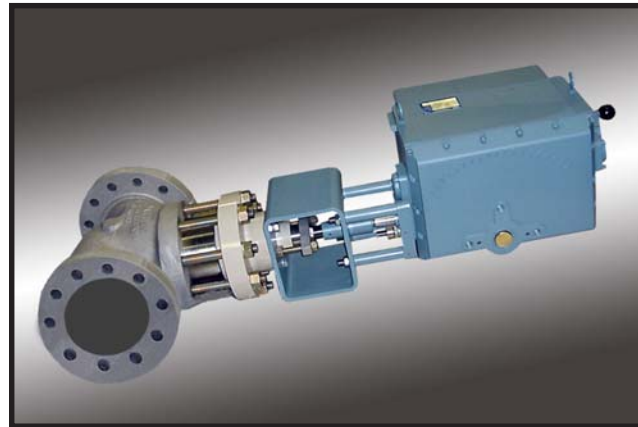


GENERAL DESCRIPTION

The LA-5000 Series are bi-directional, linear actuators internally geared to produce up to 6,500 lbs. (28,913 N) of thrust, and offer continuous modulating duty up to 4,000 starts per hour. This series of actuators combine the scotch-yoke output gearing design of the SM-5000 Series with a three-point toggle mechanism to convert rotary motion to linear motion. The LA-5000 Series is ideally suited for any sliding stem valve or other applications requiring a high-thrust, short stroke linear actuator.

All LA-5000 Series actuators are also available with an internal amplifier (excluding LA-5140). They are all full-featured ac or dc switching devices designed to work with the actuator for closed loop control.



LA-5120

FEATURES

- “Scotch-yoke” final output increases thrust at ends of travel for positive seating and unseating of valves.
- Permanently lubricated for any position mounting
- Internal or remote mounted amplifier
- Self-locking drive system to hold in last position and prevent backdriving up to thrust rating
- Manual handcrank, safely isolated from motor, with overload indication and shear pin protection
- AC input power (single and three phase) or DC input power versions
- Wide ambient temperature range
- All mounting and interface hardware supplied
- Full two year warranty

BASE MODEL INCLUDES:

- Motor
- Manual override
- Cast aluminum, painted NEMA 4 (IP65) enclosure
- Anti-condensation heater with thermostat
- Automatic thrust limiting
- Internal Scotch-yoke gear train
- 4-20 mA transmitter for customer use (amplifier models only)
- End of travel switches, not for customer use

POPULAR OPTIONS (See Pages 197-206)

- Split command input
- Position switch outputs
- Auxilliary position limit switches
- Electric brake
- Local Auto/Manual toggle or key lock rotary switches
- Open-Close-Stop pushbuttons
- Pilot lights
- Extended temperature ranges
- Local position indicator
- Thrust or position seating of valve
- Battery back-up, RP-4000

AMPLIFIER FEATURES

- Digital or analog available
- Isolated, two-wire, 4-20mA output
- Push button set-up for digital amplifier
- Customer-adjustable zero and span
- Adjustable deadband
- Accepts either voltage or current command inputs
- Selectable options for Loss-of-Signal action:
 - Lock in place
 - Run to preset
- Digital amplifier proportional control
- Soft seat at ends of travel
- AC triac switching of AC motors and IGBT for DC motors for increased life

SELECT BY THRUST & STROKE

Actuator Series	Minimum Stroke inch (mm)	Maximum Stroke inch (mm)	Maximum Thrust lbf. (N)
LA-5100	0.75 (19)	2.25 (57)	3000 (13344)
LA-5200	1.00 (25)	4.00 (102)	6500 (28912)

Due to the complexities of the LA-5000 Series, please consult factory for exact model specification and pricing.

