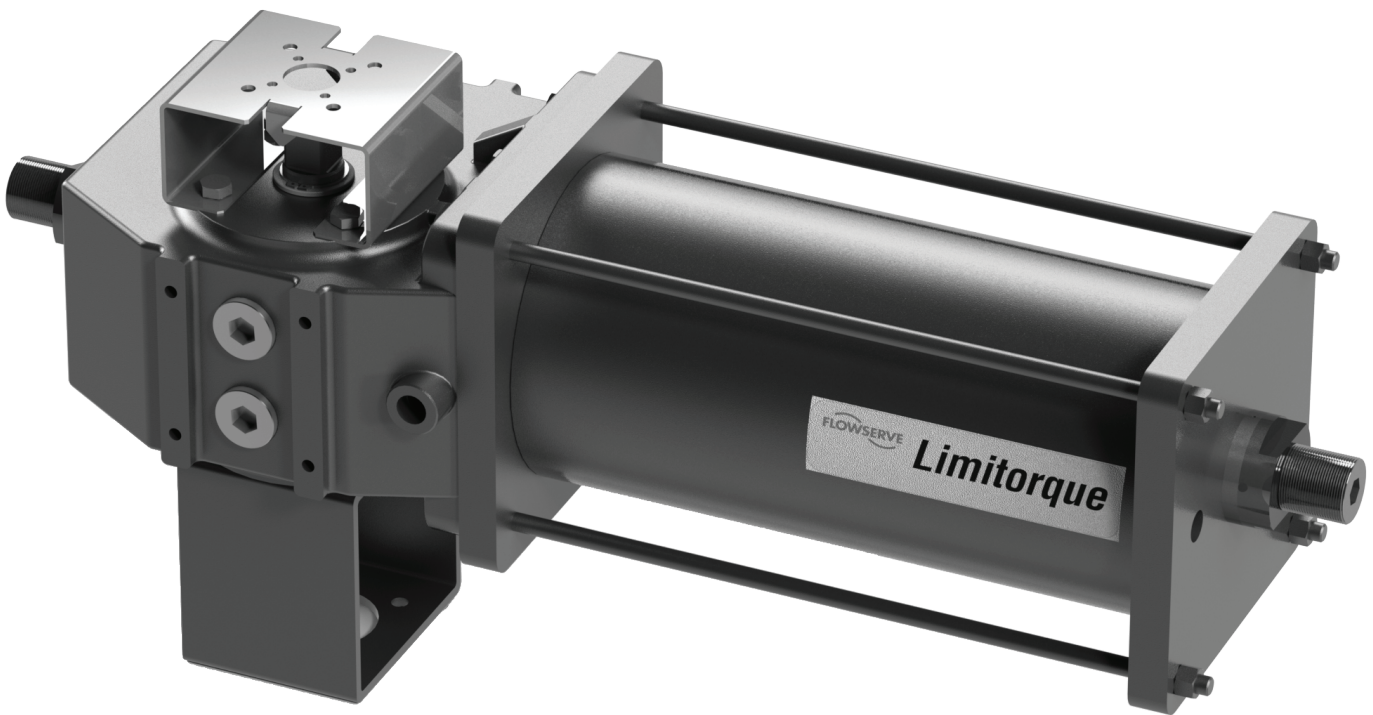


# LPC Compact Actuator Series



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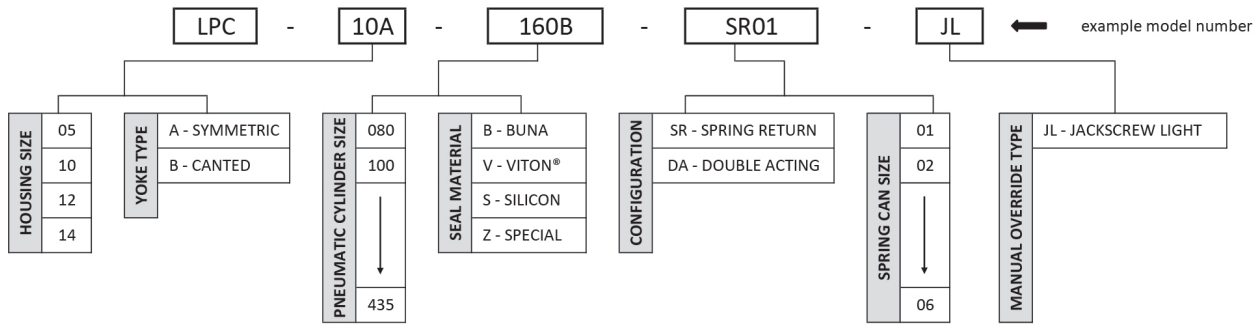
## LPC Series Compact Actuator Specifications

1. The LPC range of Limitorque Pneumatic Actuators is a robust, lightweight 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. LPC Compact actuators deliver up to 5500 Nm\* (4057 ft-lb) of precisely controlled torque. The LPC product range is complementary to the already available range of Limitorque LPS heavy-duty pneumatic Scotch yoke actuators. A similar design philosophy to the one adopted for the large heavy-duty LPS actuators has been applied to the new LPC range, bringing enhanced performance and high reliability.
3. The LPC is available in a selection of standard as well as in different and special material executions, upon request.
  - LPC housing constructed in Nodular Ductile Cast Iron; Carbon Steel or different materials of construction available upon request.
  - Carbon Steel ENP lined Cylinders; Stainless Steel Cylinders, Tie Rods and Spool Pieces available upon request
  - External Tie Rods cylinder construction; protected Tie Rods version available upon request for offshore applications
4. LPC actuators are complemented by a comprehensive range of control systems, including ESD, PST and Quick Closing options. A suite of standard controls systems is available for short delivery, but the Limitorque engineering team can design custom solutions for the largest and most complex customer requirements.
5. To complete the actuation package, LPC actuators are available with accessories such as lockout modules, dampening systems for fast-acting applications and manual overrides. Limitorque provides engineering design services for mounting hardware, ensuring that your actuation solution is ready to handle the toughest challenges.
6. The LPC 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 five 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.
7. Suitable for use in on/off, modulating and control valve application in general service, protective service and safety applications such as ESD or HIPPS.
8. The LPC is provided with square output shaft as described in “Mounting Interface Dimensions” paragraph of this Technical Bulletin. It is also available with valve adaptor interface in compliance with ISO 5211 or MSS SP-101, upon request as an option.
9. Manufactured and tested in compliance with **EN 15714-3** and **ISO 12490**, **API 6DX** and **API6A** as options.
10. Spring components are designed in compliance with **EN 13906-1**.
11. Surface coating and corrosion protection in compliance with **ISO 12944-2:2018** up to and including **CX** if requested.
12. Environmental resistance has been certified to meet or exceed the requirements of **IEC 60529**, including **IP66/66M**, **IP67/67M** and **NEMA** Standard 250 grade **4X**.
13. The LPC actuator is suitable for use in Safety Integrated Systems in accordance with **IEC 61508** up to and including **SIL Level 3**.
14. The actuator accessories in the LPC series meet the requirements of **ISO 5599-2**.
15. LPC actuators are available in accordance with **ATEX 2014/34/ EU, Ex II 2GD Ex h IIC/IIIC T6 Gb/Db**, as it relates to mechanical actuators.
16. LPC actuators are compliant with **Machinery Directive 2006/42/ EC** and are identified as “Partly completed machinery.”
17. Actuators are available in compliance with **NACE specification MR0175** for sour gas applications, upon request.
18. Shaft-driven accessories/devices are mounted to **VDE VDI 3845 NAMUR** compliant mounting locations, by means of an adaptor available upon request as an option.
19. The actuator is manufactured and tested in compliance with an **ISO 9001** Quality Assurance Program.
20. Integral travel stops provide **90°±5°** of stroke adjustment and are designed for the **MAWP** of the actuator up to **12 barg (174 PSIG)**.
21. The materials of construction and seals of the LPC 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**.

\* Contact factory for larger sizes and higher output torques

22. The pneumatic 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** (electroless nickel plating) is the standard for the internal surface of the pneumatic cylinder to ensure complete sealing and superior corrosion resistance. Other coatings for the internal surface of the cylinder are available upon request. The LPC actuator cylinders are capable of being independently tested prior to assembly.
23. Pressure modules are available upon request in compliance with:
  - a. **Pressure Equipment Directive 2014/68/EU.**
  - b. **ASME BPVC Sec. VIII Div. 1.**
  - c. **EN 13445-3, Part 3 for Unfired Pressure Vessels.**
24. All actuators and modules meet acceptance criteria defined by Flowserve test specifications.
25. The LPC is available with either a symmetric or canted Scotch yoke. Scotch yoke cants are available from 1° to 8° upon request, pending on application.
26. All modules align and mate with close-tolerance machined flanges with no exposed threaded connections.
27. The high-strength, heat-treated alloy steel guide bar is hard chrome plated for wear and corrosion protection.
28. 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.
29. 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.
30. The push-to-compress springs are safely enclosed by tie rods and positively retained on the torque module under all load conditions. Springs are 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 and coated prior to assembly to eliminate corrosion.
31. In the LPC single acting execution, the spring is located inside the pneumatic cylinder, like an integral solution.
32. The spring are self-centered within the spring module. The spring rod is guided in a self-lubricating bushing and connected to the torque module. Installation and removal of the spring module do not require special tools.
33. Maintenance-free, self-lubricating bushings are used to minimize friction of the yoke, yoke pins and roller bearing in the yoke slots for low friction and to minimize contact stresses in order to provide the longest possible service life.
34. Retention of the yoke pin is by a retaining washer to permit easy removal of the yoke pin while the actuator is mounted on the valve. No special 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

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

## LPC Torque and Pressure Table

Model	MOT Maximum Operating Torque Nm (ft-lb)	MOP Maximum Operating Pressure barg (PSIG)	MAWP Maximum Allowable Working Pressure barg (PSIG)
LPC-05	500 (369)	Variable for every model	12 (174)
LPC-10	1600 (1180)		
LPC-12	3500 (2582)		
LPC-14	5500 (4057)		

## Actuator Selection Guidance

### 1. Scope

This section provides guidance for the selection of the proper LPC 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 LPC 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 LPC actuators. Please contact your local office for assistance.

### 2. General Definitions/Terms Used

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

<b>Safety Factor</b>	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.
<b>Pneumatic Break Torque</b>	Output torque when the actuator is in the position to start the pressure stroke. [The torque required to initiate the pressure stroke.]
<b>Pneumatic End Torque</b>	Output torque at the end limit of the pressure stroke. [The torque required to seat the valve at the end of the pressure stroke.]
<b>Run Torque</b>	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.
<b>Spring Break Torque</b>	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.
<b>Spring End Torque</b>	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.
<b>Minimum Torque</b>	The output torque at an intermediate position of the spring stroke, where the output torque of the actuator is at its lowest value.
<b>MOP</b>	Maximum operating pressure of an actuator.

### 3. Inputs for Sizing Pneumatic Scotch Yoke Actuators

Due to the Scotch yoke mechanism, LPC 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).

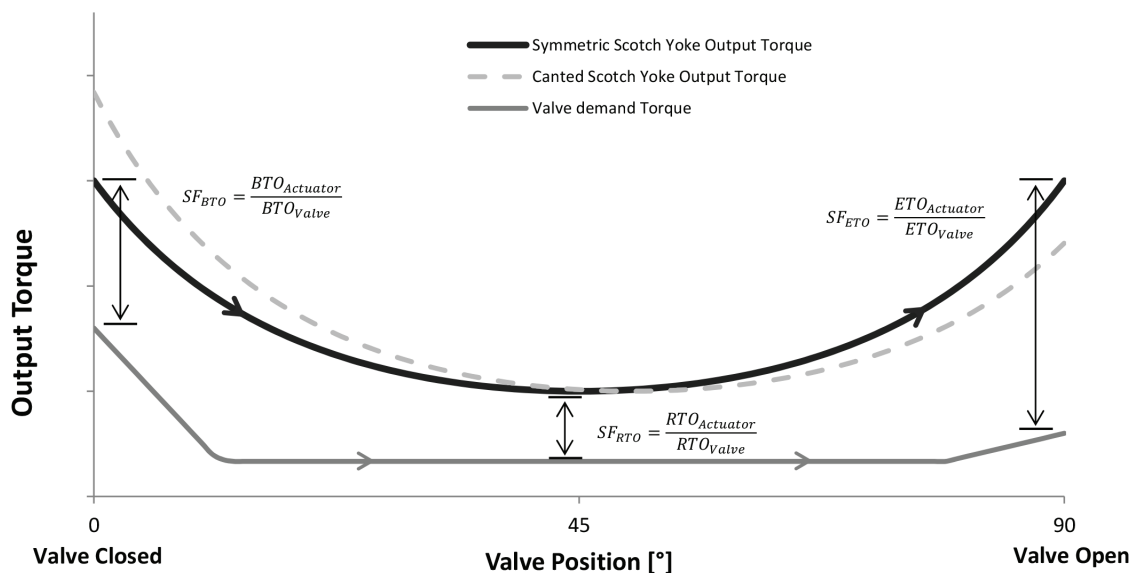


Figure 1: Example of Actuator OPEN (by instr. air) Torque Curve: Double Acting Actuators

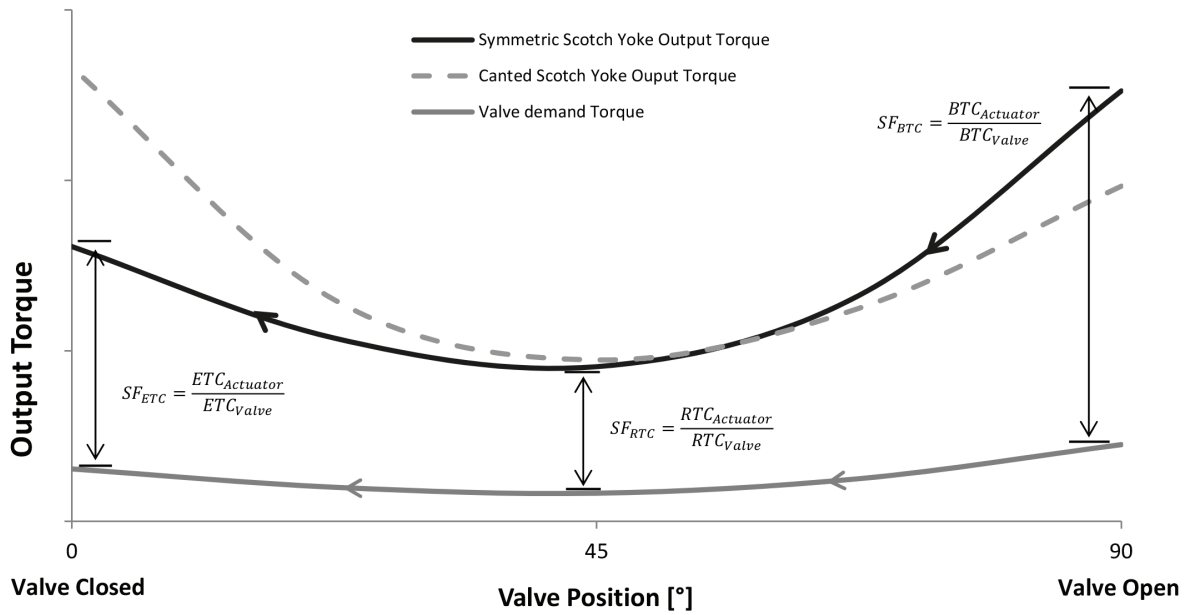


Figure 2: Example of Actuator CLOSE (by spring) Torque Curve: Single Acting Spring Return – Fail Close (CW)

**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 Pneumatic 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, etc....)

**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



## Examples of LPC Actuator Sizing

### 1<sup>st</sup> Application

A customer would like to use an LPC actuator to automate a ball valve in an Oil & Gas process. For this reason, he wishes to perform a preliminary sizing, and he has the following information at disposal:

- Torques required by the valve during the opening/closing strokes, when installed in process at customer plant:
  - **BTO = 900 Nm, RTO = 470 Nm, ETO = 950 Nm,**
  - **BTC = 890 Nm, RTC = 460 Nm, ETC = 935 Nm,**
- He would like to automate the valve by means of a Double-Acting LPC actuator for on-off service.
- He would like the actuator's torques to be higher than valve torques with a Safety Factor  $SF = 1,3$ .
- The available air supply pressure for the actuator is 4 barg minimum.
- The actuator will be installed in an onshore environment, with temperatures in standard range. No requirements for fast stroking times are present.

### Sizing Procedure:

Step 1. Determine the minimum torques that the actuator must generate, considering required Safety Factor. For this purpose, multiply the valve required torques by  $SF = 1,3$ .

- **BTO = 900 x 1.3 = 1170 Nm, RTO = 470 x 1.3 = 611 Nm, ETO = 950 x 1.3 = 1235 Nm,**
- **BTC = 890 x 1.3 = 1157 Nm, RTC = 460 x 1.3 = 598 Nm, ETC = 935 x 1.3 = 1215 Nm,**

Step 2. Select a double-acting LPC actuator from Torque Charts reported in this document. Torque outputs at 0°, 45° and 90°, with 4 barg supply pressure, must meet or exceed the torque requirements, defined at previous point, for both opening and closing strokes.

To this end, consult Double Acting actuators Torque charts, in particular the column dedicated to 4 barg supply pressure. We find several suitable models, but the model that better fits torque requirements, without excessively exceeding them (causing possible problems to valve stem) is the following one: LPC-12A-200Y-DA (see image below).

In fact:

- **BTO = 1178 (> 1170) Nm, RTO = 625 (>611) Nm, ETO = 1249 (>1235) Nm,**
- **BTC = 1178 (>1157) Nm, RTC = 625 (>598) Nm, ETC = 1249 (>1215) Nm,**

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Actuator Model		barg (PSIG)						
		2.5 (36)	3 (44)	3.5 (51)	4 (58)	4.5 (65)	5 (73)	5.5 (80)
		Output Torque Nm (ft-lb) @ supply pressure						
		Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)
LPC-12A-140Y-DA	start	355 (262)	429 (316)	503 (371)	577 (426)	651 (480)	725 (535)	799 (589)
	run	189 (139)	228 (168)	267 (197)	306 (226)	346 (255)	385 (284)	424 (313)
	end	377 (278)	455 (336)	534 (394)	612 (451)	691 (510)	769 (567)	848 (625)
LPC-12A-160Y-DA	start	464 (342)	561 (414)	657 (485)	754 (556)	851 (628)	947 (698)	1044 (770)
	run	246 (181)	298 (220)	349 (257)	400 (295)	452 (333)	503 (371)	554 (409)
	end	492 (363)	594 (438)	697 (514)	800 (590)	902 (665)	1004 (741)	1107 (816)
LPC-12A-180Y-DA	start	587 (433)	710 (524)	832 (614)	954 (704)	1077 (794)	1199 (884)	1321 (974)
	run	312 (230)	377 (278)	442 (326)	506 (373)	572 (422)	636 (469)	701 (517)
	end	623 (460)	752 (555)	882 (651)	1012 (746)	1142 (842)	1271 (937)	1401 (1033)
LPC-12A-200Y-DA	start	725 (535)	876 (646)	1027 (757)	1178 (869)	1329 (980)	1480 (1092)	1631 (1203)
	run	385 (284)	465 (343)	545 (402)	625 (461)	706 (521)	786 (580)	866 (639)
	end	769 (567)	929 (685)	1089 (803)	1249 (921)	1409 (1039)	1570 (1158)	1730 (1276)
LPC-12A-235Y-DA	start	1036 (764)	1245 (918)	1454 (1072)	1662 (1226)	1871 (1380)	2079 (1533)	2288 (1688)
	run	550 (406)	661 (488)	772 (569)	882 (651)	993 (732)	1104 (814)	1214 (895)
	end	1099 (811)	1320 (974)	1541 (1137)	1762 (1300)	1983 (1463)	2204 (1626)	2426 (1789)
LPC-12A-285Y-DA	start	1524 (1124)	1831 (1350)	2138 (1577)	2445 (1803)	2751 (2029)	3058 (2255)	
	run	809 (597)	972 (717)	1135 (837)	1298 (957)	1460 (1077)	1623 (1197)	
	end	1616 (1192)	1942 (1432)	2267 (1672)	2592 (1912)	2917 (2151)	3242 (2391)	



To conclude the definition of the model for the current application, you could now contact Flowserve Sales Team, for having a check about the correct actuator code to be chosen, in accordance with the additional requirements (onshore environment, standard temperature range) and to check the model suitability to required stroking times (Cylinder Ports sizing).

