	start run end	4901 (3615) 2706 (1996) 4805 (3544)	8456 (6237) 2089 (1549) 1949 (1439)	10422 (7687) 2814 (2076) 3001 (2124)	12389 (9138) 3540 (2611) 4054 (2990)	14356 (10588) 4266 (3146) 5106 (2766)	16322 (12039) 4991 (3681) 6158 (4542)	18289 (13489) 5717 (4217) 7211 (5318)					124 (1794)	
LHS-25C-110X-FC1-4	start run end	4901 (3615) 2706 (1996) 4805 (3544)	8967 (6614) 2777 (1680) 4769 (3544)	11347 (8369) 3155 (2327) 4033 (2975)	16106 (10124) 4912 (3623) 5790 (4270)	18486 (13634) 5201 (3623) 7316 (5396)							102 (1482)	
LHS-25C-120X-FC1-4	start run end	4901 (3615) 2706 (1996) 4805 (3544)	11681 (8615) 3279 (2418) 3675 (2710)	14513 (10704) 4324 (3189) 4769 (3518)	17345 (12793) 5369 (3960) 6705 (4946)								86 (1247)	
LHS-25C-130X-FC1-4	start run end	4901 (3615) 2706 (1996) 4805 (3544)	14631 (10791) 4367 (3221) 5253 (3875)	17955 (13243) 5594 (4126) 7032 (5186)									73 (1062)	
LHS-25C-140X-FC1-4	start run end	4901 (3615) 2706 (1996) 4805 (3544)	17817 (13141) 5543 (4088) 6958 (5132)										63 (916)	
LHS-25C-075X-FC2-1	start run end	4945 (3647) 2776 (2048) 5143 (3793)												
LHS-25C-080X-FC2-1	start run end	4945 (3647) 2776 (2048) 5143 (3793)											197 (2850)	
LHS-25C-085X-FC2-1	start run end	4945 (3647) 2776 (2048) 5143 (3793)											174 (2524)	
LHS-25C-090X-FC2-1	start run end	4945 (3647) 2776 (2048) 5143 (3793)											155 (2253)	
LHS-25C-100X-FC2-1	start run end	4945 (3647) 2776 (2048) 5143 (3793)	8082 (5961) 2011 (1484) 1901 (1402)	10049 (7412) 2737 (2019) 3463 (2554)	12016 (8862) 4198 (3809) 4843 (3566)	13982 (10313) 2810 (2072) 3058 (2556)	9803 (7230) 2646 (1505) 2616 (1930)	12016 (8862) 3463 (2554) 4005 (2954)	14228 (10494) 4342 (3156) 5189 (3827)	16441 (12126) 5381 (3969) 6787 (5006)	17215 (12697)		207 (3000)	
LHS-25C-110X-FC2-1	start run end	4945 (3647) 2776 (2048) 5143 (3793)	11308 (8340) <td>11440 (10429)</td> <td>16972 (1518)</td> <td>10246 (7557) 3398 (2506) 3911 (2884)</td> <td>11839 (8732) 3223 (2377) 4763 (3513)</td> <td>13432 (9907) 3223 (2377) 4763 (3513)</td> <td>14208 (10480) 4272 (3121) 5179 (3820)</td> <td>17050 (12576) 5292 (3903) 6648 (4770)</td> <td></td> <td></td> <td>126 (1822)</td>	11440 (10429)	16972 (1518)	10246 (7557) 3398 (2506) 3911 (2884)	11839 (8732) 3223 (2377) 4763 (3513)	13432 (9907) 3223 (2377) 4763 (3513)	14208 (10480) 4272 (3121) 5179 (3820)	17050 (12576) 5292 (3903) 6648 (4770)			126 (1822)	
LHS-25C-120X-FC2-1	start run end	4945 (3647) 2776 (2048) 5143 (3793)	8594 (6238) 2059 (1623) 2774 (1623)	10973 (8093) 2200 (1623) 3440 (2554)	13353 (9649) 3505 (2556) 4721 (3482)	15733 (11604) 4834 (3566) 5994 (4421)	18112 (13359) 5713 (4213) 7268 (5360)						104 (1506)	
LHS-25C-130X-FC2-1	start run end	4945 (3647) 2776 (2048) 5143 (3793)	11308 (8340) <td>11440 (10429)</td> <td>16972 (1518)</td> <td>10246 (7557) 3398 (2506) 3911 (2884)</td> <td>11839 (8732) 3223 (2377) 4763 (3513)</td> <td>13432 (9907) 3223 (2377) 4763 (3513)</td> <td>14208 (10480) 4272 (3121) 5179 (3820)</td> <td>17050 (12576) 5292 (3903) 6648 (4770)</td> <td></td> <td></td> <td>87 (1267)</td>	11440 (10429)	16972 (1518)	10246 (7557) 3398 (2506) 3911 (2884)	11839 (8732) 3223 (2377) 4763 (3513)	13432 (9907) 3223 (2377) 4763 (3513)	14208 (10480) 4272 (3121) 5179 (3820)	17050 (12576) 5292 (3903) 6648 (4770)			87 (1267)	
LHS-25C-140X-FC2-1	start run end	4945 (3647) 2776 (2048) 5143 (3793)	14258 (10516) 4290 (3164) 5205 (3839)	17581 (12967) 5517 (4069) 6983 (5151)									74 (1079)	
LHS-25C-140X-FC2-1	start run end	4945 (3647) 2776 (2048) 5143 (3793)	17444 (12864) 5466 (4031) 6910 (5096)										64 (930)	
LHS-25C-075X-FC3-2	start run end	4830 (3562) 2783 (2053) 5487 (4047)												
LHS-25C-080X-FC3-2	start run end	4830 (3562) 2783 (2053) 5487 (4047)											200 (2895)	
LHS-25C-085X-FC3-2	start run end	4830 (3562) 2783 (2053) 5487 (4047)											158 (2289)	
LHS-25C-090X-FC3-2	start run end	4830 (3562) 2783 (2053) 5487 (4047)											128 (1851)	
LHS-25C-100X-FC3-2	start run end	4830 (3562) 2783 (2053) 5487 (4047)	7702 (5681) 2004 (1478) 2028 (1496)	10593 (7813) 2729 (2013) 3080 (2272)	12973 (9568) 3455 (2548) 4132 (3048)	15353 (11324) 3185 (2349)	17732 (13079) 4033 (1499) 5705 (4208)	7211 (5318) 2033 (1499) 3785 (2792)	9423 (6950) 2497 (1842) 4890 (3607)	11636 (8582) 3426 (2527) 5316 (4321)	13848 (10214) 4355 (3212) 5437 (4010)	16061 (11846) 5284 (3897) 6784 (5004)	16835 (12417)	
LHS-25C-110X-FC3-2	start run end	4830 (3562) 2783 (2053) 5487 (4047)	8214 (6058) 2192 (1617) 2301 (1697)	10593 (7813) 3070 (2265) 3575 (2637)	12948 (9568) 3498 (2912) 4848 (3576)	15353 (11324) 4827 (3560) 6121 (4515)	17732 (13079) 4033 (1499) 5705 (4208)						105 (1530)	
LHS-25C-120X-FC3-2	start run end	4830 (3562) 2783 (2053) 5487 (4047)	10928 (8060) 3194 (2356) 3754 (2769)	13760 (10149) 4239 (3126) 5269 (3886)	16592 (12237) 3874 (2804) 6784 (5004)								89 (1287)	
LHS-25C-130X-FC3-2	start run end	4830 (3562) 2783 (2053) 5487 (4047)	13878 (10236) 5509 (4063) 5332 (3933)	17201 (12687) 4782 (3158) 7110 (5244)									76 (1096)	
LHS-25C-140X-FC3-2	start run end	4830 (3562) 2783 (2053) 5487 (4047)	17064 (12586) 5458 (4026) 7037 (5190)										65 (945)	
LHS-25C-075X-FC2-2	start run end	5013 (3612) 2794 (2048) 5487 (4047)												
LHS-25C-080X-FC2-2	start run end	5013 (3612) 2794 (2048) 5487 (4047)											177 (2565)	
LHS-25C-085X-FC2-2	start run end	5013 (3612) 2794 (2048) 5487 (4047)											158 (2289)	
LHS-25C-090X-FC2-2	start run end	5013 (3612) 2794 (2048) 5487 (4047)											128 (1851)	
LHS-25C-100X-FC2-2	start run end	5013 (3612) 2794 (2048) 5487 (4047)											105 (1530)	
LHS-25C-110X-FC2-2	start run end	5013 (3612) 2794 (2048) 5487 (4047)											89 (1287)	
LHS-25C-120X-FC2-2	start run end	5013 (3612) 2794 (2048) 5487 (4047)											76 (1096)	
LHS-25C-130X-FC2-2	start run end	5013 (3612) 2794 (2048) 5487 (4047)											65 (945)	
LHS-25C-140X-FC2-2	start run end	5013 (3612) 2794 (2048) 5487 (4047)											4.1	

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)

Actuator Model	LHS-25C 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)			
LHS-25C-075X-FC3-3	start run end	5990 (4418) 3417 (2520) 6579 (4852)												207 (3000)	1.2	
LHS-25C-080X-FC3-3	start run end	5990 (4418) 3417 (2520) 6579 (4852)												207 (3000)	1.3	
LHS-25C-085X-FC3-3	start run end	5990 (4418) 3417 (2520) 6579 (4852)												185 (2684)	1.5	
LHS-25C-090X-FC3-3	start run end	5990 (4418) 3417 (2520) 6579 (4852)												165 (2394)	1.7	
LHS-25C-100X-FC3-3	start run end	5990 (4418) 3417 (2520) 6579 (4852)				10429 (7692)	12395 (9142)	14362 (10593)	16329 (12043)	18305 (13501)				134 (1943)	2.1	
LHS-25C-110X-FC3-3	start run end	5990 (4418) 3417 (2520) 6579 (4852)				8659 (6386) 2755 (2032) 2850 (2102)	10252 (7561) 2102 (1550) 3903 (2878)	11845 (8736) 2377 (2417) 3608 (2661)	15031 (11086) 4024 (3968) 5313 (3918)	18217 (13436) 5443 (3284) 7017 (5176)					110 (1601)	2.5
LHS-25C-120X-FC3-3	start run end	5990 (4418) 3417 (2520) 6579 (4852)				10429 (7692)	12395 (9142)	14362 (10593)	16329 (12043)	18305 (13501)				93 (1347)	3.0	
LHS-25C-130X-FC3-3	start run end	5990 (4418) 3417 (2520) 6579 (4852)				12970 (9218)	14346 (10433)	16525 (12188)	18905 (13944)					79 (1150)	3.5	
LHS-25C-140X-FC3-3	start run end	5990 (4418) 3417 (2520) 6579 (4852)				15857 (11695)								68 (992)	4.1	
LHS-25C-075X-FC2-3	start run end	6559 (4838) 3660 (2699) 6675 (4923)												207 (3000)	1.2	
LHS-25C-080X-FC2-3	start run end	6559 (4838) 3660 (2699) 6675 (4923)												207 (3000)	1.3	
LHS-25C-085X-FC2-3	start run end	6559 (4838) 3660 (2699) 6675 (4923)												186 (2695)	1.5	
LHS-25C-090X-FC2-3	start run end	6559 (4838) 3660 (2699) 6675 (4923)												166 (2404)	1.7	
LHS-25C-100X-FC2-3	start run end	6559 (4838) 3660 (2699) 6675 (4923)												135 (1952)	2.1	
LHS-25C-110X-FC2-3	start run end	6559 (4838) 3660 (2699) 6675 (4923)				11660 (8600)	14040 (10355)	16419 (12110)	18799 (13865)					111 (1608)	2.5	
LHS-25C-120X-FC2-3	start run end	6559 (4838) 3660 (2699) 6675 (4923)				12447 (9180)	15279 (11269)	18111 (13358)						93 (1352)	3.0	
LHS-25C-130X-FC2-3	start run end	6559 (4838) 3660 (2699) 6675 (4923)				12565 (9267)	15888 (11719)	18489 (13439)						80 (1155)	3.5	
LHS-25C-140X-FC2-3	start run end	6559 (4838) 3660 (2699) 6675 (4923)				15751 (11617)	14489 (3311)	5199 (3835)						69 (996)	4.1	
LHS-25C-075X-FC4-1	start run end	6736 (4968) 3893 (2871) 7223 (5696)												207 (3000)	1.2	
LHS-25C-080X-FC4-1	start run end	6736 (4968) 3893 (2871) 7223 (5696)												207 (3000)	1.3	
LHS-25C-085X-FC4-1	start run end	6736 (4968) 3893 (2871) 7223 (5696)												194 (2817)	1.5	
LHS-25C-090X-FC4-1	start run end	6736 (4968) 3893 (2871) 7223 (5696)												173 (2513)	1.7	
LHS-25C-100X-FC4-1	start run end	6736 (4968) 3893 (2871) 7223 (5696)												140 (2031)	2.1	
LHS-25C-110X-FC4-1	start run end	6736 (4968) 3893 (2871) 7223 (5696)				10501 (7744)	12883 (9500)	15260 (11255)	17640 (13011)					116 (1681)	2.5	
LHS-25C-120X-FC4-1	start run end	6736 (4968) 3893 (2871) 7223 (5696)				11288 (8325)	14120 (10414)	16952 (12503)						97 (1414)	3.0	
LHS-25C-130X-FC4-1	start run end	6736 (4968) 3893 (2871) 7223 (5696)				14592 (10762)	18446 (13605)	2059 (4170)						83 (1203)	3.5	
LHS-25C-140X-FC4-1	start run end	6736 (4968) 3893 (2871) 7223 (5696)				11051 (7744)	9164 (6759)	11130 (8209)	13097 (9660)	15064 (11110)	18997 (14011)			71 (1037)	4.1	
LHS-25C-075X-FC3-4	start run end	6944 (5121) 3980 (2935) 7747 (5714)												207 (3000)	1.2	
LHS-25C-080X-FC3-4	start run end	6944 (5121) 3980 (2935) 7747 (5714)												207 (3000)	1.3	
LHS-25C-085X-FC3-4	start run end	6944 (5121) 3980 (2935) 7747 (5714)												194 (2820)	1.5	
LHS-25C-090X-FC3-4	start run end	6944 (5121) 3980 (2935) 7747 (5714)												173 (2516)	1.7	
LHS-25C-100X-FC3-4	start run end	6944 (5121) 3980 (2935) 7747 (5714)												140 (2033)	2.1	
LHS-25C-110X-FC3-4	start run end	6944 (5121) 3980 (2935) 7747 (5714)				10475 (7726)	12854 (9481)	15234 (11236)	17614 (12991)					116 (1683)	2.5	
LHS-25C-120X-FC3-4	start run end	6944 (5121) 3980 (2935) 7747 (5714)				12980 (2137)	13504 (2585)	14382 (3232)	15260 (3880)	16037 (11091)	18971 (13992)			98 (1415)	3.0	
LHS-25C-130X-FC3-4	start run end	6944 (5121) 3980 (2935) 7747 (5714)				14565 (10743)	18420 (13586)	20827 (13296)	21627 (14014)	16925 (12484)				83 (1204)	3.5	
LHS-25C-140X-FC3-4	start run end	6944 (5121) 3980 (2935) 7747 (5714)				11261 (8306)	14093 (10395)	16925 (12484)	17627 (12991)					72 (1038)	4.1	

