



CMLA

PRODUCT INFORMATION

MOTION TECHNOLOGY

CMLA Introduction

CMLA is the newest addition to the Duff Norton Linear Actuator line and incorporates the latest in design techniques, manufacturing methods and draws on more than 100 years of experience in motion control applications. CMLA is designed to run faster, last longer and is the flagship series of linear actuators for Duff Norton and its global partners at Columbus McKinnon.

Featuring an innovative and patented* design the cast aluminum construction houses a variable configured linear actuator covering the 2,200 N (500 lbs) to 8,900 N (2,000 lbs) capacity ranges. Pairings of speed, capacity and optional features expand the boundaries of applications and overall performance making CMLA the most comprehensive linear actuator available on the market today.

Lightweight, high strength corrosion resistant materials were a cornerstone in the CMLA design consideration. The aluminum and stainless steel construction along with IP66S ingress protection provides a watertight low maintenance envelope suitable for most environmental applications.

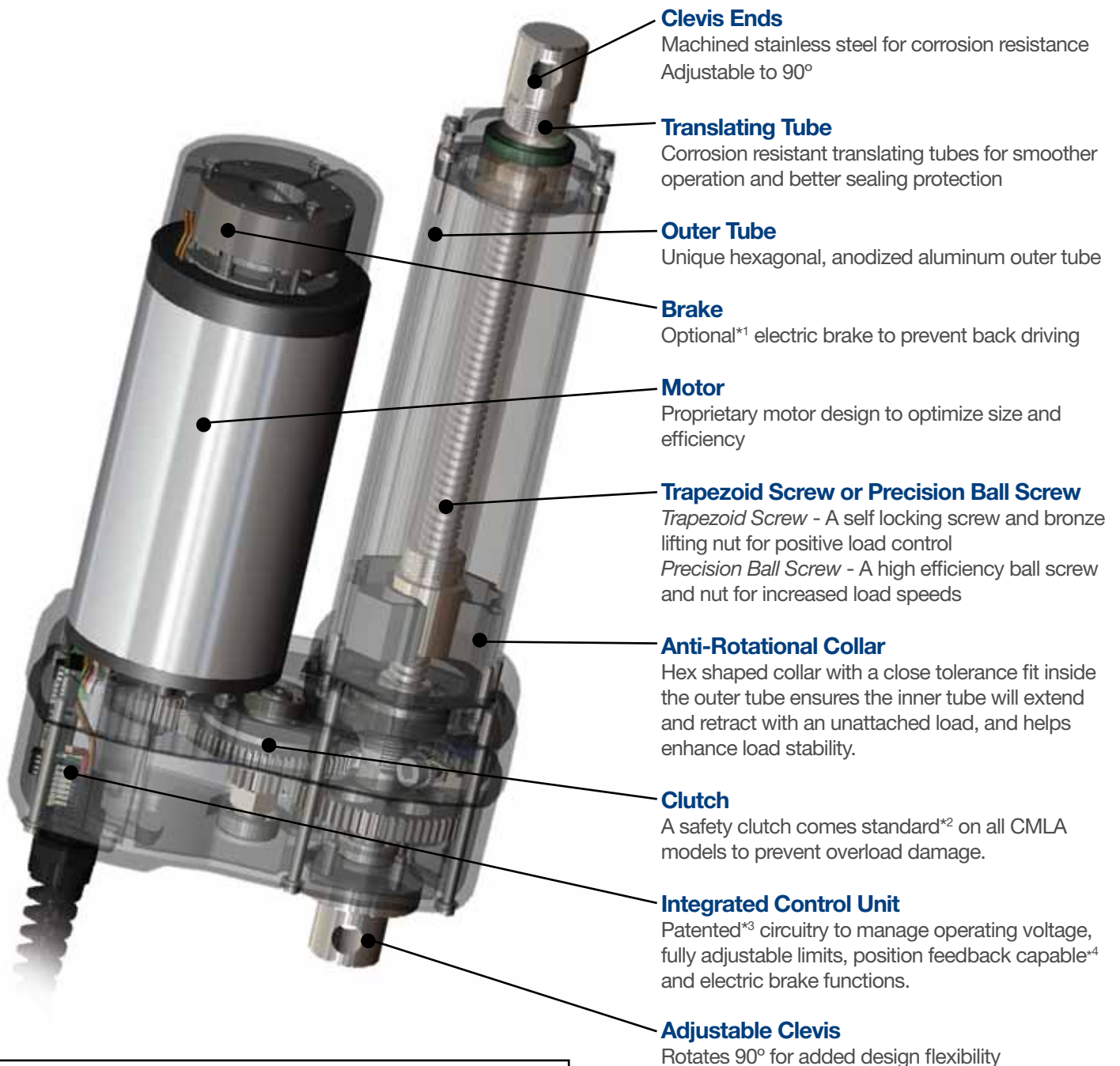
An advanced array of flexible design options and features have been incorporated to make the design engineering function easier. CMLA is unlike any other linear actuator as it offers a performance standard and life cycle dependability that will minimize down time and reduce total equipment cost.