## 2<sup>nd</sup> Application

A valve maker would like to use a LPC actuator to automate a butterfly valve belonging to its product portfolio. For this reason, he wishes to perform a preliminary sizing, according to the following requirements:

- torques required by the valve during OPEN/CLOSE strokes, comprising a proper safety factor (SF), when installed for a specific process:
  - **BTO = 1280 Nm, RTO = 510 Nm, ETO = 790 Nm,**
  - **BTC = 1200 Nm, RTC = 480 Nm, ETC = 700 Nm,**
- He would like to automate the valve by means of a Single-Acting Fail Close LPC actuator for on-off service.
- The available air supply pressure for the actuator varies in a range from 4.5 barg minimum to 9 barg maximum.
- The actuator will be installed in an onshore environment, with low temperatures reaching up to -40 °C. No requirements for fast stroking times.
- He would then like then to check not to exceed the Valve MAST = 3900 Nm (MAST = Maximum Allowable Stem Torque), when actuator is fed by maximum supply pressure.

## Sizing Procedure:

Select a single-acting LPC actuator from Torque Charts reported in this document. Actuator outputs during the strokes 0° - 90° (torque generated by pressure) and 90° - 0° (torque generated by spring) must always meet or exceed the required valve torques. As a general rule, we need to choose a model satisfying required torques considering minimum supply pressure, equal to 4.5 barg.

Step 1. Check the Single Acting Fail Close actuators charts, in particular the column dedicated to Spring Torque, and search for a model satisfying BTC, RTC, ETC. We find several suitable spring modules, and we will choose the model that fits spring torque requirements, but also air torque requirements, according to next point.

Step 2. Now define the model that best fits air torques, remembering to choose only among the rows satisfying spring torques also. For this purpose, only considering the rows defined at previous point, refer to the column dedicated to 4,5 barg. We find several suitable models, but the one that better fits torque requirements, is the following one: LPC-14A-235Y-SR01 (see image below).

In fact:

- **BTO = 1328 (> 1280) Nm, RTO = 557 (>510) Nm, ETO = 820 (>790) Nm,**
- **BTC = 1212 (>1200) Nm, RTC = 509 (>480) Nm, ETC = 735 (>700) Nm,**

Step 3. Now let's check that actuator torques, at maximum supply pressure of 9 barg, never exceed Valve MAST = 3900 Nm. From the column dedicated to air Torque at 9 barg, we find that:

- **BTO = 3455 (< 3900) Nm, RTO = 1687 (< 3900) Nm, ETO = 3075 (< 3900) Nm,**

It is therefore confirmed that the selected model won't create problems to valve stem and is then the best model to be used for automating the valve.

LPC Compact Actuator Series

METRIC / IMPERIAL TORQUE TABLE													
Actuator Model	Spring Torque	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	
		2.5 (36)	3 (44)	3.5 (51)	4 (58)	4.5 (65)	5 (73)	5.5 (80)	6 (87)	7 (102)	9 (131)	10 (145)	
Output Torque Nm (ft-lb) @ supply pressure													
	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	
LPC-12A-235Y-SR06	start 1965 (1449) run 878 (648) end 1422 (1049)										1424 (1050) 570 (420) 778 (574)	2258 (1665) 1015 (749) 1663 (1227)	2675 (1973) 1237 (912) 2105 (1553)
LPC-12A-285Y-SR06	start 1962 (1447) run 876 (646) end 1419 (1047)						1262 (931) 481 (355) 607 (448)	1568 (1156) 648 (478) 932 (687)	1875 (1383) 812 (599) 1257 (927)	2182 (1609) 975 (719) 1582 (1167)	2795 (2061) 1301 (960) 2233 (1647)		
LPC-12A-335Y-SR06	start 1959 (1445) run 874 (645) end 1416 (1044)		1040 (767)	1464 (1080)	1888 (1393)	2312 (1705)	2736 (2018)	3160 (2316)	3584 (2632)	4008 (2964)	4432 (3256)	4856 (3568)	5280 (3880)
LPC-14A-180Y-SR01	start 1191 (878) run 498 (367) end 731 (539)									844 (623) 290 (214) 307 (226)	1121 (827) 445 (328) 601 (443)	1676 (1236) 742 (547) 1189 (877)	1953 (1440) 890 (656) 1483 (1094)
LPC-14A-235Y-SR01	start 1212 (894) run 509 (375) end 753 (555)			855 (631)	1091 (805)	1328 (979)	1564 (1154)	1800 (1328)	2037 (1502)	2274 (1682)	2510 (1851)	2746 (2035)	2982 (2209)
LPC-14A-285Y-SR01	start 1209 (892) run 508 (375) end 749 (552)	935 (690)	1283 (946)	1631 (1203)	1978 (1459)	2326 (1716)	2674 (1972)	3021 (2228)	3369 (2485)	3717 (2751)	4064 (2997)	4412 (3243)	4760 (3517)
LPC-14A-335Y-SR01	start 1205 (889) run 505 (372) end 745 (549)	1595 (1176)	2075 (1530)	2555 (1884)	3036 (2239)	3516 (2593)	3996 (2947)	4477 (3302)	4957 (3636)	5437 (3990)	5917 (4344)	6397 (4698)	6877 (5052)

step 1

step 2

step 2

To conclude the definition of the model for the current application, you could now contact Flowserve Sales Team, for having a check about the correct actuator code to be chosen, in accordance with the additional requirements (onshore installation, -40 °C low temperatures environment) and to check the model suitability to required stroking times (Cylinder Ports sizing)

**IMPORTANT:** Disclaimer - these examples are presented for informational purposes only, with an effort to ensure the accuracy. Flowserve is not responsible for any incorrect usage of the information contained in this document.

For any doubt or additional information, please refer to Flowserve Limitorque Sales Team. Remember to always give priority to SAFETY.

## 4. LPC Manual Overrides

A range of Mechanical Manual Override options are available for LPC Compact pneumatic actuators for both single acting (spring-return) and double-acting actuator models. Manual overrides are necessary to allow operating valve actuator whenever the motive pressure (e.g. instrument air) and/or the electrical power are not available. LFPS manual overrides are designed in accordance with EN 12570. Hydraulic Hand Pump is available upon request, not as a standard feature for LPC actuators.

Suffix	Description	LPC Actuator Model			
		LPC-05	LPC-10	LPC-12	LPC-14
-JL	Jackscrew Light Handwheel	✓	✓	✓	✓
-JS	Enclosed Jackscrew Handwheel	✓	✓	✓	✓
-BG	Bevel Gear Handwheel	-	-	-	-
-HP	Hydraulic Manual Hand Pump	-	-	-	-

### JL Jackscrew Light

- Simple and economical manual override option
- Direct operating handwheel screwed on the cylinder/housing side
- Rotating and sliding threaded external screw
- Integral and adjustable not-enclosed travel stop
- Handwheel may be optionally replaced by portable wrench
- Special exposed threads coating and special protection suitable for offshore/marine applications, available upon request



Figure 3: LPC Double Acting Actuator With JL Jackscrew Manual Override



Figure 4: LPC Single Acting Actuator With JL Jackscrew Manual Override

### JS Enclosed Jackscrew Handwheel

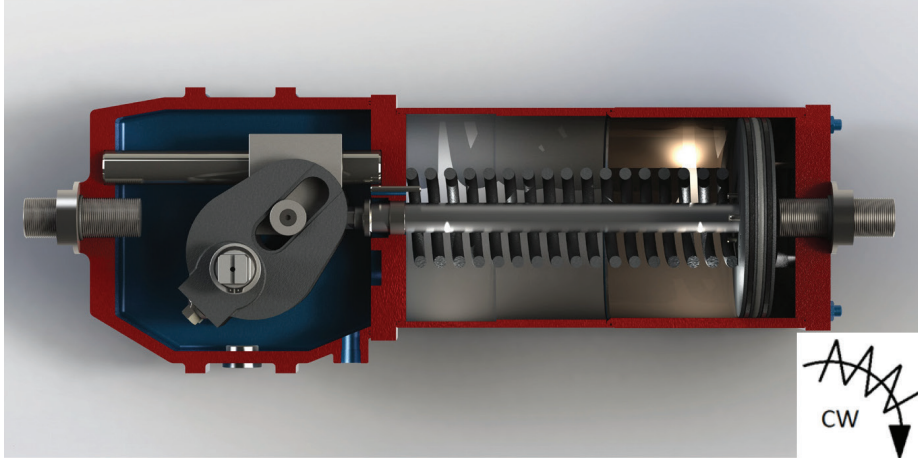
- Design totally enclosed and protected from ambient environment
- Suitable for severe and saline environmental conditions
- Direct operating handwheel screwed on the cylinder/housing side
- Integral and adjustable not-enclosed travel stop; enclosed type as option



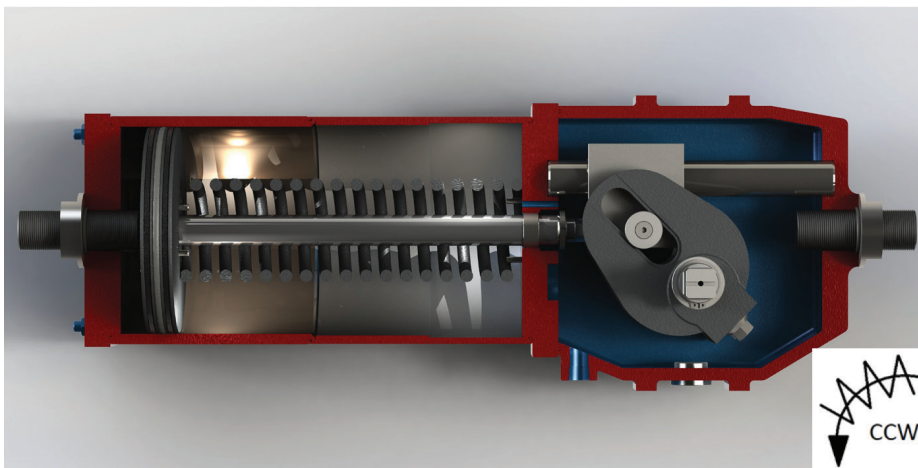
Figure 5: LPC Single Acting Actuator with JS Jackscrew Manual Override

## 5. Fail Open/Fail Close and Double Acting Configurations

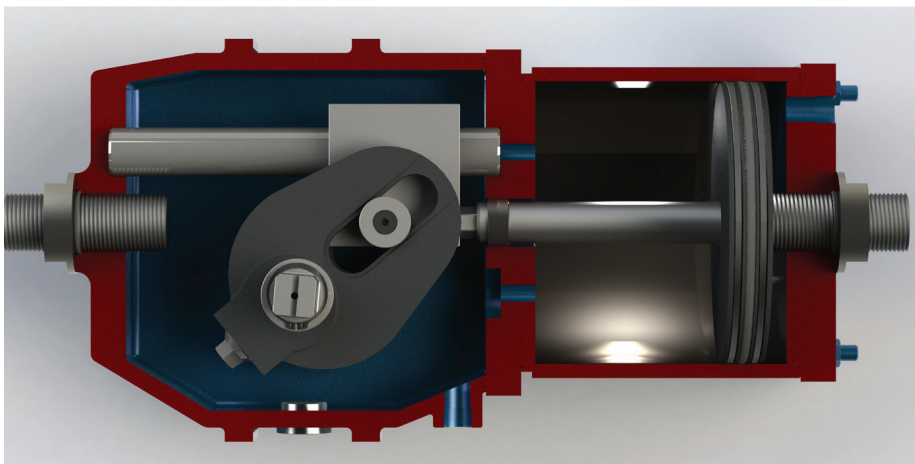
The LPC actuator is designed for work in both single acting (fail open and fail close) and double acting configurations:



**Figure 6:** Single Acting Actuator Configuration: Fail Close – Fail Clockwise



**Figure 7:** Single Acting Actuator Configuration: Fail Open – Fail Counterclockwise



**Figure 8:** Double Acting Actuator Configuration – Close Position

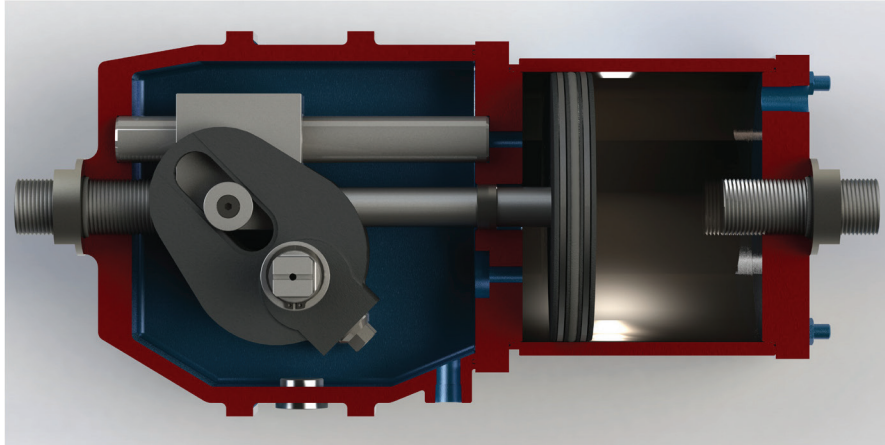


Figure 9: Actuator Configuration – Open Position

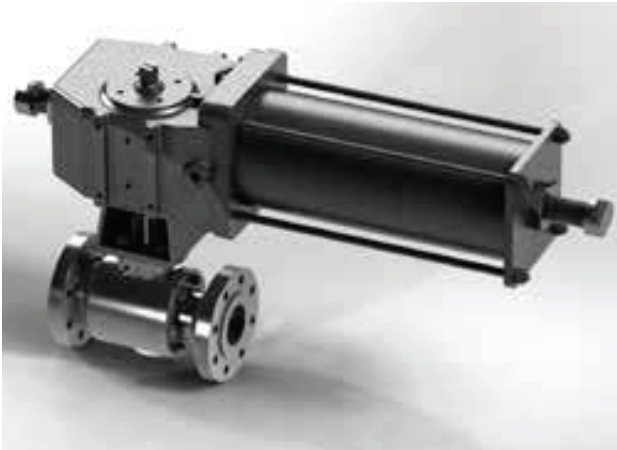


Figure 10: Fail Close configuration with valve

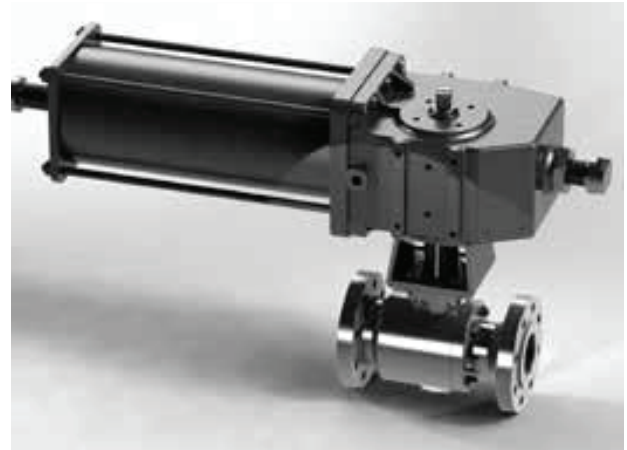


Figure 11: Fail Open configuration with valve

## 6. Performance Data

Torques reported in following tables concern a selection of most common actuator models. Available model range comprises many more models, in addition to the ones reported here.

Furthermore, Flowserve technicians remain at full disposal to size special models that can be suitable to the majority of valve types and sizes.

The following tables are then a valid support, but if you do not find models meeting your needs, please feel free to contact Limitorque Flowserve Application Engineers or local Sales Support, who will help in finding models meeting your needs.

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

## 7. Dimensions

The following Dimensions & Weight tables include main external dimensions referred to the relevant pictures included in each section. The

overall lengths, weights, mounting dimension details, interface dimensions and tolerances are included as a guide for actuator selection.

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

**Note:** Provided dimensional data and weights may be subject to variations due to continuous improvement of LPC products. For latest data, please contact Flowserve and/or refer to technical documentation transmitted along with the quotes or job documentation.

## 8. Disclaimer

This publication is presented for informational 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.

## Dimensional Data and Weights – LPC Single Acting

Figure 12: Dimensional Data – Single Acting – Sym/Cant – Fail Close

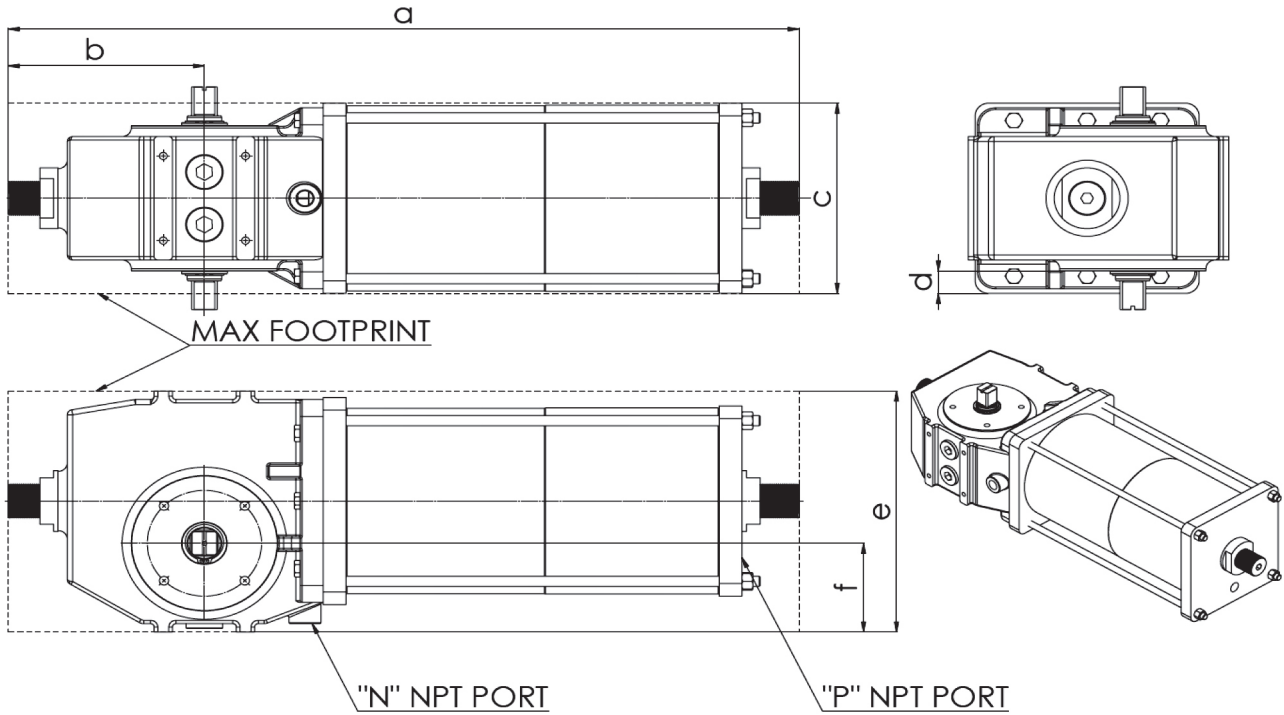
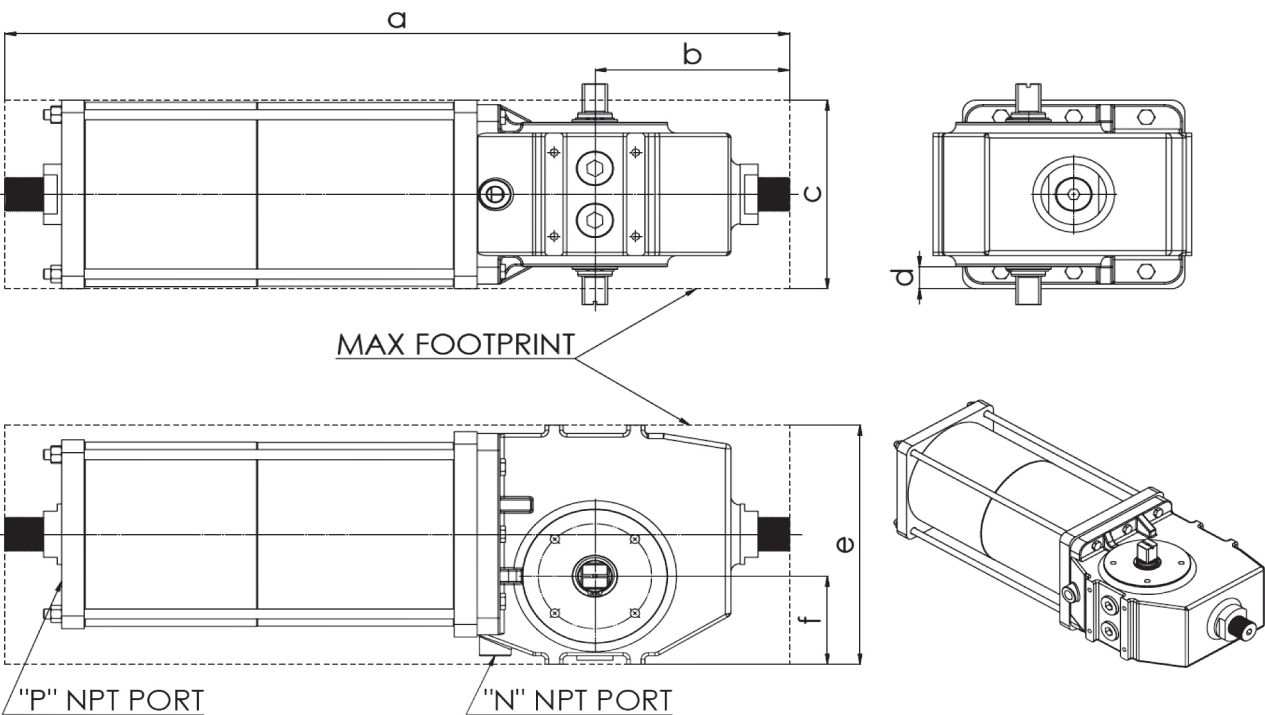