BASIC SPECIFICATIONS FOR LA-5000 SERIES ACTUATORS

Stroke: 0.75 in. (19mm) to 5.25 in. (133mm)

Drive Train: Scotch-yoke

Temperature Limits: -40° to 150° F (-40° to 65° C)
(For higher temperatures consult factory)

Environmental Ratings:

LA-5100 - NEMA 4 (IP65) Explosion Proof, Class I, Division 1, Groups C & D. Class II, Division 1, Groups E, F & G

LA-5200 - NEMA 4 (IP65)

Enclosure: Cast aluminum with polyurethane coating

Back Drive: Self-locking up to twice the thrust rating

Field Wiring: To barrier terminal blocks

Thrust Limiting: 10 Amp, SPDT switch, one for each direction (Extend & Retract). Switch will change states when thrust exceeds rated thrust for actuator. (20 Amp switches for LA-5200).

Approximate Weight: LA-5100: 125 lbs. (57 kg)
LA-5200: 245 lbs. (111 kg)

Approvals: See page 207

Position Switch Rating: 120/240 Vac, 20 Amp

ACTUATOR/AMPLIFIER SPECIFICATIONS

	LA-5115-A, LA-5120-D, LA-5160-A, LA-5190-D, LA-5210-A, LA-5220-D & LA-5260-A	LA-5160-D & LA-5260-D
Position Accuracy	1.0 % of full travel	0.25 % of full travel
Repeatability	0.5 % of full travel	0.25 % of full travel
Hysteresis	0.5 % of full travel	0.25 % of full travel
Linearity	+/-1 % of full travel	+/-0.5 % of full travel
Deadband	0.75 % of full travel	0.5 % of full travel
Resolution	0.75 % of full travel	0.5 % of full travel

See page 31 for additional features of Jordan Controls analog and digital amplifiers.

REMOTE AMPLIFIER CHART

Actuator	Remote Mounted Amplifier	Catalog Page
LA-5115-N	AD-8900	177
LA-5120-N	AD-8240	173
LA-5140-N	AD-7540	170
LA-5160-N	AD-7830/AD-9120	180/184
LA-5190-N	AD-8240	173
LA-5210-N	AD-8900	177
LA-5220-N	AD-8240	173
LA-5260-N	AD-7830/AD-9120	180/184

LA-5100 SERIES SELECTION CHART

Selection

1	Basic Model	LA-5115-N	3 phase, 208/240/380/480 Vac, modulating duty, without built-in amplifier	
		LA-5115-A	LA-5115 with built-in analog amplifier	
		LA-5120-N	1 phase, 120 Vac, modulating duty, without built-in amplifier	
		LA-5120-D	LA-5120 with built-in digital amplifier	
		LA-5140-N	24 Vdc, modulating duty, (If amplifier desired, see AD-7540)	
		LA-5160-N	90 Vdc, modulating duty, without built-in amplifier	
		LA-5160-A	LA-5160 with built-in analog amplifier, 120/208/240 Vac, 1 Ph; 208/240 Vac, 3 Ph	
		LA-5160-D	LA-5160 with built-in digital amplifier, 120/208/240 Vac, 1 Ph; 208/240 Vac, 3 Ph	
		LA-5190-N	1 phase, 240 Vac, modulating duty, without built-in amplifier	
		LA-5190-D	LA-5190 above with built-in digital amplifier	
2	Input Voltage	1: 120 Vac, 1 Phase, 50/60 Hz (LA-5120-N, LA-5120-D, LA-5160-A or LA-5160-D)		
		2: 240 Vac, 1 Phase, 50/60 Hz (LA-5190-D, LA-5160-A or LA-5160-D)		
		3: 380 Vac, 3 Phase, 50 Hz (LA-5115-N or LA-5115-A)		
		4: 480 Vac, 3 Phase, 50/60 Hz (LA-5115-N or LA-5115-A)		
		5: 240 Vac, 3 Phase, 50/60 Hz (LA-5115-N, LA-5115-A, LA-5160-A or LA-5160-D)		
		6: 24 Vdc (LA-5140-N)		
		7: 90 Vdc (LA-5160-N)		
		9: 208 Vac, 1 Phase, 50 Hz (LA-5160-A or LA-5160-D)		
		10: 208 Vac, 3 Phase, 50 Hz (LA-5115-N, LA-5115-A, LA-5160-A or LA-5160-D)		
		3	Speed	Consult Factory for Model Designation and Pricing
4	Thrust			
5	Linear Travel	Consult Factory for Model Designation and Pricing		

