

## Data Sheet

# Axial Piston Motors

## L and K Frame



For more than 40 years, Danfoss has been developing state-of-the-art components and systems for mobile machinery used in off-highway operations around the world. We have become a preferred supplier by offering the best of what really matters: The hardware inside your vehicle application.

The L/K motor is designed for use primarily in mobile equipment using existing and proven technology. These motors have been optimized with regard to options, life, package size and installed cost.

The L/K motor family consists of five base displacements which all fit in one package size. Two different configurations are available, an SAE-B two-bolt, or a cartridge style motor.

These motors are a two-position, variable displacement, with smooth, shift-on-the-go capability. The working displacement range of 3.4:1 with a minimum angle option to Zero degree provides exceptional versatility in the application of L/K motors. The motor is spring biased to maximum displacement and can be hydraulically shifted to minimum angle



### Features

#### Wide range of options

- Integral loop flush valve with relief plus orifice
- Minimum angle option to Zero degrees
- Speed sensor with zero rpm and direction sensing capability
- Single and Two line control available for SAE mount motors. Single line control available for cartridge motors
- Twin radial (side) or axial (end) porting is available
- Multiple minimum displacement options available
- Reduced maximum displacement options
- Tapered input shaft with shaft seal dust protector for fan drive applications

#### Installation and Packaging benefits

- SAE-B two-bolt, and cartridge mounting
- Three clean sides with superior clearance and access to mounting bolts
- Short and compact: fits into wheel end and compact installations with improved porting
- The cartridge motor fits through a 178 mm [7 Inch] mounting hole of a gearbox pilot for subassembly installation of motor to gearbox
- High Efficiency - nine piston rotating groups with an 18 degree maximum angle
- Low control pressure requirement (14 bar for servo) - no undue parasitic power loss. Smooth two-speed shift from minimum to maximum angle

#### Designed for Durability and Flexibility

- Versatility - working displacement range of 3.4:1 with a minimum angle option to Zero degrees. SAE-B two-bolt, and cartridge mounting available
- Five displacements allow the optimum selection of hydraulic motor for the lowest possible installed cost
- Reliability - uses existing technology
- Suitable for closed and open circuit applications
- Designed for maximum system pressures up to 420 bar [6100 psi]

Comprehensive technical literature is online at [powersolutions.danfoss.com](http://powersolutions.danfoss.com)

**Technical specifications**

*Physical properties*

Parameter	Unit	L25	L30	L35	K38	K45
<b>Displacement maximum</b>	cm <sup>3</sup> [in <sup>3</sup> ]	25 [1.50]	30 [1.83]	35 [2.14]	38 [2.32]	45 [2.75]
<b>Weight (cartridge and SAE-B)</b>	kg [lb]	15.4 [34]				
<b>Mass moment of inertia of rotating components</b>	kg·m <sup>2</sup> [slug·ft <sup>2</sup> ]	0.001666 [0.001229]	0.001582 [0.001167]	0.001530 [0.001128]	0.002326 [0.001716]	0.002286 [0.001687]
<b>Theoretical torque</b>	N·m/bar [lbf·in/1000psi]	0.40 [244]	0.48 [293]	0.56 [347]	0.60 [366]	0.72 [439]

*Operating parameters*

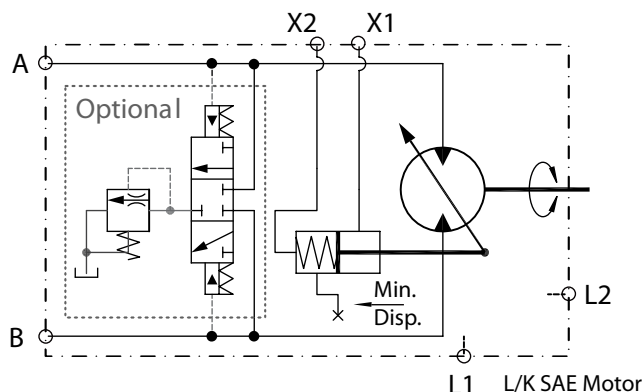
Parameter		Unit	L25	L30	L35	K38	K45
<b>System pressure<sup>1</sup></b>	Maximum operating	bar [psi]	400 [5800]	350 [5075]	300 [4350]	350 [5075]	300 [4350]
	Maximum		420 [6090]	375 [5440]	325 [4715]	415 [6019]	350 [5075]
<b>Speed limit (at max. disp)</b>	Rated	min <sup>-1</sup> (rpm)	3400	3500	3600	3600	3500
	Maximum		3950	4150	4300	4000	3900
<b>Speed limit (at min. disp)<sup>2</sup></b>	Rated	min <sup>-1</sup> (rpm)	4400	4450	4500	4650	4500
	Maximum		5000	5150	5300	5200	5050
<b>Case pressure</b>	Maximum operating	bar [ psi]	2 [29]				
	Maximum		6 [87]				
<b>Shift pressure (single line control)</b>	Maximum operating	bar [ psi]	14 [203]				
	Maximum		69 [1000]				