Figure 13: Dimensional Data – Single Acting – Sym/Cant – Fail Open





**Table 1: LPC Single Acting – Dimensional, Weight and Volume Tables**

LPC - Single Acting - Dimensions: mm (in) - Weights: Kg (lbs) - Swept Volumes: l (cu in) - MOT Nm (ft-lb)											
Model	a*	b*	c	d	e	f	"P" NPT PORT	"N" NPT PORT	Weight	Swept volume*	MOT
LPC-05X-080Y-SR01	680	165	175	18	197	69.0	1/4"	1/4"	37	0,5	500
	26.8	6.5	6.9	0.7	7.8	2.7			82	31	369
LPC-05X-080Y-SR02	680	165	175	18	197	69	1/4"	1/4"	38	0,5	500
	26.8	6.5	6.9	0.7	7.8	2.7			83	31	369
LPC-05X-100Y-SR01	680	165	175	18	197	69	1/4"	1/4"	43	0,8	500
	26.8	6.5	6.9	0.7	7.8	2.7			94	49	369
LPC-05X-100Y-SR02	680	165	175	18	197	69	1/4"	1/4"	43	0,8	500
	26.8	6.5	6.9	0.7	7.8	2.7			95	49	369
LPC-05X-100Y-SR03	680	165	175	18	197	69	1/4"	1/4"	44	0,8	500
	26.8	6.5	6.9	0.7	7.8	2.7			96	49	369
LPC-05X-120Y-SR01	680	165	175	18	197	69	1/4"	1/4"	44	1,2	500
	26.8	6.5	6.9	0.7	7.8	2.7			97	73	369
LPC-05X-120Y-SR02	680	165	175	18	197	69	1/4"	1/4"	44	1,2	500
	26.8	6.5	6.9	0.7	7.8	2.7			98	73	369
LPC-05X-120Y-SR03	680	165	175	18	197	69	1/4"	1/4"	45	1,2	500
	26.8	6.5	6.9	0.7	7.8	2.7			99	73	369
LPC-05X-120Y-SR04	680	165	175	18	197	69	1/4"	1/4"	45	1,2	500
	26.8	6.5	6.9	0.7	7.8	2.7			100	73	369
LPC-05X-120Y-SR05	680	165	175	18	197	69	1/4"	1/4"	46	1,2	500
	26.8	6.5	6.9	0.7	7.8	2.7			102	73	369
LPC-05X-140Y-SR01	680	165	175	18	197	69	1/4"	1/4"	47	1,6	500
	26.8	6.5	6.9	0.7	7.8	2.7			104	98	369
LPC-05X-140Y-SR02	680	165	175	18	197	69	1/4"	1/4"	48	1,6	500
	26.8	6.5	6.9	0.7	7.8	2.7			106	98	369
LPC-05X-140Y-SR03	680	165	175	18	197	69	1/4"	1/4"	48	1,6	500
	26.8	6.5	6.9	0.7	7.8	2.7			107	98	369
LPC-05X-140Y-SR04	680	165	175	18	197	69	1/4"	1/4"	49	1,6	500
	26.8	6.5	6.9	0.7	7.8	2.7			108	98	369
LPC-05X-140Y-SR05	680	165	175	18	197	69	1/4"	1/4"	50	1,6	500
	26.8	6.5	6.9	0.7	7.8	2.7			110	98	369
LPC-05X-140Y-SR06	680	165	175	18	197	69	1/4"	1/4"	54	1,6	500
	26.8	6.5	6.9	0.7	7.8	2.7			119	98	369
LPC-05X-160Y-SR01	680	165	185	23	200	69	1/2"	1/4"	53	2,1	500
	26.8	6.5	7.3	0.9	7.9	2.7			117	128	369
LPC-05X-160Y-SR02	680	165	185	23	200	69	1/2"	1/4"	54	2,1	500
	26.8	6.5	7.3	0.9	7.9	2.7			118	128	369
LPC-05X-160Y-SR03	680	165	185	23	200	69	1/2"	1/4"	54	2,1	500
	26.8	6.5	7.3	0.9	7.9	2.7			119	128	369
LPC-05X-160Y-SR04	680	165	185	23	200	69	1/2"	1/4"	55	2,1	500
	26.8	6.5	7.3	0.9	7.9	2.7			120	128	369
LPC-05X-160Y-SR05	680	165	185	23	200	69	1/2"	1/4"	56	2,1	500
	26.8	6.5	7.3	0.9	7.9	2.7			122	128	369
LPC-05X-160Y-SR06	680	165	185	23	200	69	1/2"	1/4"	57	2,1	500
	26.8	6.5	7.3	0.9	7.9	2.7			126	128	369
LPC-10X-100Y-SR01	831	195	245	37	285	105	1/4"	1/2"	68	1,1	1600
	32.7	7.7	9.6	1.4	11.2	4.1			150	67	1180

**LPC Compact Actuator Series**

LPC - Single Acting - Dimensions: mm (in) - Weights: Kg (lbs) - Swept Volumes: l (cu in) - MOT Nm (ft-lb)											
Model	a*	b*	c	d	e	f	"P" NPT PORT	"N" NPT PORT	Weight	Swept volume*	MOT
LPC-10X-120Y-SR01	831	195	245	37	285	105	1/4"	1/2"	72	1,5	1600
	32.7	7.7	9.6	1.4	11.2	4.1			159	92	1180
LPC-10X-120Y-SR02	831	195	245	37	285	105	1/4"	1/2"	74	1,5	1600
	32.7	7.7	9.6	1.4	11.2	4.1			163	92	1180
LPC-10X-140Y-SR01	831	195	245	37	285	105	1/4"	1/2"	77	2,1	1600
	32.7	7.7	9.6	1.4	11.2	4.1			169	128	1180
LPC-10X-140Y-SR02	831	195	245	37	285	105	1/4"	1/2"	79	2,1	1600
	32.7	7.7	9.6	1.4	11.2	4.1			174	128	1180
LPC-10X-140Y-SR03	874	195	245	37	285	105	1/4"	1/2"	81	2,1	1600
	34.4	7.7	9.6	1.4	11.2	4.1			179	128	1180
LPC-10X-160Y-SR01	831	195	245	37	285	105	1/2"	1/2"	79	2,7	1600
	32.7	7.7	9.6	1.4	11.2	4.1			175	165	1180
LPC-10X-160Y-SR02	831	195	245	37	285	105	1/2"	1/2"	81	2,7	1600
	32.7	7.7	9.6	1.4	11.2	4.1			178	165	1180
LPC-10X-160Y-SR03	874	195	245	37	285	105	1/2"	1/2"	83	2,7	1600
	34.4	7.7	9.6	1.4	11.2	4.1			183	165	1180
LPC-10X-160Y-SR04	874	195	245	37	285	105	1/2"	1/2"	85	2,7	1600
	34.4	7.7	9.6	1.4	11.2	4.1			188	165	1180
LPC-10X-160Y-SR05	917	195	245	37	285	105	1/2"	1/2"	87	2,7	1600
	36.1	7.7	9.6	1.4	11.2	4.1			192	165	1180
LPC-10X-180Y-SR01	831	195	245	37	285	105	1/2"	1/2"	90	3,4	1600
	32.7	7.7	9.6	1.4	11.2	4.1			199	207	1180
LPC-10X-180Y-SR02	831	195	245	37	285	105	1/2"	1/2"	92	3,4	1600
	32.7	7.7	9.6	1.4	11.2	4.1			202	207	1180
LPC-10X-180Y-SR03	874	195	245	37	285	105	1/2"	1/2"	93	3,4	1600
	34.4	7.7	9.6	1.4	11.2	4.1			206	207	1180
LPC-10X-180Y-SR04	874	195	245	37	285	105	1/2"	1/2"	96	3,4	1600
	34.4	7.7	9.6	1.4	11.2	4.1			211	207	1180
LPC-10X-180Y-SR05	917	195	245	37	285	105	1/2"	1/2"	97	3,4	1600
	36.1	7.7	9.6	1.4	11.2	4.1			215	207	1180
LPC-10X-180Y-SR06	917	195	245	37	285	105	1/2"	1/2"	99	3,4	1600
	36.1	7.7	9.6	1.4	11.2	4.1			219	207	1180
LPC-10X-200Y-SR01	831	195	245	37	285	105	1/2"	1/2"	99	4,2	1600
	32.7	7.7	9.6	1.4	11.2	4.1			218	256	1180
LPC-10X-200Y-SR02	831	195	245	37	285	105	1/2"	1/2"	100	4,2	1600
	32.7	7.7	9.6	1.4	11.2	4.1			221	256	1180
LPC-10X-200Y-SR03	874	195	245	37	285	105	1/2"	1/2"	102	4,2	1600
	34.4	7.7	9.6	1.4	11.2	4.1			226	256	1180
LPC-10X-200Y-SR04	874	195	245	37	285	105	1/2"	1/2"	105	4,2	1600
	34.4	7.7	9.6	1.4	11.2	4.1			231	256	1180
LPC-10X-200Y-SR05	917	195	245	37	285	105	1/2"	1/2"	106	4,2	1600
	36.1	7.7	9.6	1.4	11.2	4.1			234	256	1180
LPC-10X-200Y-SR06	917	195	245	37	285	105	1/2"	1/2"	109	4,2	1600
	36.1	7.7	9.6	1.4	11.2	4.1			241	256	1180
LPC-10X-220Y-SR01	831	195	245	37	285	105	1/2"	1/2"	115	5,1	1600
	32.7	7.7	9.6	1.4	11.2	4.1			254	311	1180

LPC Compact Actuator Series

LPC - Single Acting - Dimensions: mm (in) - Weights: Kg (lbs) - Swept Volumes: l (cu in) - MOT Nm (ft-lb)											
Model	a*	b*	c	d	e	f	"P" NPT PORT	"N" NPT PORT	Weight	Swept volume*	MOT
LPC-10X-220Y-SR02	831	195	245	37	285	105	1/2"	1/2"	117	5,1	1600
	32.7	7.7	9.6	1.4	11.2	4.1			257	311	1180
LPC-10X-220Y-SR03	874	195	245	37	285	105	1/2"	1/2"	119	5,1	1600
	34.4	7.7	9.6	1.4	11.2	4.1			261	311	1180
LPC-10X-220Y-SR04	874	195	245	37	285	105	1/2"	1/2"	121	5,1	1600
	34.4	7.7	9.6	1.4	11.2	4.1			266	311	1180
LPC-10X-220Y-SR05	917	195	245	37	285	105	1/2"	1/2"	122	5,1	1600
	36.1	7.7	9.6	1.4	11.2	4.1			269	311	1180
LPC-10X-220Y-SR06	917	195	245	37	285	105	1/2"	1/2"	124	5,1	1600
	36.1	7.7	9.6	1.4	11.2	4.1			273	311	1180
LPC-12X-140Y-SR01	921	214	243	28	285	101	1/4"	3/4"	100	2	3500
	36.2	8.4	9.6	1.1	11.2	4.0			221	136	2581
LPC-12X-160Y-SR01	921	214	243	28	285	101	1/2"	3/4"	105	2,8	3500
	36.2	8.4	9.6	1.1	11.2	4.0			230	173,6	2581
LPC-12X-160Y-SR02	921	214	243	28	285	101	1/2"	3/4"	107	2,8	3500
	36.2	8.4	9.6	1.1	11.2	4.0			235	173,6	2581
LPC-12X-160Y-SR03	1032	214	243	28	285	101	1/2"	3/4"	115	2,8	3500
	40.6	8.4	9.6	1.1	11.2	4.0			254	173,6	2581
LPC-12X-180Y-SR01	921	214	243	28	285	101	1/2"	3/4"	109	3,5	3500
	36.2	8.4	9.6	1.1	11.2	4.0			240	217	2581
LPC-12X-180Y-SR02	921	214	243	28	285	101	1/2"	3/4"	111	3,5	3500
	36.2	8.4	9.6	1.1	11.2	4.0			244	217	2581
LPC-12X-180Y-SR03	1032	214	243	28	285	101	1/2"	3/4"	120	3,5	3500
	40.6	8.4	9.6	1.1	11.2	4.0			264	217	2581
LPC-12X-180Y-SR04	1032	214	243	28	285	101	1/2"	3/4"	124	3,5	3500
	40.6	8.4	9.6	1.1	11.2	4.0			273	217	2581
LPC-12X-200Y-SR01	921	214	243	28	285	101	1/2"	3/4"	113	4,4	3500
	36.2	8.4	9.6	1.1	11.2	4.0			250	272,8	2581
LPC-12X-200Y-SR02	921	214	243	28	285	101	1/2"	3/4"	115	4,4	3500
	36.2	8.4	9.6	1.1	11.2	4.0			254	272,8	2581
LPC-12X-200Y-SR03	1032	214	243	28	285	101	1/2"	3/4"	125	4,4	3500
	40.6	8.4	9.6	1.1	11.2	4.0			276	272,8	2581
LPC-12X-200Y-SR04	1032	214	243	28	285	101	1/2"	3/4"	129	4,4	3500
	40.6	8.4	9.6	1.1	11.2	4.0			284	272,8	2581
LPC-12X-200Y-SR05	1032	214	243	28	285	101	1/2"	3/4"	130	4,4	3500
	40.6	8.4	9.6	1.1	11.2	4.0			287	272,8	2581
LPC-12X-235Y-SR01	921	214	260	36	289	101	1/2"	3/4"	125	6,1	3500
	36.2	8.4	10.2	1.4	11.4	4.0			275	378,2	2581
LPC-12X-235Y-SR02	921	214	260	36	289	101	1/2"	3/4"	127	6,1	3500
	36.2	8.4	10.2	1.4	11.4	4.0			280	378,2	2581
LPC-12X-235Y-SR03	1032	214	260	36	289	101	1/2"	3/4"	137	6,1	3500
	40.6	8.4	10.2	1.4	11.4	4.0			303	378,2	2581
LPC-12X-235Y-SR04	1032	214	260	36	289	101	1/2"	3/4"	141	6,1	3500
	40.6	8.4	10.2	1.4	11.4	4.0			311	378,2	2581
LPC-12X-235Y-SR05	1032	214	260	36	289	101	1/2"	3/4"	142	6,1	3500
	40.6	8.4	10.2	1.4	11.4	4.0			313	378,2	2581

**LPC Compact Actuator Series**

LPC - Single Acting - Dimensions: mm (in) - Weights: Kg (lbs) - Swept Volumes: l (cu in) - MOT Nm (ft-lb)											
Model	a*	b*	c	d	e	f	"P" NPT PORT	"N" NPT PORT	Weight	Swept volume*	MOT
LPC-12X-235Y-SR06	1032	214	260	36	289	101	1/2"	3/4"	152	6,1	3500
	40.6	8.4	10.2	1.4	11.4	4.0			334	378,2	2581
LPC-12X-285Y-SR01	916	214	363	88	363	124	1"	3/4"	152	9,0	3500
	36.0	8.4	14.3	3.4	14.3	4.9			335	558	2581
LPC-12X-285Y-SR02	916	214	363	88	363	124	1"	3/4"	156	9,0	3500
	36.0	8.4	14.3	3.4	14.3	4.9			343	558	2581
LPC-12X-285Y-SR03	1027	214	363	88	363	124	1"	3/4"	165	9,0	3500
	40.4	8.4	14.3	3.4	14.3	4.9			363	558	2581
LPC-12X-285Y-SR04	1027	214	363	88	363	124	1"	3/4"	172	9,0	3500
	40.4	8.4	14.3	3.4	14.3	4.9			378	558	2581
LPC-12X-285Y-SR05	1027	214	363	88	363	124	1"	3/4"	173	9,0	3500
	40.4	8.4	14.3	3.4	14.3	4.9			380	558	2581
LPC-12X-285Y-SR06	1027	214	363	88	363	124	1"	3/4"	182	9,0	3500
	40.4	8.4	14.3	3.4	14.3	4.9			401	558	2581
LPC-12X-335Y-SR01	921	214	413	113	413	149	1"	3/4"	179	12,3	3500
	36.2	8.4	16.3	4.4	16.3	5.8			395	763	2581
LPC-12X-335Y-SR02	921	214	413	113	413	149	1"	3/4"	182	12,3	3500
	36.2	8.4	16.3	4.4	16.3	5.8			402	763	2581
LPC-12X-335Y-SR03	1032	214	413	113	413	149	1"	3/4"	193	12,3	3500
	40.6	8.4	16.3	4.4	16.3	5.8			426	763	2581
LPC-12X-335Y-SR04	1032	214	413	113	413	149	1"	3/4"	200	12,3	3500
	40.6	8.4	16.3	4.4	16.3	5.8			441	763	2581
LPC-12X-335Y-SR05	1032	214	413	113	413	149	1"	3/4"	201	12,3	3500
	40.6	8.4	16.3	4.4	16.3	5.8			444	763	2581
LPC-12X-335Y-SR06	1032	214	413	113	413	149	1"	3/4"	211	12,3	3500
	40.6	8.4	16.3	4.4	16.3	5.8			465	763	2581
LPC-14X-180Y-SR01	1129	252	284	31	316	116	1/2"	3/4"	152	4,1	5500
	44.4	9.9	11.2	1.2	12.4	4.6			334	254,2	4057
LPC-14X-235Y-SR01	1129	252	284	31	316	116	1/2"	3/4"	168	7	5500
	44.4	9.9	11.2	1.2	12.4	4.6			370	434	4057
LPC-14X-235Y-SR02	1129	252	284	31	316	116	1/2"	3/4"	172	7	5500
	44.4	9.9	11.2	1.2	12.4	4.6			379	434	4057
LPC-14X-235Y-SR03	1129	252	284	31	316	116	1/2"	3/4"	182	7	5500
	44.4	9.9	11.2	1.2	12.4	4.6			402	434	4057
LPC-14X-285Y-SR01	1124	252	371	75	371	121	1"	3/4"	194	10,2	5500
	44.3	9.9	14.6	2.9	14.6	4.7			429	632,4	4057
LPC-14X-285Y-SR02	1124	252	371	75	371	121	1"	3/4"	198	10,2	5500
	44.3	9.9	14.6	2.9	14.6	4.7			437	632,4	4057
LPC-14X-285Y-SR03	1124	252	371	75	371	121	1"	3/4"	209	10,2	5500
	44.3	9.9	14.6	2.9	14.6	4.7			460	632,4	4057
LPC-14X-285Y-SR04	1099	252	371	75	371	121	1"	3/4"	184	10,2	5500
	43.3	9.9	14.6	2.9	14.6	4.7			405	632,4	4057
LPC-14X-335Y-SR01	1129	252	413	96	413	142	1"	3/4"	227	14,1	5500
	44.4	9.9	16.3	3.8	16.3	5.6			500	874,2	4057
LPC-14X-335Y-SR02	1129	252	413	96	413	142	1"	3/4"	231	14,1	5500
	44.4	9.9	16.3	3.8	16.3	5.6			508	874,2	4057