*See valve mounting options L001 through L003

LA-5100 STANDARD OPTIONS

Code	Description	Selection
Toggles, Lights		
A001	Local Auto/Manual Toggle Switches	
A002	INC/OFF/DEC Toggle Switches	
A003	Local Auto/Manual Toggle Switches & INC/OFF/DEC Toggles (A001 & A002)	
A004	Open-Close-Stop Push Buttons - NEMA 4	
A005	Two Pilot Lights - NEMA 4	
A006	Two Position Auto/Manual Selector Switches - NEMA 4	
A007	Three Position INC/OFF/DEC Selector Switches - NEMA 4	
A009	ON/OFF Toggle Power Switch	
A010	Local Auto/Manual Switches & (INC/OFF/DEC) Switches - NEMA 4 (A006 & A007)	
A011	Key locks for Auto/Manual rotary switches - NEMA 4	
A012	ON/OFF Rotary Power Switch - NEMA 4	
Feedback		
F001	Potentiometer, 1000 ohms	
F002	Tandem Potentiometer, 1000 ohms each (Not for use with models with internal amplifiers)	
F003	Potentiometer, 5000 ohms (Not for use with models with internal amplifiers)	
F004	Potentiometer, 10,000 ohms (Not for use with models with internal amplifiers)	
F005	Transmitter, 4-20 mA output	
F006	One Potentiometer, 1000 ohms plus 4-20 mA Transmitter (Not for use with models with internal amplifiers)	
F010	Anti Backlash Feedback Gearing	
F999	Special Potentiometer (consult factory)	
Identification/Certifications		
J001	CE Marking, AC input only (only available for units with amplifiers)	
J002	Stainless Steel Tags	
J004	One year extended warranty	
J005	Two year extended warranty	

Code	Description	Selection
Valve Mounting		
L001	Mounting of actuator to valve by customer. Compatible hardware supplied by Jordan Controls per customer specifications. Complete, certified valve drawings showing topworks detail must be submitted with order.	
L002	Valve provided by customer for mounting and set-up with actuator by Jordan Controls.	
L003	Valve provided by Jordan Controls, mounted and set-up with actuator per customer specifications.	
Position Indicator		
P001	Local Position Indicator	
Auxiliary Switches		
S001	Two Adjustable Position Switches, SPDT, 20 Amp, 120/240 Vac	
S002	Two Adjustable Position Switches, DPDT, 20 Amp, 120/240 Vac	
S003	Four Adjustable Position Switches, SPDT, 20 Amp, 120/240 Vac	
S004	Four Adjustable Position Switches, DPDT, 20 Amp, 120/240 Vac	
S014	Two nonadjustable end of travel position switches, SPDT, 20 Amp, 120/240 Vac	
S015	Two nonadjustable thrust limit switches SPST, 10 Amp, 120/240 Vac	
S016	Two nonadjustable thrust limit switches SPDT, 10 Amp, 120/240 Vac	
S019	Two nonadjustable end of travel position switches, SPST, 20 Amp	
Painting/Coating		
W002	Two Part Epoxy	

LA-5100 SPECIAL OPTIONS

(Consult factory for special requirements)

Code	Description	Selection
Connectors		
C001	Plug-In Cannon Type Connector on Enclosure for Power and Control	
C002	Mating Plug-In Cannon Type Connector on Enclosure for Power and Control	
Enclosure		
E003	Explosion Proof - Class 1, Div. 1, Groups C & D, indoor/outdoor (NEMA 7)	
Feedback		
F008	Contactless 4-20 mA	
F009	Contactless 0-10Vdc	
3-Phase Controls		
G001	3-Phase Contactor with Overloads	
G002	Control Transformer (120 Vac control voltage)	
G003	Control Transformer (240 Vac control voltage)	

Code	Description	Selection
Motor		
M001	3 Phase, 575 Vac	
Special Electrical Options		
X001	24 Vdc power supply, 320 mA, 100-240 Vac input	
X004	Voltage to current converter	
X005	Loop powered 4 to 20 isolator, M-system HSN-IAA	
X006	± 15 Vdc power supply	
X010	Customer command and feedback, 0-10 Vdc or 0-5 Vdc instead of 4-20 mA	
X019	AC Power Sensing with Output	

For a full description of options, go to the Complete Listing of Options starting on page 197.