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																	
		60 (870)	70 (1015)	80 (1160)	90 (1305)	100 (1450)	110 (1595)	120 (1740)	140 (2031)	160 (2321)	180 (2611)	200 (2901)	207 (3000)						
LHS-25C-075X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)										12381 (9132) 3181 (2331) 3111 (2231)	13156 (9703) 3447 (2542) 3525 (2630)	207 (3000)	1.2				
LHS-25C-080X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)										12912 (9524) 3357 (2476) 3395 (2504)	15430 (12030) 4286 (3161) 4742 (3497)	16311 (12030) 4611 (3401) 5213 (3845)	207 (3000)	1.3			
LHS-25C-085X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)										12991 (9582) 3286 (2497) 3427 (3526)	15833 (11678) 4435 (3271) 4957 (2656)	18675 (13774) 5483 (4044) 6478 (4778)	202 (2935)	1.5			
LHS-25C-090X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)										12558 (9263) 3226 (2380) 4402 (3247) 3205 (2364)	13856 (10220) 3705 (2733) 4402 (3247) 4910 (3621)	17790 (13121) 5157 (3803) 6004 (4429)		180 (2617)	1.7		
LHS-25C-100X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)										16433 (12120) 3778 (2786) 4656 (3434) 5278 (3893)	18812 (13875) 5578 (4114) 6615 (4879)			146 (2123)	2.1		
LHS-25C-110X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)			11673 (8610) 2900 (2139) 2732 (2015)	14053 (10365) 3778 (2786) 4005 (2954)						15744 (11612) 4402 (3247) 4910 (3621)	18930 (13962) 5578 (4114) 6615 (4879)			121 (1752)	2.5		
LHS-25C-120X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)			12912 (9524) 3357 (2476) 3395 (2504)	15744 (11612) 4402 (3247) 4910 (3621)	18576 (19370) 5447 (4017) 6425 (4739)									102 (1473)	3.0		
LHS-25C-130X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)		13522 (9973) 3582 (2642) 3721 (2744)	16846 (12425) 4808 (3546) 5499 (4056)										87 (1258)	3.5			
LHS-25C-140X-FC4-2	start run end	7896 (5824) 4527 (3339) 8816 (6502)	13384 (9872) 3531 (2604) 5710 (4211)	17239 (12715)											75 (1084)	4.1			
LHS-25C-080X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)											14139 (10428) 3664 (2703) 5687 (2720)	15020 (11078) 3889 (2942) 4159 (3006)			207 (3000)	1.3	
LHS-25C-085X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)											14542 (10725) 3813 (2012) 5903 (2879)	17384 (12821) 4861 (3585) 5228 (3856)	18378 (13555) 5242 (4000) 5956 (4393)		207 (3000)	1.5	
LHS-25C-090X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)											14453 (10660) 3780 (2788) 3856 (2844)	4956 (3655) 5560 (4101)			189 (2739)	1.7	
LHS-25C-100X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)													153 (2222)	2.1			
LHS-25C-110X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)													126 (1834)	2.5			
LHS-25C-120X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)				14453 (10660) 3156 (2328) 2951 (2176)	17285 (12749) 4034 (2975) 4224 (3115)	15142 (11168) 4912 (3623) 5497 (4055)								106 (1542)	3.0		
LHS-25C-130X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)	12231 (9021) 2960 (2183) 2667 (1967)	15555 (11472) 4186 (3088) 4445 (3278)	18878 (13924) 5413 (3992) 6223 (4590)										90 (1311)	3.5			
LHS-25C-140X-FC4-3	start run end	8850 (6528) 5090 (3754) 9984 (7364)	15948 (11763) 4331 (3195) 4655 (3434)												78 (1135)	4.1			
LHS-25C-080X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)												13068 (9638) 3226 (2379) 3008 (2219)	13949 (10288) 3551 (2619) 3480 (2566)			207 (3000)	1.3
LHS-25C-085X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)												13471 (9396) 3375 (2489) 3226 (2378)	16313 (12032) 4424 (3263) 4745 (3499)	17307 (12765) 4791 (3533) 5277 (3892)		207 (3000)	1.5
LHS-25C-090X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)												13382 (9870) 3342 (2465) 3177 (2343)	4518 (3352) 4881 (3600)			196 (2841)	1.7
LHS-25C-100X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)												15428 (11379) 4097 (3022) 4271 (3150)				159 (2305)	2.1
LHS-25C-110X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)														131 (1902)	2.5		
LHS-25C-120X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)			13382 (9870) 3177 (2343)	16214 (11959) 4387 (3236)										110 (1599)	3.0		
LHS-25C-130X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)		14484 (10683) 3749 (2765) 3765 (2778)	17807 (13134) 4975 (3669) 5544 (4089)										94 (1359)	3.5			
LHS-25C-140X-FC4-4	start run end	9465 (6981) 5485 (4046) 10953 (8078)	14877 (10973) 3894 (2872) 3976 (2933)	18732 (13816) 5316 (3921) 6039 (4454)											71 (1024)	4.1			

Torque Charts – Single Acting Fail Open – Imperial and Metric

Table 17: Torque Table – LHS-15A – Single Acting – Spring Return Fail Open – 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												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)	L		
LHS-15A-050X-F01-2	start run end	619 (457) 279 (206) 375 (277)	771 (598) 357 (264) 502 (370)	969 (715) 469 (346) 699 (516)	1166 (860) 580 (427) 1094 (807)	1364 (1006) 802 (591) 913 (673)	1562 (1152) 1024 (719) 1687 (1245)	1759 (1298) 1246 (919) 2083 (1536)	1957 (1443) 1468 (1083) 2478 (1828)	2352 (1735) 1246 (919) 2873 (2119)	2748 (2026) 1690 (1246) 3269 (2411)	3143 (2318) 1912 (1410) 3269 (2411)	3538 (2610) 1990 (1468) 3407 (2513)	207 (3000)	0.3	
LHS-15A-055X-F01-2	start run end	619 (457) 279 (206) 375 (277)	1020 (752) 497 (367) 571 (554)	1259 (929) 632 (466) 990 (730)	1498 (1105) 766 (565) 1030 (664)	1738 (1282) 900 (664) 1070 (1259)	1977 (1458) 1169 (763) 1464 (1363)	2216 (1634) 1450 (1070) 2446 (1804)	2455 (1811) 1304 (961) 2185 (1612)	2933 (2164) 1930 (1423) 2731 (2014)	3412 (2516) 1841 (1358) 3200 (2670)	3890 (2869) 2250 (1659) 4099 (3023)	4366 (3222) 2569 (1895) 4439 (3274)	4536 (345) 3001 (2213) 5008 (3694)	207 (3000)	0.4
LHS-15A-060X-F01-2	start run end	619 (457) 279 (206) 375 (277)	1293 (954) 651 (480) 1303 (665)	1578 (1164) 811 (598) 1593 (1175)	1862 (1373) 970 (716) 1877 (1385)	2147 (1583) 1130 (834) 2162 (1594)	2431 (1793) 1295 (952) 2716 (2003)	2716 (2003) 1610 (1187) 3001 (2213)	3570 (2633) 1930 (1423) 2731 (2014)	4139 (3053) 2300 (1659) 3869 (2854)	4708 (3473) 2889 (2131) 4439 (3274)	5277 (3892) 3001 (2213) 5008 (3694)	5477 (4039) 3001 (2213) 5207 (3841)	207 (3000)	0.4	
LHS-15A-065X-F01-2	start run end	619 (457) 279 (206) 375 (277)	1589 (1172) 817 (608) 1320 (793)	1827 (1419) 1003 (700) 1654 (1220)	2257 (1665) 1380 (899) 1988 (1466)	2591 (1911) 1380 (899) 2332 (1713)	2925 (2158) 1755 (1159) 2651 (1629)	3259 (2404) 1953 (1159) 3034 (2352)	3593 (2650) 1863 (1422) 3992 (2944)	4262 (3143) 2318 (1710) 4660 (3437)	4930 (3636) 2694 (1987) 4660 (3437)	5177 (2570)	0.5			
LHS-15A-075X-F01-2	start run end	619 (457) 279 (206) 375 (277)	2253 (1662) 1190 (878) 1984 (1462)	2698 (1990) 1440 (1062) 2429 (791)	3143 (2318) 2872 (2119) <td>3568 (2646) 2190 (1615) 2318 (2447)</td> <td>4032 (2974) 2439 (1799) 4207 (3103)</td> <td>4477 (3302) 2689 (1983) 4652 (3431)</td> <td>4922 (3600)</td> <td>5177 (2578)</td> <td>5298 (2432)</td> <td>5376 (2785)</td> <td>5477 (4039)</td> <td>133 (1930)</td> <td>0.7</td>	3568 (2646) 2190 (1615) 2318 (2447)	4032 (2974) 2439 (1799) 4207 (3103)	4477 (3302) 2689 (1983) 4652 (3431)	4922 (3600)	5177 (2578)	5298 (2432)	5376 (2785)	5477 (4039)	133 (1930)	0.7	
LHS-15A-085X-F01-2	start run end	619 (457) 279 (206) 375 (277)	3012 (2222) 1617 (1192) 2743 (2329)	3584 (2643) 1938 (1249) 3314 (2444)	4155 (3064) 2258 (1666) 4456 (3287)	4726 (3486) 2579 (1902) 5028 (3708)	5297 (3907) 3001 (2139) 5028 (3708)	5297 (3907)	5349 (3945)	5349 (3945)	5349 (3945)	5349 (3945)	104 (1502)	0.9		
LHS-15A-090X-F01-2	start run end	619 (457) 279 (206) 375 (277)	3427 (2528) 1850 (1364) 3158 (2329)	4068 (3000) 2210 (1630) 3798 (2801)	4708 (3473) 2569 (1895) 4439 (3274)	5349 (3945) 2929 (2160) 5079 (3746)	5349 (3945) 2929 (2160) 5079 (3746)	5349 (3945)	5349 (3945)	5349 (3945)	5349 (3945)	5349 (3945)	92 (1340)	1.0		
LHS-15A-050X-F01-3	start run end	579 (560) 348 (256) 478 (353)	657 (485) 855 (630) 288 (208)	855 (630) 1052 (726) 1110 (801)	1052 (726) 1250 (922) 1310 (901)	1448 (1068) 1645 (1214) 1723 (1271)	1645 (1214) 1843 (1359) 1930 (1411)	1843 (1359) 1948 (699) 1533 (1131)	2238 (1651) 1970 (863) 1928 (482)	2634 (1942) 1392 (1027) 2323 (1727)	3029 (2234) 1614 (1191) 2719 (2105)	3424 (2525) 1837 (1355) 3114 (2297)	3562 (2628) 1914 (1412) 3252 (2399)	207 (3000)	0.3	
LHS-15A-055X-F01-3	start run end	579 (560) 348 (256) 478 (353)	900 (668) 1145 (890) 869 (661)	1145 (890) 895 (661) 1074 (792)	1264 (1197) 1863 (1374) 1361 (1197)	1684 (1374) 2190 (1615) 1972 (1322)	2102 (1550) 2341 (1727) 1723 (1271)	2102 (1550) 2341 (1727) 1723 (1271)	2102 (1550) 2341 (1727) 1723 (1271)	2317 (1919) 2886 (2129) 2200 (1459)	3456 (2549) 4025 (2969) 2206 (1459)	4286 (3388) 5163 (3808) 2814 (2057)	5363 (3955) 5163 (3808) 2926 (2158)	207 (3000)	0.4	
LHS-15A-060X-F01-3	start run end	579 (560) 348 (256) 478 (353)	1179 (869) 1743 (1079) 869 (661)	1463 (1079) 1748 (1289) 1055 (787)	2137 (1499) 2602 (1709) 2001 (1459)	2317 (1499) 2602 (1919) 2200 (1459)	2317 (1499) 2602 (1919) 2200 (1459)	2317 (1499) 2602 (1919) 2200 (1459)	2317 (1499) 2602 (1919) 2200 (1459)	2317 (1499) 2602 (1919) 2200 (1459)	3456 (2549) 4025 (2969) 2206 (1459)	4286 (3388) 5163 (3808) 2814 (2057)	5363 (3955) 5163 (3808) 2926 (2158)	207 (3000)	0.4	
LHS-15A-065X-F01-3	start run end	579 (560) 348 (256) 478 (353)	1740 (1088) 2443 (1581) 1165 (859)	1809 (1334) 2443 (1581) 1499 (106)	2401 (1827) 2443 (1581) 2163 (1594)	2474 (1827) 3125 (1581) 2163 (1594)	3145 (2220) 3145 (2220) 2163 (1594)	3145 (2220) 3145 (2220) 2163 (1594)	3145 (2220) 3145 (2220) 2163 (1594)	4147 (3059) 4815 (3552) 3505 (1860)	5484 (4044) 5484 (4044) 3166 (1560)	5484 (4044) 5484 (4044) 3166 (1560)	180 (2618)	0.5		
LHS-15A-075X-F01-3	start run end	579 (560) 348 (256) 478 (353)	2139 (1578) 1115 (822) 1829 (1349)	3029 (2334) 1365 (1007) 2719 (2005)	3473 (2562) 1864 (1375) 3163 (2333)	3918 (2890) 2114 (1559) 3608 (2661)	4363 (3218) 2364 (1744) 4053 (2989)	4808 (3546) 2614 (1928) 4498 (3317)	5177 (2578)	5177 (2578)	5177 (2578)	5177 (2578)	136 (1968)	0.7		
LHS-15A-085X-F01-3	start run end	579 (560) 348 (256) 478 (353)	2893 (2138) 1541 (1137) 2586 (1909)	3470 (559) 2183 (1623) 3160 (2330)	4041 (2980) 2504 (1847) 3731 (2752)	4612 (3402) 3285 (2083) 4302 (3173)	5181 (3823) 2886 (2129) 4873 (3594)	5181 (3823) 2886 (2129) 4873 (3594)	5181 (3823) 2886 (2129) 4873 (3594)	5238 (2233) 3223 (1333) 3223 (1333)	5398 (2432) 3223 (1333) 3223 (1333)	5398 (2432) 3223 (1333) 3223 (1333)	106 (1532)	0.9		
LHS-15A-090X-F01-3	start run end	579 (560) 348 (256) 478 (353)	3313 (2444) 2134 (1574) 3003 (2215)	3954 (2916) 2494 (1839) 4248 (3160)	4594 (3388) 2854 (2105) 4934 (3624)	5234 (3861) 1361 (1226) 5042 (3624)	5234 (3861) 1361 (1226) 5042 (3624)	5234 (3861) 1361 (1226) 5042 (3624)	5234 (3861) 1361 (1226) 5042 (3624)	5234 (3861) 1361 (1226) 5042 (3624)	5234 (3861) 1361 (1226) 5042 (3624)	5234 (3861) 1361 (1226) 5042 (3624)	94 (1366)	1.0		
LHS-15A-050X-F02-1	start run end	1204 (888) 553 (408) 765 (564)	1204 (888) 553 (408) 765 (564)	736 (543) 277 (204) 251 (185)	934 (689) 388 (286) 449 (331)	1131 (834) 499 (368) 646 (477)	1329 (980) 610 (450) 844 (622)	1527 (1126) 721 (532) 1041 (768)	1922 (1418) 1166 (860) 1832 (1351)	2317 (2107) 1388 (1023) 2227 (1643)	3108 (2292) 1610 (1187) 2623 (1934)	3246 (2394) 1687 (1245) 2761 (2036)	207 (3000)	0.3		
LHS-15A-055X-F02-1	start run end	1204 (888) 553 (408) 765 (564)	829 (611) 344 (254)	1068 (788) 583 (430)	1546 (1141) 1375 (1041)	1786 (1317) 1066 (787)	2025 (1493) 1601 (738)	2025 (1493) 1539 (1135)	2025 (1493) 1539 (1135)	2025 (1493) 1539 (1135)	3456 (2552) 3938 (2904)	4105 (3028) 2076 (1531)	2170 (1601)	207 (3000)	0.4	
LHS-15A-060X-F02-1	start run end	1204 (888) 553 (408) 765 (564)	1159 (855) 503 (408) 674 (497)	1493 (1101) 703 (518) 1008 (740)	1827 (1348) 644 (364) 890 (657)	2161 (1594) 1078 (795) 1676 (1236)	2495 (1840) 2277 (1679) 2010 (1482)	2495 (1840) 2277 (1679) 2010 (1482)	2495 (1840) 2277 (1679) 2010 (1482)	3163 (2333) 2344 (1724) 2678 (1975)	3831 (2826) 2614 (1210) 3346 (2468)	4499 (3318) 2391 (1764) 4014 (2961)	5167 (3811) 2767 (2041) 4682 (3453)	190 (2757)	0.5	
LHS-15A-065X-F02-1	start run end	1204 (888) 553 (408) 765 (564)	1823 (1345) 1314 (969) 2097 (1547)	2268 (1673) 1635 (1206) 2688 (1668)	3127 (2339) 2056 (1443) 3239 (2889)	3602 (2657) 1864 (1374) 3810 (2810)	4047 (2895) 3117 (2299) 4382 (3232)	4491 (3313) 5381 (3969) 4953 (3653)	143 (2070)	0.7						
LHS-15A-075X-F02-1	start run end	1204 (888) 553 (408) 765 (564)	2582 (1904) 1314 (969) 2097 (1547)	3724 (3274) 1596 (1443) 3239 (2889)	4296 (3168) 2277 (1679) 3810 (2810)	4867 (3590) 2598 (1916) 4382 (4011)	5438 (4011)	5438 (4011)	5438 (4011)	5438 (4011)	5438 (4011)	5438 (4011)	111 (1611)	0.9		
LHS-15A-085X-F02-1	start run end	1204 (888) 553 (408) 765 (564)	2997 (2211) 1547 (1141) 2512 (1853)	3638 (2683) 1907 (1407) 3152 (325)	4278 (3155) 2267 (1672) 3793 (2797)	4918 (3628) 2627 (1937) 4433 (3270)	5093 (2055) 3117 (2299) 4096 (2095)	4956 (4895)	4956 (4895)	4956 (4895)	4956 (4895)	4956 (4895)	99 (1439)	1.0		
LHS-15A-050X-F02-2	start run end	1823 (1344) 832 (614) 1140 (841)	1204 (888) 832 (614) 1140 (841)	1138 (839) 1731 (1315) 2227 (1643)	1823 (1710) 2318 (1710) 2678 (1975)	2137 (2339) 1903 (1444) 2318 (1710)	2678 (1975) 1609 (1544) 2678 (1975)	1057 (1112) 635 (468) 1079 (796)	2298 (1695) 1301 (960) 1079 (796)	2831 (2088) 1301 (960) 1079 (796)	207 (3000)	0.3				
LHS-15A-055X-F02-2	start run end	1823 (1344) 832 (614) 1140 (841)	1408 (1039) 832 (614) 1140 (841)	1853 (1367) 829 (611) 1543 (1138)	2743 (2023) 1543 (1138) 2432 (1794)	3187 (2351) 1543 (1138) 2877 (2122)	3632 (2679) 1609 (1544) 3322 (2450)	4077 (3007) 2078 (1533) 4211 (3106)	4066 (3663) 2578 (1901) 4211 (3106)	152 (2208)	0.7					
LHS-15A-060X-F02-2	start run end	1823 (1344														

