INTEGRATED ACTUATORS

Joyce integrated actuators are designed to lift and precisely position loads of up to one ton. Translating tube (TT) integrated actuators are well suited for use in industrial environments where protection of the lifting screw mechanism is critical and low maintenance is desired. Traveling nut (TN) integrated actuators are best suited for use in environments that are relatively clean and free of dust.

Requiring only electric power, Joyce integrated actuators may be used in place of hydraulic cylinders, eliminating the cost and potential for leaks associated with hydraulic systems.

Integrated actuators include NEMA 56C-face motor flanges, and are capable of moving at speeds up to 345 inches per minute. Dynamic speed/load rating charts can be viewed along with product drawings on pages 139 to 142. Both acme screw (IA, DIA) and ball screw (BIA, HBIA) models are designed to operate at the charted capacities under both tension and compression loading.

Joyce Integrated Actuator Features and Benefits:

- Chrome plated (BIA, HBIA) or stainless steel (IA, DIA) inner cylinder tube resists harsh contaminants while providing smooth cylinder translation.
- Tube seals retain lubrication while preventing dirt and grime from entering the internal cavity and contaminating the lifting screw.
- Aluminum cast housing provides durable protection for screw and internal components.
- Rigid cylinder tube guide bearings provide resistance to buckling (external guides are required when side loads are present).
- Alloy steel input shafts riding on tapered roller bearings provide proper wormgear alignment for increased service life.
- Input shaft seals prevent the loss of lubrication.

Joyce can customize integrated actuators to meet your specifications.

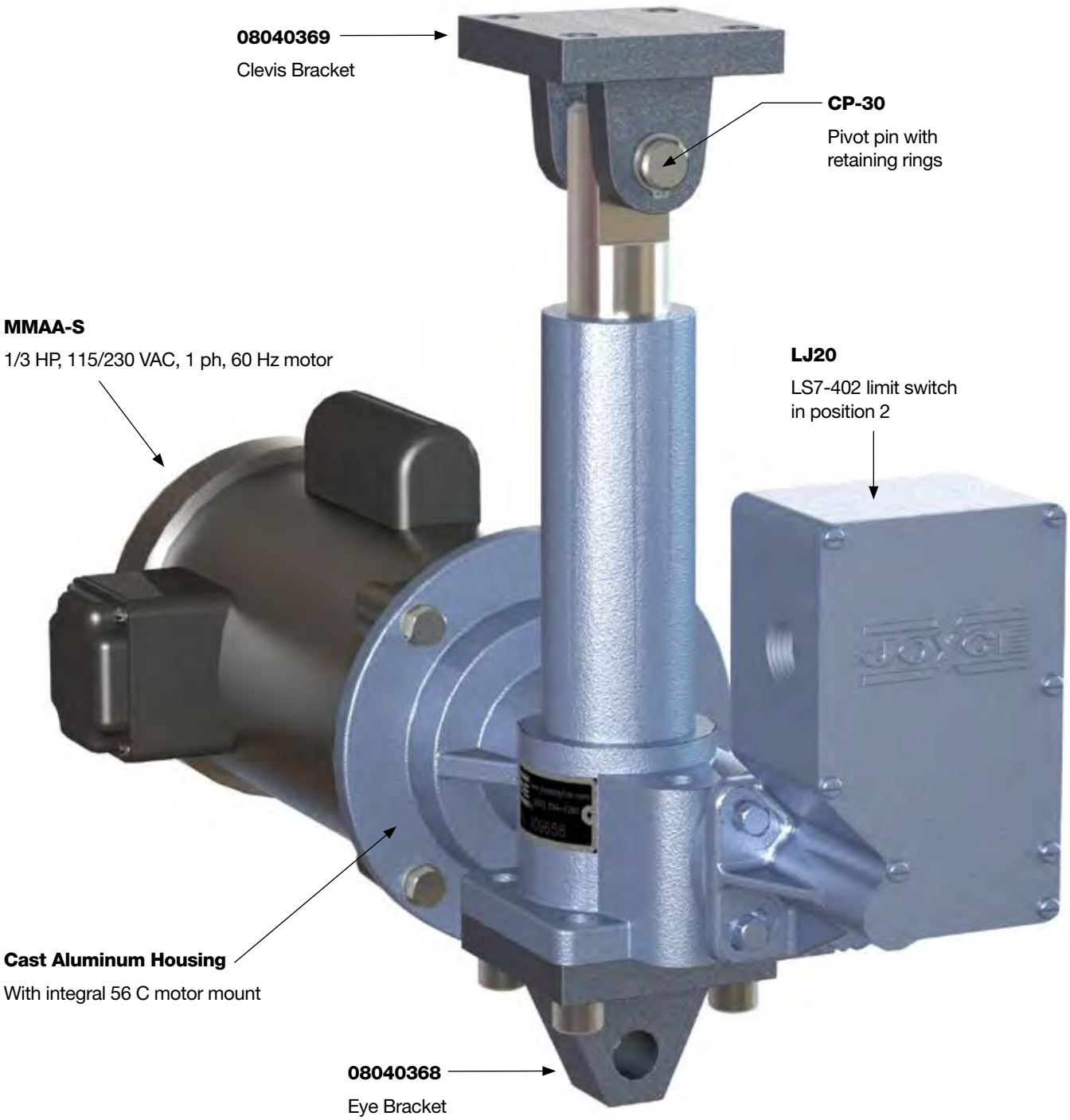
Joyce offers Integrated Actuators in the following designs:
- **Translating tube**
- **Traveling nut**