LA-5200 SERIES SELECTION CHART

Selection

1	Basic Model	LA-5210-N	3 phase, 208/240/380/480 Vac, modulating duty, without built-in amplifier	
		LA-5210-A	LA-5210 with built-in analog amplifier	
		LA-5220-N	1 phase, 120/240 Vac, modulating duty, without built-in amplifier	
		LA-5220-D	LA-5220 with built-in digital amplifier	
		LA-5260-N	90 Vdc (perm. magnet field), modulating duty, without built-in amplifier	
		LA-5260-A	LA-5260 with built-in analog amplifier, 120/208/240 Vac, 1 Phase	
		LA-5260-D	LA-5260 with built-in digital amplifier, 120/208/240 Vac, 1 Phase	
2	Input Voltage	1: 120 Vac, 1 Phase, 50/60 Hz (LA-5220-N, LA-5220-D, LA-5260-A or LA-5260-D)		
		2: 240 Vac, 1 Phase, 50/60 Hz (LA-5220-N, LA-5220-D, LA-5260-A or LA-5260-D)		
		3: 380 Vac, 3 Phase, 50 Hz (LA-5210-N or LA-5210-A)		
		4: 480 Vac, 3 Phase, 50/60 Hz (LA-5210-N or LA-5210-A)		
		5: 240 Vac, 3 Phase, 50/60 Hz (LA-5210-N or LA-5210-A)		
		7: 90 Vdc (LA-5260-N)		
		9: 208 Vac, 1 Phase, 50 Hz (LA-5260-A or LA-5260-D)		
		10: 208 Vac, 3 Phase, 50 Hz (LA-5210-N or LA-5210-A)		
3	Speed	Consult Factory for Model Designation and Pricing		
4	Thrust			
5	Linear Travel	Consult Factory for Model Designation and Pricing		

*See valve mounting options L001 through L003

LA-5200 STANDARD OPTIONS

Code	Description	Selection
Toggles, Lights		
A001	Local Auto/Manual Toggle Switches	
A002	INC/OFF/DEC Toggle Switches	
A003	Local Auto/Manual Toggle Switches & INC/OFF/DEC Toggles (A001 & A002)	
A004	Open-Close-Stop Push Buttons - NEMA 4	
A005	Two Pilot Lights - NEMA 4	
A006	Two Position Auto/Manual Selector Switches - NEMA 4	
A007	Three Position INC/OFF/DEC Selector Switches - NEMA 4	
A009	ON/OFF Toggle Power Switch	
A010	Local Auto/Manual Switches & (INC/OFF/DEC) Switches - NEMA 4 (A006 & A007)	
A011	Key locks for Auto/Manual rotary switches - NEMA 4	
A012	ON/OFF Rotary Power Switch - NEMA 4	
Brake		
B001	Electrically Operated Brake 120 Vac	
B002	Electrically Operated Brake 240 Vac	
Feedback		
F001	Potentiometer, 1000 ohms	
F002	Tandem Potentiometer, 1000 ohms each (Not for use with models with internal amplifiers)	
F003	Potentiometer, 5000 ohms (Not for use with models with internal amplifiers)	
F004	Potentiometer, 10,000 ohms (Not for use with models with internal amplifiers)	
F005	Transmitter, 4-20 mA output	
F006	One Potentiometer, 1000 ohms plus 4-20 mA Transmitter (Not for use with models with internal amplifiers)	
F010	Anti Backlash Feedback Gearing	
F999	Special Potentiometer (consult factory)	
3-Phase Controls		
G001	3-Phase Contactor with Overloads	
G002	Control Transformer (120 Vac control voltage)	
G003	Control Transformer (240 Vac control voltage)	