Table 18: Torque Table – LHS-15A – Single Acting – Spring Return Fail Open – 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)	
LHS-15A-050X-FO3-1	start run end	1829 (1349) 856 (632) 1220 (899)													
LHS-15A-055X-FO3-1	start run end	1829 (1349) 856 (632) 1220 (899)													
LHS-15A-060X-FO3-1	start run end	1829 (1349) 856 (632) 1220 (899)													
LHS-15A-065X-FO3-1	start run end	1829 (1349) 856 (632) 1220 (899)													
LHS-15A-075X-FO3-1	start run end	1829 (1349) 856 (632) 1220 (899)	1320 (974) 856 (632) 1220 (899)	1765 (1302) 802 (592) 1091 (805)	2210 (1630) 1052 (776) 1536 (1133)	2654 (1958) 1302 (960) 1980 (1461)	3099 (2286) 1552 (1145) 2425 (1789)	3544 (2634) 1802 (1329) 2870 (2117)	3988 (2942) 2051 (1513) 3315 (2445)	4578 (3598) 2551 (1882) 4204 (3101)				154 (2238)	
LHS-15A-085X-FO3-1	start run end	1829 (1349) 856 (632) 1220 (899)	2079 (1534) 1766 (1236) 1405 (1036)	2460 (1955) 3222 (2376) 1976 (1458)	3793 (2797) 1941 (1432) 3119 (2300)	4364 (3219) 2262 (1669) 3690 (2722)	4935 (3640) 2583 (1905) 4261 (3143)							120 (1742)	
LHS-15A-090X-FO3-1	start run end	1829 (1349) 856 (632) 1220 (899)	2494 (1840) 1212 (894) 1820 (1343)	3135 (2312) 1621 (1195) 2461 (1815)	3775 (2784) 1931 (1425) 3101 (2287)	4415 (3257) 2603 (2056) 3741 (2760)	5056 (3729) 4261 (3143)							107 (1553)	
LHS-15A-050X-FO3-2	start run end	2448 (1806) 1136 (838) 1595 (1176)													
LHS-15A-055X-FO3-2	start run end	2448 (1806) 1136 (838) 1595 (1176)													
LHS-15A-060X-FO3-2	start run end	2448 (1806) 1136 (838) 1595 (1176)													
LHS-15A-065X-FO3-2	start run end	2448 (1806) 1136 (838) 1595 (1176)													
LHS-15A-075X-FO3-2	start run end	2448 (1806) 1136 (838) 1595 (1176)													
LHS-15A-085X-FO3-2	start run end	2448 (1806) 1136 (838) 1595 (1176)	1795 (1324) 743 (548) 851 (628)	2240 (1652) 993 (733) 1296 (956)	2684 (1980) 1243 (917) 1741 (1284)	3129 (2308) 1493 (1101) 1743 (1285)	3574 (2636) 1302 (660) 3520 (2596)	5092 (3755) 4463 (3292) 4409 (3252)	5353 (3948) 2742 (2022) 3006 (2439)	5152 (3800) 4918 (3627) 3306 (2439)	5152 (3800) 4918 (3627) 3306 (2439)	4208 (3104)		163 (2370)	
LHS-15A-085X-FO3-2	start run end	2236 (1649) 1136 (838) 1595 (1176)	2861 (2070) 1312 (968) 1292 (953)	3378 (2492) 1631 (1204) 1863 (1191)	3949 (2913) 1954 (1411) 2435 (1401)	4520 (3334) 2275 (1678) 3036 (2217)	5092 (3755) 2595 (1914) 3261 (2638)	4148 (3059)						127 (1847)	
LHS-15A-090X-FO3-2	start run end	2730 (2066) 1136 (838) 1595 (1176)	3360 (2476) 1603 (666) 1776 (1310)	4001 (2951) 1623 (923) 2417 (1783)	4640 (3423) 2342 (1728) 3057 (2255)	3261 (2638) 2702 (1933) 3698 (2727)	3574 (2636) 1970 (1453) 4338 (3199)	4250 (3134) 2122 (1565) 3520 (2596)	4360 (2478) 2123 (1565) 3306 (2439)	4129 (3045) 2054 (1515) 3185 (2349)	4129 (3045) 2054 (1515) 3185 (2349)	207 (3000)			
LHS-15A-050X-FO3-3	start run end	2588 (1909) 1204 (888) 1698 (1252)													
LHS-15A-055X-FO3-3	start run end	2588 (1909) 1204 (888) 1698 (1252)													
LHS-15A-060X-FO3-3	start run end	2588 (1909) 1204 (888) 1698 (1252)													
LHS-15A-065X-FO3-3	start run end	2588 (1909) 1204 (888) 1698 (1252)													
LHS-15A-075X-FO3-3	start run end	2588 (1909) 1204 (888) 1698 (1252)													
LHS-15A-085X-FO3-3	start run end	2588 (1909) 1204 (888) 1698 (1252)	1550 (1144) 916 (675) 1138 (839)	2122 (1565) 1681 (1240) 1669 (1260)	2693 (1986) 2634 (2407) 1709 (1260)	3835 (2829) 1557 (1149) 2280 (1682)	4006 (3250) 1878 (1385) 2851 (2103)	4978 (3671) 3015 (2224) 2031 (1498)	3246 (2394) 2199 (1622) 2520 (1859)	3815 (2814) 1088 (802) 3994 (2946)	4015 (2961) 1056 (1070) 4054 (2990)	4015 (2961) 1056 (1070) 4054 (2990)	207 (3000)		
LHS-15A-090X-FO3-3	start run end	2588 (1909) 1204 (888) 1698 (1252)	1966 (1450) 1188 (876) 1698 (1252)	2606 (1922) 1547 (1141) 2262 (1669)	3246 (2394) 1907 (1407) 2903 (2141)	3887 (2867) 4527 (3339) 3543 (2613)	5167 (3811) 2627 (1672) 4183 (3085)	5238 (3864) 2667 (1967) 4255 (3138)	4804 (3543) 2422 (1787) 3820 (2817)	5037 (3715) 2554 (1883) 4054 (2990)	5037 (3715) 2554 (1883) 4054 (2990)	207 (3000)			

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)

Actuator Model	LHS-20A SYMMETRIC ACTUATOR												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)					
LHS-20A-050X-F01-1	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)	L				
LHS-20A-050X-F01-1	start	1604 (1183)	730 (538)	933 (732)		1256 (926)	1517 (1119)	1779 (1312)	2040 (1505)	2563 (1890)	3086 (2276)	3609 (2662)	4134 (3047)	4314 (3182)				
LHS-20A-055X-F01-1	run	1604 (1183)	730 (538)	933 (732)		516 (407)	662 (486)	809 (605)	954 (705)	1290 (922)	1595 (1139)	1837 (1355)	2134 (1572)	2247 (1618)	207 (3000)			
LHS-20A-055X-F01-1	end	1604 (1183)	730 (538)	933 (732)		588 (437)	734 (559)	841 (650)	1102 (763)	1481 (1066)	1802 (1373)	2149 (1722)	2529 (1945)	2335 (1848)	5451 (4020)			
LHS-20A-055X-F01-1	start	1604 (1183)	730 (538)	933 (732)		1117 (824)	1433 (1057)	1750 (1291)	2302 (1924)	2699 (1991)	3331 (2457)	3964 (2924)	4597 (3390)	5229 (3857)				
LHS-20A-055X-F01-1	run	1604 (1183)	730 (538)	933 (732)		438 (323)	615 (454)	793 (585)	971 (716)	1149 (847)	1326 (978)	1682 (1240)	2037 (1502)	2393 (1765)	2748 (2027)	207 (3000)		
LHS-20A-055X-F01-1	end	1604 (1183)	730 (538)	933 (732)		441 (325)	757 (559)	1074 (792)	1390 (1025)	1706 (1259)	2023 (1492)	2655 (1958)	3288 (2425)	3921 (2892)	4553 (3358)	4775 (3522)		
LHS-20A-065X-F01-1	start	1604 (1183)	730 (538)	933 (732)		1554 (1146)	1996 (1472)	2437 (1798)	2879 (2124)	3321 (2449)	3763 (2775)	4205 (3101)	5088 (3753)	5972 (4405)	6855 (5056)	7739 (5708)	8048 (5936)	
LHS-20A-065X-F01-1	run	1604 (1183)	730 (538)	933 (732)		683 (504)	931 (687)	1179 (870)	1428 (1053)	1924 (1419)	2172 (1602)	2669 (1968)	3165 (2334)	3661 (2701)	4158 (3067)	4332 (3195)	4775 (3522)	
LHS-20A-065X-F01-1	end	1604 (1183)	730 (538)	933 (732)		1319 (973)	1761 (1299)	2203 (1625)	2645 (1951)	3087 (2277)	3528 (2602)	4412 (3254)	5296 (3906)	6179 (4585)	7063 (5209)	7372 (5437)	207 (3000)	
LHS-20A-075X-F01-1	start	1604 (1183)	730 (538)	933 (732)		1176 (868)	1507 (1111)	1837 (1355)	2168 (1599)	2498 (1843)	2829 (2086)	3159 (2330)	3820 (2818)	4481 (3305)	5142 (3722)	5803 (4280)	6263 (5683)	
LHS-20A-075X-F01-1	run	1604 (1183)	730 (538)	933 (732)		1756 (1295)	2344 (1729)	3521 (2163)	3521 (2159)	4109 (3131)	4697 (3483)	5285 (3898)	6462 (4766)	7638 (5634)	8815 (6501)	9991 (7369)	206 (2984)	
LHS-20A-075X-F01-1	end	1604 (1183)	730 (538)	933 (732)		2918 (2152)	3588 (2646)	4257 (3140)	4926 (3633)	5595 (4127)	6265 (4621)	6934 (5114)	8272 (6101)	9611 (7089)	10549 (8076)	181 (2622)	1.0	
LHS-20A-080X-F01-1	start	1604 (1183)	730 (538)	933 (732)		1450 (1069)	1826 (1346)	2202 (1624)	2578 (1901)	2954 (2178)	3303 (2456)	3706 (2733)	4457 (3288)	5209 (3842)	5961 (4397)	10273 (7577)		
LHS-20A-080X-F01-1	run	1604 (1183)	730 (538)	933 (732)		2242 (1645)	2911 (2147)	3581 (2641)	4250 (3135)	4919 (3628)	5589 (4122)	6258 (4615)	7596 (5603)	8935 (6590)	10273 (7577)		1.0	
LHS-20A-080X-F01-1	end	1604 (1183)	730 (538)	933 (732)		3049 (1511)	2525 (1862)	3001 (2123)	3476 (2813)	4594 (4125)	4428 (3266)	4904 (3617)	5856 (4319)			143 (2072)	1.3	
LHS-20A-090X-F01-1	start	1604 (1183)	730 (538)	933 (732)		3309 (2440)	4220 (3065)	4833 (3564)	5679 (4153)	6526 (4813)	8220 (6063)	9067 (6688)	10761 (7937)					
LHS-20A-090X-F01-1	run	1604 (1183)	730 (538)	933 (732)		4051 (3320)	5547 (4091)	6592 (4862)	7638 (5634)	8684 (6405)	10406 (7675)	1166 (7176)				116 (1679)	1.6	
LHS-20A-090X-F01-1	end	1604 (1183)	730 (538)	933 (732)		5103 (2205)	7760 (5723)	9025 (6657)	10291 (7590)						96 (1387)	1.9		
LHS-20A-100X-F01-1	start	1604 (1183)	730 (538)	933 (732)		4349 (2551)	4170 (3075)	4880 (3606)	5591 (4124)	7084 (5158)	9615 (7091)							
LHS-20A-100X-F01-1	run	1604 (1183)	730 (538)	933 (732)		4519 (2492)	5819 (4292)	7084 (5158)	8349 (6158)						80 (1165)	2.3		
LHS-20A-100X-F01-1	end	1604 (1183)	730 (538)	933 (732)		4270 (3149)	5115 (3773)	5961 (4397)	10273 (7577)	8676 (6467)								
LHS-20A-050X-F02-1	start	1513 (1853)	7177 (3818)	8626 (5356)		6223 (4590)	7269 (5361)	8314 (6132)	9360 (6904)	10406 (7675)								
LHS-20A-050X-F02-1	run	1513 (1853)	7177 (3818)	8626 (5356)		5547 (4091)	6592 (4862)	7638 (5634)	8684 (6405)	9730 (7176)								
LHS-20A-055X-F02-1	start	1513 (1853)	7177 (3818)	8626 (5356)		1705 (1258)	2021 (1491)	2654 (1957)	3287 (2424)	3919 (2891)	4552 (3357)	5277 (3521)	6773 (4166)	7276 (1678)	207 (3000)	0.5		
LHS-20A-055X-F02-1	run	1513 (1853)	7177 (3818)	8626 (5356)		7676 (5361)	9025 (6657)	10291 (7590)	1165 (1154)	1209 (892)	1320 (1416)	1651 (2118)	2284 (1685)	2917 (2151)	3549 (2618)	3771 (2781)		
LHS-20A-055X-F02-1	end	1513 (1853)	7177 (3818)	8626 (5356)		1760 (1298)	2202 (1624)	2643 (1950)	3085 (2276)	3527 (2601)	4111 (3253)	5294 (3905)	6178 (4575)	7026 (5208)	7371 (5436)	207 (3000)	0.7	
LHS-20A-065X-F02-1	start	1513 (1853)	7177 (3818)	8626 (5356)		707 (525)	955 (705)	1199 (884)	1452 (1071)	1700 (1254)	2196 (1620)	2693 (1986)	3189 (2352)	3859 (2846)	4366 (5687)	5331 (3932)	6059 (4469)	
LHS-20A-065X-F02-1	run	1513 (1853)	7177 (3818)	8626 (5356)		752 (555)	1340 (989)	1729 (1422)	2517 (1856)	3105 (2290)	3693 (2724)	4281 (3158)	4548 (4025)	5634 (4893)	7811 (5761)	8987 (6629)	10401 (7672)	0.9
LHS-20A-065X-F02-1	end	1513 (1853)	7177 (3818)	8626 (5356)		1606 (1184)	2241 (2146)	3579 (2640)	4249 (3134)	4918 (3627)	5587 (4121)	6256 (4614)	7595 (5602)	8933 (6589)	10272 (7576)		191 (2771)	1.0
LHS-20A-075X-F02-1	start	1513 (1853)	7177 (3818)	8626 (5356)		1066 (1184)	1755 (1294)	2343 (1728)	2931 (2162)	3519 (2596)	4107 (3030)	4696 (3463)	5284 (3897)	6460 (4765)	7673 (5633)	8813 (6500)	9990 (7368)	10401 (7672)
LHS-20A-075X-F02-1	run	1513 (1853)	7177 (3818)	8626 (5356)		1504 (1184)	2034 (1512)	2602 (1524)	3028 (1645)	3578 (2639)	4166 (3246)	4687 (3507)	5285 (3835)	6460 (4765)	7673 (5633)	8813 (6500)	9990 (7368)	10401 (7672)
LHS-20A-075X-F02-1	end	1513 (1853)	7177 (3818)	8626 (5356)		1606 (1184)	2246 (1673)	3579 (2640)	4249 (3134)	4918 (3627)	5587 (4121)	6256 (4614)	7595 (5602)	8933 (6589)	10272 (7576)		191 (2771)	1.0
LHS-20A-080X-F02-1	start	1513 (1853)	7177 (3818)	8626 (5356)		1606 (1184)	977 (721)	1353 (998)	1729 (1275)	2105 (1533)	2481 (1830)	2857 (2107)	3233 (2385)	3958 (2939)	4773 (3494)	5486 (4049)	6592 (4862)	8987 (6629)
LHS-20A-080X-F02-1	run	1513 (1853)	7177 (3818)	8626 (5356)		1606 (1184)	1908 (1407)	2577 (1901)	3246 (2394)	3913 (2888)	4585 (3381)	5246 (3875)	6592 (5622)	7931 (5850)			151 (2190)	1.3
LHS-20A-080X-F02-1	end	1513 (1853)	7177 (3818)	8626 (5356)		1606 (1184)	3307 (2439)	4155 (3064)	5002 (3286)	5849 (4314)	6696 (4938)	7543 (5563)	8399 (6188)	10084 (7437)	122 (1772)		122 (1772)	1.6
LHS-20A-090X-F02-1	start	1513 (1853)	7177 (3818)	8626 (5356)		1606 (1184)	2246 (1673)	3579 (2640)	4242 (3251)	4904 (2957)	5862 (4029)	6716 (4824)	7387 (724)	8086 (6484)				
LHS-20A-090X-F02-1	run	1513 (1853)	7177 (3818)	8626 (5356)		1606 (1184)	2246 (1673)	3579 (2640)	4242 (3251)	4904 (2957)	5862 (4029)	6716 (4824)	7387 (724)	8086 (6484)			101 (1464)	1.9
LHS-20A-090X-F02-1	end	1513 (1853)	7177 (3818)	8626 (5356)		1606 (1184)	3307 (2439)	4155 (3064)	5002 (3286)	5849 (4314)	6696 (4938)	7543 (5563)	8399 (6188)	10084 (7437)			85 (1231)	2.3
LHS-20A-050X-F02-2	start	1513 (1853)	7177 (3818)	8626 (5356)		3266 (2409)	3697 (2727)	4369 (3251)	5119 (3776)	5850 (4300)	6592 (4860)	7329 (5330)	8040 (6198)	8739 (7186)				
LHS-20A-050X-F02-2	run	1513 (1853)	7177 (3818)	8626 (5356)		2085 (1538)	3266 (2409)	3697 (2727)	4369 (3251)	5119 (3776)	5850 (4300)	6592 (4860)	7329 (5330)	8040 (6198)			207 (3000)	0.4
LHS-20A-055X-F02-2	start	1513 (1853)	7177 (3818)	8626 (5356)		2085 (1538)	3266 (2409)	3697 (2727)	4369 (3251)	5119 (3776)	5850 (4300)	6592 (4860)	7329 (5330)	8040 (6198)			207 (3000)	0.5
LHS-20A-055X-F02-2	run	1513 (1853)	7177 (3818)	8626 (5356)		2085 (1538)	3266 (2409)	3697 (2727)	4369 (3251)	5119 (3776)	5850 (4300)	6592 (4860)	7329 (5330)	8040 (6198)			207 (3000)	0.5
LHS-20A-055X-F02-2	end	1513 (1853)	7177 (3818)	8626 (5356)		2085 (1538)	3266 (2409)	3697 (2727)	4369 (3251)	5119 (3776)	5850 (4300)	6592 (4860)	7329 (5330)	8040 (6198)			207 (3000)	0.5
LHS-20A-060X-F02-2	start	1513 (1853)	7177 (3818)	8626 (5356)		2085 (1538)	3266 (2409)	3697 (2727)	4369 (3251)	5119 (3776)	5850 (4300)	6592 (4860)	7329 (5330)	8040 (6198)			207 (3000)	0.5
LHS-20A-060X-F02-2	run	1513																