The patented* onboard CMLA electronic controls bring a new dimension to the linear actuator application and will usher in an era of exciting new developments in motion control from Duff Norton.

“The most comprehensive linear actuator available on the market today”

- **Load**
4 convenient model sizes ranging from 2,200 N (500 lbs) to 8,900 N (2,000 lbs)
- **Low Maintenance**
Sealed bearings and high quality lubricants
- **Faster lifting speeds**
The precision ball screw and gear sets offers unmatched load speed
- **Service Life**
Hardened gears, screws and lifting nuts provide longer life than most competitor offerings
- **Operating Temperature**
From -4F (-20C) to 150F (65C)
- **IP66S Protection**
External envelope is sealed and protected against moisture and dust ingress

NOTE: IP66s does not mean that the CMLA is impervious to water penetration. The rating denotes protection against water spray when the unit is not running. High usage and exposure to wet or humid environments can lead to water accumulation over time. In such environmental applications it is advised that the CMLA actuators are installed with the tube at a downward angle or shielded if possible.



NOTE

Duff-Norton has made every effort to ensure that the information contained in the publication is accurate and reliable. Determining the suitability of our products for specific applications is the user's responsibility.

WARNING

The equipment shown in this catalog is intended for industrial use only and should not be used to lift, support, or otherwise transport people unless you have written statement from Duff-Norton, which authorizes the specific actuator used in your applications as suitable for moving people.

IP66S STANDARD

Dust Tight - No ingress of dust; complete protection against contact
Powerful Water Jets - Water projected in powerful jets (12.5mm nozzle) against the enclosure from any direction shall have no harmful effects. 100 liters per minute at 100 kPa at a distance of 3 meters

*¹ Brake is required on all Ball Screw Models

*² Clutch not available on 1000# quad speed 2.07:1 ratio

*³ Patent pending

*⁴ Requires external display

Up to 2,200 N (500 lbs)