Code	Description	Selection
Identification/Certifications		
J002	Stainless Steel Tags	
Valve Mounting		
L001	Mounting of actuator to valve by customer. Compatible hardware supplied by Jordan Controls per customer specifications. Complete, certified valve drawings showing topworks detail must be submitted with order.	
L002	Valve provided by customer for mounting and set-up with actuator by Jordan Controls.	
L003	Valve provided by Jordan Controls, mounted and set-up with actuator per customer specifications.	
Position Indicator		
P001	Local Position Indicator	
Auxiliary Switches		
S001	Two Adjustable Position Switches, SPDT, 20 Amp, 120/240 Vac	
S002	Two Adjustable Position Switches, DPDT, 20 Amp, 120/240 Vac	
S003	Four Adjustable Position Switches, SPDT, 20 Amp, 120/240 Vac	
S004	Four Adjustable Position Switches, DPDT, 20 Amp, 120/240 Vac	
S014	Two nonadjustable end of travel position switches, SPDT, 20 Amp, 120/240 Vac	
S016	Two nonadjustable thrust limit switches SPDT, 10 Amp, 120/240 Vac	
S019	Two nonadjustable end of travel position switches, SPST, 20 Amp, 120/240 Vac	
S020	Two nonadjustable thrust limit switches SPST, 20 Amp, 120/240 Vac	
Painting/Coating		
W002	Two Part Epoxy	

LA-5200 SPECIAL OPTIONS

(Consult factory for special requirements)