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 (2034)	160 (2321)	180 (2611)	200 (2901)	207 (3000)		
LHS-20A-055X-F02-4	start run end	4870 (3592) 2232 (1647) 3077 (2270)												3147 (2321) 1211 (893) 1156 (775)	
LHS-20A-065X-F02-4	start run end	4870 (3592) 2232 (1647) 3077 (2270)												207 (3000) 0.5	
LHS-20A-075X-F02-4	start run end	4870 (3592) 2232 (1647) 3077 (2270)												3147 (2321) 1211 (893) 1156 (775)	
LHS-20A-080X-F02-4	start run end	4870 (3592) 2232 (1647) 3077 (2270)												207 (3000) 0.7	
LHS-20A-090X-F02-4	start run end	4870 (3592) 2232 (1647) 3077 (2270)												207 (3000) 0.9	
LHS-20A-100X-F02-4	start run end	4870 (3592) 2232 (1647) 3077 (2270)												207 (3000) 1.0	
LHS-20A-110X-F02-4	start run end	4870 (3592) 2232 (1647) 3077 (2270)												170 (2470) 1.3	
LHS-20A-120X-F02-4	start run end	4870 (3592) 2232 (1647) 3077 (2270)												138 (2004) 1.6	
LHS-20A-110X-F02-4	start run end	4870 (3592) 2232 (1647) 3077 (2270)												114 (1652) 1.9	
LHS-20A-120X-F02-4	start run end	4870 (3592) 2232 (1647) 3077 (2270)												96 (1389) 2.3	
LHS-20A-055X-F03-1	start run end	4914 (3624) 2286 (1686) 3226 (2379)												2982 (2200) 1151 (849) 1117 (824)	
LHS-20A-065X-F03-1	start run end	4914 (3624) 2286 (1686) 3226 (2379)												207 (3000) 0.5	
LHS-20A-075X-F03-1	start run end	4914 (3624) 2286 (1686) 3226 (2379)												207 (3000) 0.7	
LHS-20A-080X-F03-1	start run end	4914 (3624) 2286 (1686) 3226 (2379)												207 (3000) 0.9	
LHS-20A-090X-F03-1	start run end	4914 (3624) 2286 (1686) 3226 (2379)												207 (3000) 1.0	
LHS-20A-100X-F03-1	start run end	4914 (3624) 2286 (1686) 3226 (2379)												172 (2499) 1.3	
LHS-20A-110X-F03-1	start run end	4914 (3624) 2286 (1686) 3226 (2379)												140 (2028) 1.6	
LHS-20A-120X-F03-1	start run end	4914 (3624) 2286 (1686) 3226 (2379)												115 (1671) 1.9	
LHS-20A-110X-F03-1	start run end	4914 (3624) 2286 (1686) 3226 (2379)												97 (1405) 2.3	
LHS-20A-055X-F03-2	start run end	5877 (4334) 2715 (2002) 3788 (2794)												3766 (2777) 1467 (1082) 1457 (1075)	
LHS-20A-075X-F03-2	start run end	5877 (4334) 2715 (2002) 3788 (2794)												145 (2109) 1.6	
LHS-20A-080X-F03-2	start run end	5877 (4334) 2715 (2002) 3788 (2794)												180 (2609) 1.3	
LHS-20A-090X-F03-2	start run end	5877 (4334) 2715 (2002) 3788 (2794)												207 (3000) 0.7	
LHS-20A-100X-F03-2	start run end	5877 (4334) 2715 (2002) 3788 (2794)												207 (3000) 0.9	
LHS-20A-110X-F03-2	start run end	5877 (4334) 2715 (2002) 3788 (2794)												207 (3000) 1.0	
LHS-20A-120X-F03-2	start run end	5877 (4334) 2715 (2002) 3788 (2794)												101 (1463) 2.3	
LHS-20A-055X-F03-3	start run end	5877 (4334) 2715 (2002) 3788 (2794)												4173 (3078) 1631 (1203) 1632 (1204)	
LHS-20A-075X-F03-3	start run end	5877 (4334) 2715 (2002) 3788 (2794)												4483 (3306) 1804 (1331) 1941 (1432)	
LHS-20A-080X-F03-3	start run end	5877 (4334) 2715 (2002) 3788 (2794)												145 (2109) 1.6	
LHS-20A-090X-F03-3	start run end	5877 (4334) 2715 (2002) 3788 (2794)												120 (1741) 1.9	
LHS-20A-100X-F03-3	start run end	5877 (4334) 2715 (2002) 3788 (2794)												101 (1463) 2.3	
LHS-20A-110X-F03-3	start run end	5877 (4334) 2715 (2002) 3788 (2794)												104 (1510) 2.3	
LHS-20A-055X-F03-3	start run end	6518 (4808) 3016 (2224) 4219 (3112)												flowserve.com 31	
LHS-20A-075X-F03-3	start run end	6518 (4808) 3016 (2224) 4219 (3112)												124 (1797) 1.9	
LHS-20A-080X-F03-3	start run end	6518 (4808) 3016 (2224) 4219 (3112)												150 (2177) 1.6	
LHS-20A-090X-F03-3	start run end	6518 (4808) 3016 (2224) 4219 (3112)												185 (2684) 1.3	
LHS-20A-110X-F03-3	start run end	6518 (4808) 3016 (2224) 4219 (3112)												124 (1797) 1.9	
LHS-20A-120X-F03-3	start run end	6518 (4808) 3016 (2224) 4219 (3112)												104 (1510) 2.3	

Table 21: Torque Table – LHS-25A – Single Acting – Spring Return Fail Open – Symmetric

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

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

Actuator Model	LHS-25A SYMMETRIC ACTUATOR												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)	L	
LHS-25A-075X-FO1-1	start	2595 (1914)	2666 (1966)	3392 (2502)	4119 (3083)	4845 (3574)	5572 (4110)	6299 (4646)	7025 (5182)	8478 (6253)	9932 (7325)	11385 (8397)	12838 (9469)	13347 (9844)	
	run	1160 (855)	1168 (861)	1576 (1162)	1984 (1463)	2392 (1764)	2006 (2066)	3209 (2367)	3617 (2668)	4433 (3270)	5250 (3872)	6066 (4474)	6883 (5076)	7168 (5287)	
	end	1533 (1131)	1492 (1100)	2218 (1636)	2953 (2172)	4398 (3244)	5125 (3780)	5851 (4316)	7304 (5387)	8758 (6459)	10211 (7531)	11664 (8603)	12173 (8978)		
LHS-25A-080X-FO1-1	start	2595 (1914)	3266 (2409)	4053 (3019)	4920 (3629)	5746 (4238)	6573 (4848)	7400 (5458)	8227 (6063)	9880 (7287)	11833 (8507)	13187 (9726)	14840 (10946)	15419 (11373)	
	run	1160 (855)	1505 (1140)	1970 (1453)	2434 (1795)	2899 (2138)	3363 (2480)	3827 (2823)	4292 (3166)	5221 (3816)	6376 (4536)	7079 (5221)	8008 (5906)	8333 (6146)	
	end	1533 (1131)	2092 (1543)	2919 (2153)	3746 (2763)	4572 (3372)	5399 (3962)	6226 (4592)	7053 (5203)	8706 (6421)	10359 (7641)	12013 (8860)	13666 (1080)	14245 (10507)	
LHS-25A-085X-FO1-1	start	2595 (1914)	3040 (2375)	3844 (2981)	4593 (3421)	5301 (3849)	6074 (4351)	6874 (4941)	7674 (5531)	8486 (6259)	9354 (6969)	10172 (7618)	10742 (8258)	11622 (9300)	
	run	1160 (855)	1864 (1375)	2389 (1762)	2913 (2149)	3437 (2535)	3962 (2922)	4496 (3309)	5010 (3695)	6050 (4469)	7108 (5242)	8156 (6016)	9205 (6789)	9572 (7060)	
	end	1533 (1131)	2722 (2015)	3665 (2703)	4598 (3391)	5331 (4080)	6465 (4768)	7398 (5457)	8331 (6145)	10198 (7522)	12065 (8898)	13931 (1025)	15798 (11652)	16451 (12134)	
LHS-25A-090X-FO1-1	start	2595 (1914)	4584 (3381)	5630 (4153)	6676 (4924)	7723 (5696)	8769 (6468)	9815 (7273)	10862 (8011)	12954 (8555)	15047 (11089)	17140 (12642)	18974 (13944)	198 (2871)	
	run	1160 (855)	2245 (1656)	2833 (2090)	3421 (2523)	4009 (2957)	4597 (3380)	5185 (3824)	5772 (4257)	6948 (5125)	8124 (5922)	9299 (6589)		1.6	
	end	1533 (1131)	3410 (2515)	4058 (3827)	5502 (4058)	6549 (4830)	7595 (5602)	8641 (6374)	9688 (7145)	11780 (8689)	13873 (10232)	15966 (11776)			
LHS-25A-100X-FO1-1	start	2595 (1914)	6056 (4467)	7348 (5420)	8640 (6372)	9932 (7325)	11223 (8278)	12515 (9231)	13807 (10183)	16390 (12089)	18974 (13944)			160 (2324)	
	run	1160 (855)	3073 (2266)	3759 (2802)	4337 (3323)	5250 (3872)	5976 (4407)	6701 (4943)	7427 (5478)	8878 (6548)	10330 (7619)			2.0	
	end	1533 (1131)	4882 (3601)	6174 (4554)	7466 (5507)	8758 (6459)	10049 (7142)	11341 (8365)	12633 (9318)	15216 (11223)	17800 (13129)				
LHS-25A-110X-FO1-1	start	2595 (1914)	7684 (5667)	9248 (6820)	10810 (7971)	12732 (9126)	13936 (10279)	15499 (11432)	17062 (12584)					133 (1922)	
	run	1160 (855)	3987 (2941)	4865 (3588)	5743 (4236)	6621 (4884)	7500 (5531)	8378 (6179)	9256 (6827)					2.4	
	end	1533 (1131)	6510 (4802)	7073 (5954)	9636 (5756)	12760 (9413)	14325 (10566)	15888 (11718)							
LHS-25A-120X-FO1-1	start	2595 (1914)	6947 (6692)	11327 (8354)	13187 (9762)	15047 (11098)	16907 (12470)	18767 (13842)						111 (1614)	
	run	1160 (855)	4989 (3679)	6034 (4450)	7079 (5292)	8124 (5992)	9169 (6762)	10214 (7533)						2.9	
	end	1533 (1131)	8293 (6116)	10153 (7488)	12013 (8860)	13873 (10232)	15733 (11604)	17593 (12976)							
LHS-25A-130X-FO1-1	start	2595 (1914)	11404 (8411)	13587 (10023)	15770 (11632)	17954 (13242)								95 (1375)	
	run	1160 (855)	6077 (4482)	7243 (5387)	8530 (6291)	9756 (7196)								3.3	
	end	1533 (1131)	10230 (7545)	12413 (9156)	14596 (10766)	16779 (12376)									
LHS-25A-140X-FO1-1	start	2595 (1914)	13497 (9955)	16029 (18122)	18561 (13690)	20591 (17048)								82 (1186)	
	run	1160 (855)	7253 (5349)	8675 (6398)	10095 (10596)	12323 (9089)								3.9	
	end	1533 (1131)													
LHS-25A-075X-FO1-2	start	4034 (2976)	3346 (2468)	4073 (3004)	4799 (3540)	5526 (4076)	6253 (4612)	7706 (5684)	9159 (6755)	10612 (7827)	12066 (8899)	12574 (9274)			
	run	1760 (1298)	1320 (974)	1728 (1275)	2137 (1576)	2545 (1877)	2953 (2179)	3770 (2780)	4542 (3382)	5402 (3985)	6219 (4587)	6505 (4798)		207 (3000)	
	end	2232 (1646)	1354 (995)	2081 (1535)	2408 (1826)	2807 (2070)	3534 (2606)	4260 (3143)	5174 (4214)	6260 (3158)	70073 (7430)	10582 (7805)			
LHS-25A-080X-FO1-2	start	4034 (2976)	3230 (2449)	4077 (3055)	4694 (3574)	5801 (4278)	6455 (4548)	7455 (5453)	9197 (6577)	10761 (7937)	12406 (8899)	14068 (10376)	14647 (10853)		
	run	1760 (1298)	1201 (885)	1725 (1277)	2274 (1659)	2774 (2046)	3228 (2422)	3822 (2819)	4346 (3206)	5286 (3882)	68620 (4150)	8620 (4570)		207 (3000)	
	end	2232 (1646)	1341 (941)	2074 (1520)	2306 (1926)	2807 (2190)	3454 (2633)	4036 (3046)	4557 (3257)	5421 (3721)	6455 (4151)	8042 (4573)	12654 (10933)		
LHS-25A-085X-FO1-2	start	4034 (2976)	3133 (3311)	4066 (2999)	5000 (3688)	5933 (4376)	6866 (5064)	7800 (5753)	8733 (6441)	10599 (7818)	12466 (8194)	14333 (10571)	16109 (11948)	16853 (12430)	
	run	1760 (1298)	1201 (885)	1725 (1277)	2274 (1659)	2774 (2046)	3228 (2422)	3822 (2819)	4346 (3206)	5286 (3882)	68620 (4150)	8620 (4570)		207 (3000)	
	end	2232 (1646)	1341 (941)	2074 (1520)	2306 (1926)	2807 (2190)	3454 (2633)	4036 (3046)	4557 (3257)	5421 (3721)	6455 (4151)	8042 (4573)	12654 (10933)		
LHS-25A-090X-FO1-2	start	4034 (2976)	3811 (2811)	4855 (3588)	5904 (5126)	6950 (5126)	7987 (5888)	9043 (6670)	10089 (7441)	12182 (8895)	14275 (10528)	16367 (12072)	18460 (13615)		
	run	1760 (1298)	1582 (1166)	2169 (1600)	2757 (2034)	3345 (2467)	4393 (2901)	5251 (3344)	6452 (3828)	7108 (5768)	8284 (6505)	9811 (7236)		205 (2976)	
	end	2232 (1646)	1819 (1342)	2865 (2113)	3119 (2428)	3958 (4367)	4958 (3657)	6004 (4429)	7051 (5200)	8097 (7058)	9128 (9054)	14375 (10602)	16468 (12146)		
LHS-25A-100X-FO1-2	start	4034 (2976)	5284 (3897)	6576 (4850)	7867 (5803)	9159 (6755)	10451 (7088)	11743 (8661)	13034 (9614)	15618 (11519)	18201 (13425)			166 (2411)	
	run	1760 (1298)	2409 (1777)	3135 (2312)	3860 (4284)	4586 (3382)	5312 (3918)	6037 (4453)	6763 (4988)	8215 (6059)	9666 (7129)			2.0	
	end	2232 (1646)	3222 (2428)	3858 (4380)	4587 (3833)	5333 (4733)	6076 (5286)	6859 (6239)	7570 (7191)	11042 (8144)	13626 (10050)	16209 (11955)			
LHS-25A-110X-FO1-2	start	4034 (2976)	6912 (5098)	8475 (6250)	10038 (7403)	11601 (8556)	13169 (7409)	14727 (10862)	16290 (12015)					138 (1995)	
	run	1760 (1298)	2333 (2451)	4201 (3099)	5079 (3746)	6836 (5042)	7714 (5689)	8592 (6337)						2.4	
	end	2232 (1646)	4919 (3628)	8045 (5943)	9606 (7087)	11711 (8240)	12734 (9392)	14297 (10545)							
LHS-25A-120X-FO1-2	start	4034 (2976)	8814 (7748)	10554 (7784)	12427 (8784)	14125 (10528)	16135 (11900)	17995 (13272)						115 (1675)	
	run	1760 (1298)	10632 (7842)	12815 (9452)	14998 (11062)	17811 (12672)	18569 (11059)	2002						2.9	
	end	2232 (1646)	1364 (979)	1660 (1166)	1866 (1272)	2082 (1701)	2360 (1916)	2038 (1038)							
LHS-25A-130X-FO1-2	start	4034 (2976)	12724 (9385)	1546 (1153)	1878 (1304)	2140 (1474)	2436 (1552)	2736 (1653)	3037 (1773)	3221 (1736)	3474 (1823)	3750 (1934)	4008 (12046)	85 (1231)	
	run	1760 (1298)	1907 (1406)	2007 (1480)	2595 (1914)	3183 (2347)	4358 (3213)	4946 (3648)	5656 (4241)	5921 (4216)	6455 (4241)	7181 (5267)	8635 (6369)	14803 (10918)	
	end	2232 (1646)	2016 (1487)	2950 (2176)	3884 (3284)	4388 (3644)	5050 (4241)	5750 (5292)	6683 (4929)	8550 (6306)	10416 (7683)	12283 (9059)	14149 (10436)		
LHS-25A-140X-FO1-2	start	4034 (2976)	3291 (2427)	4480 (3204)	5412 (3992)	6346 (4681)	7279 (5369)	8213 (6057)	10079 (7424)	11946 (8811)	13813 (10188)	15679 (11564)	16332 (12046)		
	run	1760 (1298)	1907 (1406)	2007 (1480)	2595 (1914)	3183 (2347)	4358 (3213)	4946 (3648)	5656 (4241)	5921 (4216)	6455 (4241)	7187 (5362)	8746 (6451)		
	end	2232 (1646)	2016 (1487)	2950 (2176)	3884 (3284)	4388 (3644)	5050 (4241)	5750 (5292)	6683 (4929)	8550 (6306)	10416 (7683)	12283 (9059)	14803 (10918)		
LHS-25A-075X-FO1-3	start	4034 (2976)	2826 (2324)	3553 (2620)	4279 (3156)	5006 (3862)	5733 (4228)	7186 (5300)	8638 (5327)	10092 (7444)	11546 (8516)	12024 (8801)	12574 (9274)	207 (3000)	
	run	1760 (1298													