**LPC Compact Actuator Series**

LPC - Single Acting - Dimensions: mm (in) - Weights: Kg (lbs) - Swept Volumes: l (cu in) - MOT Nm (ft-lb)											
Model	a*	b*	c	d	e	f	"P" NPT PORT	"N" NPT PORT	Weight	Swept volume*	MOT
LPC-14X-335Y-SR03	1129	252	413	96	413	142	1"	3/4"	241	14,1	5500
	44.4	9.9	16.3	3.8	16.3	5.6			532	874,2	4057
LPC-14X-335Y-SR04	1104	252	413	96	413	142	1"	3/4"	216	14,1	5500
	43.5	9.9	16.3	3.8	16.3	5.6			476	874,2	4057
LPC-14X-335Y-SR05	1104	252	413	96	413	142	1"	3/4"	247	14,1	5500
	43.5	9.9	16.3	3.8	16.3	5.6			545	874,2	4057
LPC-14X-335Y-SR06	1104	252	413	96	413	142	1"	3/4"	268	14,1	5500
	43.5	9.9	16.3	3.8	16.3	5.6			590	874,2	4057
LPC-14X-360Y-SR01	1129	252	439	109	439	155	1"	3/4"	246	16,3	5500
	44.4	9.9	17.3	4.3	17.3	6.1			543	1010,6	4057
LPC-14X-360Y-SR02	1129	252	439	109	439	155	1"	3/4"	250	16,3	5500
	44.4	9.9	17.3	4.3	17.3	6.1			551	1010,6	4057
LPC-14X-360Y-SR03	1129	252	439	109	439	155	1"	3/4"	261	16,3	5500
	44.4	9.9	17.3	4.3	17.3	6.1			574	1010,6	4057
LPC-14X-360Y-SR04	1104	252	439	109	439	155	1"	3/4"	235	16,3	5500
	43.5	9.9	17.3	4.3	17.3	6.1			518	1010,6	4057
LPC-14X-360Y-SR05	1104	252	439	109	439	155	1"	3/4"	264	16,3	5500
	43.5	9.9	17.3	4.3	17.3	6.1			582	1010,6	4057
LPC-14X-360Y-SR06	1104	252	439	109	439	155	1"	3/4"	283	16,3	5500
	43.5	9.9	17.3	4.3	17.3	6.1			624	1010,6	4057
LPC-14X-385Y-SR01	1129	252	465	122	465	168	1"	3/4"	265	18,7	5500
	44.4	9.9	18.3	4.8	18.3	6.6			584	1159,4	4057
LPC-14X-385Y-SR02	1129	252	465	122	465	168	1"	3/4"	269	18,7	5500
	44.4	9.9	18.3	4.8	18.3	6.6			592	1159,4	4057
LPC-14X-385Y-SR03	1129	252	465	122	465	168	1"	3/4"	269	18,7	5500
	44.4	9.9	18.3	4.8	18.3	6.6			592	1159,4	4057
LPC-14X-385Y-SR04	1104	252	465	122	465	168	1"	3/4"	279	18,7	5500
	43.5	9.9	18.3	4.8	18.3	6.6			616	1159,4	4057
LPC-14X-385Y-SR05	1104	252	465	122	465	168	1"	3/4"	253	18,7	5500
	43.5	9.9	18.3	4.8	18.3	6.6			559	1159,4	4057
LPC-14X-385Y-SR06	1099	252	465	122	465	168	1"	3/4"	285	18,7	5500
	43.3	9.9	18.3	4.8	18.3	6.6			627	1159,4	4057
LPC-14X-435Y-SR01	1147	252	526	152	526	198	1"	3/4"	316	18,7	5500
	45.1	9.9	20.7	6.0	20.7	7.8			696	1475,6	4057
LPC-14X-435Y-SR02	1147	252	526	152	526	198	1"	3/4"	320	23,8	5500
	45.1	9.9	20.7	6.0	20.7	7.8			705	1475,6	4057
LPC-14X-435Y-SR03	1147	252	526	152	526	198	1"	3/4"	330	23,8	5500
	45.1	9.9	20.7	6.0	20.7	7.8			728	1475,6	4057
LPC-14X-435Y-SR04	1122	252	526	152	526	198	1"	3/4"	304	23,8	5500
	44.2	9.9	20.7	6.0	20.7	7.8			670	1475,6	4057
LPC-14X-435Y-SR05	1122	252	526	152	526	198	1"	3/4"	335	23,8	5500
	44.2	9.9	20.7	6.0	20.7	7.8			739	1475,6	4057
LPC-14X-435Y-SR06	1122	252	526	152	526	198	1"	3/4"	352	23,8	5500
	44.2	9.9	20.7	6.0	20.7	7.8			776	1475,6	4057

Notes:

\* Swept Volume and overall dimensions data are referred to actuators with end stops adjusted for 90° of stroke. Refer to Figure for details of Ports "N" and "P".

Tolerance 5% to be considered on dimensions and weight

## Dimensional Data and Weights – LPC Double Acting

Figure 14: Dimensional Data – Double Acting – Sym/Cant

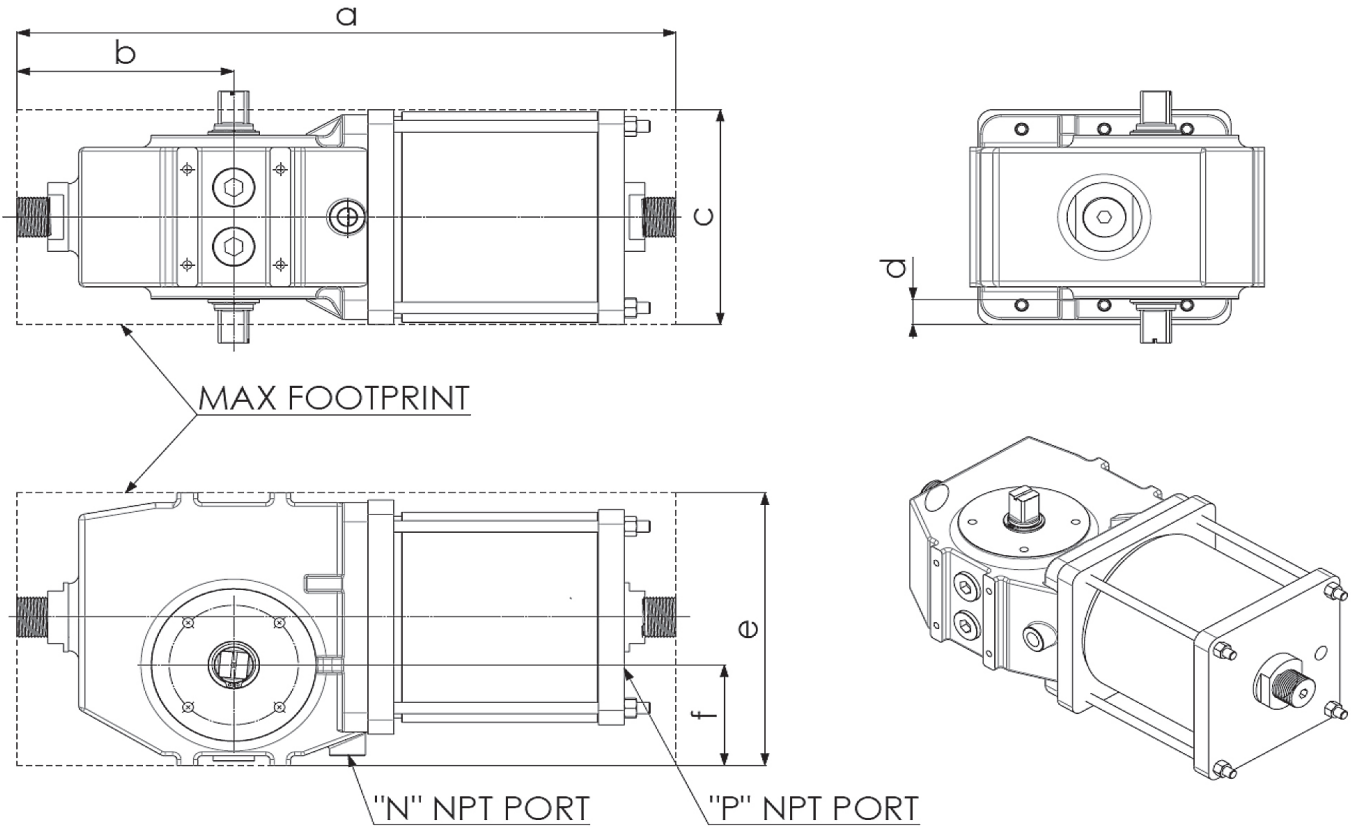


Table 2: LPC Double Acting – Dimensional, Weight and Volume Tables

LPC - Double Acting - Dimensions: mm (in) - Weights: Kg (lbs) - Swept Volumes: l (cu in) - MOT Nm (ft-lb)												
Model	a*	b*	c	d	e	f	"P" NPT PORT	"N" NPT PORT	Weight	Swept volume*		MOT
										Port "P"	Port "N"	
LPC-05X-080Y-DA	512	165	175	18	197	69	1/4"	1/4"	33	0.5	2.8	500
	20.1	6.5	6.9	0.7	7.8	2.7			72	31	171	369
LPC-05X-100Y-DA	512	165	175	18	197	69	1/4"	1/4"	39	0.8	3.1	500
	20.1	6.5	6.9	0.7	7.8	2.7			87	49	189	369
LPC-05X-120Y-DA	512	165	175	18	197	69	1/4"	1/4"	40	1.2	3.5	500
	20.1	6.5	6.9	0.7	7.8	2.7			88	73	214	369
LPC-05X-140Y-DA	512	165	175	18	197	69	1/4"	1/4"	43	1.6	3.9	500
	20.1	6.5	6.9	0.7	7.8	2.7			94	98	238	369
LPC-05X-160Y-DA	512	165	185	23	200	69	1/2"	1/4"	47	2.1	4.4	500
	20.1	6.5	7.3	0.9	7.9	2.7			103	128	269	369
LPC-10X-100Y-DA	616	195	245	37	285	105	1/4"	1/2"	56	0.9	6.7	1600
	24.3	7.7	9.6	1.4	11.2	4.1			123	55	409	1180
LPC-10X-120Y-DA	616	195	245	37	285	105	1/4"	1/2"	60	1.5	7.1	1600
	24.3	7.7	9.6	1.4	11.2	4.1			132	92	433	1180

**LPC Compact Actuator Series**

LPC - Double Acting - Dimensions: mm (in) - Weights: Kg (lbs) - Swept Volumes: l (cu in) - MOT Nm (ft-lb)												
Model	a*	b*	c	d	e	f	"P" NPT PORT	"N" NPT PORT	Weight	Swept volume*		MOT
										Port "P"	Port "N"	
LPC-10X-140Y-DA	616	195	245	37	285	105	1/4"	1/2"	63	2.1	7.7	1600
	24.3	7.7	9.6	1.4	11.2	4.1			139	128	470	1180
LPC-10X-160Y-DA	616	195	245	37	285	105	1/2"	1/2"	67	2.4	8.3	1600
	24.3	7.7	9.6	1.4	11.2	4.1			148	146	506	1180
LPC-10X-180Y-DA	616	195	245	37	285	105	1/2"	1/2"	73	3.4	9.0	1600
	24.3	7.7	9.6	1.4	11.2	4.1			161	207	549	1180
LPC-10X-200Y-DA	616	195	245	37	285	105	1/2"	1/2"	75	4.2	9.8	1600
	24.3	7.7	9.6	1.4	11.2	4.1			165	256	598	1180
LPC-10X-220Y-DA	616	195	245	37	285	105	1/2"	1/2"	81	5.1	10.7	1600
	24.3	7.7	9.6	1.4	11.2	4.1			179	311	653	1180
LPC-12X-140Y-DA	666	214	243	28	285	101	1/4"	3/4"	82	2.2	9.7	3500
	26.2	8.4	9.6	1.1	11.2	4.0			181	136	601,4	2581
LPC-12X-160Y-DA	666	214	243	28	285	101	1/2"	3/4"	85	2,8	10,3	3500
	26.2	8.4	9.6	1.1	11.2	4.0			188	173,6	638,6	2581
LPC-12X-180Y-DA	666	214	243	28	285	101	1/2"	3/4"	89	3,5	11	3500
	26.2	8.4	9.6	1.1	11.2	4.0			195	217	682	2581
LPC-12X-200Y-DA	666	214	243	28	285	101	1/2"	3/4"	92	4,4	11,8	3500
	26.2	8.4	9.6	1.1	11.2	4.0			203	272,8	731,6	2581
LPC-12X-235Y-DA	666	214	260	36	289	101	1/2"	3/4"	103	6,1	13,3	3500
	26.2	8.4	10.2	1.4	11.4	4.0			227	378,2	824,6	2581
LPC-12X-285Y-DA	661	214	363	88	363	124	1"	3/4"	126	9,0	16	3500
	26.0	8.4	14.3	3.4	14.3	4.9			278	558	992	2581
LPC-12X-335Y-DA	666	214	413	113	413	149	1"	3/4"	148	12,3	19,1	3500
	26.2	8.4	16.3	4.4	16.3	5.8			327	763	1184,2	2581
LPC-14X-180Y-DA	764	252	284	31	316	116	1/2"	3/4"	120	4,1	12,1	5500
	30.1	9.9	11.2	1.2	12.4	4.6			263	254,2	748	4057
LPC-14X-235Y-DA	764	252	284	31	316	116	1/2"	3/4"	133	7	14,7	5500
	30.1	9.9	11.2	1.2	12.4	4.6			293	434	909	4057
LPC-14X-285Y-DA	759	252	371	75	371	121	1"	3/4"	151	10,2	17,6	5500
	29.9	9.9	14.6	2.9	14.6	4.7			334	632,4	1088	4057
LPC-14X-335Y-DA	764	252	413	96	413	142	1"	3/4"	181	14,1	21,1	5500
	30.1	9.9	16.3	3.8	16.3	5.6			399	874,2	1304,4	4057
LPC-14X-360Y-DA	764	252	439	109	439	155	1"	3/4"	193	16,3	23,1	5500
	30.1	9.9	17.3	4.3	17.3	6.1			425	1010,6	1428	4057
LPC-14X-385Y-DA	764	252	465	122	465	168	1"	3/4"	213	18,7	25,2	5500
	30.1	9.9	18.3	4.8	18.3	6.6			469	1159,4	1557,8	4057
LPC-14X-435Y-DA**	764	252	526	152	526	263	1"	3/4"	256	23,8	29,9	5500
	30.8	9.8	20.7	6.0	20.7	10.4			565	1475,6	1848,4	4057

Notes:

\* Swept Volume and overall dimensions data are referred to actuators with end stops adjusted for 90° of stroke. Refer to Figure for details of Ports "N" and "P".

Tolerance 5% to be considered on dimensions and weight

## Dimensional Data and Weights – LPC Single Acting With JL Manual Override

Figure 15: Dimensional Data – Single Acting – Sym/Cant – Fail Close With JL Manual Override

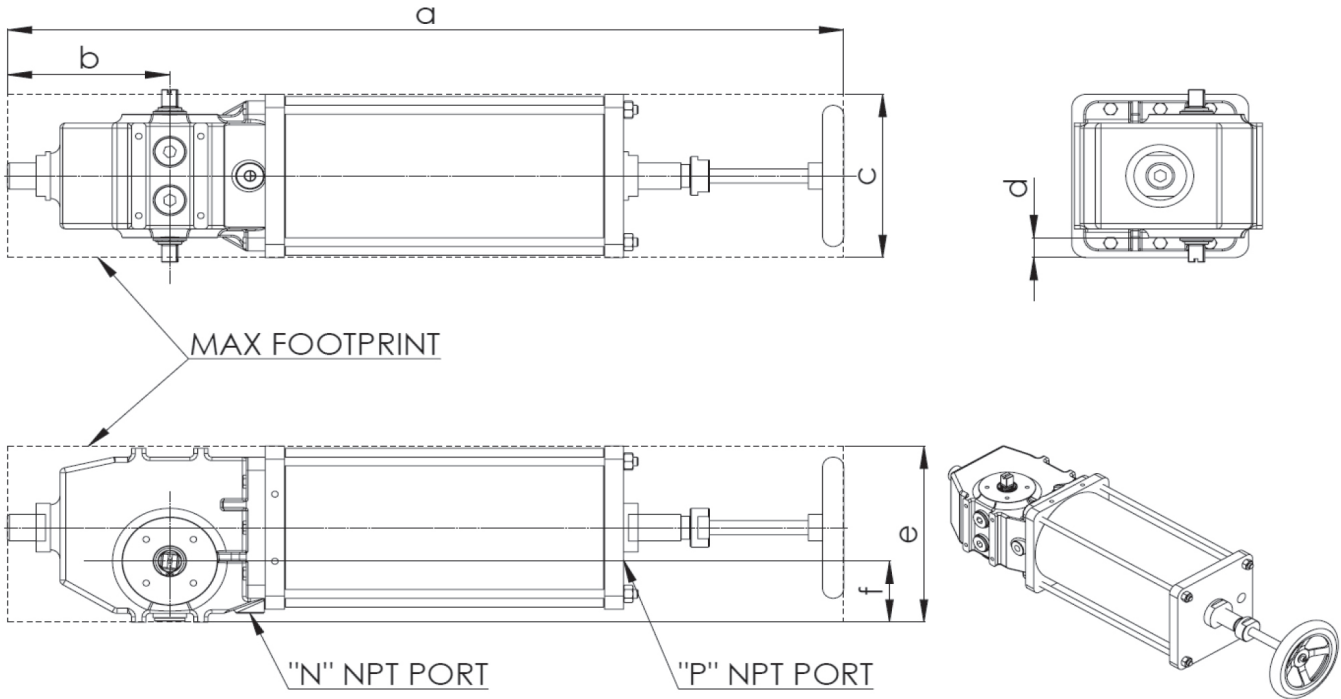
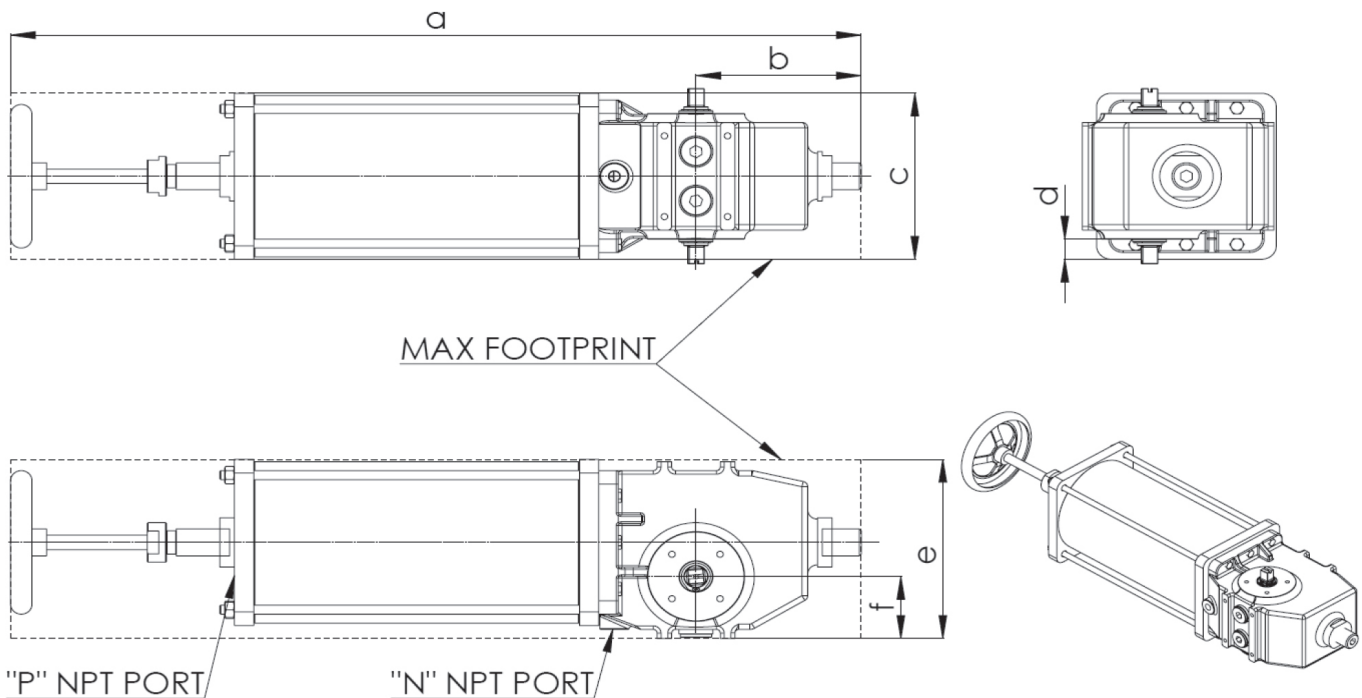