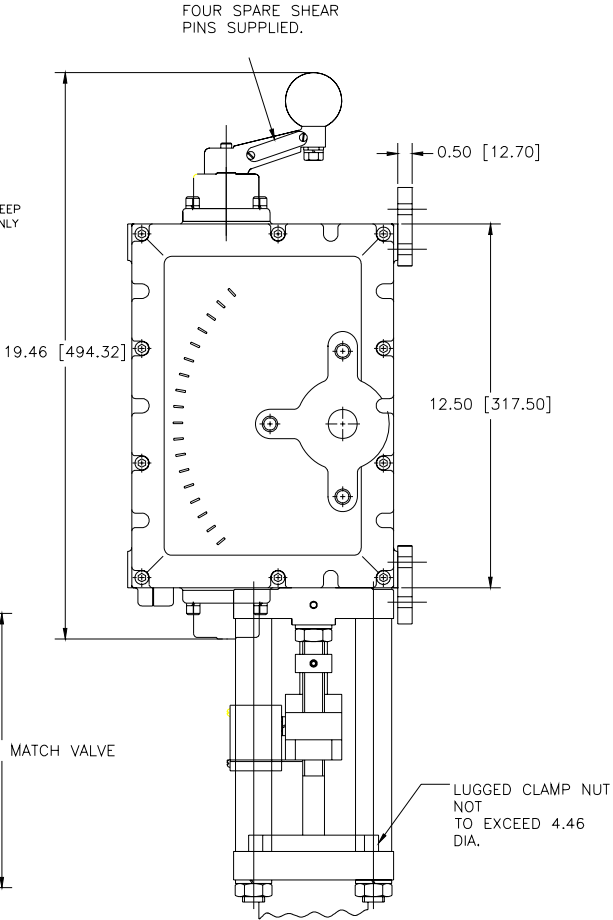
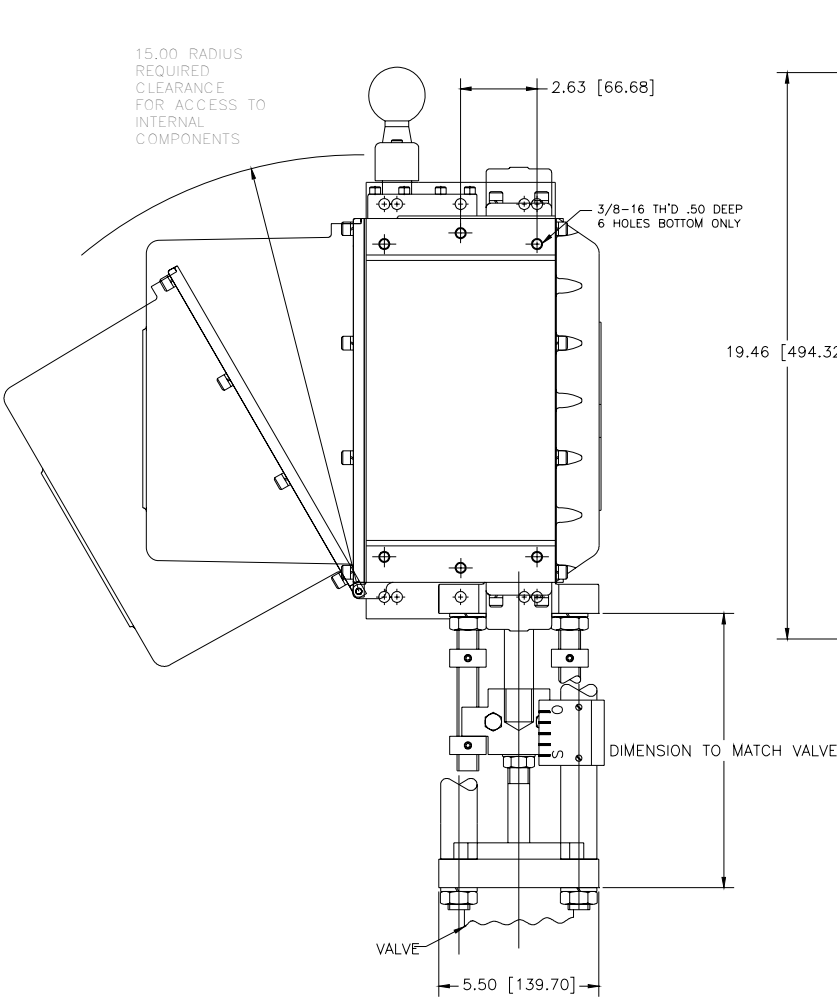
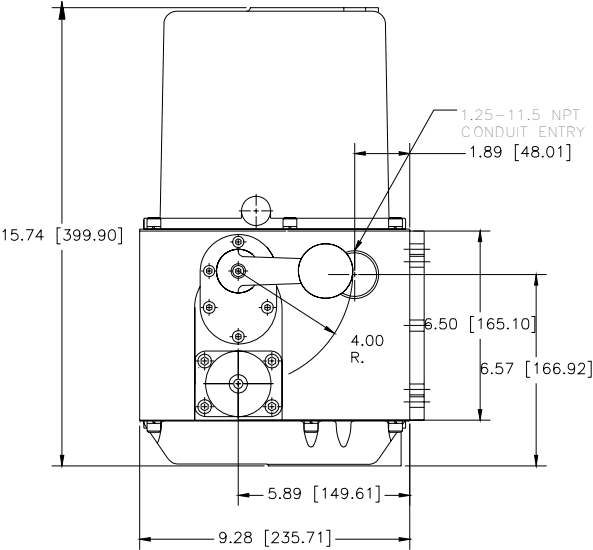
Code	Description	Selection
Connectors		
C001	Plug-In Cannon Type Connector on Enclosure for Power and Control	
C002	Mating Plug-In Cannon Type Connector on Enclosure for Power and Control	
Feedback		
F008	Contactless 4-20 mA	
F009	Contactless 0-10Vdc	
Motor		
M001	3 Phase, 575 Vac	

Code	Description	Selection
Special Electrical Options		
X001	24 Vdc power supply, 320 mA, 100-240 Vac input	
X004	Voltage to current converter	
X005	Loop powered 4 to 20 isolator, M-system HSN-IAA	
X006	± 15 Vdc power supply	
X010	Customer command and feedback, 0-10 Vdc or 0-5 Vdc instead of 4-20 mA	
X019	AC Power Sensing with Output	

For a full description of options, go to the Complete Listing of Options starting on page 197.