Table 22: 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)

Actuator Model	LHS-25A 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-25A-075X-F01-4	start run end	6016 (4437) 2611 (926) 3280 (219)												207 (3000)	
LHS-25A-080X-F01-4	start run end	6016 (4437) 2611 (926) 3280 (219)												1.1	
LHS-25A-085X-F01-4	start run end	6016 (4437) 2611 (926) 3280 (219)												1.3	
LHS-25A-090X-F01-4	start run end	6016 (4437) 2611 (926) 3280 (219)												1.6	
LHS-25A-100X-F01-4	start run end	6016 (4437) 2611 (926) 3280 (219)												2.0	
LHS-25A-110X-F01-4	start run end	6016 (4437) 2611 (926) 3280 (219)												2.4	
LHS-25A-120X-F01-4	start run end	6016 (4437) 2611 (926) 3280 (219)												2.9	
LHS-25A-130X-F01-4	start run end	6016 (4437) 2611 (926) 3280 (219)												3.3	
LHS-25A-140X-F01-4	start run end	6016 (4437) 2611 (926) 3280 (219)												3.9	
LHS-25A-075X-F02-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)												207 (3000)	
LHS-25A-080X-F02-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)												1.1	
LHS-25A-085X-F02-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)												1.3	
LHS-25A-090X-F02-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)												1.4	
LHS-25A-100X-F02-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)												2.0	
LHS-25A-110X-F02-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)												2.4	
LHS-25A-120X-F02-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)												2.9	
LHS-25A-130X-F02-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)												3.3	
LHS-25A-140X-F02-1	start run end	6070 (4477) 2687 (1982) 3495 (2578)												3.9	
LHS-25A-075X-F03-2	start run end	5929 (4373) 2706 (1996) 3705 (2732)												207 (3000)	
LHS-25A-080X-F03-2	start run end	5929 (4373) 2706 (1996) 3705 (2732)												1.1	
LHS-25A-085X-F03-2	start run end	5929 (4373) 2706 (1996) 3705 (2732)												1.3	
LHS-25A-090X-F03-2	start run end	5929 (4373) 2706 (1996) 3705 (2732)												1.6	
LHS-25A-100X-F03-2	start run end	5929 (4373) 2706 (1996) 3705 (2732)												2.0	
LHS-25A-110X-F03-2	start run end	5929 (4373) 2706 (1996) 3705 (2732)												2.4	
LHS-25A-120X-F03-2	start run end	5929 (4373) 2706 (1996) 3705 (2732)												2.9	
LHS-25A-130X-F03-2	start run end	5929 (4373) 2706 (1996) 3705 (2732)												3.3	
LHS-25A-140X-F03-2	start run end	5929 (4373) 2706 (1996) 3705 (2732)												3.9	
LHS-25A-075X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												207 (3000)	
LHS-25A-080X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												1.1	
LHS-25A-085X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												1.3	
LHS-25A-090X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												1.6	
LHS-25A-100X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												2.0	
LHS-25A-110X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												2.4	
LHS-25A-120X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												2.9	
LHS-25A-130X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												3.3	
LHS-25A-140X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												3.9	
LHS-25A-075X-F02-1	start run end	5259 (3534) 2706 (1996) 3705 (2732)												207 (3000)	
LHS-25A-080X-F02-1	start run end	5259 (3534) 2706 (1996) 3705 (2732)												1.1	
LHS-25A-085X-F02-1	start run end	5259 (3534) 2706 (1996) 3705 (2732)												1.3	
LHS-25A-090X-F02-1	start run end	5259 (3534) 2706 (1996) 3705 (2732)												1.6	
LHS-25A-100X-F02-1	start run end	5259 (3534) 2706 (1996) 3705 (2732)												2.0	
LHS-25A-110X-F02-1	start run end	5259 (3534) 2706 (1996) 3705 (2732)												2.4	
LHS-25A-120X-F02-1	start run end	5259 (3534) 2706 (1996) 3705 (2732)												2.9	
LHS-25A-130X-F02-1	start run end	5259 (3534) 2706 (1996) 3705 (2732)												3.3	
LHS-25A-140X-F02-1	start run end	5259 (3534) 2706 (1996) 3705 (2732)												3.9	
LHS-25A-075X-F01-4	start run end	5259 (3534) 2706 (1996) 3705 (2732)												207 (3000)	
LHS-25A-080X-F01-4	start run end	5259 (3534) 2706 (1996) 3705 (2732)												1.1	
LHS-25A-085X-F01-4	start run end	5259 (3534) 2706 (1996) 3705 (2732)												1.3	
LHS-25A-090X-F01-4	start run end	5259 (3534) 2706 (1996) 3705 (2732)												1.6	
LHS-25A-100X-F01-4	start run end	5259 (3534) 2706 (1996) 3705 (2732)												2.0	
LHS-25A-110X-F01-4	start run end	5259 (3534) 2706 (1996) 3705 (2732)												2.4	
LHS-25A-120X-F01-4	start run end	5259 (3534) 2706 (1996) 3705 (2732)												2.9	
LHS-25A-130X-F01-4	start run end	5259 (3534) 2706 (1996) 3705 (2732)												3.3	
LHS-25A-140X-F01-4	start run end	5259 (3534) 2706 (1996) 3705 (2732)												3.9	
LHS-25A-075X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												207 (3000)	
LHS-25A-080X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												1.1	
LHS-25A-085X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												1.3	
LHS-25A-090X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												1.6	
LHS-25A-100X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												2.0	
LHS-25A-110X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												2.4	
LHS-25A-120X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												2.9	
LHS-25A-130X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												3.3	
LHS-25A-140X-F02-2	start run end	5259 (3534) 2706 (1996) 3705 (2732)												3.9	

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)

Actuator Model	LHS-25A 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)				
LHS-25A-075X-FO3-3	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)	L		
LHS-25A-075X-FO3-3	start	7353 (5423)															
LHS-25A-075X-FO3-3	run	3316 (2446)															
LHS-25A-075X-FO3-3	end	4453 (3284)															
LHS-25A-080X-FO3-3	start	7353 (5423)															
LHS-25A-080X-FO3-3	run	3316 (2446)															
LHS-25A-080X-FO3-3	end	4453 (3284)															
LHS-25A-085X-FO3-3	start	7353 (5423)															
LHS-25A-085X-FO3-3	run	3316 (2446)															
LHS-25A-085X-FO3-3	end	4453 (3284)															
LHS-25A-090X-FO3-3	start	7353 (5423)															
LHS-25A-090X-FO3-3	run	3316 (2446)															
LHS-25A-090X-FO3-3	end	4453 (3284)															
LHS-25A-100X-FO3-3	start	7353 (5423)															
LHS-25A-100X-FO3-3	run	3316 (2446)															
LHS-25A-100X-FO3-3	end	4453 (3284)															
LHS-25A-110X-FO3-3	start	7353 (5423)															
LHS-25A-110X-FO3-3	run	3316 (2446)															
LHS-25A-110X-FO3-3	end	4453 (3284)															
LHS-25A-120X-FO3-3	start	7353 (5423)															
LHS-25A-120X-FO3-3	run	3316 (2446)															
LHS-25A-120X-FO3-3	end	4453 (3284)															
LHS-25A-130X-FO3-3	start	7353 (5423)															
LHS-25A-130X-FO3-3	run	3316 (2446)															
LHS-25A-130X-FO3-3	end	4453 (3284)															
LHS-25A-140X-FO3-3	start	7353 (5423)															
LHS-25A-140X-FO3-3	run	3316 (2446)															
LHS-25A-140X-FO3-3	end	4453 (3284)															
LHS-25A-075X-FO2-3	start	8052 (5939)															
LHS-25A-075X-FO2-3	run	3538 (2609)															
LHS-25A-075X-FO2-3	end	4543 (3351)															
LHS-25A-080X-FO2-3	start	8052 (5939)															
LHS-25A-080X-FO2-3	run	3538 (2609)															
LHS-25A-080X-FO2-3	end	4543 (3351)															
LHS-25A-085X-FO2-3	start	8052 (5939)															
LHS-25A-085X-FO2-3	run	3538 (2609)															
LHS-25A-085X-FO2-3	end	4543 (3351)															
LHS-25A-090X-FO2-3	start	8052 (5939)															
LHS-25A-090X-FO2-3	run	3538 (2609)															
LHS-25A-090X-FO2-3	end	4543 (3351)															
LHS-25A-100X-FO2-3	start	8052 (5939)															
LHS-25A-100X-FO2-3	run	3538 (2609)															
LHS-25A-100X-FO2-3	end	4543 (3351)															
LHS-25A-110X-FO2-3	start	8052 (5939)															
LHS-25A-110X-FO2-3	run	3538 (2609)															
LHS-25A-110X-FO2-3	end	4543 (3351)															
LHS-25A-120X-FO2-3	start	8052 (5939)															
LHS-25A-120X-FO2-3	run	3538 (2609)															
LHS-25A-120X-FO2-3	end	4543 (3351)															
LHS-25A-130X-FO2-3	start	8052 (5939)															
LHS-25A-130X-FO2-3	run	3538 (2609)															
LHS-25A-130X-FO2-3	end	4543 (3351)															
LHS-25A-140X-FO2-3	start	8052 (5939)															
LHS-25A-140X-FO2-3	run	3538 (2609)															
LHS-25A-140X-FO2-3	end	4543 (3351)															
LHS-25A-075X-FO4-1	start	8269 (6099)															
LHS-25A-075X-FO4-1	run	3787 (2789)															
LHS-25A-075X-FO4-1	end	5212 (3844)															
LHS-25A-080X-FO4-1	start	8269 (6099)															
LHS-25A-080X-FO4-1	run	3787 (2789)															
LHS-25A-080X-FO4-1	end	5212 (3844)															
LHS-25A-085X-FO4-1	start	8269 (6099)															
LHS-25A-085X-FO4-1	run	3787 (2789)															
LHS-25A-085X-FO4-1	end	5212 (3844)															
LHS-25A-090X-FO4-1	start	8269 (6099)															
LHS-25A-090X-FO4-1	run	3787 (2789)															
LHS-25A-090X-FO4-1	end	5212 (3844)															
LHS-25A-100X-FO4-1	start	8269 (6099)															
LHS-25A-100X-FO4-1	run	3787 (2789)															
LHS-25A-100X-FO4-1	end	5212 (3844)															
LHS-25A-110X-FO4-1	start	8269 (6099)															
LHS-25A-110X-FO4-1	run	3787 (2789)															
LHS-25A-110X-FO4-1	end	5212 (3844)															
LHS-25A-120X-FO4-1	start	8269 (6099)															
LHS-25A-120X-FO4-1	run	3787 (2789)															
LHS-25A-120X-FO4-1	end	5212 (3844)															
LHS-25A-130X-FO4-1	start	8269 (6099)															
LHS-25A-130X-FO4-1	run	3787 (2789)															
LHS-25A-130X-FO4-1	end	5212 (3844)															
LHS-25A-140X-FO4-1	start	8269 (6099)															
LHS-25A-140X-FO4-1	run	3787 (2789)															
LHS-25A-140X-FO4-1	end	5212 (3844)															
LHS-25A-075X-FO3-4	start	8274 (6287)															
LHS-25A-075X-FO3-4	run	3866 (2851)															
LHS-25A-075X-FO3-4	end	5237 (3863)															
LHS-25A-080X-FO3-4	start	8274 (6287)															
LHS-25A-080X-FO3-4	run	3866 (2851)															
LHS-25A-080X-FO3-4	end	5237 (3863)															
LHS-25A-085X-FO3-4	start	8274 (6287)															
LHS-25A-085X-FO3-4	run	3866 (2851)															
LHS-25A-085X-FO3-4	end	5237 (3863)															
LHS-25A-090X-FO3-4	start	8274 (6287)															
LHS-25A-090X-FO3-4	run	3866 (2851)															
LHS-25A-090X-FO3-4	end	5237 (3863)															
LHS-25A-100X-FO3-4	start	8274 (6287)															
LHS-25A-100X-FO3-4	run	3866 (2851)															
LHS-25A-100X-FO3-4	end	5237 (3863)															
LHS-25A-110X-FO3-4	start	8274 (6287)															
LHS-25A-110X-FO3-4	run	3866 (2851)															
LHS-25A-110X-FO3-4	end	5237 (3863)															
LHS-25A-120X-FO3-4	start	8274 (6287)															
LHS-25A-120X-FO3-4	run	3866 (2851)															
LHS-25A-120X-FO3-4	end	5237 (3863)</td															



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)