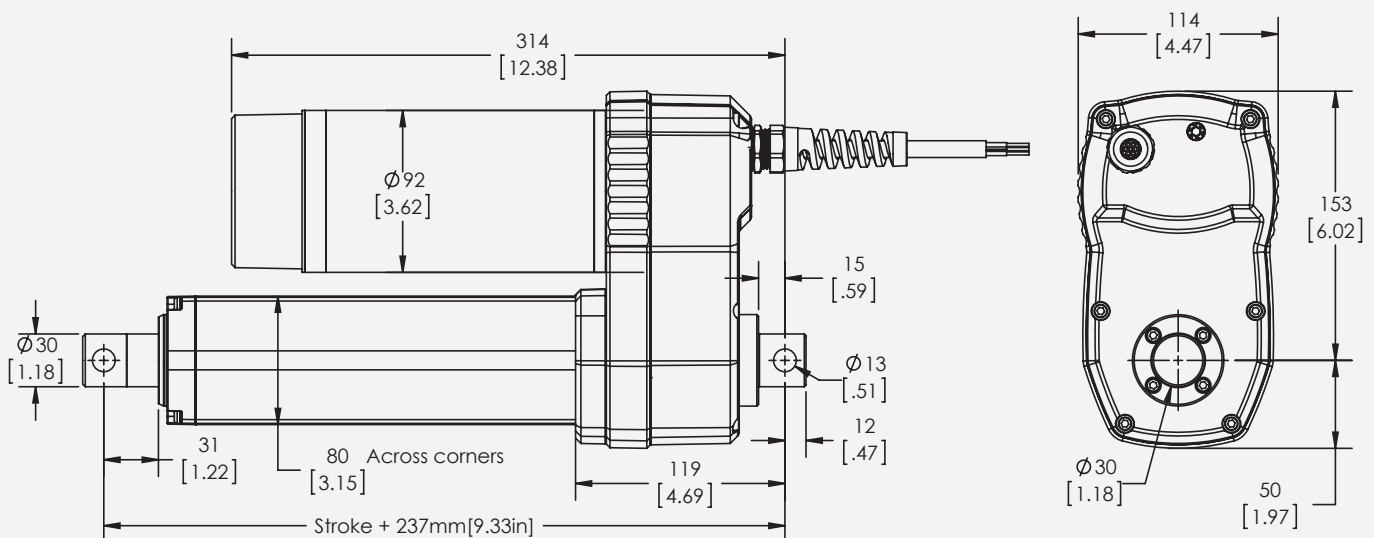
Technical Features

- Tensile and compressive dynamic loads up to 2,200 N (500 lbs)
- Lifting speeds up to 38 mm/sec (90 in/min) at rated load
- Standard stroke lengths 100 mm (3.9 in): 150 mm (5.9 in): 300 mm (11.8 in): 450 mm (17.7 in): 600 mm (23.6 in)
- Safety clutch standard

Options

- Ball Screw or Trapezoidal Screw
- 115 VAC or 230 VAC motors
- Electric Brake - standard on Ball Screw Models
- Potentiometer
- Adjustable Limits

CMLA A Dimensions



Performance Specifications

CMLA A					
Motor Type		AC	AC	AC	AC
Maximum Dynamic Load	N (lbs)	2,200 (500)	2,200 (500)	2,200 (500)	2,200 (500)
Maximum Static Load	N (lbs)	3,336 (750)	3,336 (750)	3,336 (750)	3,336 (750)
Screw Type		Trapezoid	Trapezoid	Ball	Ball
Gear Ratio		11.5	11.5	6.5	6.5
Motor Power	Volts	115	230	115	230
Amperage	Amps	2.3	1.4	2.4	1.5
Lifting Speed	mm/s (in/s)	18.0 (0.71)	18.0 (0.71)	38.1 (1.5)	38.1 (1.5)
Duty Cycle	m/hr (in/hr)	20.6 (810)	20.6 (810)	30.5 (1,200)	30.5 (1,200)
Capacitor	mfd	35	10	35	10

Note: A capacitor is required for all single phase AC motors SK6405-7-10 = 10 mfd and SK6405-7-13 = 35 mfd



Selection Table

CMLA A											
Models											
A T R 1 1 5 C		-									
CMLA 2,200 N: Trapezoid Screw: 11.5:1 Ratio: Standard Clutch											
A K U 0 6 5 C		-									
CMLA 2,200 N: Ball Screw: 6.5:1 Ratio: Standard Clutch											
Motor											
115V ac/60hz/1ph			1	1	5						
230V ac/60hz/1ph			2	3	0						
Brake											
No Brake									B		
Stroke mm (in)									X		
100mm (3.9")							1	0	0		
150mm (5.9")							1	5	0		
300mm (11.8")							3	0	0		
450mm (17.7")							4	5	0		
600mm (23.6")							6	0	0		
Other Features/Options											
Potentiometer Only - For position feedback									P	O	T
Circuit Board Only - For electric brake control									C	B	O
Potentiometer & Circuit Board - For adjustable limits and electric brake control									P	C	B
No Pot/No Circuit Board									X	X	X
Potentiometer Feedback & Circuit Board Brake Control - (Wired Separately)									P	C	X