Figure 16: Dimensional Data – Single Acting – Sym/Cant – Fail Open With JL Manual Override





**Table 3: LPC Single Acting w/ JL Manual Override – Dimensional, Weight and Volume Tables**

LPC - Single Acting - MANUAL OVERRIDE JL - Dimensions: mm (in) - Weights: Kg (lbs) - MOT Nm (ft-lb)											
Model	a*	b*	c	d	e	f	"P" NPT PORT	"N" NPT PORT	Weight	Swept Volume*	MOT
LPC-05X-080Y-SR01-JL	863	165	175	18	197	69	1/4"	1/4"	38	0,5	500
	34.0	6.5	6.9	0.7	7.8	2.7			84	30.5	369
LPC-05X-080Y-SR02-JL	863	165	175	18	197	69	1/4"	1/4"	39	0,5	500
	34.0	6.5	6.9	0.7	7.8	2.7			86	30.5	369
LPC-05X-100Y-SR01-JL	863	165	175	18	197	69	1/4"	1/4"	44	0,8	500
	34.0	6.5	6.9	0.7	7.8	2.7			96	48.8	369
LPC-05X-100Y-SR02-JL	863	165	175	18	197	69	1/4"	1/4"	44	0,8	500
	34.0	6.5	6.9	0.7	7.8	2.7			97	48.8	369
LPC-05X-100Y-SR03-JL	863	165	175	18	197	69	1/4"	1/4"	45	0,8	500
	34.0	6.5	6.9	0.7	7.8	2.7			98	48.8	369
LPC-05X-120Y-SR01-JL	863	165	175	18	197	69	1/4"	1/4"	45	1,2	500
	34.0	6.5	6.9	0.7	7.8	2.7			99	73.2	369
LPC-05X-120Y-SR02-JL	863	165	175	18	197	69	1/4"	1/4"	45	1,2	500
	34.0	6.5	6.9	0.7	7.8	2.7			100	73.2	369
LPC-05X-120Y-SR03-JL	863	165	175	18	197	69	1/4"	1/4"	46	1,2	500
	34.0	6.5	6.9	0.7	7.8	2.7			101	73.2	369
LPC-05X-120Y-SR04-JL	863	165	175	18	197	69	1/4"	1/4"	46	1,2	500
	34.0	6.5	6.9	0.7	7.8	2.7			102	73.2	369
LPC-05X-120Y-SR05-JL	863	165	175	18	197	69	1/4"	1/4"	47	1,2	500
	34.0	6.5	6.9	0.7	7.8	2.7			104	73.2	369
LPC-05X-140Y-SR01-JL	863	165	175	18	197	69	1/4"	1/4"	48	1,6	500
	34.0	6.5	6.9	0.7	7.8	2.7			107	97.6	369
LPC-05X-140Y-SR02-JL	863	165	175	18	197	69	1/4"	1/4"	49	1,6	500
	34.0	6.5	6.9	0.7	7.8	2.7			108	97.6	369
LPC-05X-140Y-SR03-JL	863	165	175	18	197	69	1/4"	1/4"	49	1,6	500
	34.0	6.5	6.9	0.7	7.8	2.7			109	97.6	369
LPC-05X-140Y-SR04-JL	863	165	175	18	197	69	1/4"	1/4"	50	1,6	500
	34.0	6.5	6.9	0.7	7.8	2.7			110	97.6	369
LPC-05X-140Y-SR05-JL	863	165	175	18	197	69	1/4"	1/4"	51	1,6	500
	34.0	6.5	6.9	0.7	7.8	2.7			112	97.6	369
LPC-05X-140Y-SR06-JL	863	165	175	18	197	69	1/4"	1/4"	55	1,6	500
	34.0	6.5	6.9	0.7	7.8	2.7			121	97.6	369
LPC-05X-160Y-SR01-JL	863	165	185	23	200	69	1/2"	1/4"	54	2,1	500
	34.0	6.5	7.3	0.9	7.9	2.7			119	128.1	369
LPC-05X-160Y-SR02-JL	863	165	185	23	200	69	1/2"	1/4"	55	2,1	500
	34.0	6.5	7.3	0.9	7.9	2.7			120	128.1	369
LPC-05X-160Y-SR03-JL	863	165	185	23	200	69	1/2"	1/4"	55	2,1	500
	34.0	6.5	7.3	0.9	7.9	2.7			121	128.1	369
LPC-05X-160Y-SR04-JL	863	165	185	23	200	69	1/2"	1/4"	56	2,1	500
	34.0	6.5	7.3	0.9	7.9	2.7			122	128.1	369
LPC-05X-160Y-SR05-JL	863	165	185	23	200	69	1/2"	1/4"	57	2,1	500
	34.0	6.5	7.3	0.9	7.9	2.7			125	128.1	369
LPC-05X-160Y-SR06-JL	863	165	185	23	200	69	1/2"	1/4"	58	2,1	500
	34.0	6.5	7.3	0.9	7.9	2.7			128	128.1	369
LPC-10X-100Y-SR01-JL	1083	195	400	114	330	150	1/4"	1/2"	76	1,1	1600
	42.6	7.7	15.7	4.5	13.0	5.9			166	67.1	1180

LPC Compact Actuator Series

LPC - Single Acting - MANUAL OVERRIDE JL - Dimensions: mm (in) - Weights: Kg (lbs) - MOT Nm (ft-lb)											
Model	a*	b*	c	d	e	f	"P" NPT PORT	"N" NPT PORT	Weight	Swept Volume*	MOT
LPC-10X-120Y-SR01-JL	1083	195	400	114	330	150	1/4"	1/2"	80	1,5	1600
	42.6	7.7	15.7	4.5	13.0	5.9			175	91.5	1180
LPC-10X-120Y-SR02-JL	1083	195	400	114	330	150	1/4"	1/2"	82	1,5	1600
	42.6	7.7	15.7	4.5	13.0	5.9			180	91.5	1180
LPC-10X-140Y-SR01-JL	1083	195	400	114	330	150	1/4"	1/2"	84	2,1	1600
	42.6	7.7	15.7	4.5	13.0	5.9			186	128.1	1180
LPC-10X-140Y-SR02-JL	1083	195	400	114	330	150	1/4"	1/2"	87	2,1	1600
	42.6	7.7	15.7	4.5	13.0	5.9			191	128.1	1180
LPC-10X-140Y-SR03-JL	1126	195	400	114	330	150	1/4"	1/2"	89	2,1	1600
	44.3	7.7	15.7	4.5	13.0	5.9			195	128.1	1180
LPC-10X-160Y-SR01-JL	1083	195	400	114	330	150	1/2"	1/2"	87	2,7	1600
	42.6	7.7	15.7	4.5	13.0	5.9			192	164.8	1180
LPC-10X-160Y-SR02-JL	1083	195	400	114	330	150	1/2"	1/2"	88	2,7	1600
	42.6	7.7	15.7	4.5	13.0	5.9			195	164.8	1180
LPC-10X-160Y-SR03-JL	1126	195	400	114	330	150	1/2"	1/2"	90	2,7	1600
	44.3	7.7	15.7	4.5	13.0	5.9			199	164.8	1180
LPC-10X-160Y-SR04-JL	1126	195	400	114	330	150	1/2"	1/2"	93	2,7	1600
	44.3	7.7	15.7	4.5	13.0	5.9			205	164.8	1180
LPC-10X-160Y-SR05-JL	1169	195	400	114	330	150	1/2"	1/2"	94	2,7	1600
	46.0	7.7	15.7	4.5	13.0	5.9			208	164.8	1180
LPC-10X-180Y-SR01-JL	1083	195	400	114	330	150	1/2"	1/2"	98	3,4	1600
	42.6	7.7	15.7	4.5	13.0	5.9			216	207.5	1180
LPC-10X-180Y-SR02-JL	1083	195	400	114	330	150	1/2"	1/2"	99	3,4	1600
	42.6	7.7	15.7	4.5	13.0	5.9			219	207.5	1180
LPC-10X-180Y-SR03-JL	1126	195	400	114	330	150	1/2"	1/2"	101	3,4	1600
	44.3	7.7	15.7	4.5	13.0	5.9			222	207.5	1180
LPC-10X-180Y-SR04-JL	1126	195	400	114	330	150	1/2"	1/2"	103	3,4	1600
	44.3	7.7	15.7	4.5	13.0	5.9			228	207.5	1180
LPC-10X-180Y-SR05-JL	1169	195	400	114	330	150	1/2"	1/2"	105	3,4	1600
	46.0	7.7	15.7	4.5	13.0	5.9			231	207.5	1180
LPC-10X-180Y-SR06-JL	1169	195	400	114	330	150	1/2"	1/2"	107	3,4	1600
	46.0	7.7	15.7	4.5	13.0	5.9			235	207.5	1180
LPC-10X-200Y-SR01-JL	1083	195	400	114	330	150	1/2"	1/2"	106	4,2	1600
	42.6	7.7	15.7	4.5	13.0	5.9			234	256.3	1180
LPC-10X-200Y-SR02-JL	1083	195	400	114	330	150	1/2"	1/2"	108	4,2	1600
	42.6	7.7	15.7	4.5	13.0	5.9			238	256.3	1180
LPC-10X-200Y-SR03-JL	1126	195	400	114	330	150	1/2"	1/2"	110	4,2	1600
	44.3	7.7	15.7	4.5	13.0	5.9			242	256.3	1180
LPC-10X-200Y-SR04-JL	1126	195	400	114	330	150	1/2"	1/2"	112	4,2	1600
	44.3	7.7	15.7	4.5	13.0	5.9			248	256.3	1180
LPC-10X-200Y-SR05-JL	1169	195	400	114	330	150	1/2"	1/2"	114	4,2	1600
	46.0	7.7	15.7	4.5	13.0	5.9			251	256.3	1180
LPC-10X-200Y-SR06-JL	1169	195	400	114	330	150	1/2"	1/2"	117	4,2	1600
	46.0	7.7	15.7	4.5	13.0	5.9			257	256.3	1180
LPC-10X-220Y-SR01-JL	1083	195	400	114	330	150	1/2"	1/2"	123	5,1	1600
	42.6	7.7	15.7	4.5	13.0	5.9			270	311.2	1180

LPC Compact Actuator Series

LPC - Single Acting - MANUAL OVERRIDE JL - Dimensions: mm (in) - Weights: Kg (lbs) - MOT Nm (ft-lb)											
Model	a*	b*	c	d	e	f	"P" NPT PORT	"N" NPT PORT	Weight	Swept Volume*	MOT
LPC-10X-220Y-SR02-JL	1083	195	400	114	330	150	1/2"	1/2"	124	5,1	1600
	42.6	7.7	15.7	4.5	13.0	5.9			273	311.2	1180
LPC-10X-220Y-SR03-JL	1126	195	400	114	330	150	1/2"	1/2"	126	5,1	1600
	44.3	7.7	15.7	4.5	13.0	5.9			278	311.2	1180
LPC-10X-220Y-SR04-JL	1126	195	400	114	330	150	1/2"	1/2"	128	5,1	1600
	44.3	7.7	15.7	4.5	13.0	5.9			282	311.2	1180
LPC-10X-220Y-SR05-JL	1169	195	400	114	330	150	1/2"	1/2"	130	5,1	1600
	46.0	7.7	15.7	4.5	13.0	5.9			285	311.2	1180
LPC-10X-220Y-SR06-JL	1169	195	400	114	330	150	1/2"	1/2"	132	5,1	1600
	46.0	7.7	15.7	4.5	13.0	5.9			290	311.2	1180
LPC-12X-140Y-SR01-JL	1106	214	400	106	326	142	1/4"	3/4"	105	2	3500
	43.5	8.4	15.7	4.2	12.8	5.6			232	136	2581
LPC-12X-160Y-SR01-JL	1106	214	400	106	326	142	1/2"	3/4"	110	2,8	3500
	43.5	8.4	15.7	4.2	12.8	5.6			241	173,6	2581
LPC-12X-160Y-SR02-JL	1106	214	400	106	326	142	1/2"	3/4"	112	2,8	3500
	43.5	8.4	15.7	4.2	12.8	5.6			246	173,6	2581
LPC-12X-160Y-SR03-JL	1217	214	400	106	326	142	1/2"	3/4"	120	2,8	3500
	47.9	8.4	15.7	4.2	12.8	5.6			265	173,6	2581
LPC-12X-180Y-SR01-JL	1106	214	400	106	326	142	1/2"	3/4"	114	3,5	3500
	43.5	8.4	15.7	4.2	12.8	5.6			251	217	2581
LPC-12X-180Y-SR02-JL	1106	214	400	106	326	142	1/2"	3/4"	116	3,5	3500
	43.5	8.4	15.7	4.2	12.8	5.6			255	217	2581
LPC-12X-180Y-SR03-JL	1217	214	400	106	326	142	1/2"	3/4"	125	3,5	3500
	47.9	8.4	15.7	4.2	12.8	5.6			275	217	2581
LPC-12X-180Y-SR04-JL	1217	214	400	106	326	142	1/2"	3/4"	129	3,5	3500
	47.9	8.4	15.7	4.2	12.8	5.6			284	217	2581
LPC-12X-200Y-SR01-JL	1106	214	400	106	326	142	1/2"	3/4"	118	4,4	3500
	43.5	8.4	15.7	4.2	12.8	5.6			261	272,8	2581
LPC-12X-200Y-SR02-JL	1106	214	400	106	326	142	1/2"	3/4"	120	4,4	3500
	43.5	8.4	15.7	4.2	12.8	5.6			265	272,8	2581
LPC-12X-200Y-SR03-JL	1217	214	400	106	326	142	1/2"	3/4"	130	4,4	3500
	47.9	8.4	15.7	4.2	12.8	5.6			287	272,8	2581
LPC-12X-200Y-SR04-JL	1217	214	400	106	326	142	1/2"	3/4"	134	4,4	3500
	47.9	8.4	15.7	4.2	12.8	5.6			295	272,8	2581
LPC-12X-200Y-SR05-JL	1217	214	600	206	426	242	1/2"	3/4"	135	4,4	3500
	47.9	8.4	23.6	8.1	16.8	9.5			298	272,8	2581
LPC-12X-235Y-SR01-JL	1106	214	400	106	330	142	1/2"	3/4"	130	6,1	3500
	43.5	8.4	15.7	4.2	13.0	5.6			286	378,2	2581
LPC-12X-235Y-SR02-JL	1106	214	400	106	330	142	1/2"	3/4"	132	6,1	3500
	43.5	8.4	15.7	4.2	13.0	5.6			291	378,2	2581
LPC-12X-235Y-SR03-JL	1217	214	400	106	330	142	1/2"	3/4"	142	6,1	3500
	47.9	8.4	15.7	4.2	13.0	5.6			314	378,2	2581
LPC-12X-235Y-SR04-JL	1217	214	400	106	330	142	1/2"	3/4"	146	6,1	3500
	47.9	8.4	15.7	4.2	13.0	5.6			322	378,2	2581
LPC-12X-235Y-SR05-JL	1217	214	600	206	430	242	1/2"	3/4"	147	6,1	3500
	47.9	8.4	23.6	8.1	16.9	9.5			325	378,2	2581

LPC Compact Actuator Series

LPC - Single Acting - MANUAL OVERRIDE JL - Dimensions: mm (in) - Weights: Kg (lbs) - MOT Nm (ft-lb)											
Model	a*	b*	c	d	e	f	"P" NPT PORT	"N" NPT PORT	Weight	Swept Volume*	MOT
LPC-12X-235Y-SR06-JL	1217	214	600	206	430	242	1/2"	3/4"	157	6,1	3500
	47.9	8.4	23.6	8.1	16.9	9.5			345	378,2	2581
LPC-12X-285Y-SR01-JL	1101	214	400	106	382	142	1"	3/4"	157	9,0	3500
	43.3	8.4	15.7	4.2	15.0	5.6			346	558	2581
LPC-12X-285Y-SR02-JL	1101	214	400	106	382	142	1"	3/4"	161	9,0	3500
	43.3	8.4	15.7	4.2	15.0	5.6			354	558	2581
LPC-12X-285Y-SR03-JL	1212	214	400	106	382	142	1"	3/4"	170	9,0	3500
	47.7	8.4	15.7	4.2	15.0	5.6			374	558	2581
LPC-12X-285Y-SR04-JL	1212	214	400	106	382	142	1"	3/4"	177	9,0	3500
	47.7	8.4	15.7	4.2	15.0	5.6			389	558	2581
LPC-12X-285Y-SR05-JL	1212	214	600	206	482	242	1"	3/4"	178	9,0	3500
	47.7	8.4	23.6	8.1	19.0	9.5			391	558	2581
LPC-12X-285Y-SR06-JL	1212	214	600	206	482	242	1"	3/4"	187	9,0	3500
	47.7	8.4	23.6	8.1	19.0	9.5			412	558	2581
LPC-12X-335Y-SR01-JL	1106	214	413	113	413	149	1"	3/4"	184	12,3	3500
	43.5	8.4	16.3	4.4	16.3	5.8			406	763	2581
LPC-12X-335Y-SR02-JL	1106	214	413	113	413	149	1"	3/4"	187	12,3	3500
	43.5	8.4	16.3	4.4	16.3	5.8			413	763	2581
LPC-12X-335Y-SR03-JL	1217	214	413	113	413	149	1"	3/4"	198	12,3	3500
	47.9	8.4	16.3	4.4	16.3	5.8			437	763	2581
LPC-12X-335Y-SR04-JL	1217	214	413	113	413	149	1"	3/4"	205	12,3	3500
	47.9	8.4	16.3	4.4	16.3	5.8			452	763	2581
LPC-12X-335Y-SR05-JL	1217	214	600	206	507	242	1"	3/4"	206	12,3	3500
	47.9	8.4	23.6	8.1	19.9	9.5			455	763	2581
LPC-12X-335Y-SR06-JL	1217	214	600	206	507	242	1"	3/4"	216	12,3	3500
	47.9	8.4	23.6	8.1	19.9	9.5			476	763	2581
LPC-14X-180Y-SR01-JL	1321	252	400	89	335	135	1/2"	3/4"	162	4,1	5500
	52.0	9.9	15.7	3.5	13.2	5.3			357	254,2	4057
LPC-14X-235Y-SR01-JL	1321	252	400	89	335	135	1/2"	3/4"	178	7	5500
	52.0	9.9	15.7	3.5	13.2	5.3			393	434	4057
LPC-14X-235Y-SR02-JL	1321	252	400	89	335	135	1/2"	3/4"	182	7	5500
	52.0	9.9	15.7	3.5	13.2	5.3			402	434	4057
LPC-14X-235Y-SR03-JL	1321	252	600	189	435	235	1/2"	3/4"	193	7	5500
	52.0	9.9	23.6	7.4	17.1	9.3			425	434	4057
LPC-14X-285Y-SR01-JL	1316	252	400	89	386	135	1"	3/4"	205	10,2	5500
	51.8	9.9	15.7	3.5	15.2	5.3			452	632,4	4057
LPC-14X-285Y-SR02-JL	1316	252	400	89	386	135	1"	3/4"	209	10,2	5500
	51.8	9.9	15.7	3.5	15.2	5.3			460	632,4	4057
LPC-14X-285Y-SR03-JL	1316	252	600	189	486	235	1"	3/4"	219	10,2	5500
	51.8	9.9	23.6	7.4	19.1	9.3			483	632,4	4057
LPC-14X-285Y-SR04-JL	1291	252	600	189	486	235	1"	3/4"	194	10,2	5500
	50.8	9.9	23.6	7.4	19.1	9.3			429	632,4	4057
LPC-14X-335Y-SR01-JL	1321	252	413	96	413	142	1"	3/4"	237	14,1	5500
	52.0	9.9	16.3	3.8	16.3	5.6			523	874,2	4057
LPC-14X-335Y-SR02-JL	1321	252	413	96	413	142	1"	3/4"	241	14,1	5500
	52.0	9.9	16.3	3.8	16.3	5.6			532	874,2	4057