An illustration and a guide for ordering are on pages 136 and 137.

INTEGRATED ACTUATORS

Integrated Actuator

(Example: IA51TT-6-LJ20-MMAA-S)



(Shown with typical accessories)

INTEGRATED ACTUATORS ORDERING INFORMATION

Instructions: Select a model number from this chart.

ACME 1" diameter, .25" pitch	ACME 1" diameter, .25" pitch/. 50" lead	Ball 1" diameter, .25" pitch	Ball 1" diameter, 1.00" pitch
IA51 IA201	DIA51* DIA201*	BIA51* BIA201*	HBIA51*

Important Note: *Integrated actuators may lower under load. Brake motors or external locking systems are recommended.

Sample Part Number: IA51-TT-6.00-LJ20-MMAA-S

Integrated Actuator Configuration

TT	TN
Translating Tube	Keyed for Traveling Nut

Integrated Actuator Rise

Rise is travel expressed in inches and not the actual tube length.
Contact Joyce for rises greater than 24"

Left Side Shaft Code

XXXX=Remove Shaft
STDX=Standard
CUST=Custom

LJ10
LJ20
LJ30
LJ40
— See limit switch positions from chart below

Right Side Shaft Code

RMMT=Remove Motor Mount
MMA_=Standard
— Motor code from chart below

Limit Switches

Position	1	2	3	4
Left side Shaft				
Code	LJ10	LJ20	LJ30	LJ40

Motors

Size	Code
1/4 HP	K
1/3 HP	A
1/2 HP	B
3/4 HP	C
No Motor	X

Standard Motors

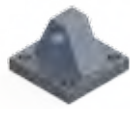
Voltage	Speed (rpm)	1/4 HP	1/3 HP	1/2 HP	3/4 HP
115/230 VAC Single Phase	1140			X	X
115/230 VAC Single Phase	1725	X	X	X	X
115/230 VAC Single Phase w/brake	1725		X	X	X
230/460 VAC Three Phase	1140	X	X	X	X
230/460 VAC Three Phase	1725	X	X	X	X
230/460 VAC Three Phase w/brake	1725	X	X	X	X
12 VDC Permanent Magnet	1800	X	X	X	X
24 VDC Permanent Magnet	1800		X	X	X
90 VDC Permanent Magnet	1750	X	X	X	X
180 VDC Permanent Magnet	1750	X	X	X	X

Options** (see chart to left)

X	No additional options
M	Modify standard actuator
C12	12 VDC motor
C24	24 VDC motor
C90	90 VDC motor
C180	180 VDC motor
K	Brake motor
R	1140 RPM motor
S	Single phase 115/230 1-ph. 60 Hz

** Specify as many options as needed.

Optional Accessories (p. 138)

 Clevis Bracket	 Pivot Pin with retaining rings	 Eye Bracket
08040369	CP-30	08040368

INTEGRATED ACTUATORS OPTIONS

Motors

Standard 56C-NEMA frame motors are available in:

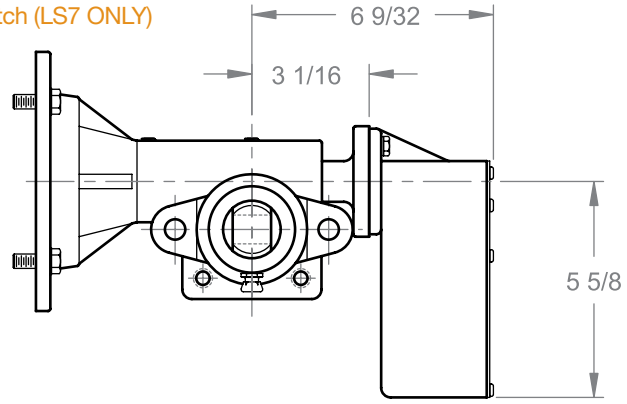
AC Motors
- 1/4, 1/3, 1/2, and 3/4 HP
- 1140 or 1725 rpm
- Single or three phase
- With or without brake

DC Motors
- 1/4, 1/3, 1/2, and 3/4 HP
- 1750 rpm or 1800 rpm
- 90 and 180 volts

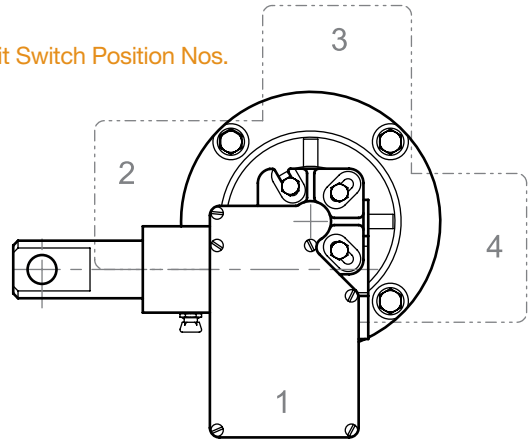
Ring Encoders

Contact Joyce with your requirements.

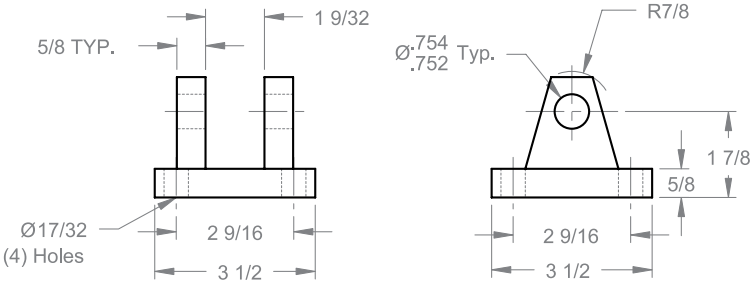
Limit Switch (LS7 ONLY)



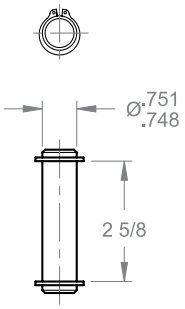
Limit Switch Position Nos.