LA-5100 MAJOR DIMENSIONS

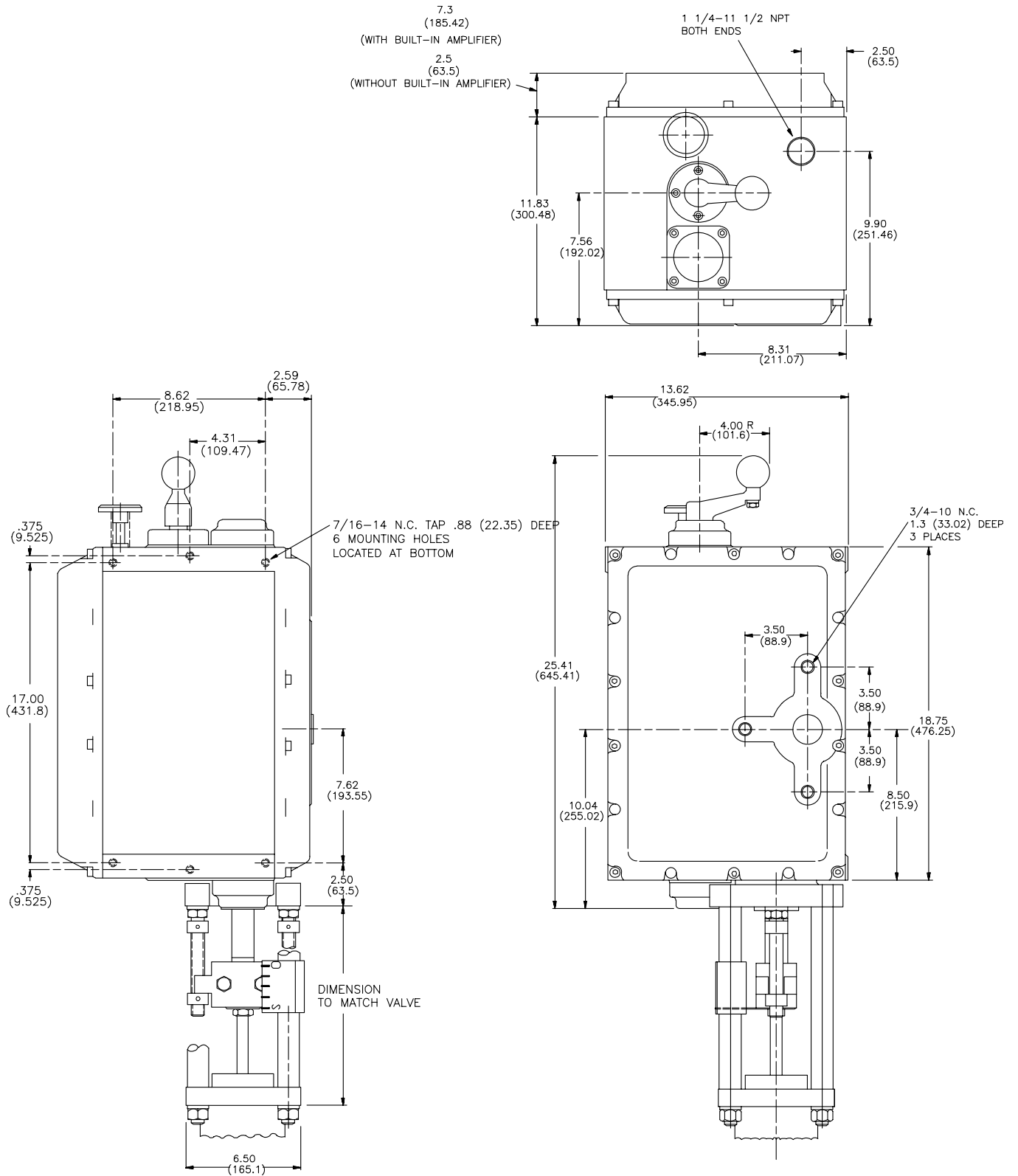
INCHES
(MILLIMETERS)



These dimensions are subject to change without notice and should not be used for preparation of drawings or fabrication of installation mounting. For current installation manuals and other product information, see www.jordancontrols.com.

LA-5200 MAJOR DIMENSIONS

INCHES
(MILLIMETERS)



These dimensions are subject to change without notice and should not be used for preparation of drawings or fabrication of installation mounting. For current installation manuals and other product information, see www.jordancontrols.com.