LPC Compact Actuator Series

LPC - Single Acting - MANUAL OVERRIDE JL - Dimensions: mm (in) - Weights: Kg (lbs) - MOT Nm (ft-lb)											
Model	a*	b*	c	d	e	f	"P" NPT PORT	"N" NPT PORT	Weight	Swept Volume*	MOT
LPC-14X-335Y-SR03-JL	1321	252	600	189	507	235	1"	3/4"	252	14,1	5500
	52.0	9.9	23.6	7.4	19.9	9.3			555	874,2	4057
LPC-14X-335Y-SR04-JL	1296	252	600	189	507	235	1"	3/4"	226	14,1	5500
	51.0	9.9	23.6	7.4	19.9	9.3			499	874,2	4057
LPC-14X-335Y-SR05-JL	1296	252	900	339	657	385	1"	3/4"	258	14,1	5500
	51.0	9.9	35.4	13.3	25.8	15.2			568	874,2	4057
LPC-14X-335Y-SR06-JL	1296	252	900	339	657	385	1"	3/4"	278	14,1	5500
	51.0	9.9	35.4	13.3	25.8	15.2			614	874,2	4057
LPC-14X-360Y-SR01-JL	1321	252	439	109	439	155	1"	3/4"	257	16,3	5500
	52.0	9.9	17.3	4.3	17.3	6.1			566	1010,6	4057
LPC-14X-360Y-SR02-JL	1321	252	439	109	439	155	1"	3/4"	261	16,3	5500
	52.0	9.9	17.3	4.3	17.3	6.1			574	1010,6	4057
LPC-14X-360Y-SR03-JL	1321	252	600	189	520	235	1"	3/4"	271	16,3	5500
	52.0	9.9	23.6	7.4	20.5	9.3			597	1010,6	4057
LPC-14X-360Y-SR04-JL	1296	252	600	189	520	235	1"	3/4"	246	16,3	5500
	51.0	9.9	23.6	7.4	20.5	9.3			541	1010,6	4057
LPC-14X-360Y-SR05-JL	1296	252	900	339	670	385	1"	3/4"	275	16,3	5500
	51.0	9.9	35.4	13.3	26.4	15.2			605	1010,6	4057
LPC-14X-360Y-SR06-JL	1296	252	900	339	670	385	1"	3/4"	294	16,3	5500
	51.0	9.9	35.4	13.3	26.4	15.2			647	1010,6	4057
LPC-14X-385Y-SR01-JL	1321	252	465	122	465	168	1"	3/4"	275	18,7	5500
	52.0	9.9	18.3	4.8	18.3	6.6			607	1159,4	4057
LPC-14X-385Y-SR02-JL	1321	252	465	122	465	168	1"	3/4"	279	18,7	5500
	52.0	9.9	18.3	4.8	18.3	6.6			615	1159,4	4057
LPC-14X-385Y-SR03-JL	1321	252	600	189	533	235	1"	3/4"	279	18,7	5500
	52.0	9.9	23.6	7.4	21.0	9.3			615	1159,4	4057
LPC-14X-385Y-SR04-JL	1296	252	600	189	533	235	1"	3/4"	290	18,7	5500
	51.0	9.9	23.6	7.4	21.0	9.3			639	1159,4	4057
LPC-14X-385Y-SR05-JL	1296	252	900	339	683	385	1"	3/4"	264	18,7	5500
	51.0	9.9	35.4	13.3	26.9	15.2			582	1159,4	4057
LPC-14X-385Y-SR06-JL	1291	252	900	339	683	385	1"	3/4"	295	18,7	5500
	50.8	9.9	35.4	13.3	26.9	15.2			651	1159,4	4057
LPC-14X-435Y-SR01-JL	1321	252	526	152	526	198	1"	3/4"	326	18,7	5500
	52.0	9.9	20.7	6.0	20.7	7.8			719	1475,6	4057
LPC-14X-435Y-SR02-JL	1321	252	526	152	526	198	1"	3/4"	330	23,8	5500
	52.0	9.9	20.7	6.0	20.7	7.8			728	1475,6	4057
LPC-14X-435Y-SR03-JL	1321	252	600	189	563	235	1"	3/4"	341	23,8	5500
	52.0	9.9	23.6	7.4	22.2	9.3			751	1475,6	4057
LPC-14X-435Y-SR04-JL	1372	252	600	189	563	235	1"	3/4"	314	23,8	5500
	54.0	9.9	23.6	7.4	22.2	9.3			693	1475,6	4057
LPC-14X-435Y-SR05-JL	1372	252	900	339	713	385	1"	3/4"	346	23,8	5500
	54.0	9.9	35.4	13.3	28.1	15.2			762	1475,6	4057
LPC-14X-435Y-SR06-JL	1372	252	900	339	713	385	1"	3/4"	362	23,8	5500
	54.0	9.9	35.4	13.3	28.1	15.2			799	1475,6	4057

Notes:

\* Swept Volume and overall dimensions data are referred to actuators with end stops adjusted for 90° of stroke. Refer to Figure for details of Ports "N" and "P".

Tolerance 5% to be considered on dimensions and weight

## Dimensional Data and Weights – LPC Double Acting With JL Manual Override

Figure 17: Dimensional Data – Double Acting – Sym/Cant – With JL Manual Override

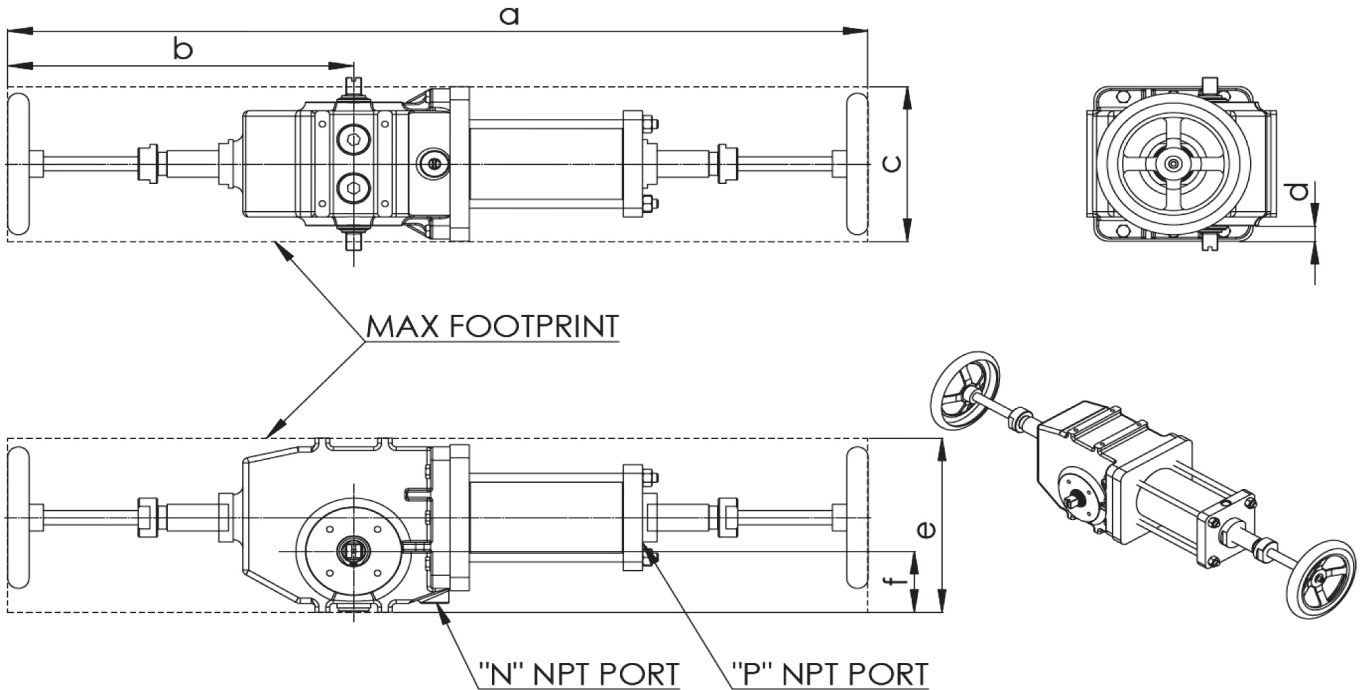


Table 4: LPC Double Acting w/ JL Manual Override – Dimensional, Weight and Volume Tables

LPC - Double Acting - MANUAL OVERRIDE JL - Dimensions: mm (in) - Weights: Kg (lbs) - MOT Nm (ft-lb)												
Model	a*	b*	c	d	e	f	"P" NPT PORT	"N" NPT PORT	Weight	Swept Volume*		MOT
										Port "P"	Port "N"	
LPC-05X-080Y-DA-JL	878	348	175	18	197	69	1/4"	1/4"	35	0.5	2.8	500
	34.5	13.7	6.9	0.7	7.8	2.7			76	31	171	369
LPC-05X-100Y-DA-JL	878	348	175	18	197	69	1/4"	1/4"	41	0.8	3.1	500
	34.5	13.7	6.9	0.7	7.8	2.7			91	49	189	369
LPC-05X-120Y-DA-JL	878	348	175	18	197	69	1/4"	1/4"	42	1.2	3.5	500
	34.5	13.7	6.9	0.7	7.8	2.7			93	73	214	369
LPC-05X-140Y-DA-JL	878	348	175	18	197	69	1/4"	1/4"	45	1.6	3.9	500
	34.5	13.7	6.9	0.7	7.8	2.7			99	98	238	369
LPC-05X-160Y-DA-JL	878	348	185	23	200	69	1/2"	1/4"	49	2.1	4.4	500
	34.5	13.7	7.3	0.9	7.9	2.7			108	128	269	369
LPC-10X-100Y-DA-JL	1130	452	400	114	400	150	1/4"	1/2"	71	0.9	6.7	1600
	44.5	17.8	15.7	4.5	15.7	5.9			156	55	409	1180

**LPC Compact Actuator Series**

LPC - Double Acting - MANUAL OVERRIDE JL - Dimensions: mm (in) - Weights: Kg (lbs) - MOT Nm (ft-lb)												
Model	a*	b*	c	d	e	f	"P" NPT PORT	"N" NPT PORT	Weight	Swept Volume*		MOT
										Port "P"	Port "N"	
LPC-10X-120Y-DA-JL	1130	452	400	114	400	150	1/4"	1/2"	75	1.5	7.1	1600
	44.5	17.8	15.7	4.5	15.7	5.9			165	92	433	1180
LPC-10X-140Y-DA-JL	1130	452	400	114	400	150	1/4"	1/2"	78	2.1	7.7	1600
	44.5	17.8	15.7	4.5	15.7	5.9			172	128	470	1180
LPC-10X-160Y-DA-JL	1130	452	400	114	400	150	1/2"	1/2"	82	2.4	8.3	1600
	44.5	17.8	15.7	4.5	15.7	5.9			181	146	506	1180
LPC-10X-180Y-DA-JL	1130	452	400	114	400	150	1/2"	1/2"	88	3.4	9.0	1600
	44.5	17.8	15.7	4.5	15.7	5.9			194	207	549	1180
LPC-10X-200Y-DA-JL	1130	452	400	114	400	150	1/2"	1/2"	90	4.2	9.8	1600
	44.5	17.8	15.7	4.5	15.7	5.9			198	256	598	1180
LPC-10X-220Y-DA-JL	1130	452	400	114	400	150	1/2"	1/2"	96	5.1	10.7	1600
	44.5	17.8	15.7	4.5	15.7	5.9			212	311	653	1180
LPC-12X-140Y-DA-JL	1081	424	400	106	400	142	1/4"	3/4"	92	2.2	9,7	3500
	42.6	16.7	15.7	4.2	15.7	5.6			203	134	592	2581
LPC-12X-160Y-DA-JL	1081	424	400	106	400	142	1/2"	3/4"	95	2,8	10,3	3500
	42.6	16.7	15.7	4.2	15.7	5.6			210	171	629	2581
LPC-12X-180Y-DA-JL	1081	424	400	106	400	142	1/2"	3/4"	99	3,5	11	3500
	42.6	16.7	15.7	4.2	15.7	5.6			217	214	671	2581
LPC-12X-200Y-DA-JL	1081	424	400	106	400	142	1/2"	3/4"	102	4,4	11,8	3500
	42.6	16.7	15.7	4.2	15.7	5.6			225	269	720	2581
LPC-12X-235Y-DA-JL	1081	424	400	106	400	142	1/2"	3/4"	113	6,1	13,3	3500
	42.6	16.7	15.7	4.2	15.7	5.6			249	372	812	2581
LPC-12X-285Y-DA-JL	1081	424	400	106	400	142	1"	3/4"	136	9,0	16	3500
	42.6	16.7	15.7	4.2	15.7	5.6			300	549	976	2581
LPC-12X-335Y-DA-JL	1081	424	600	206	600	242	1"	3/4"	158	12,3	19,1	3500
	42.6	16.7	23.6	8.1	23.6	9.5			349	751	1166	2581
LPC-14X-180Y-DA-JL	1179	475	400	89	400	135	1/2"	3/4"	120	4,1	12,1	5500
	46.4	18.7	15.7	3.5	15.7	5.3			263	250	738	4057
LPC-14X-235Y-DA-JL	1179	475	400	89	400	135	1/2"	3/4"	133	7	14,7	5500
	46.4	18.7	15.7	3.5	15.7	5.3			293	427	897	4057
LPC-14X-285Y-DA-JL	1179	475	400	89	400	135	1"	3/4"	151	10,2	17,6	5500
	46.4	18.7	15.7	3.5	15.7	5.3			334	622	1074	4057
LPC-14X-335Y-DA-JL	1179	475	600	189	600	235	1"	3/4"	181	14,1	21,1	5500
	46.4	18.7	23.6	7.4	23.6	9.3			399	860	1288	4057
LPC-14X-360Y-DA-JL	1179	475	600	189	600	235	1"	3/4"	193	16,3	23,1	5500
	46.4	18.7	23.6	7.4	23.6	9.3			425	995	1410	4057
LPC-14X-385Y-DA-JL	1179	475	600	189	600	235	1"	3/4"	213	18,7	25,2	5500
	46.4	18.7	23.6	7.4	23.6	9.3			469	1141	1538	4057
LPC-14X-435Y-DA-JL**	1188	475	900	339	900	385	1"	3/4"	256	23,8	29,9	5500
	46.8	18.7	35.4	13.3	35.4	15.2			565	1476	1848	4057

Notes:

\* Swept Volume and overall dimensions data are referred to actuators with end stops adjusted for 90° of stroke. Refer to Figure for details of Ports "N" and "P".

\*\* Actuators with MAWP = 10,5 barg.

Tolerance 5% to be considered on dimensions and weight

Table 5: LPC Single Acting – Performance Tables

Actuator Model	METRIC / IMPERIAL TORQUE TABLE															Max Operating Pressure	Max Operating Torque	Swept Volume*
	Spring Torque	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)			
		2.5 (36)	3 (44)	3.5 (51)	4 (58)	4.5 (65)	5 (73)	5.5 (80)	6 (87)	7 (102)	9 (131)	10 (145)	12 (174)					
		Output Torque Nm (ft-lb) @ supply pressure																
Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	barg (PSIG)	Nm (lb-ft)	L (cu in)	
LPC-05A-080Y-SR01	start	61 (45)		52 (38)	68 (50)	83 (61)	99 (73)	114 (84)	130 (96)	146 (108)	177 (131)	240 (177)	271 (200)	334 (246)				
	run	25 (18)		19 (14)	27 (20)	36 (27)	44 (32)	52 (38)	61 (45)	69 (51)	86 (63)	119 (88)	136 (100)	169 (125)	12 (174)	500 (369)	0,6 (37)	
	end	34 (25)		21 (15)	38 (28)	55 (41)	71 (52)	88 (65)	104 (77)	121 (89)	154 (114)	221 (163)	254 (187)	320 (236)				
LPC-05A-100Y-SR02	start	107 (79)			98 (72)	122 (90)	147 (108)	171 (126)	196 (145)	220 (162)	269 (198)	367 (271)	416 (307)					
	run	43 (32)			37 (27)	50 (37)	63 (46)	76 (56)	89 (66)	102 (75)	128 (94)	180 (133)	206 (152)		11,7 (170)	500 (369)	0,9 (55)	
	end	61 (45)			46 (34)	72 (53)	98 (72)	124 (91)	150 (111)	175 (129)	227 (167)	331 (244)	383 (282)					
LPC-05A-120Y-SR03	start	165 (122)		93 (69)	128 (94)	164 (121)	199 (147)	234 (173)	269 (198)	305 (225)	375 (277)							
	run	69 (51)		15 (11)	46 (34)	65 (48)	84 (62)	103 (76)	122 (90)	141 (104)	178 (131)				8,7 (126)	500 (369)	1,3 (79)	
	end	99 (73)		15 (11)	52 (38)	89 (66)	127 (94)	164 (121)	201 (148)	239 (176)	313 (231)							
LPC-05A-140Y-SR04	start	211 (156)			185 (136)	232 (171)	280 (207)	328 (242)	376 (277)	424 (313)								
	run	87 (64)			70 (52)	96 (71)	122 (90)	147 (108)	173 (128)	198 (146)					6,7 (97)	500 (369)	1,7 (104)	
	end	125 (92)			87 (64)	138 (102)	189 (139)	240 (177)	290 (214)	341 (252)								
LPC-05A-160Y-SR06	start	324 (239)				268 (198)	330 (243)	393 (290)										
	run	136 (100)				100 (74)	135 (100)	168 (124)							5,8 (84)	500 (369)	2,2 (134)	
	end	199 (147)				123 (91)	190 (140)	256 (189)										
LPC-10A-160Y-SR02	start	367 (271)			316 (233)	400 (295)	483 (356)	566 (417)	650 (479)	733 (541)	900 (664)	1233 (909)	1400 (1033)					
	run	153 (113)			121 (89)	166 (122)	210 (155)	255 (188)	299 (221)	343 (253)	432 (319)	609 (449)	697 (514)		11,2 (162)	1600 (1180)	2,6 (159)	
	end	222 (164)			152 (112)	240 (177)	329 (243)	417 (308)	505 (372)	594 (438)	770 (568)	1124 (829)	1301 (960)					
LPC-10A-180Y-SR02	start	362 (267)	256 (189)	362 (267)	467 (344)	572 (422)	678 (500)	784 (578)	889 (656)	994 (733)	1205 (889)							
	run	150 (111)	86 (63)	145 (107)	202 (149)	258 (190)	314 (232)	370 (273)	426 (314)	482 (356)	594 (438)				8,8 (128)	1600 (1180)	3,2 (195)	
	end	218 (161)	88 (65)	200 (148)	311 (229)	423 (312)	535 (395)	647 (477)	759 (560)	871 (642)	1094 (807)							
LPC-10A-220Y-SR02	start	352 (260)	506 (373)	664 (490)	821 (606)	979 (722)	1136 (838)	1294 (954)										
	run	145 (107)	223 (164)	306 (226)	390 (288)	474 (350)	557 (411)	641 (473)							5,9 (86)	1600 (1180)	4,8 (293)	
	end	207 (153)	353 (260)	520 (384)	687 (507)	854 (630)	1021 (753)	1188 (876)										
LPC-10A-200Y-SR03	start	499 (368)		402 (296)	532 (392)	662 (488)	792 (584)	923 (681)	1053 (777)	1183 (873)								
	run	210 (155)		151 (111)	222 (164)	291 (215)	360 (266)	430 (317)	499 (368)	568 (419)					7,6 (110)	1600 (1180)	4 (244)	
	end	312 (230)		186 (137)	324 (239)	462 (341)	600 (443)	738 (544)	876 (646)	1014 (748)								