CMLA B

Up to 4,500 N (1,000 lbs)

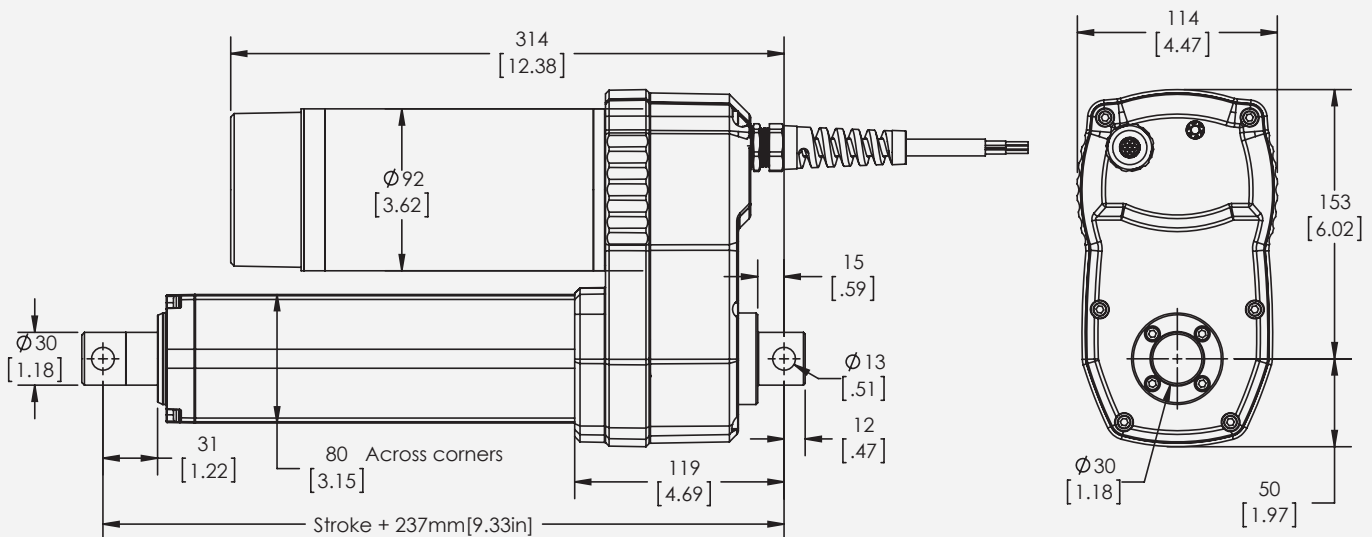
Technical Features

- Tensile and compressive dynamic loads up to 4,500 N (1,000 lbs)
- Lifting speeds up to 28 mm/sec (67 in/min) at rated load
- Standard stroke lengths 100 mm (3.9 in): 150 mm (5.9 in): 300 mm (11.8 in): 450 mm (17.7 in): 600 mm (23.6 in)
- Safety clutch standard (not available on quad speed 2.1:1 ratio)

Options

- Ball Screw or Trapezoidal Screw
- 115 VAC or 230 VAC motors
- Electric Brake - standard on Ball Screw Models
- Potentiometer
- Adjustable Limits

CMLA B Dimensions



CMLA C

Up to 6,700 N (1,500 lbs)