Actuator Model	LHS-25A SYMMETRIC ACTUATOR (continued)																										
	Spring Torque	Output Torque Nm (ft-lb) @ supply pressure												Max Operating Pressure	Swept Volume												
		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-25A-075X-FO4-2	9693 (7140) run end 5960 (4396)	4397 (3243) 4397 (3243) 5960 (4396)												9492 (1798) 2499 (1837) 3265 (1745)	7945 (5860) 3454 (5255) 3819 (5166) 4327 (3129)	207 (3000)	1.1										
	9693 (7140) run end 5960 (4396)	4397 (3243) 4397 (3243) 5960 (4396)												6641 (4898) 2572 (1897) 2352 (1735)	8294 (6118) 3500 (2582) 4420 (3267) 4167 (3074)	9948 (7337) 4754 (3507) 7952 (5865)	10526 (7764) 12732 (6391) 5094 (4421) 8605 (6347)	207 (3000)	1.3								
	9693 (7140) run end 5960 (4396)	4397 (3243) 4397 (3243) 5960 (4396)												6479 (4779) 8346 (6156) 3295 (2603) 2419 (3112)	2481 (1830) 10213 (7532) 5329 (4080) 6096 (4488)	12247 (9033) 12079 (8909) 5721 (4220) 8120 (5989)	14340 (10576) 12732 (6391) 6897 (5087) 10213 (7533)	15072 (11117) 7308 (5390) 10945 (8073)	207 (3000)	1.4							
LHS-25A-080X-FO4-2	9693 (7140) run end 5960 (4396)	4397 (3243) 4397 (3243) 5960 (4396)												8062 (5946) 10154 (7489) 3370 (2485) 3935 (2902)	104081 (10386) 8914 (6575) 5455 (3353) 7371 (5436)	11498 (8480) 12079 (8909) 5300 (3909) 9554 (7342)	16665 (12291) 12079 (8909) 8203 (6050) 12538 (9247)	15072 (11117) 12732 (6391) 6897 (5087) 10213 (7533)	199 (2880)	1.6							
	9693 (7140) run end 5960 (4396)	4397 (3243) 4397 (3243) 5960 (4396)												6331 (4669) 2397 (1768) 3204 (2026)	7623 (5622) 3123 (2303) 4396 (4488)	8914 (6575) 12170 (8974) 5678 (4188)	12247 (9033) 12079 (8909) 5721 (4220) 8120 (5989)	14340 (10576) 12732 (6391) 6897 (5087) 10213 (7533)	199 (2880)	2.0							
	9693 (7140) run end 5960 (4396)	4397 (3243) 4397 (3243) 5960 (4396)												7480 (5517) 3043 (2245)	3921 (2892) 4799 (3540)	10606 (7823) 12170 (8974)	15296 (11281) 18422 (13587)	19100 (6778) 11619 (8238)	164 (2376)	2.4							
LHS-25A-100X-FO4-2	9693 (7140) run end 5960 (4396)	4397 (3243) 4397 (3243) 5960 (4396)												3354 (2473) 4917 (3626)	4800 (4779)	10406 (7823) 8043 (5932)	11169 (10543)	14295 (10543)	138 (2002)	2.9							
	9693 (7140) run end 5960 (4396)	4397 (3243) 4397 (3243) 5960 (4396)												6434 (4746) 2455 (1811) 3500 (2582)	8294 (6118) 4545 (3353) 5590 (4123)	10154 (7489) 6027 (4446) 7888 (5818)	12015 (8861) 6635 (4894) 7948 (7190)	13875 (10233) 15735 (11605)	7681 (5665) 11608 (8561)	138 (2002)	2.9						
	9693 (7140) run end 5960 (4396)	4397 (3243) 4397 (3243) 5960 (4396)												6512 (4903) 1095 (5913) 1095 (5913)	1095 (5913) 4992 (4049) 6178 (4557)	1095 (5913) 15265 (5461)	17427 (12853)	8631 (6366) 13300 (9810)	1117 (1703)	3.3							
LHS-25A-110X-FO4-2	9693 (7140) run end 5960 (4396)	4397 (3243) 4397 (3243) 5960 (4396)												3285 (1759) 6751 (9797)	4558 (3369) 9324 (5898)	1117 (1819)	13300 (9810)	1117 (1703)	101 (1466)	3.9							
	9693 (7140) run end 5960 (4396)	4397 (3243) 4397 (3243) 5960 (4396)												3675 (2710) 5097 (3759)	11136 (8214) 6519 (4808)	13668 (10081) 7942 (5858)	16200 (11948) 9364 (6807)	18732 (13816) 12073 (10722)	7078 (5221) 2697 (2400) 2524 (1862)	7587 (5596) 2983 (2200) 3033 (2237)	101 (1466)	3.9					
	9693 (7140) run end 5960 (4396)	4397 (3243) 4397 (3243) 5960 (4396)												4477 (3302)	9541 (7037)	12073 (8904)	14605 (10722)	11169 (8238)	101 (1466)	3.9							
LHS-25A-075X-FO4-3	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															7078 (5221) 2697 (2400) 2524 (1862)	7587 (5596) 2983 (2200) 3033 (2237)	107 (3000)	1.1							
	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	2893 (2134) 3938 (2905) 4873 (2119)	10864 (8013) 6892 (4049) 7472 (3911)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	9080 (6697) 4147 (3059) 5105 (3765)	207 (3000)	1.3			
	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	11865 (8751) 5387 (3973) 7311 (5392)	207 (3000)	1.4			
LHS-25A-080X-FO4-3	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	14205 (10477) 6701 (4942) 9651 (7118)	207 (3000)	1.6			
	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	205 (2972)	2.0				
	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	14205 (10477) 6701 (4942) 9651 (7118)	205 (2972)	2.0			
LHS-25A-085X-FO4-3	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	11865 (8751) 5387 (3973) 7311 (5392)	207 (3000)	1.4			
	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	11865 (8751) 5387 (3973) 7311 (5392)	207 (3000)	1.4			
	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	14205 (10477) 6701 (4942) 9651 (7118)	207 (3000)	1.4			
LHS-25A-090X-FO4-3	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	14205 (10477) 6701 (4942) 9651 (7118)	207 (3000)	1.4			
	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	14205 (10477) 6701 (4942) 9651 (7118)	207 (3000)	1.4			
	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	14205 (10477) 6701 (4942) 9651 (7118)	207 (3000)	1.4			
LHS-25A-110X-FO4-3	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	14205 (10477) 6701 (4942) 9651 (7118)	207 (3000)	1.4			
	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	14205 (10477) 6701 (4942) 9651 (7118)	207 (3000)	1.4			
	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	14205 (10477) 6701 (4942) 9651 (7118)	207 (3000)	1.4			
LHS-25A-140X-FO4-3	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	14205 (10477) 6701 (4942) 9651 (7118)	105 (1517)	3.9			
	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	14205 (10477) 6701 (4942) 9651 (7118)	105 (1517)	3.9			
	10864 (8013) run end 6744 (4974)	4946 (3648) 4946 (3648) 6744 (4974)															10864 (8013) 4946 (3648) 6744 (4974)	3946 (2576)	10864 (8013)	10907 (9594)	7427 (5478) 3829 (2134) 2873 (2119)	14205 (10477) 6701 (4942) 9651 (7118)	105 (1517)	3.9			
LHS-25A-080X-FO4-4	11619 (8569) run end 7386 (5447)	5338 (3937) 5338 (3937) 7386 (5447)															11619 (8569) run end 7386 (5447)	5338 (3937) 3900 (2876)	10438 (7699) 4550 (3285) 5760 (4248)	12298 (9071) 5595 (4127) 9480 (4892)	11458 (10443) 6640 (4893) 1206 (8855)	9221 (7218) 4260 (3140) 10410 (7678)	12763 (6228) 4586 (3383) 3958 (2919)	8371 (6174) 3389 (2499) 3693 (2724)	8950 (6601) 3714 (2739) 4272 (3151)	207 (3000)	1.3
	11619 (8569) run end 7386 (5447)	5338 (3937) 5338 (3937) 7386 (5447)															11619 (8569) run end 7386 (5447)	5338 (3937) 3900 (2876)	10438 (7699) 4550 (3285) 5760 (4248)	12298 (9071) 5595 (4127) 9480 (4892)	11458 (10443) 6640 (4893) 1206 (8855)	9221 (7218) 4260 (3140) 10410 (7678)	12763 (6228) 4586 (3383) 3958 (2919)	8371 (6174) 3389 (2499) 3693 (2724)	8950 (6601) 3714 (2739) 4272 (3151)	207 (3000)	1.3
	11619 (8569) run end 7386 (5447)	5338 (3937) 5338 (3937) 7386 (5447)															11619 (8569) run end 7386 (5447)	5338 (3937) 3900 (2876)	10438 (7699) 4550 (3285) 5760 (4248)	12298 (9071) 5595 (4127) 9480 (4892)	11458 (10443) 6640 (4893) 1206 (8855)	9221 (7218) 4260 (3140) 10410 (7678)	12763 (6228) 4586 (3383) 3958 (2919)	8371 (6174) 3389 (2499) 3693 (2724)	8950 (6601) 3714 (2739) 4272 (3151)	207 (3000)	1.3
LHS-25A-085X-FO4-4	11619 (8569) run end 7386 (5447)	5338 (3937) 5338 (3937) 7386 (5447)</																									

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) barg (PSIG)	70 (1015) barg (PSIG)	80 (1160) barg (PSIG)	90 (1305) barg (PSIG)	100 (1450) barg (PSIG)	110 (1595) barg (PSIG)	120 (1740) barg (PSIG)	140 (2031) barg (PSIG)	160 (2321) barg (PSIG)	180 (2611) barg (PSIG)	200 (2901) barg (PSIG)	207 (3000) 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) barg (PSIG)	70 (1015) barg (PSIG)	80 (1160) barg (PSIG)	90 (1305) barg (PSIG)	100 (1450) barg (PSIG)	110 (1595) barg (PSIG)	120 (1740) barg (PSIG)	140 (2031) barg (PSIG)	160 (2321) barg (PSIG)	180 (2611) barg (PSIG)	200 (2901) barg (PSIG)	207 (3000) 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)			
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) 2115 (1560) 3388 (2499)	3765 (2777) 2189 (1614) 3765 (2777)	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) 3648 (2691) 5019 (3702)	5647 (4165) 6274 (4628) 5647 (4165)	6274 (4628) 6494 (4790) 6274 (4628)	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 (2288) 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) 3344 (2467) 5412 (3991)	5953 (4390) 3648 (2691) 5953 (4390)	6494 (4790) 4256 (3139) 6494 (4790)	7576 (5588) 5756 (5588) 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 (2838) 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) 4309 (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)			
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 (1297) 749 (552) 1086 (801)	2233 (1647) 824 (608) 1195 (881)	2436 (1797) 1163 (858) 1303 (961)	2842 (2096) 1269 (936) 1521 (1121)	3248 (2395) 1480 (1092) 1738 (1282)	3654 (2695) 5654 (4171) 1955 (1442)	4060 (2994) 1903 (1404) 2172 (1602)	4202 (3099) 5170 (3813) 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) 1057 (780) 1380 (1018)	2866 (2114) 1057 (780) 1533 (1131)	3152 (2325) 1687 (1244) 1687 (1244)	3439 (2536) 1840 (1357) 2147 (1583)	4012 (2959) 2115 (1560) 2453 (1809)	4585 (3382) 2115 (1560) 2760 (2036)	5158 (3805) 1903 (1404) 3067 (2262)	5731 (4227) 2189 (1614) 3174 (2341)	5932 (4375) 100 (1458)	207 (3000)	0.5
LHS-20C-065X-D1	start run end	2866 (1362) 1057 (780) 1533 (1131)	3343 (2466) 1234 (910) 1789 (1319)	3821 (2818) 1410 (1040) 2044 (1508)	4299 (3170) 1176 (1300) 2300 (1696)	4776 (3523) 1939 (1430) 2556 (1885)	5254 (3875) 2115 (1560) 2811 (2073)	5731 (4227) 2467 (1820) 3067 (2262)	6687 (4932) 2467 (1820) 3578 (2639)	7642 (5636) 2820 (2080) 4089 (3016)	8597 (6341) 3172 (2340) 4600 (3939)	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) 1824 (1345) 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) 3243 (2467) 4123 (3041)	8406 (6200) 3648 (2691) 4498 (3317)	9807 (7233) 3619 (2669) 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) 7415 (5469) 3527 (2601)	8239 (6077) 10945 (8073) 4048 (3251)	9063 (6684) 9887 (7292) 4849 (3849)							134 (1936)	1.1	
LHS-20C-090X-D1	start run end	6567 (4844) 2423 (1787) 3514 (2592)	8756 (6458) 2827 (2085) 4099 (3024)	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	

Table 29: Torque Table – LHS-25A – Double Acting – Symmetric

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

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

Actuator Model	LHS-25A 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)	L		
LHS-25A-075X-D1	start run end	2790 (2058) 1568 (1156) 2790 (2058)	3255 (2401) 1829 (1349) 3255 (2401)	3720 (2744) 2090 (1542) 3720 (2744)	4185 (3087) 2351 (1734) 4185 (3087)	4650 (3430) 2613 (1927) 4650 (3430)	5115 (3773) 2874 (2120) 5115 (3773)	5580 (4116) 6510 (4802) 5580 (4116)	6510 (4802) 7441 (5488) 6510 (4802)	8371 (6174) 9301 (6860) 8371 (6174)	9301 (6860) 9626 (7100) 9301 (6860)	9626 (7100) 5408 (3989) 9626 (7100)	207 (3000)	1.1		
LHS-25A-080X-D1	start run end	3391 (2501) 1905 (1405) 3391 (2501)	3956 (2918) 2222 (1639) 3956 (2918)	4521 (3335) 2540 (1873) 4521 (3335)	5086 (3751) 2857 (2108) 5086 (3751)	5651 (4168) 3175 (2342) 5651 (4168)	6217 (4585) 3492 (2576) 6217 (4585)	6782 (5002) 3810 (2810) 6782 (5002)	7912 (5836) 5080 (3747) 7912 (5836)	9042 (6669) 5715 (4215) 9042 (6669)	10173 (7503) 6350 (4683) 10173 (7503)	11303 (8337) 6572 (4847) 11303 (8337)	11699 (8628) 6350 (4683) 11699 (8628)	207 (3000)	1.3	
LHS-25A-085X-D1	start run end	4030 (2973) 2264 (1670) 4030 (2973)	4702 (3468) 2642 (1948) 4702 (3468)	5374 (3963) 3019 (2227) 5374 (3963)	6045 (4459) 3396 (2505) 6045 (4459)	6717 (4954) 3774 (2783) 6717 (4954)	7389 (5450) 4151 (3062) 7389 (5450)	8061 (5945) 4528 (3340) 8061 (5945)	9404 (6936) 6038 (4453) 9404 (6936)	10747 (7927) 7457 (5567) 10747 (7927)	12091 (8918) 6793 (5010) 12091 (8918)	13434 (9909) 7812 (5761) 13434 (9909)	13905 (10255) 13905 (10255)	207 (3000)	1.4	
LHS-25A-090X-D1	start run end	4708 (3473) 2645 (1951) 4708 (3473)	5493 (4052) 3086 (2276) 5493 (4052)	5272 (4630) 3968 (2927) 6278 (4630)	5209 (4052) 4409 (3252) 5209 (4052)	4850 (3577) 5290 (3902) 4850 (3577)	6172 (4552) 7054 (5203) 6172 (4552)	7936 (5853) 7936 (5853) 7936 (5853)	10986 (8103) 8103 (5976) 10986 (8103)	14125 (10418) 9260 (6830) 14125 (10418)	15695 (11576) 10418 (7684) 15695 (11576)	16244 (11981) 9126 (6731) 16244 (11981)	207 (3000)	1.6		
LHS-25A-100X-D1	start run end	6181 (4559) 3473 (2611) 6181 (4559)	7211 (5319) 4051 (2988) 7211 (5319)	8241 (6079) 4630 (3415) 8241 (6079)	9272 (6838) 5209 (3842) 9272 (6838)	10302 (7598) 5788 (4269) 10302 (7598)	11332 (8358) 6366 (4966) 11332 (8358)	12362 (9118) 6455 (5122) 12362 (9118)	14423 (10637) 8241 (6079) 14423 (10637)	16483 (12157) 9260 (13439) 16483 (12157)	18543 (13677) 10418 (7684) 18543 (13677)		184 (2675)	2.0		
LHS-25A-110X-D1	start run end	7809 (5759) 4387 (3236) 7809 (5759)	9110 (6719) 5118 (3775) 9110 (6719)	10412 (7679) 5849 (4314) 10412 (7679)	1063 (8639) 6580 (4853) 1063 (8639)	13014 (9599) 7312 (5393) 13014 (9599)	14316 (10559) 8043 (5932) 14316 (10559)	15617 (11519) 8774 (6471) 15617 (11519)	15617 (11519) 10236 (7550) 18220 (13439)				146 (2117)	2.4		
LHS-25A-120X-D1	start run end	9591 (7074) 5388 (3974) 9591 (7074)	11190 (8253) 7185 (5299) 11190 (8253)	12788 (9432) 7185 (5299) 12788 (9432)	14387 (10611) 8083 (5961) 14387 (10611)	15986 (11790) 8978 (7286) 15986 (11790)	17584 (12969) 8103 (5976) 17584 (12969)						119 (1724)	2.9		
LHS-25A-130X-D1	start run end	11529 (8503) 6477 (4777) 11529 (8503)	13450 (9921) 7556 (5573) 13450 (9921)	15372 (11338) 3019 (2227) 15372 (11338)	17293 (12755) 9715 (7166) 17293 (12755)								99 (1434)	3.3		
LHS-25A-140X-D1	start run end	13622 (10047) 7653 (5644) 13622 (10047)	15892 (11721) 8928 (6585) 15892 (11721)	18162 (13396) 10203 (7526) 18162 (13396)									84 (1214)	3.9		