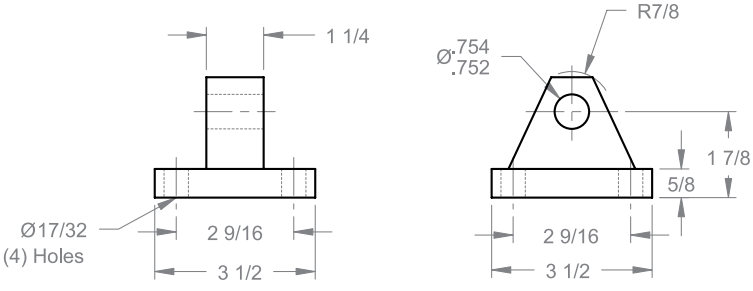
Clevis Accessories



Clevis Bracket #08040369



Pivot Pin
With Retaining Rings
CP-30



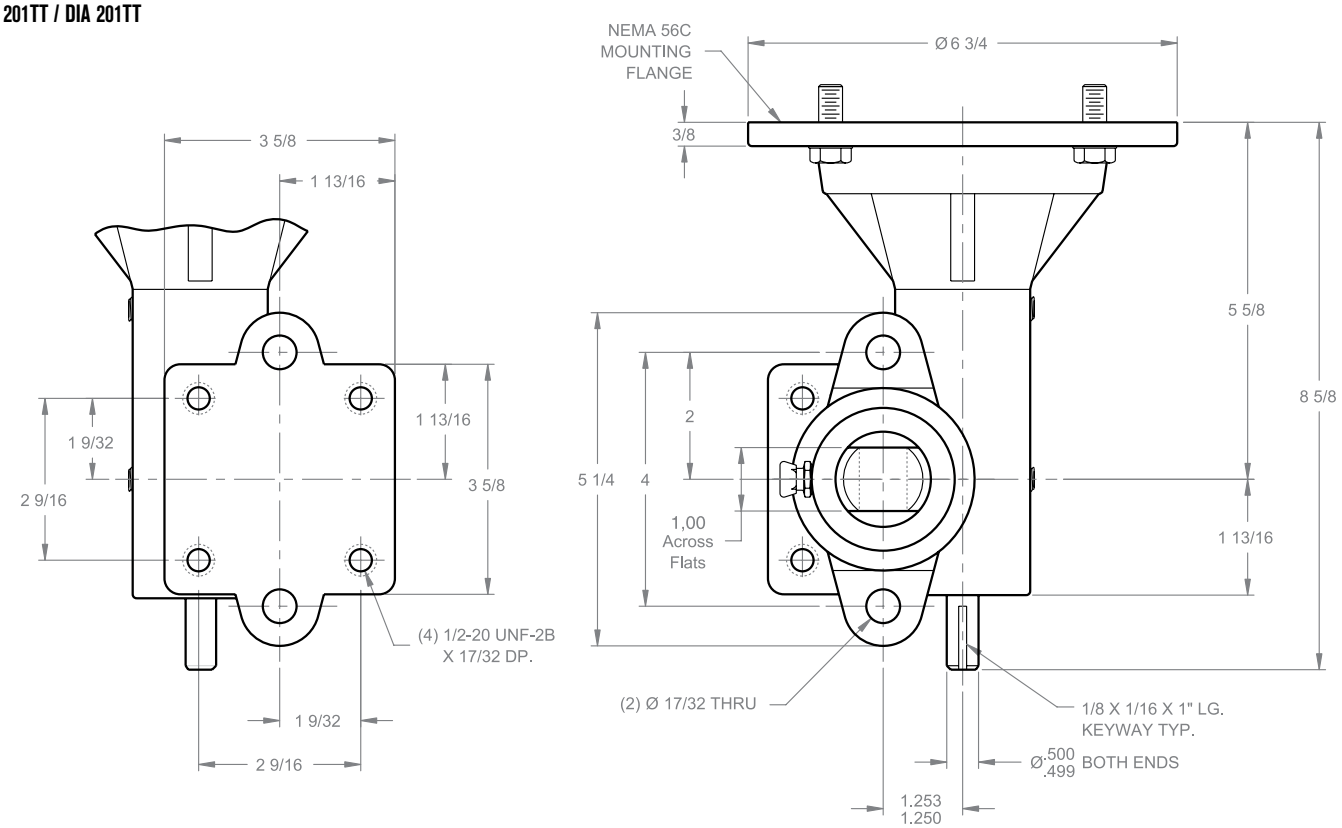
Eye Bracket #08040368

Note: Drawings are artist's conception — not for certification; dimensions are subject to change without notice.