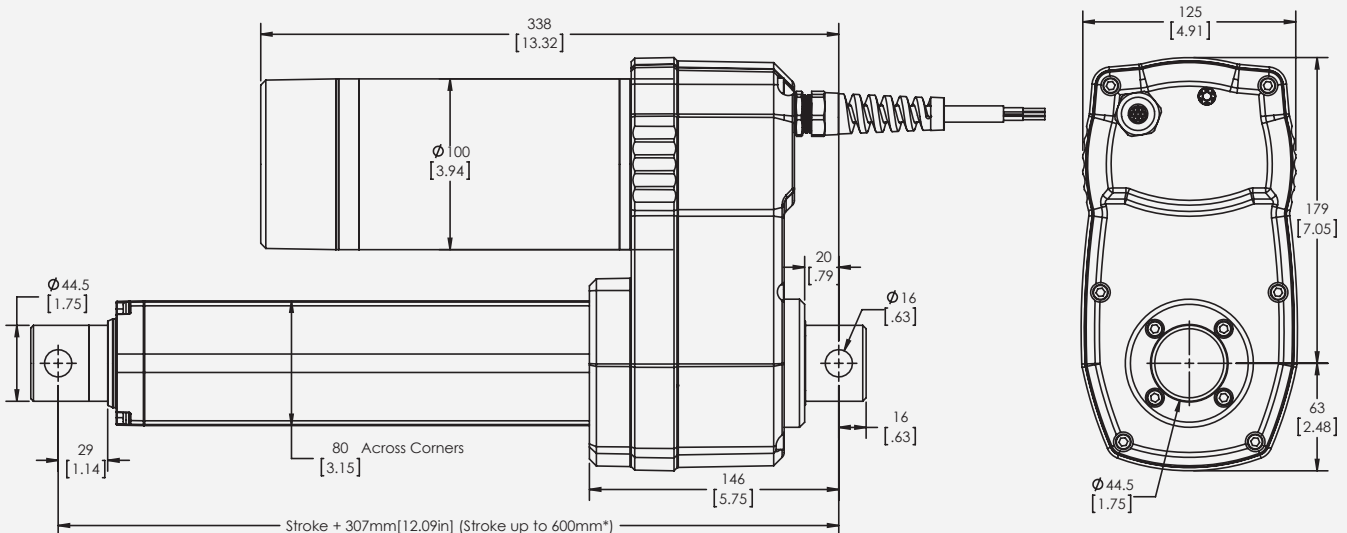
Technical Features

- Tensile and compressive dynamic loads up to 6,700 N (1,500 lbs)
- Lifting speeds up to 36 mm/sec (87 in/min) at rated load
- Standard stroke lengths 100 mm (3.9 in): 150 mm (5.9 in): 300 mm (11.8 in): 450 mm (17.7 in): 600 mm (23.6 in): 750 mm (29.5 in)
- Safety clutch standard

Options

- Ball Screw or Trapezoidal Screw
- 115 VAC or 230 VAC motors
- Electric Brake - standard on Ball Screw Models
- Potentiometer
- Adjustable Limits

CMLA C Dimensions



*. Pin-to-pin dimension
for 750mm stroke = 1207mm [47.5in]

Performance Specifications

CMLA C							
Motor Type		AC	AC	AC	AC	AC	AC
Maximum Dynamic Load	N (lbs)	6,700 (1,500)	6,700 (1,500)	6,700 (1,500)	6,700 (1,500)	3,336 (750) [§]	3,336 (750) [§]
Maximum Static Load	N (lbs)	10,008 (2,250)	10,008 (2,250)	10,008 (2,250)	10,008 (2,250)	10,008 (2,250)	10,008 (2,250)
Screw Type		Trapezoid	Trapezoid	Ball	Ball	Ball	Ball
Gear Ratio		17.2	17.2	14.0	14.0	6.9	6.9
Motor Power	Volts	115	230	115	230	115	230
Amperage	Amps	8	4	8.3	4.4	8.3	4.4
Lifting Speed	mm/s (in/s)	18.8 (0.74)	18.8 (0.74)	36.8 (1.45)	36.8 (1.45)	73.7 (2.9)	73.7 (2.9)
Duty Cycle	m/hr (in/hr)	12.7 (500)	12.7 (500)	22.9 (900)	22.9 (900)	45.8 (1,800)	45.8 (1,800)
Capacitor	mfd	90	25	90	25	90	25