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Actuator Model	METRIC / IMPERIAL TORQUE TABLE															Max Operating Pressure	Max Operating Torque	Swept Volume*
	Spring Torque	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)			
		2.5 (36)	3 (44)	3.5 (51)	4 (58)	4.5 (65)	5 (73)	5.5 (80)	6 (87)	7 (102)	9 (131)	10 (145)	12 (174)					
		Output Torque Nm (ft-lb) @ supply pressure																
Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	barg (PSIG)	Nm (lb-ft)	L (cu in)	
LPC-10A-220Y-SR04	start	636 (469)		454 (335)	612 (451)	770 (568)	927 (684)	1085 (800)	1242 (916)	1400 (1033)								
	run	271 (200)		164 (121)	250 (184)	334 (246)	418 (308)	502 (370)	586 (432)	669 (493)						6,6 (96)	1600 (1180)	4,8 (293)
	end	407 (300)		187 (138)	354 (261)	521 (384)	688 (507)	855 (631)	1022 (754)	1189 (877)								
LPC-10A-220Y-SR05	start	777 (573)			509 (375)	666 (491)	824 (608)	981 (724)	1139 (840)	1296 (956)								
	run	333 (246)			176 (130)	264 (195)	349 (257)	433 (319)	517 (381)	600 (443)						6,9 (100)	1600 (1180)	4,8 (293)
	end	506 (373)			189 (139)	356 (263)	523 (386)	690 (509)	857 (632)	1024 (755)								
LPC-10A-220Y-SR06	start	926 (683)					720 (531)	878 (648)	1036 (764)	1193 (880)								
	run	397 (293)					275 (203)	361 (266)	446 (329)	529 (390)						7,2 (104)	1600 (1180)	4,8 (293)
	end	606 (447)					348 (257)	515 (380)	682 (503)	850 (627)								
LPC-12A-235Y-SR03	start	1069 (788)			702 (518)	910 (671)	1119 (825)	1327 (979)	1536 (1133)	1744 (1286)	2161 (1594)	2996 (2210)						
	run	463 (341)			250 (184)	365 (269)	478 (353)	589 (434)	699 (516)	810 (597)	1031 (760)	1474 (1087)				10,2 (148)	3500 (2581)	6 (366)
	end	715 (527)			281 (207)	502 (370)	723 (533)	944 (696)	1165 (859)	1386 (1022)	1829 (1349)	2713 (2001)						
LPC-12A-285Y-SR03	start	1066 (786)	772 (569)	1079 (796)	1386 (1022)	1693 (1249)	1999 (1474)	2306 (1701)	2613 (1927)	2920 (2154)								
	run	461 (340)	290 (214)	456 (336)	620 (457)	782 (577)	945 (697)	1108 (817)	1271 (937)	1434 (1058)						6,9 (100)	3500 (2581)	8,9 (543)
	end	712 (525)	356 (263)	681 (502)	1006 (742)	1332 (982)	1657 (1222)	1982 (1462)	2307 (1702)	2633 (1942)								
LPC-12A-285Y-SR04	start	1335 (985)			862 (636)	1169 (862)	1476 (1089)	1783 (1315)	2089 (1541)	2396 (1767)	2703 (1994)							
	run	584 (431)			314 (232)	482 (356)	646 (476)	809 (597)	972 (717)	1134 (836)	1297 (957)					7,2 (104)	3500 (2581)	8,9 (543)
	end	920 (679)			366 (270)	691 (510)	1017 (750)	1342 (990)	1667 (1230)	1992 (1469)	2318 (1710)							
LPC-12A-335Y-SR04	start	1332 (982)	1138 (839)	1561 (1151)	1985 (1464)	2409 (1777)	2833 (2090)											
	run	583 (430)	465 (343)	692 (510)	916 (676)	1141 (842)	1366 (1008)									5,2 (75)	3500 (2581)	12,3 (751)
	end	916 (676)	658 (485)	1107 (816)	1556 (1148)	2006 (1480)	2455 (1811)											
LPC-12A-285Y-SR05	start	1604 (1183)			952 (702)	1259 (929)	1566 (1155)	1873 (1381)	2179 (1607)	2486 (1834)	3100 (2286)							
	run	708 (522)			338 (249)	508 (375)	672 (496)	835 (616)	998 (736)	1161 (856)	1487 (1097)					7,6 (110)	3500 (2581)	8,9 (543)
	end	1127 (831)			376 (277)	702 (518)	1027 (757)	1352 (997)	1677 (1237)	2002 (1477)	2653 (1957)							
LPC-12A-335Y-SR05	start	1600 (1180)	921 (679)	1345 (992)	1768 (1304)	2192 (1617)	2616 (1929)	3040 (2242)										
	run	706 (521)	320 (236)	554 (409)	780 (575)	1005 (741)	1230 (907)	1455 (1073)								5,5 (80)	3500 (2581)	12,3 (751)
	end	1124 (829)	343 (253)	792 (584)	1242 (916)	1691 (1247)	2140 (1578)	2590 (1910)										

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Actuator Model	METRIC / IMPERIAL TORQUE TABLE																			
	Spring Torque	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)	Max Operating Pressure	Max Operating Torque	Swept Volume*			
		2.5 (36)	3 (44)	3.5 (51)	4 (58)	4.5 (65)	5 (73)	5.5 (80)	6 (87)	7 (102)	9 (131)	10 (145)	12 (174)							
		Output Torque Nm (ft-lb) @ supply pressure																		
Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	barg (PSIG)	Nm (lb-ft)	L (cu in)				
LPC-12A-335Y-SR06	start	1959 (1445)		1040 (767)	1464 (1080)	1888 (1393)	2312 (1705)	2736 (2018)							5,9 (86)	3500 (2581)	12,3 (751)			
	run	874 (645)		356 (263)	592 (437)	819 (604)	1044 (770)	1269 (936)												
	end	1416 (1044)		372 (274)	821 (606)	1271 (937)	1720 (1269)	2169 (1600)												
LPC-14A-285Y-SR03	start	2224 (1640)					1524 (1124)	1872 (1381)	2220 (1637)	2567 (1893)	3263 (2407)	4653 (3432)			10,2 (148)	5500 (4057)	10,2 (622)			
	run	970 (715)					568 (419)	758 (559)	945 (697)	1130 (833)	1499 (1106)	2237 (1650)								
	end	1518 (1120)					688 (507)	1056 (779)	1425 (1051)	1794 (1323)	2531 (1867)	4005 (2954)								
LPC-14A-335Y-SR03	start	2220 (1637)			1754 (1294)	2234 (1648)	2714 (2002)	3195 (2357)	3675 (2711)	4156 (3065)					7,3 (106)	5500 (4057)	14,1 (860)			
	run	968 (714)			694 (512)	953 (703)	1208 (891)	1463 (1079)	1718 (1267)	1973 (1455)										
	end	1514 (1117)			931 (687)	1440 (1062)	1950 (1438)	2459 (1814)	2968 (2189)	3478 (2565)										
LPC-14A-360Y-SR04	start	2675 (1973)			1928 (1422)	2482 (1831)	3037 (2240)	3592 (2649)	4146 (3058)	4701 (3467)					6,7 (97)	5500 (4057)	15,8 (964)			
	run	1171 (864)			740 (546)	1041 (768)	1337 (986)	1631 (1203)	1926 (1421)	2220 (1637)										
	end	1842 (1359)			945 (697)	1533 (1131)	2121 (1564)	2709 (1998)	3298 (2432)	3886 (2866)										
LPC-14A-385Y-SR04	start	2673 (1972)		1849 (1364)	2483 (1831)	3118 (2300)	3752 (2767)	4386 (3235)							5,8 (84)	5500 (4057)	18 (1098)			
	run	1170 (863)		697 (514)	1041 (768)	1380 (1018)	1716 (1266)	2053 (1514)												
	end	1840 (1357)		861 (635)	1534 (1131)	2207 (1628)	2879 (2123)	3552 (2620)												
LPC-14A-360Y-SR05	start	3090 (2279)				2185 (1612)	2739 (2020)	3294 (2430)	3849 (2839)	4404 (3248)					6,9 (100)	5500 (4057)	15,8 (964)			
	run	1352 (997)				832 (614)	1134 (836)	1430 (1055)	1725 (1272)	2020 (1490)										
	end	2128 (1570)				1047 (772)	1636 (1207)	2224 (1640)	2812 (2074)	3400 (2508)										
LPC-14A-385Y-SR05	start	3087 (2277)			2186 (1612)	2820 (2080)	3454 (2548)	4089 (3016)	4723 (3484)						6,1 (88)	5500 (4057)	18 (1098)			
	run	1351 (996)			833 (614)	1177 (868)	1516 (1118)	1853 (1367)	2189 (1615)											
	end	2125 (1567)			1048 (773)	1721 (1269)	2394 (1766)	3066 (2261)	3739 (2758)											
LPC-14A-435Y-SR05	start	3082 (2273)	1789 (1319)	2599 (1917)	3409 (2514)	4219 (3112)									4,7 (68)	5500 (4057)	23 (1404)			
	run	1348 (994)	608 (448)	1058 (780)	1492 (1100)	1922 (1418)														
	end	2120 (1564)	628 (463)	1487 (1097)	2345 (1730)	3204 (2363)														

LPC Compact Actuator Series

Actuator Model		METRIC / IMPERIAL TORQUE TABLE														Max Operating Pressure	Max Operating Torque	Swept Volume*
		Spring Torque	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)			
			2.5 (36)	3 (44)	3.5 (51)	4 (58)	4.5 (65)	5 (73)	5.5 (80)	6 (87)	7 (102)	9 (131)	10 (145)	12 (174)				
			Output Torque Nm (ft-lb) @ supply pressure															
Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	barg (PSIG)	Nm (lb-ft)	L (cu in)		
LPC-14A-385Y-SR06	start	3604 (2658)				2394 (1766)	3029 (2234)	3663 (2702)	4298 (3170)	4932 (3638)					6,4 (93)	5500 (4057)	18 (1098)	
	run	1591 (1173)				902 (665)	1248 (920)	1588 (1171)	1925 (1420)	2262 (1668)								
	end	2533 (1868)				1115 (822)	1788 (1319)	2460 (1814)	3133 (2311)	3806 (2807)								
LPC-14A-435B-SR06	start	3599 (2654)		2173 (1603)	2983 (2200)	3793 (2798)	4603 (3395)								5 (73)	5500 (4057)	23 (1404)	
	run	1588 (1171)		778 (574)	1224 (903)	1657 (1222)	2087 (1539)											
	end	2528 (1865)		881 (650)	1739 (1283)	2598 (1916)	3457 (2550)											

Table 6: LPC Double Acting – Performance Tables

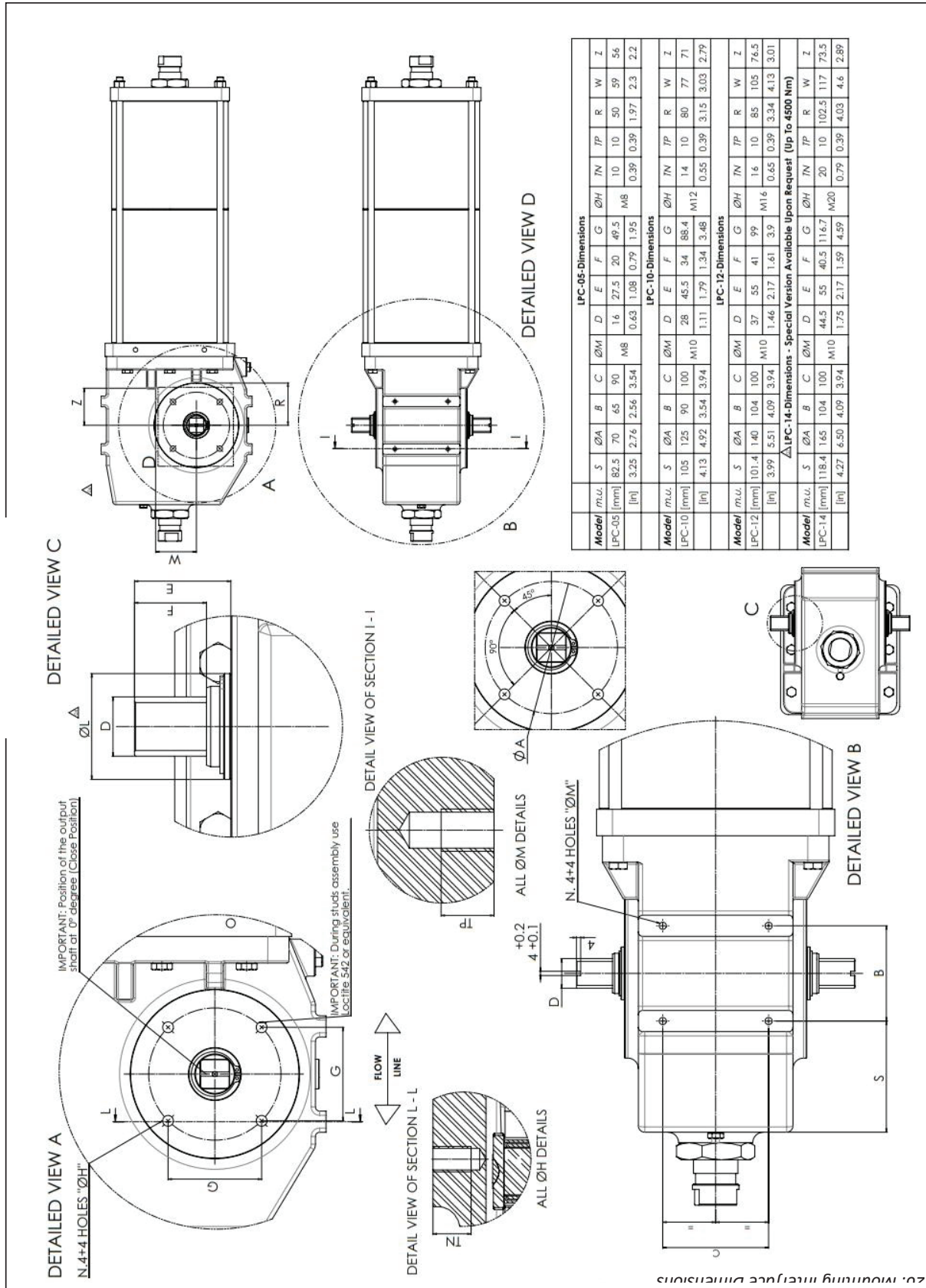
Actuator Model	METRIC / IMPERIAL TORQUE TABLE														Max Operating Pressure	Max Operating Torque	Swept Volume*	
	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	barg (PSIG)	Port "N"			Port "P"	
	2.5 (36)	3 (44)	3.5 (51)	4 (58)	4.5 (65)	5 (73)	5.5 (80)	6 (87)	7 (102)	9 (131)	10 (145)	12 (174)	Output Torque Nm (ft-lb) @ supply pressure					
	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	barg (PSIG)			Nm (lb-ft)	L (cu in)
LPC-05A-080Y-DA	start	75 (55)	91 (67)	106 (78)	122 (90)	138 (102)	153 (113)	169 (125)	185 (136)	216 (159)	279 (206)	310 (229)	373 (275)	12 (174)	500 (369)	2,5 (153)	0,6 (37)	
	run	40 (30)	48 (35)	56 (41)	65 (48)	73 (54)	81 (60)	90 (66)	98 (72)	115 (85)	148 (109)	164 (121)	198 (146)					
	end	80 (59)	96 (71)	113 (83)	130 (96)	146 (108)	163 (120)	179 (132)	196 (145)	229 (169)	295 (218)	329 (243)	395 (291)					
LPC-05A-100Y-DA	start	117 (86)	142 (105)	166 (122)	191 (141)	215 (159)	240 (177)	264 (195)	289 (213)	338 (249)	435 (321)			9,7 (141)	500 (369)	2,7 (165)	0,9 (55)	
	run	62 (46)	75 (55)	88 (65)	101 (74)	114 (84)	127 (94)	140 (103)	153 (113)	179 (132)	231 (170)							
	end	124 (91)	150 (111)	176 (130)	202 (149)	228 (168)	254 (187)	280 (207)	306 (226)	358 (264)	462 (341)							
LPC-05A-120Y-DA	start	169 (125)	204 (150)	240 (177)	275 (203)	310 (229)	345 (254)	380 (280)	416 (307)					6,7 (97)	500 (369)	2,9 (177)	1,3 (79)	
	run	90 (66)	108 (80)	127 (94)	146 (108)	164 (121)	183 (135)	202 (149)	221 (163)									
	end	179 (132)	217 (160)	254 (187)	291 (215)	329 (243)	366 (270)	403 (297)	441 (325)									
LPC-10A-160Y-DA	start	400 (295)	483 (356)	567 (418)	650 (479)	733 (541)	817 (603)	900 (664)	983 (725)	1150 (848)				9,1 (132)	1600 (1180)	8 (488)	2,6 (159)	
	run	212 (156)	257 (190)	301 (222)	345 (254)	389 (287)	434 (320)	478 (353)	522 (385)	610 (450)								
	end	424 (313)	512 (378)	601 (443)	689 (508)	778 (574)	866 (639)	954 (704)	1043 (769)	1219 (899)								
LPC-10A-180Y-DA	start	506 (373)	612 (451)	717 (529)	823 (607)	928 (684)	1034 (763)	1139 (840)	1245 (918)					7,2 (104)	1600 (1180)	8,6 (525)	3,2 (195)	
	run	269 (198)	325 (240)	381 (281)	437 (322)	493 (364)	549 (405)	605 (446)	661 (488)									
	end	537 (396)	649 (479)	760 (561)	872 (643)	984 (726)	1096 (808)	1208 (891)	1320 (974)									
LPC-10A-200Y-DA	start	625 (461)	755 (557)	886 (653)	1016 (749)	1146 (845)	1276 (941)	1406 (1037)						5,8 (84)	1600 (1180)	9,3 (568)	4 (244)	
	run	332 (245)	401 (296)	470 (347)	539 (398)	608 (448)	677 (499)	746 (550)										
	end	663 (489)	801 (591)	939 (693)	1077 (794)	1215 (896)	1353 (998)	1491 (1100)										
LPC-10A-220Y-DA	start	756 (558)	914 (674)	1071 (790)	1229 (906)	1387 (1023)								4,8 (70)	1600 (1180)	10,1 (616)	4,8 (293)	
	run	401 (296)	485 (358)	569 (420)	652 (481)	736 (543)												
	end	802 (592)	969 (715)	1136 (838)	1303 (961)	1470 (1084)												
LPC-12A-235Y-DA	start	1036 (764)	1245 (918)	1454 (1072)	1662 (1226)	1871 (1380)	2079 (1533)	2288 (1688)	2496 (1841)	2913 (2149)				7,9 (115)	3500 (2581)	11,3 (690)	6 (366)	
	run	550 (406)	661 (488)	772 (569)	882 (651)	993 (732)	1104 (814)	1214 (895)	1325 (977)	1546 (1140)								
	end	1099 (811)	1320 (974)	1541 (1137)	1762 (1300)	1983 (1463)	2204 (1626)	2426 (1789)	2647 (1952)	3089 (2278)								

LPC Compact Actuator Series

Actuator Model		METRIC / IMPERIAL TORQUE TABLE														Max Operating Pressure	Max Operating Torque	Swept Volume*				
		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)	Port "N"			Port "P"				
		2.5 (36)	3 (44)	3.5 (51)	4 (58)	4.5 (65)	5 (73)	5.5 (80)	6 (87)	7 (102)	9 (131)	10 (145)	12 (174)	Output Torque Nm (ft-lb) @ supply pressure								
		Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)	Nm (lb-ft)			barg (PSIG)	Nm (lb-ft)	L (cu in)	L (cu in)	
LPC-12A-285Y-DA	start	1524 (1124)	1831 (1350)	2138 (1577)	2445 (1803)	2751 (2029)	3058 (2255)								5,3 (77)	3500 (2581)	13,9 (848)	8,9 (543)				
	run	809 (597)	972 (717)	1135 (837)	1298 (957)	1460 (1077)	1623 (1197)															
	end	1616 (1192)	1942 (1432)	2267 (1672)	2592 (1912)	2917 (2151)	3242 (2391)															
LPC-14A-285Y-DA	start	1728 (1275)	2076 (1531)	2423 (1787)	2771 (2044)	3118 (2300)	3466 (2556)	3814 (2813)	4162 (3070)	4857 (3582)					7,4 (107)	5500 (4057)	17,1 (1044)	10,2 (622)				
	run	917 (676)	1102 (813)	1286 (949)	1471 (1085)	1655 (1221)	1840 (1357)	2024 (1493)	2209 (1629)	2578 (1901)												
	end	1832 (1351)	2201 (1623)	2569 (1895)	2938 (2167)	3306 (2438)	3675 (2711)	4044 (2983)	4412 (3254)	5150 (3798)												
LPC-14A-335Y-DA	start	2387 (1761)	2868 (2115)	3348 (2469)	3828 (2823)	4309 (3178)	4789 (3532)								5,4 (78)	5500 (4057)	20,3 (1239)	14,1 (860)				
	run	1267 (934)	1522 (1123)	1777 (1311)	2032 (1499)	2287 (1687)	2542 (1875)															
	end	2531 (1867)	3040 (2242)	3550 (2618)	4059 (2994)	4568 (3369)	5078 (3745)															
LPC-14A-360Y-DA	start	2757 (2033)	3312 (2443)	3866 (2851)	4421 (3261)										4,6 (67)	5500 (4057)	22,8 (1391)	15,8 (964)				
	run	1463 (1079)	1758 (1297)	2052 (1513)	2347 (1731)																	
	end	2923 (2156)	3511 (2590)	4099 (3023)	4688 (3458)																	

(\*) Note: MAWP (Maximum Allowable Working Pressure) : 12 barg. Actuators with (\*\*) have exceptionally MAWP = 10,5 barg.