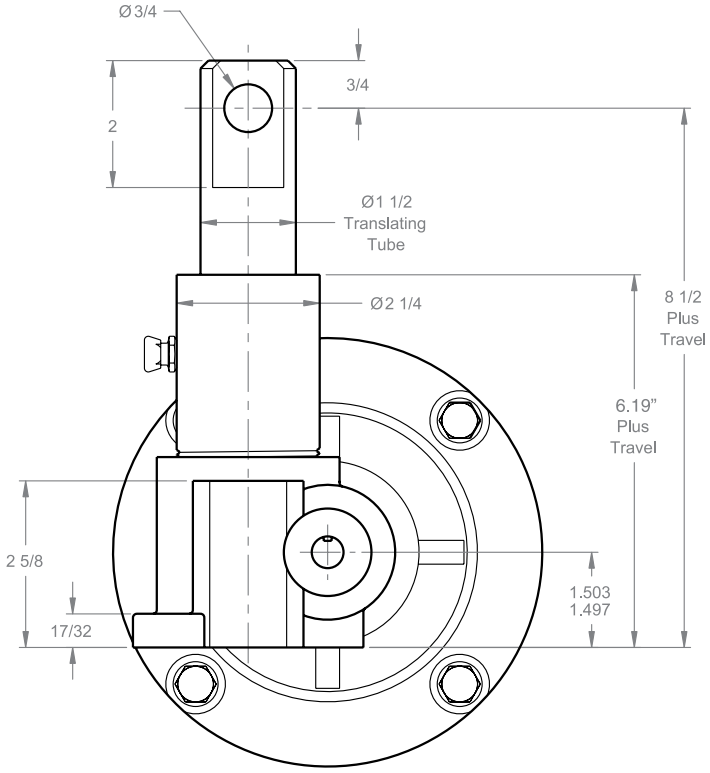
INTEGRATED ACTUATORS

250-2000 POUND INTEGRATED ACME SCREW

IA 51TT / DIA 51TT
IA 201TT / DIA 201TT



Model Number		IA51TT		DIA51TT	
		IA201TT		DIA201TT	
ACME Threaded Lifting Screw		1" diameter .25" pitch		1" diameter .25" pitch .50" lead	
Wormgear Ratio		5:1		5:1	
		20:1		20:1	
Worm Shaft Turns/1" Travel		20		10	
		80		40	
Motor RPM		1140	1725	1140	1725
Lifting Speed (Inches/Minute)		57	86	114	172
		14	21	28	43
Rated Loads (Lbs.)	1/3 HP Motor	550	375	375	250
		1775	1225	1250	850
	1/2 HP Motor	850	550	575	400
		2000	1850	1875	1300
	3/4 HP Motor	1250	850	875	600
		2000	2000	2000	1950



Lead: The distance traveled axially in one rotation of the lifting screw.

Pitch: The distance from a point on a screw thread to a corresponding point on the next thread, measured axially.

Important Note: DIA models may lower under load. Brake motors or external locking systems are recommended.

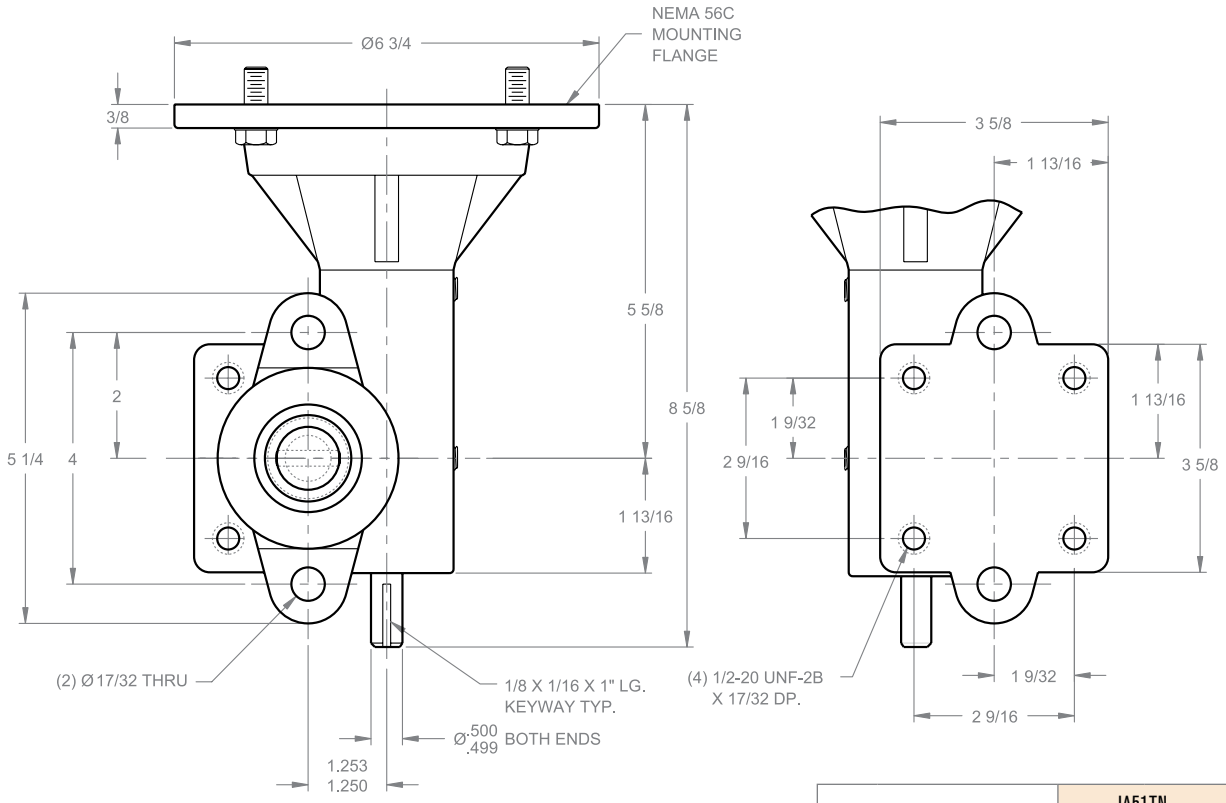
Note: Drawings are artist's conception — not for certification; dimensions are subject to change without notice.