[§]Double Speed - Lower ratio reduces rated load to 750 lbs

Note: A capacitor is required for all single phase AC motors 192002121 = 25 mfd and 192002122 = 90 mfd



Selection Table

CMLA C

Models

C T R 1 7 2 C - - -

CMLA 6,700 N: Trapezoid Screw:
17.2:1 Ratio: Standard Clutch

C K U 1 4 0 C - - -

CMLA 6,700 N: Ball Screw:
13.5:1 Ratio: Standard Clutch

[§] **C K U 0 6 9 C** - - -

CMLA 3,336 N: Ball Screw:
6.9:1 Ratio: Standard Clutch

Motor

115V ac/60hz/1ph

1 1 5

230V ac/60hz/1ph

2 3 0

Brake

B

No Brake

X

Stroke mm (in)

100mm (3.9")

1 0 0

150mm (5.9")

1 5 0

300mm (11.8")

3 0 0

450mm (17.7")

4 5 0

600mm (23.6")

6 0 0

750mm (29.5")

7 5 0

Other Features/Options

Potentiometer Only - For position feedback

P O T

Circuit Board Only - For electric brake control

C B O

Potentiometer & Circuit Board - For adjustable limits and electric brake control

P C B

No Pot/No Circuit Board

X X X

Potentiometer Feedback & Circuit Board Brake Control

P C X

[§]Double Speed - Lower ratio reduces rate load to 750lbs

CMLA D

Up to 8,900 N (2,000 lbs)