Table 30: Torque Table – LHS-25C – Double Acting – Canted

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												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)	L		
LHS-25C-075X-D1	start run end	4248 (3133) 1568 (1156) 2273 (1676)	4956 (3655) 1829 (1349) 2652 (1956)	5664 (4178) 2351 (1734) 3031 (2235)	6372 (4700) 2613 (1927) 3409 (2515)	7080 (5222) 2874 (2120) 3788 (2794)	7788 (5744) 4172 (4552) 4850 (3577)	8496 (6266) 5290 (3902) 4850 (3577)	9912 (7311) 7312 (5312) 5303 (3912)	11328 (8355) 4180 (3083) 4167 (3073)	12744 (9399) 4703 (3468) 4546 (3353)	14160 (10444) 5225 (3854) 6061 (4470)	14656 (10809) 5408 (3989) 7576 (5588)	207 (3000)	1.2	
LHS-25C-080X-D1	start run end	5163 (3808) 1905 (1405) 2762 (2037)	6023 (4442) 2222 (1639) 3223 (2377)	6883 (5077) 2540 (1873) 3683 (2716)	7744 (5711) 2857 (2108) 4143 (3056)	8604 (6346) 3492 (2576) 4604 (3396)	9465 (6981) 3175 (2342) 5064 (3735)	10325 (7615) 3810 (2810) 6405 (4754)	12046 (8885) 4445 (3278) 5524 (4075)	13767 (10154) 5080 (3747) 7366 (5433)	15488 (11423) 7571 (4215) 8287 (6112)	17208 (12692) 6350 (4683) 9207 (6791)	17811 (13136) 6572 (4847) 9530 (7029)	207 (3000)	1.3	
LHS-25C-085X-D1	start run end	6136 (4526) 2264 (1670) 3283 (2421)	7159 (5280) 2642 (1948) 3830 (2825)	8181 (6034) 3019 (2227) 4377 (3229)	9204 (6789) 3396 (2505) 4925 (3632)	10227 (7543) 3774 (2783) 5472 (4036)	11249 (8297) 4151 (3062) 6019 (4439)	12272 (9051) 4528 (3340) 6566 (4843)	14317 (10560) 5283 (3897) 7661 (5650)	16363 (12068) 6038 (4453) 8755 (6457)				186 (2695)	1.5	
LHS-25C-090X-D1	start run end	7169 (5287) 2645 (1951) 3836 (2829)	8363 (6168) 3086 (2276) 4475 (3300)	9558 (7050) 3527 (2601) 5114 (3722)	10753 (7931) 3968 (2927) 5753 (4243)	11948 (8812) 4409 (3252) 6393 (4715)	13142 (6963) 4850 (3577) 7032 (5186)	14337 (10574) 5290 (3902) 6019 (4439)	16727 (12337) 6172 (4552) 8950 (6601)					159 (2307)	1.7	
LHS-25C-100X-D1	start run end	9411 (6941) 3473 (2561) 5035 (3714)	10797 (8098) 4051 (2988) 5874 (4333)	12547 (9254) 5209 (3842) 7553 (5571)	14116 (10411) 8981 (6469) 10700 (7427)	15684 (11568) 5788 (4269) 8932 (6190)	17253 (12725) 6366 (4696) 9231 (6808)	18821 (13882) 6945 (5122) 10070 (7427)						121 (1757)	2.1	
LHS-25C-110X-D1	start run end	11889 (8769) 4387 (3236) 6361 (4692)	13870 (10230) 5118 (3775) 7421 (5474)	15851 (11691) 5849 (4314) 6580 (4853)	17833 (13153) 3954 (2927) 7553 (5571)									96 (1391)	2.5	
LHS-25C-120X-D1	start run end	14603 (10770) 5388 (3974) 7813 (5763)	17036 (12565) 6286 (4637) 9115 (6723)											78 (1132)	3.0	
LHS-25C-130X-D1	start run end	17553 (12946) 6477 (4777) 9392 (6927)	18162 (13396) 10203 (7526) 15892 (11721)											65 (942)	3.5	

Dimensional Data and Weights – Single Acting

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

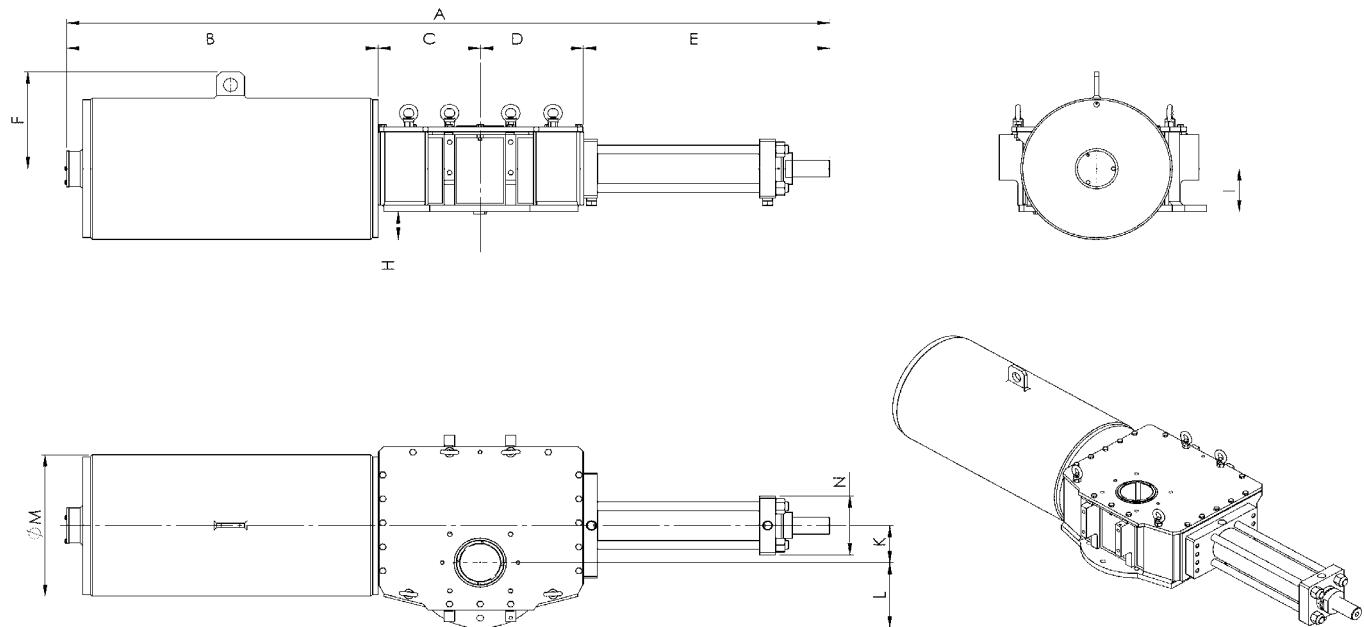


Figure 8: Dimensional Data – Single Acting – Sym/Cant – Fail Open

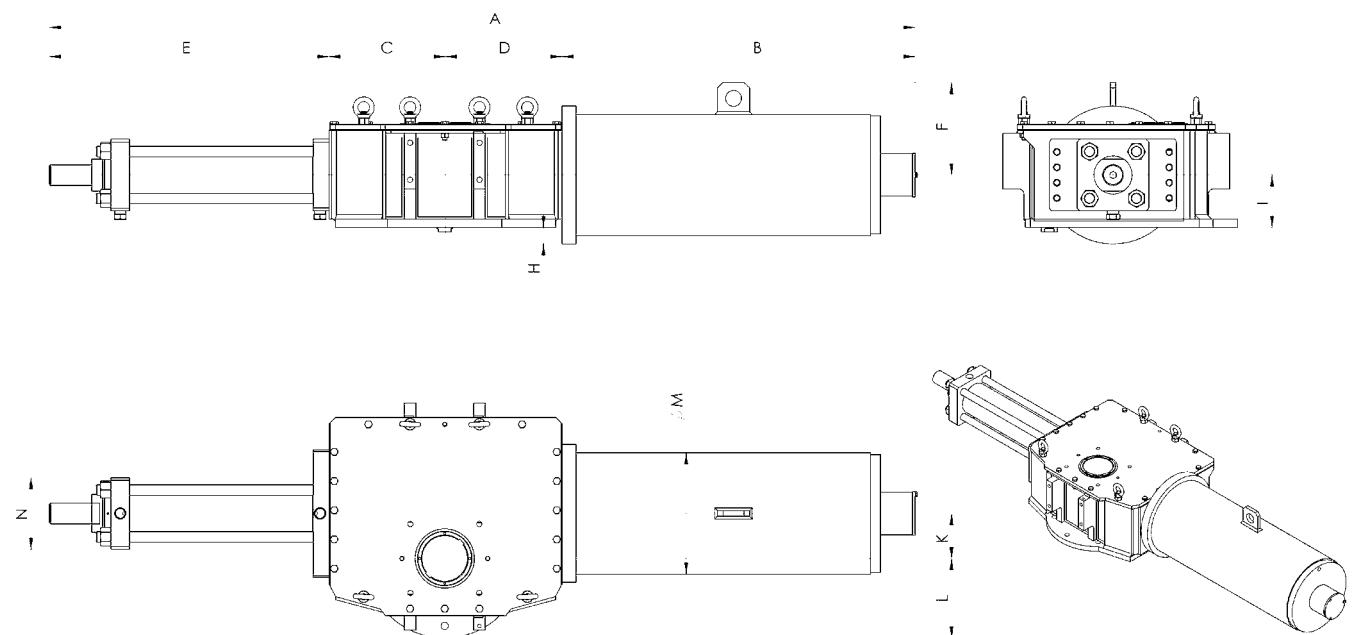


Table 31: Dimensions & Weights – LHS-15 Sym/Cant – Single Acting – Fail Close/Fail Open

TOLERANCE ±10% TO BE CONSIDERED ON DIMENSIONS

		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-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	398
		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-075Y-FC1-1	LHS-20X-075Y-FO1-1	1706	672	219	222	594	175	27	103	85	150	260	145	1/2"	182	402
		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-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	418
		67.15	26.44	8.60	8.72	23.39	6.87	1.06	4.06	3.35	5.91	10.24	6.30		*	*
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	431
		67.15	26.44	8.60	8.72	23.39	6.87	1.06	4.06	3.35	5.91	10.24	7.09		*	*
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	449
		67.93	26.44	8.60	8.72	24.17	6.87	1.06	4.06	3.35	5.91	10.24	7.48		*	*
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	528
		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-075Y-FC2-1	LHS-20X-075Y-FO2-1	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	241	533
		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-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	548
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	6.30		*	*
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	561
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	7.09		*	*
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	579
		67.32	25.83	8.60	8.72	24.17	8.74	2.32	4.06	3.35	5.91	12.44	7.48		*	*
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	533
		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-075Y-FC2-2	LHS-20X-075Y-FO2-2	1690	656	219	222	594	222	59	103	85	150	316	145	1/2"	243	537
		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-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	553
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	6.30		*	*
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	566
		66.54	25.83	8.60	8.72	23.39	8.74	2.32	4.06	3.35	5.91	12.44	7.09		*	*
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	583
		67.32	25.83	8.60	8.72	24.17	8.74	2.32	4.06	3.35	5.91	12.44	7.48		*	*

* 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	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	676	
		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-075Y-FC3-2	LHS-20X-075Y-FO3-2	1696	662	219	222	594	251	88	103	85	150	373	145	1/2"	308	681	
		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-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	696	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	6.30				
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	709	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	7.09				
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	727	
		67.56	26.06	8.60	8.72	24.17	9.86	3.44	4.06	3.35	5.91	14.69	7.48				
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	654	
		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-075Y-FC3-3	LHS-20X-075Y-FO3-3	1696	662	219	222	594	251	88	103	85	150	373	145	1/2"	298	659	
		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-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	674	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	6.30				
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	687	
		66.77	26.06	8.60	8.72	23.39	9.86	3.44	4.06	3.35	5.91	14.69	7.09				
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	705	
		67.56	26.06	8.60	8.72	24.17	9.86	3.44	4.06	3.35	5.91	14.69	7.48				

* 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

		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-FC1-1	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	625
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	5.91		*	*
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	634
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.30		*	*
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	650
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	7.09		*	*
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	672
		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-130Y-FC1-1	LHS-25X-130Y-FO1-1	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	313	692
		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-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	694
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	5.91		*	*
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	703
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.30		*	*
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	718
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	7.09		*	*
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	740
		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-130Y-FC1-2	LHS-25X-130Y-FO1-2	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	344	760
		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-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	804
		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-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	813
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.30		*	*
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	829
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	7.09		*	*
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	851
		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-130Y-FC3-1	LHS-25X-130Y-FO3-1	1888	759	249	267	614	251	73	118	105	188	374	190	1/2"	394	871
		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-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	727
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	5.91			
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	736
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.30			
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	751
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	7.09			
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	774
		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-130Y-FC1-3	LHS-25X-130Y-FO1-3	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	359	793
		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-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	705
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	5.91			
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	714
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	6.30			
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	729
		73.54	29.88	9.78	10.49	23.39	8.74	1.73	4.65	4.13	7.40	12.44	7.09			
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	751
		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-130Y-FC1-4	LHS-25X-130Y-FO1-4	1888	759	249	267	614	222	44	118	105	188	316	190	1/2"	349	771
		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-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	705
		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-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	714
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.30			
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	729
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	7.09			
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	751
		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-130Y-FC2-1	LHS-25X-130Y-FO2-1	1888	759	249	267	614	251	73	118	105	188	374	190	1/2"	349	771
		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-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