# Mounting Interface Coupling Dimensions and Standard NAMUR VDE/VDI 3845 Kit Details (available as optional item, upon request)



**Figure 18:** Coupling Details of LPC-05, LPC-10, LPC-12 Symmetric/Canted (also LPC-14 could be supplied with this coupling interface, but as special version and upon request)

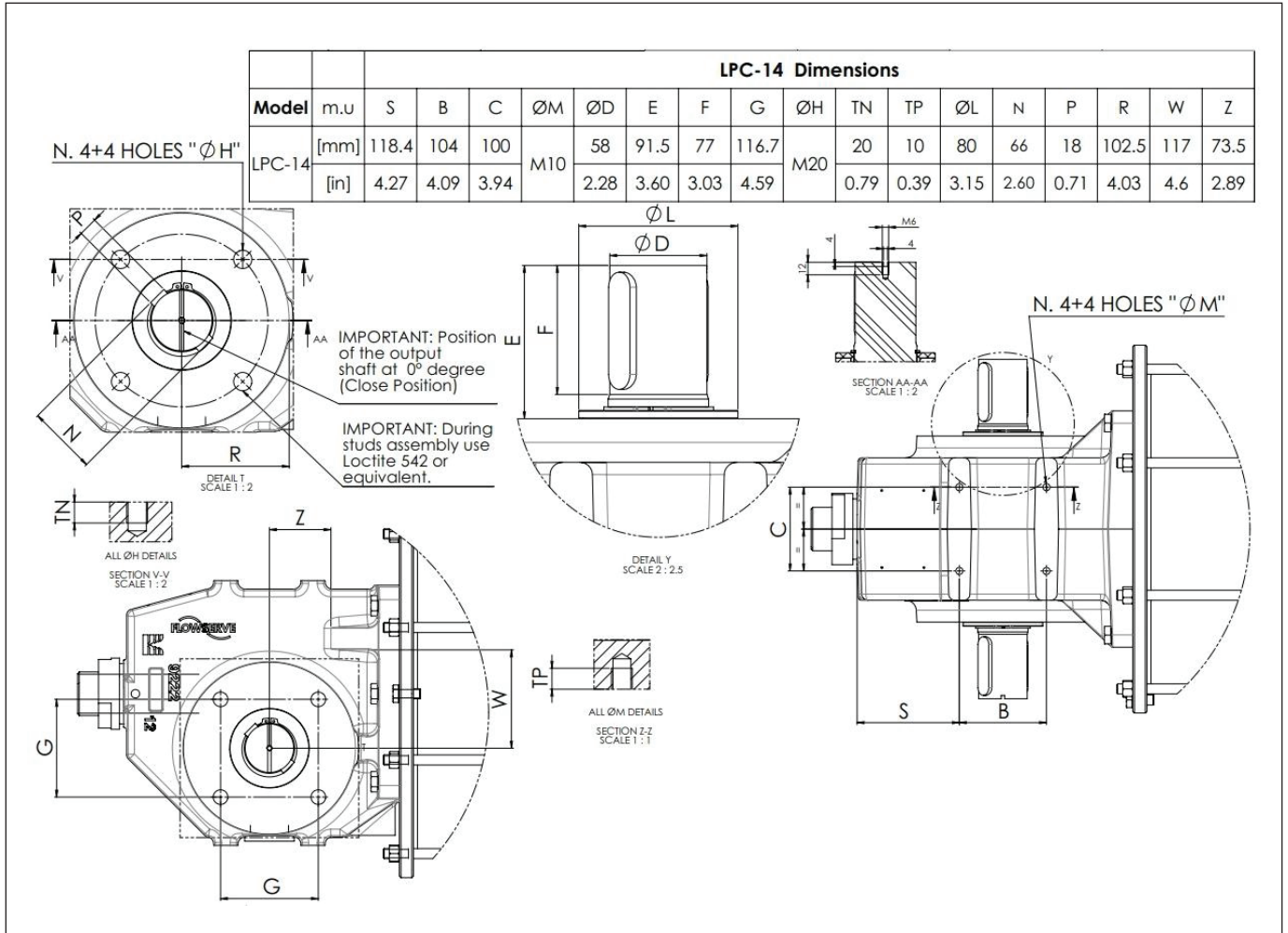


Figure 19: LPC-14 Coupling Details – Symmetric/Canted

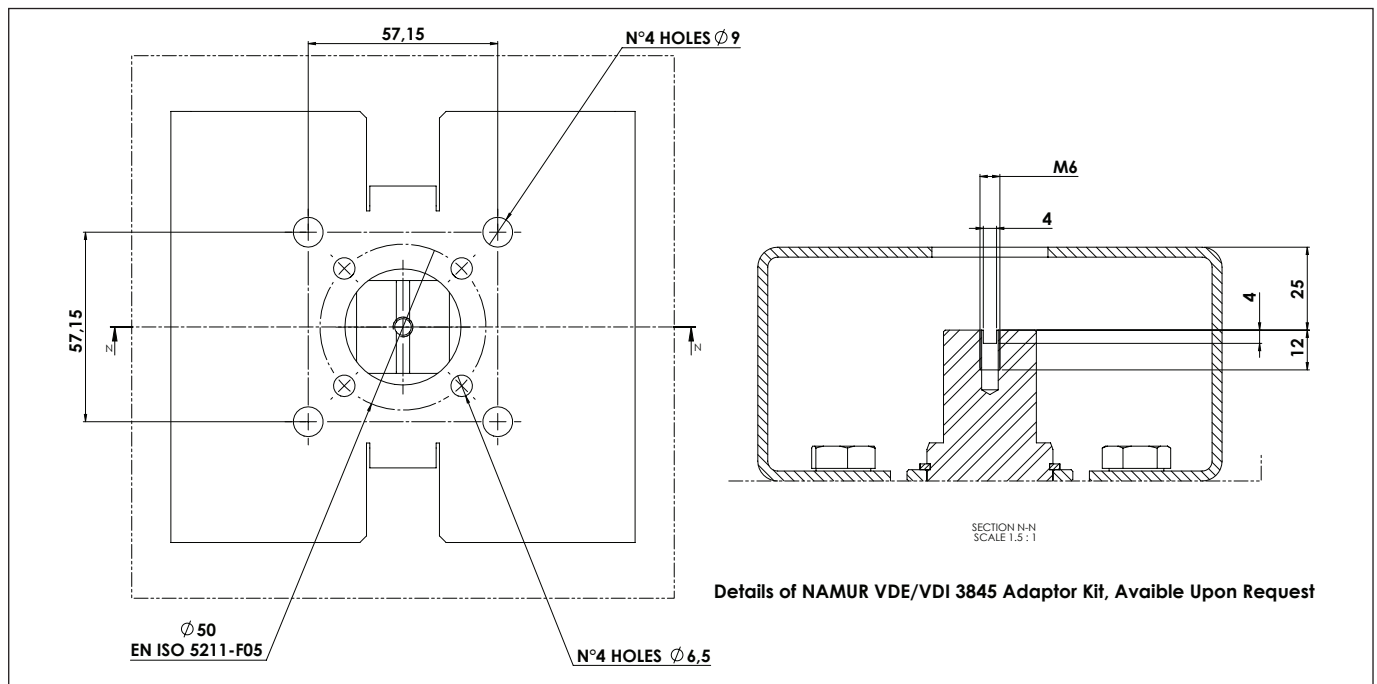
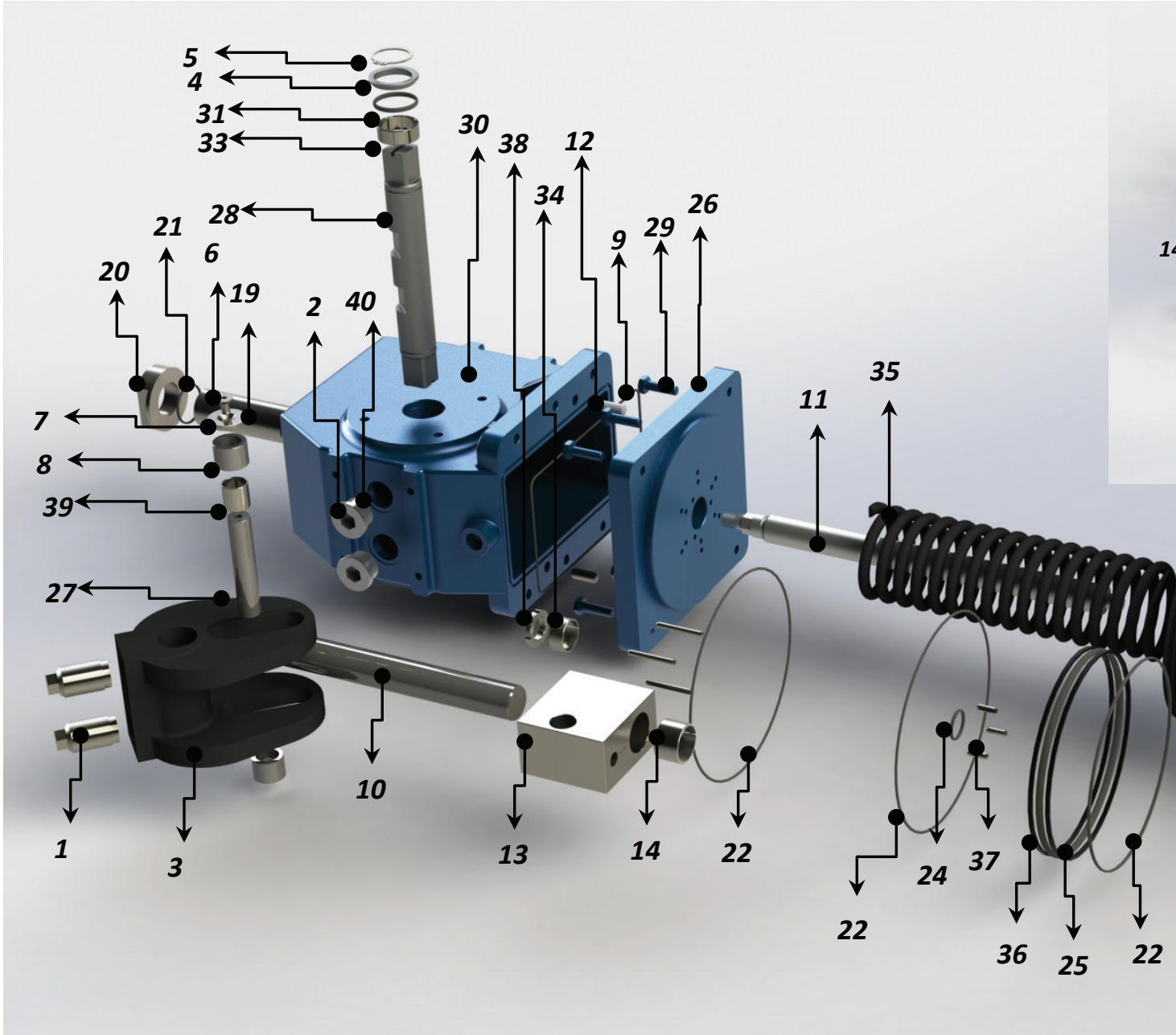


Figure 20: Details of Namur Vde/Vdi 3845 Adaptor Kit, Available Upon Request

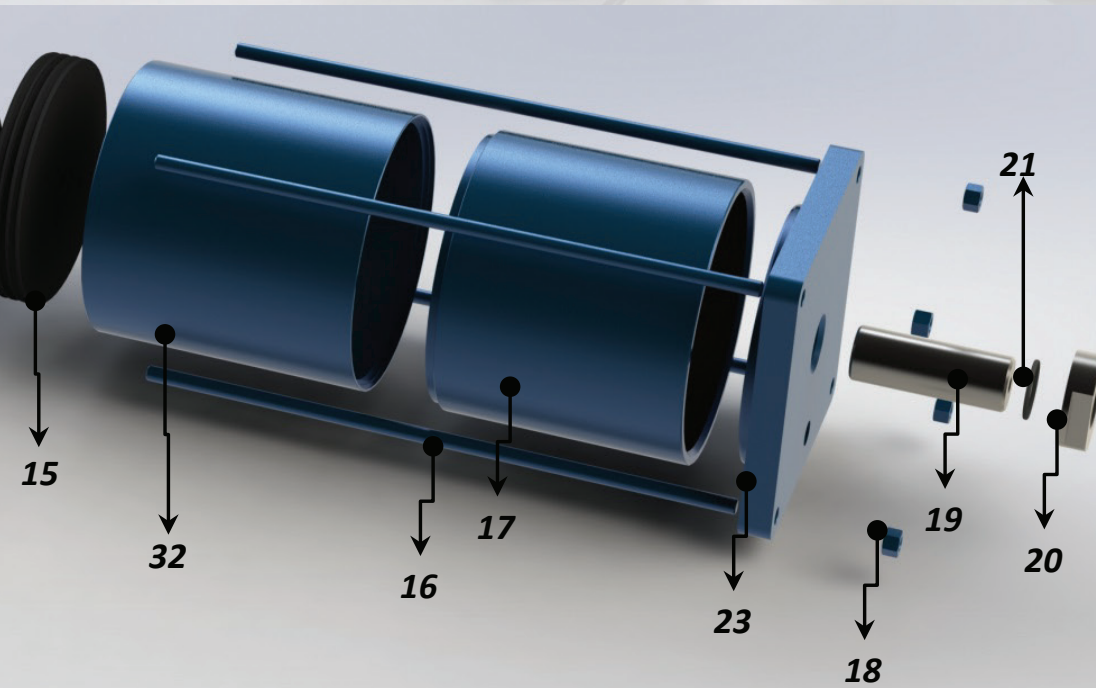
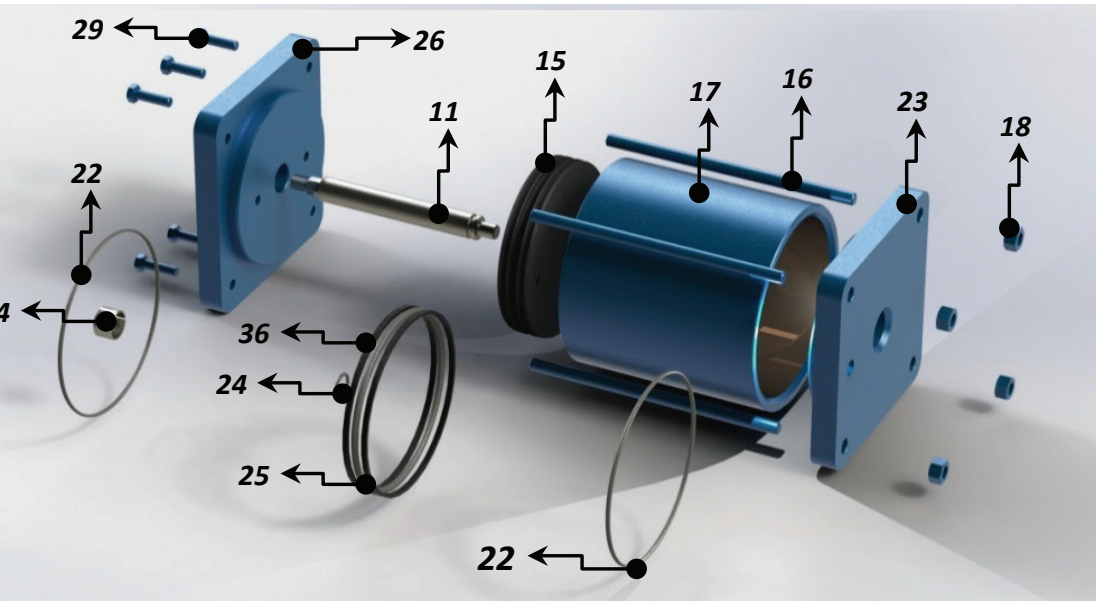
## Service Kits

Figure 21: LPC Actuator Spring Return and Double Acting – Exploded Views





LPC Compact Actuator Series



Number	Description	Qty.	Spare Parts*
1	Grub Screw	2	
2	Plug	2	
3	Scotch Yoke	1	
4	Bushing	2	
5	Retaining Ring	2	
6 <sup>4</sup>	Screw	2	
6 <sup>3</sup>	Retaining Ring	2	
7	Washer	2	
8	Roller Bearing	2	
9	O-Ring	1	X •
10	Guide Bar	1	
11	Piston Rod	1	
12	Pin	2	
13	Guide Block	1	
14	Bushing	2	
15	Piston	1	
16 <sup>5</sup>	Tie Rod	4 (8)	
17	Spring Can	2	
18 <sup>5</sup>	Hex Nut	4 (8)	
19	Stop Bolt	2	
20	Hex Nut	2	
21	O-Ring	2	X •
22 <sup>1</sup>	O-Ring	3 <sup>**</sup> (2)	X •
23	End Flange	1	
24	O-Ring	1	X •
25	O-Ring	1	X •
26	Head Flange	1	
27	Yoke Pin	1	
28	Output Shaft	1	
29	Screw	6	
30	Housing	1	
31 <sup>2</sup>	O-Ring	2	X •
32	Spacer	1	
33	Du Bushing	2	
34	Bushing	1	
35	Spring	1	
36	Tape Guide	2	X •
37	Bar Pin	6	
38	Spanner Nut	1	
39	Bushing	2	
40 <sup>3**</sup>	O-Ring	2	X •

Notes:

\* Standard maintenance spare parts for on/off applications

\*\* Variable number depending on model

X Spare parts that can be replaced

• Spare parts that can be replaced without removing the actuator from the valve

1: Quantity of Item 22 is 2 for Double Acting actuators and 3 for Single Acting actuators

2: Only the O-rings on the top of the actuator can be replaced without removing the actuator from the valve

3: Only for LPC-12 and LPC-14 models

4: Only for LPC-05 and LPC-10 models

5: Quantity variable depending on cylinder size

### Spare Parts

The main possible spare parts for LPC actuators used in ON/OFF applications are listed in the table below.

Depending on chosen actuator configuration other spare parts may be required. To obtain spare parts lists specific for each job/order, please contact your Flowserve Limitorque representative.  
Part numbers are referred to in Figure 21.

Number	Description	Qty.
9	O-Ring	1
21	O-Ring	1
22	O-Ring	3**
24	O-Ring	1
25	O-Ring	1
31	O-Ring	1
36	Tape Guide	1
40**	O-Ring	1

**Note:** \*\* Variable number depending on model





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**VATB000582 (EN/A4)** June 2022