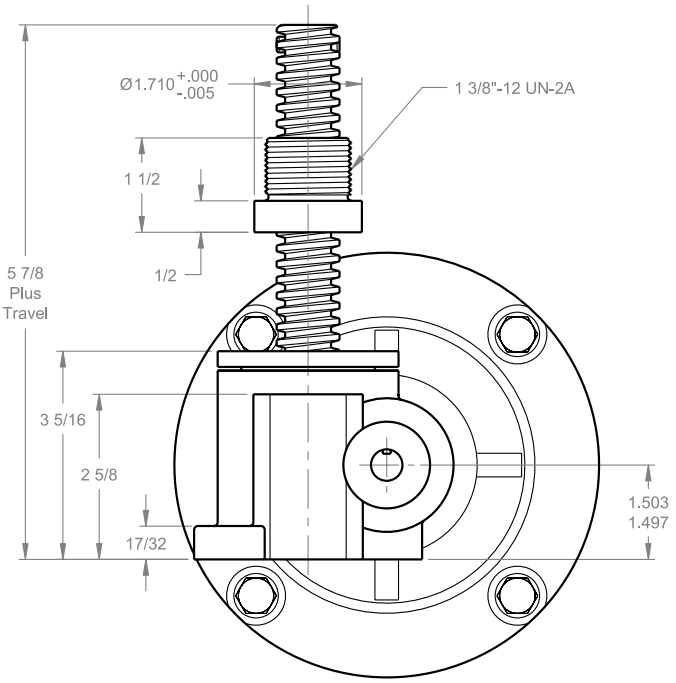
An Illustration and ordering information are on pages 136 and 137

INTEGRATED ACTUATORS

250-2000 POUND INTEGRATED ACME SCREW

IA 51TN / DIA 51TN
IA 201TN / DIA 201TN





Model Number		IA51TN		DIA51TN*	
		IA201TN		DIA201TN*	
ACME Threaded Lifting Screw		1" diameter .25" pitch		1" diameter .25" pitch .50" lead	
Wormgear Ratio		5:1		5:1	
		20:1		20:1	
Worm Shaft Turns/1" Travel		20		10	
		80		40	
Motor RPM		1140	1725	1140	1725
Lifting Speed Inches/Minute		57	86	114	172
		14	21	28	43
Rated Loads (Lbs.)	1/3 HP Motor	550	375	375	250
		1775	1225	1250	850
	1/2 HP Motor	850	550	575	400
		2000	1850	1875	1300
	3/4 HP Motor	1250	850	875	600
		2000	2000	2000	1950

Lead: The distance traveled axially in one rotation of the lifting screw.

Pitch: The distance from a point on a screw thread to a corresponding point on the next thread, measured axially.

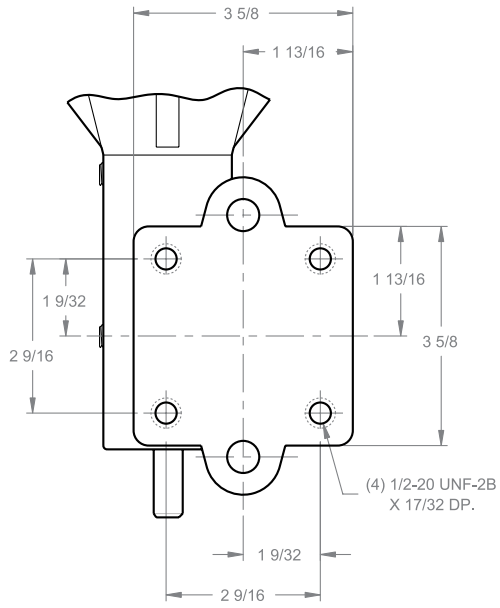
Important Note: *DIA models may lower under load. Brake motors or external locking systems are recommended.