		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-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	718
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.91			
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	727
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.30			
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	743
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	7.09			
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	765
		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-130Y-FC3-2	LHS-25X-130Y-FO3-2	1927	798	249	267	614	251	73	118	105	188	374	190	1/2"	355	785
		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-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	740
		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-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	749
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.30			
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	765
		73.54	29.88	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	7.09			
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	787
		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-130Y-FC2-2	LHS-25X-130Y-FO2-2	1888	759	249	267	614	251	73	118	105	188	374	190	1/2"	365	807
		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-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	740
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	5.91			
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	749
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	6.30			
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	765
		75.08	31.42	9.78	10.49	23.39	9.86	2.85	4.65	4.13	7.40	14.72	7.09			
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	787
		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-130Y-FC3-3	LHS-25X-130Y-FO3-3	1927	798	249	267	614	251	73	118	105	188	374	190	1/2"	365	807
		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-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' PORT	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 73.54	759 29.88	249 9.78	267 10.49	594 23.39	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	145 5.71	1/2"	325	*
																*
LHS-25X-080Y-FC2-3	LHS-25X-080Y-FO2-3	1868 73.54	759 29.88	249 9.78	267 10.49	594 23.39	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	150 5.91	1/2"	727	718
																*
LHS-25X-085Y-FC2-3	LHS-25X-085Y-FO2-3	1868 73.54	759 29.88	249 9.78	267 10.49	594 23.39	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	155 6.10	1/2"	329	*
																*
LHS-25X-090Y-FC2-3	LHS-25X-090Y-FO2-3	1868 73.54	759 29.88	249 9.78	267 10.49	594 23.39	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	160 6.30	1/2"	346	329
																*
LHS-25X-100Y-FC2-3	LHS-25X-100Y-FO2-3	1868 73.54	759 29.88	249 9.78	267 10.49	594 23.39	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	170 6.69	1/2"	765	*
																*
LHS-25X-110Y-FC2-3	LHS-25X-110Y-FO2-3	1868 73.54	759 29.88	249 9.78	267 10.49	594 23.39	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	180 7.09	1/2"	355	336
																*
LHS-25X-120Y-FC2-3	LHS-25X-120Y-FO2-3	1888 74.33	759 29.88	249 9.78	267 10.49	614 24.17	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	190 7.48	1/2"	785	346
																*
LHS-25X-130Y-FC2-3	LHS-25X-130Y-FO2-3	1888 74.33	759 29.88	249 9.78	267 10.49	614 24.17	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	190 7.48	1/2"	355	*
																*
LHS-25X-140Y-FC2-3	LHS-25X-140Y-FO2-3	1888 74.33	759 29.88	249 9.78	267 10.49	614 24.17	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	190 7.48	1/2"	346	*
																*
LHS-25X-075Y-FC4-1	LHS-25X-075Y-FO4-1	1937 76.26	828 32.60	249 9.78	267 10.49	594 23.39	270 10.61	92 3.60	118 4.65	105 4.13	188 7.40	411 16.18	145 5.71	1/2"	352	*
																*
LHS-25X-080Y-FC4-1	LHS-25X-080Y-FO4-1	1937 76.26	828 32.60	249 9.78	267 10.49	594 23.39	270 10.61	92 3.60	118 4.65	105 4.13	188 7.40	411 16.18	150 5.91	1/2"	778	*
																*
LHS-25X-085Y-FC4-1	LHS-25X-085Y-FO4-1	1937 76.26	828 32.60	249 9.78	267 10.49	594 23.39	270 10.61	92 3.60	118 4.65	105 4.13	188 7.40	411 16.18	155 6.10	1/2"	356	*
																*
LHS-25X-090Y-FC4-1	LHS-25X-090Y-FO4-1	1937 76.26	828 32.60	249 9.78	267 10.49	594 23.39	270 10.61	92 3.60	118 4.65	105 4.13	188 7.40	411 16.18	160 6.30	1/2"	787	*
																*
LHS-25X-100Y-FC4-1	LHS-25X-100Y-FO4-1	1937 76.26	828 32.60	249 9.78	267 10.49	594 23.39	270 10.61	92 3.60	118 4.65	105 4.13	188 7.40	411 16.18	170 6.69	1/2"	824	*
																*
LHS-25X-110Y-FC4-1	LHS-25X-110Y-FO4-1	1937 76.26	828 32.60	249 9.78	267 10.49	594 23.39	270 10.61	92 3.60	118 4.65	105 4.13	188 7.40	411 16.18	180 7.09	1/2"	844	*
																*
LHS-25X-120Y-FC4-1	LHS-25X-120Y-FO4-1	1957 77.05	828 32.60	249 9.78	267 10.49	614 24.17	270 10.61	92 3.60	118 4.65	105 4.13	188 7.40	411 16.18	190 7.48	1/2"	824	*
																*
LHS-25X-130Y-FC4-1	LHS-25X-130Y-FO4-1	1957 77.05	828 32.60	249 9.78	267 10.49	614 24.17	270 10.61	92 3.60	118 4.65	105 4.13	188 7.40	411 16.18	190 7.48	1/2"	844	*
																*
LHS-25X-140Y-FC4-1	LHS-25X-140Y-FO4-1	1957 77.05	828 32.60	249 9.78	267 10.49	614 24.17	270 10.61	92 3.60	118 4.65	105 4.13	188 7.40	411 16.18	190 7.48	1/2"	824	*
																*
LHS-25X-075Y-FC3-4	LHS-25X-075Y-FO3-4	1907 75.08	798 31.42	249 9.78	267 10.49	594 23.39	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	145 5.71	1/2"	336	*
																*
LHS-25X-080Y-FC3-4	LHS-25X-080Y-FO3-4	1907 75.08	798 31.42	249 9.78	267 10.49	594 23.39	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	150 5.91	1/2"	789	*
																*
LHS-25X-085Y-FC3-4	LHS-25X-085Y-FO3-4	1907 75.08	798 31.42	249 9.78	267 10.49	594 23.39	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	155 6.10	1/2"	340	*
																*
LHS-25X-090Y-FC3-4	LHS-25X-090Y-FO3-4	1907 75.08	798 31.42	249 9.78	267 10.49	594 23.39	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	160 6.30	1/2"	751	*
																*
LHS-25X-100Y-FC3-4	LHS-25X-100Y-FO3-4	1907 75.08	798 31.42	249 9.78	267 10.49	594 23.39	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	166 6.69	1/2"	347	*
																*
LHS-25X-110Y-FC3-4	LHS-25X-110Y-FO3-4	1907 75.08	798 31.42	249 9.78	267 10.49	594 23.39	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	170 7.09	1/2"	767	*
																*
LHS-25X-120Y-FC3-4	LHS-25X-120Y-FO3-4	1927 75.87	798 31.42	249 9.78	267 10.49	614 24.17	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	174 7.48	1/2"	357	*
																*
LHS-25X-130Y-FC3-4	LHS-25X-130Y-FO3-4	1927 75.87	798 31.42	249 9.78	267 10.49	614 24.17	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	180 7.48	1/2"	809	*
																*
LHS-25X-140Y-FC3-4	LHS-25X-140Y-FO3-4	1927 75.87	798 31.42	249 9.78	267 10.49	614 24.17	251 9.86	73 2.85	118 4.65	105 4.13	188 7.40	374 14.72	184 7.48	1/2"	809	*
																*

* 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

		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-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	809
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	5.91			
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	818
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	6.30			
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	833
		76.26	32.60	9.78	10.49	23.39	10.61	3.60	4.65	4.13	7.40	16.18	7.09			
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

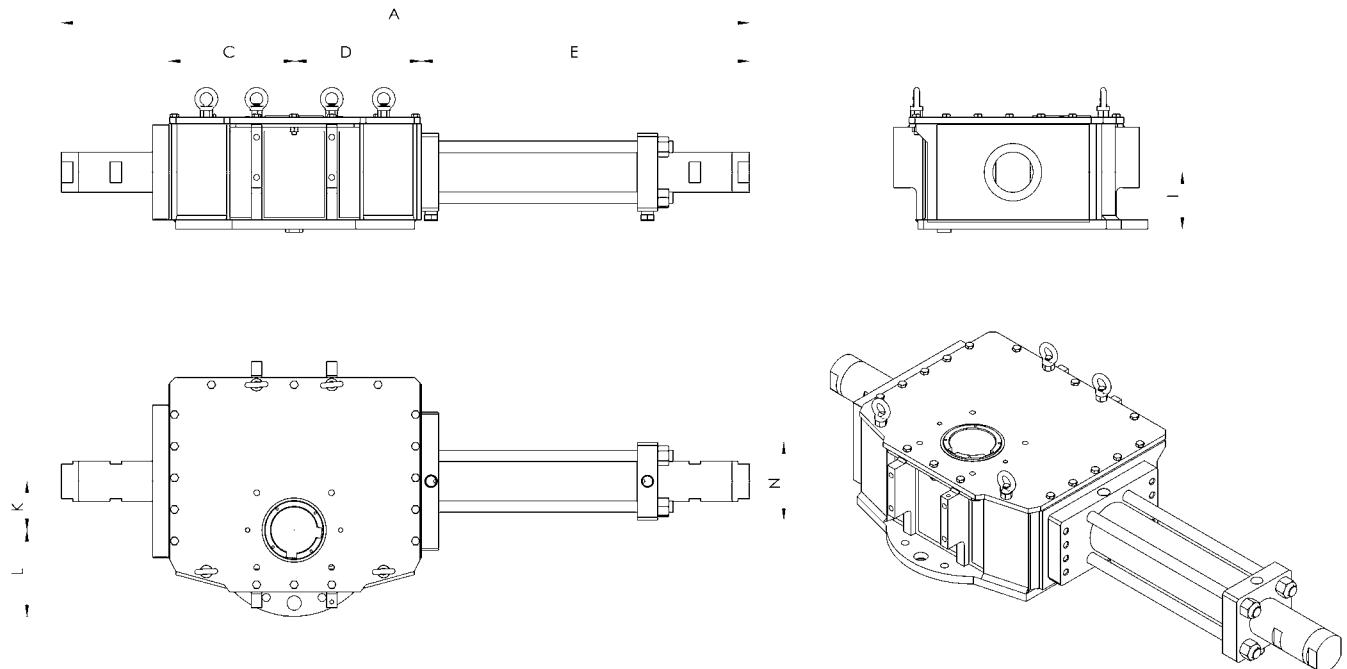


Table 41: Dimensions & Weights – LHS-15 Sym/Cant – Double Acting

TOLERANCE ±10% TO BE CONSIDERED ON DIMENSIONS

Model	Dimensions mm (in) - Kg (lbs)								'N' NPT PORT	Weight
	A	C	D	E	I	K	L	N		
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

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

* Under development. Please contact Flowserve for more information.

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

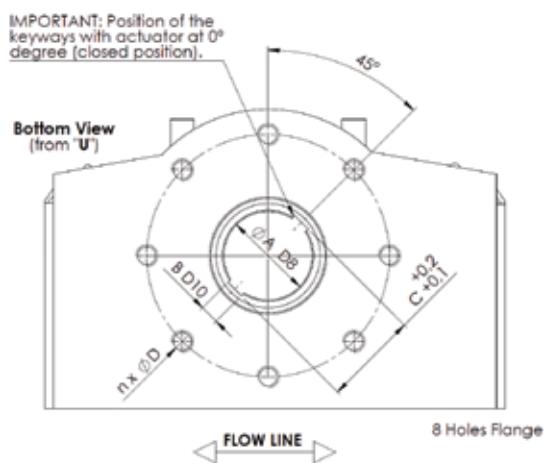
TOLERANCE ±10% TO BE CONSIDERED ON DIMENSIONS

Model	Dimensions mm (in) - Kg (lbs)									'N' NPT PORT	Weight
	A	C	D	E	I	K	L	N			
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	402
	43.66	9.78	10.49	23.39	4.65	4.13	7.40	5.91		182	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	411
	43.66	9.78	10.49	23.39	4.65	4.13	7.40	6.30		186	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	427
	43.66	9.78	10.49	23.39	4.65	4.13	7.40	7.09		193	427
LHS-25X-120Y-D1	1129	249	267	614	118	105	188	190	1/2"	203	449
	44.45	9.78	10.49	24.17	4.65	4.13	7.40	7.48		203	449
LHS-25X-130Y-D1	1129	249	267	614	118	105	188	190	1/2"	212	469
	44.45	9.78	10.49	24.17	4.65	4.13	7.40	7.48		212	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

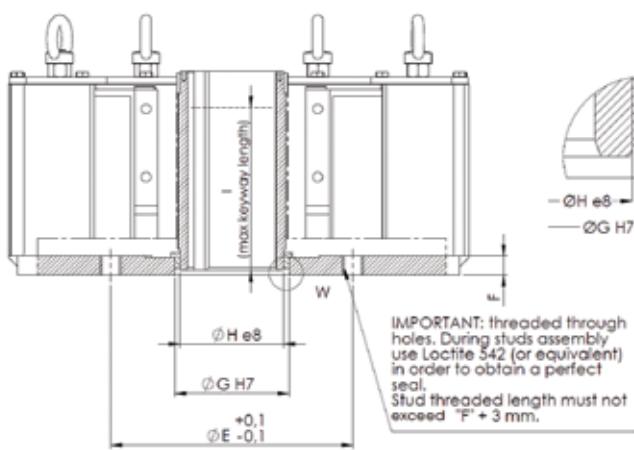
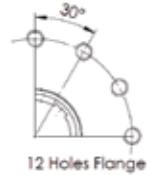
Actuator Size	ISO 5211 Flange Interface (reference)	No. of Holes	Hole Diameter	P.C.D. [mm (inch)]	Notes
LHS-15	F16	4	M20	165 (6,50)	<ul style="list-style-type: none"> • Holes in-line with axis of actuator (NOT off-center) • Flange torque different from ISO 5211 specification
LHS-20	F25	8	M16	254 (10)	<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



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

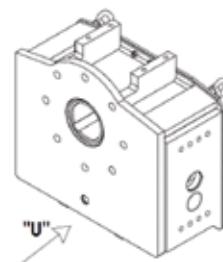
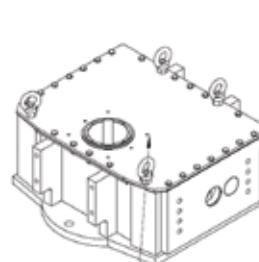
Note: the number of threaded holes (n), their size (ØD) and P.C.D. (ØE) are in accordance to ISO 5211 standard.

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



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.

Note: Dimensions are in [mm].



Service Kits

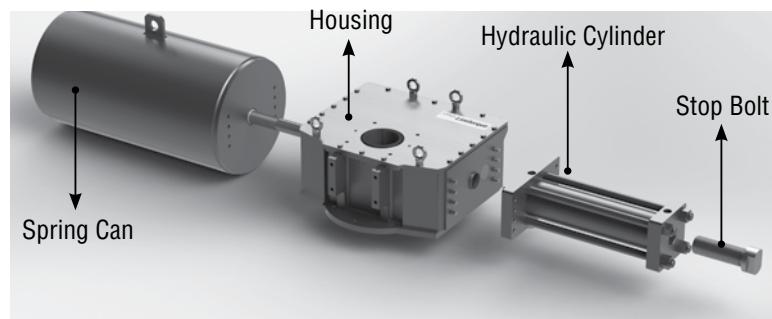


Figure 10: Single Acting Actuator

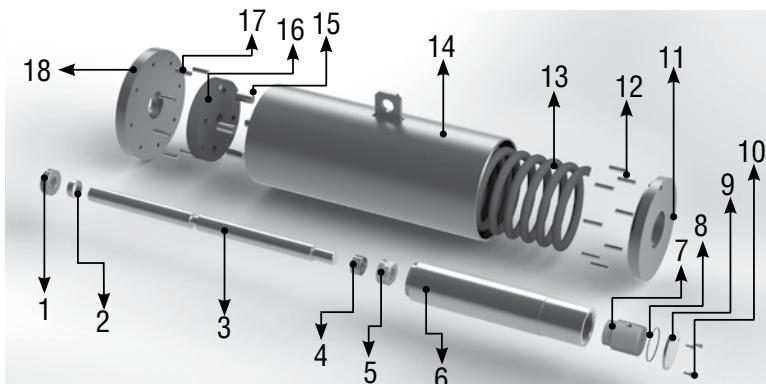


Figure 11: Spring Can Exploded View

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

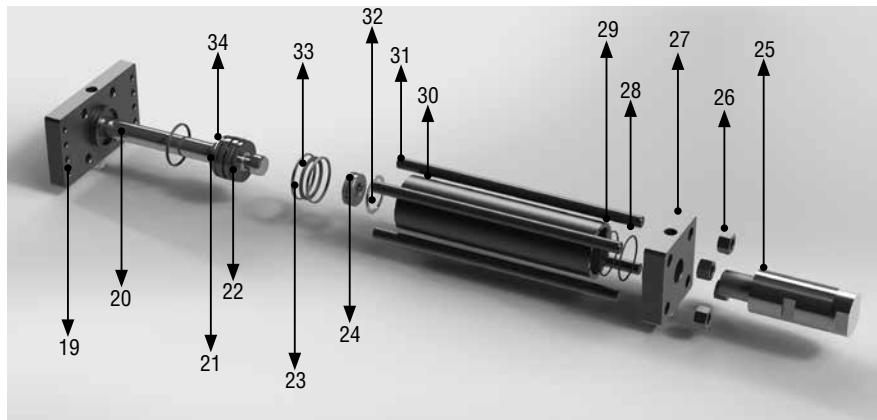


Figure 12: Exploded View of Hydraulic Cylinder

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

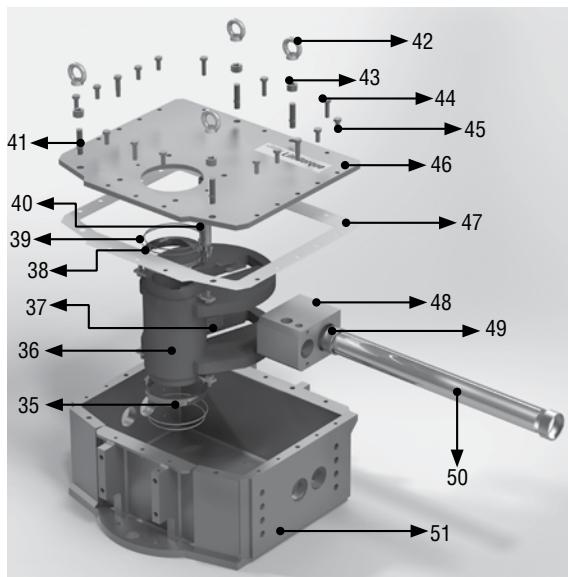


Figure 13: Exploded View of Housing

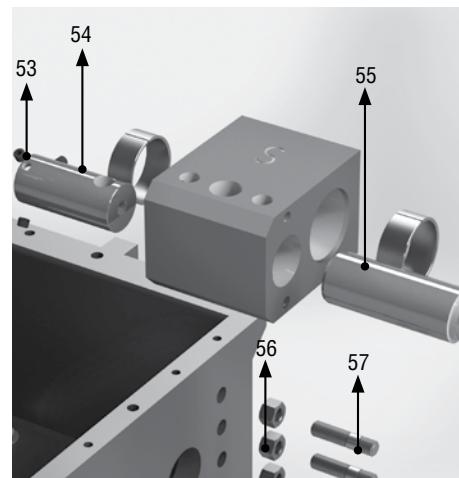


Figure 14: Exploded View of Adaptor Kit

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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