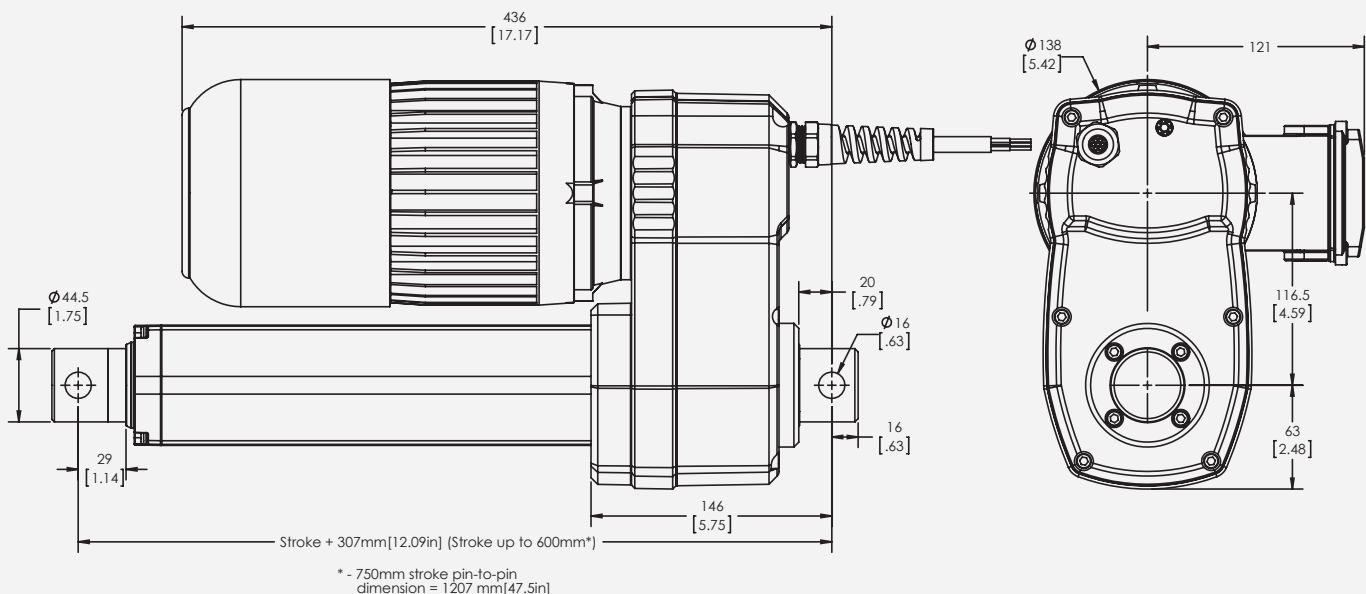
Technical Features

- Tensile and compressive dynamic loads up to 8,900 N (2,000 lbs)
- Ball Screw standard
- Lifting speeds up to 50 mm/sec (120 in/min) at rated load
- Standard stroke lengths 100 mm (3.9 in): 150 mm (5.9 in): 300 mm (11.8 in): 450 mm (17.7 in): 600 mm (23.6 in): 750 mm (29.5 in)
- Safety clutch standard
- Motor brake is standard
- Standard 230/460 3 phase motor

Options

- Potentiometer

CMLA D Dimensions



Performance Specifications

CMLA D				
Motor Type		AC	AC	AC
Maximum Dynamic Load	N (lbs)	8,900 (2,000)	4,500 (1,000) [§]	2,200 (500) [†]
Maximum Static Load	N (lbs)	13,344 (3,000)	13,344 (3,000)	13,344 (3,000)
Screw Type		Ball	Ball	Ball
Gear Ratio		11.0	5.4	2.7
Motor Power	Volts	230/460	230/460	230/460
Amperage	Amps	3.5/1.7	3.5/1.7	3.5/1.7
Lifting Speed	mm/s (in/s)	50.8 (2.0)	101.3 (3.9)	203.2 (8.0)
Duty Cycle	m/hr (in/hr)	101.6 (4,000)	203 (8,000)	406 (16,000)

[§]Double Speed - Lower ratio reduces rated load to 1,000 lbs

[†]Quad Speed - Lower ratio reduces rated load to 500 lbs



Selection Table

CMLA D										
Models										
DKU110C		-	460B		-	□□□		-	□□□	
CMLA 8,900 N: Ball Screw: 11.0:1 Ratio: Standard Clutch										
DKU054C		-	460B		-	□□□		-	□□□	
CMLA 4,500 N: Ball Screw: 5.4:1 Ratio: Standard Clutch										
DKU027C		-	460B		-	□□□		-	□□□	
CMLA 2,200 N: Ball Screw: 2.7:1 Ratio: Standard Clutch										
Motor			230/460V ac/60hz/3ph		4 6 0					
Brake					B					
Stroke mm (in)										
100mm (3.9")							1 0 0			
150mm (5.9")							1 5 0			
300mm (11.8")							3 0 0			
450mm (17.7")							4 5 0			
600mm (23.6")							6 0 0			
750mm (29.5")							7 5 0			
Other Features/Options										
Potentiometer Only - For Position Feedback									P O T	
No Potentiometer									X X X	

[§]Double Speed - Lower ratio reduces rate load to 1,000lbs

[†]Quad Speed - Lower ratio reduces rate load to 500lbs



Since 1883 Duff Norton has been at the forefront of motion technology and through continuous improvement and lean manufacturing models has established a reputation for the highest quality in engineering and design.

Today Duff Norton is the largest manufacturer of motion technology products worldwide, serving global markets in conjunction with Pfaff-silberblau and Duff Norton Europe, providing customers with reliable high quality solutions for their industrial lifting, positioning and transfer needs.

With an ISO 9001 registration since 1994 all Duff Norton products, standardized or custom designed, are subjected to the same rigorous testing and scrutiny to assure maximum performance and quality.