<sup>1</sup> Refer to bulletin 520L0627 for pressure definitions

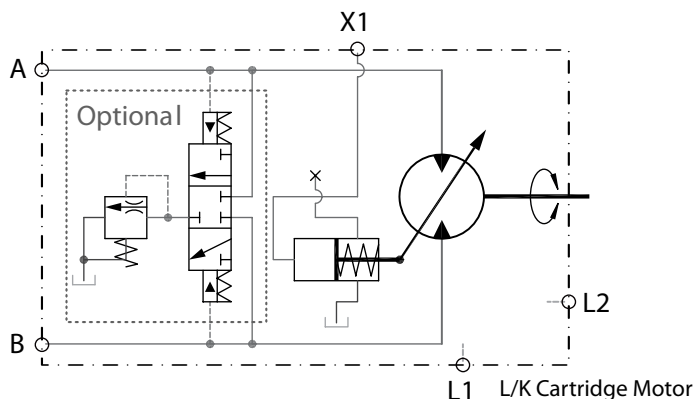
<sup>2</sup> Limit when motor angle is 12 degrees or less

**Schematics**

*SAE Motor schematic, two line control*



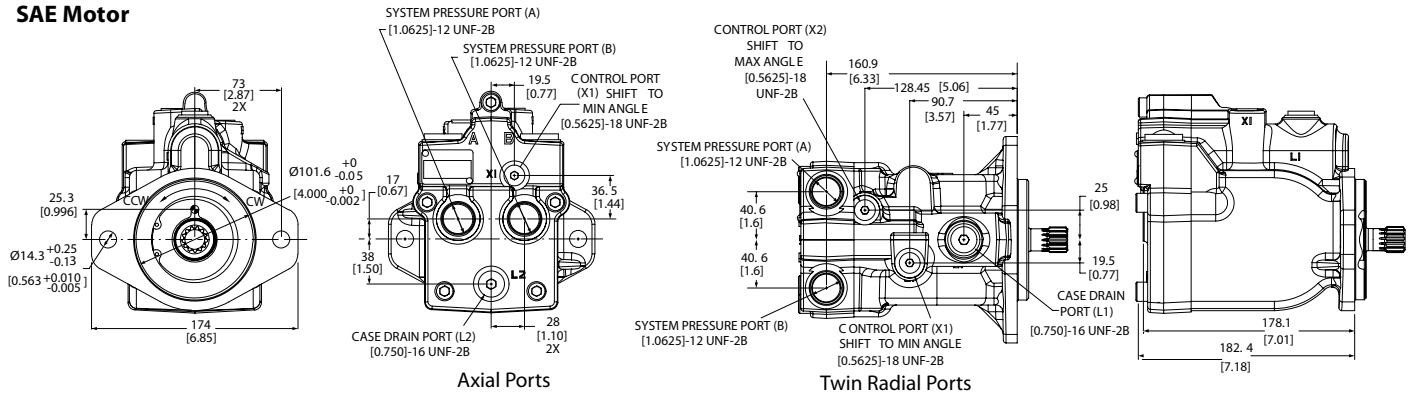
*Cartridge motor schematic, single line control*



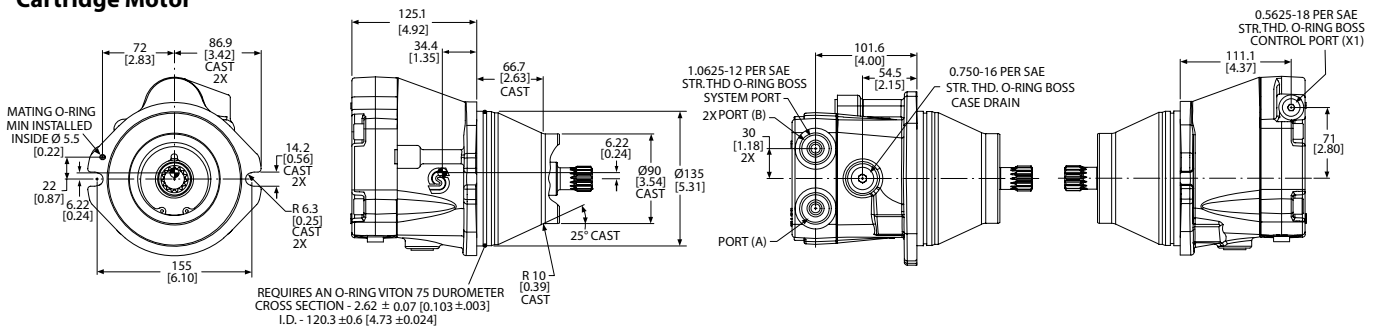
Data Sheet  
**L and K Frame Motors**

**Dimensions**

**SAE Motor**



**Cartridge Motor**



ENGINEERING  
TOMORROW



---

Danfoss can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without changes being necessary in specifications already agreed.  
All trademarks in this material are property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.

---