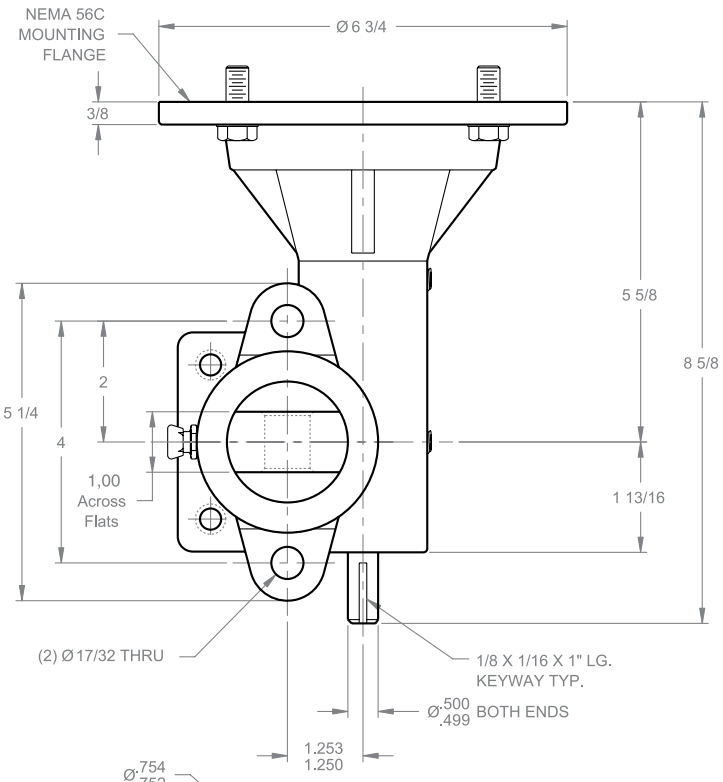
Note: Drawings are artist's conception — not for certification; dimensions are subject to change without notice.

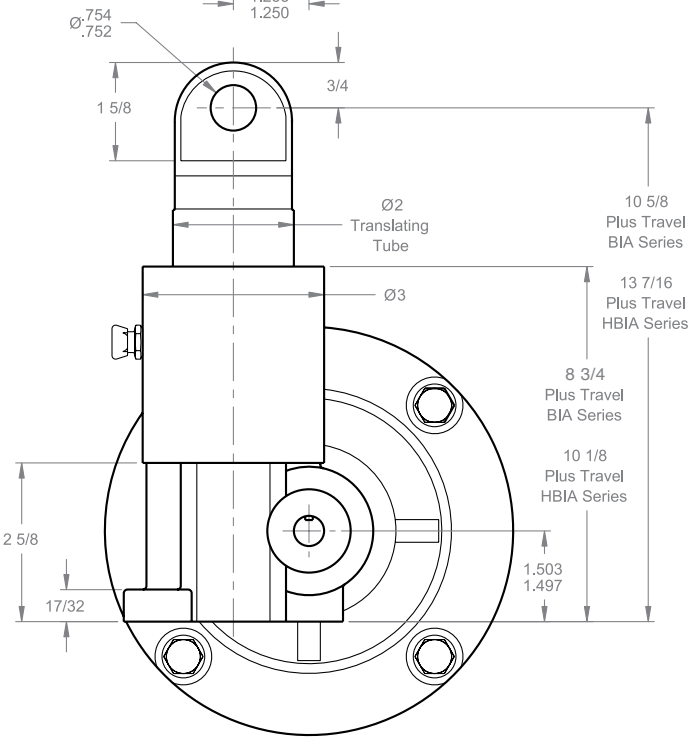
INTEGRATED ACTUATORS

100-2000 POUND INTEGRATED BALL SCREW

BIA 51TT / HBIA 51TT
BIA 201TT







		BIA51TT*		HBIA51TT*	
Model Number		BIA201TT*		–	
Ball Screw		1" diameter .250" lead ball screw		1" diameter 1.000" lead ball screw	
Wormgear Ratio		5:1		5:1	
		20:1		–	
Worm Shaft Turns/1" Travel		20		5	
		80		–	
Motor RPM		1140	1725	1140	1725
Lifting Speed Inches/Minute		57	86	228	345
		14	21	–	–
Rated Loads (Lbs.)	1/4 HP Motor	925	625	225	100
		2000	2000	–	–
	1/3 HP Motor	1225	825	300	200
		2000	2000	–	–
	1/2 HP Motor	1850	1250	450	300
		2000	2000	–	–
	3/4 HP Motor	2000	1875	700	450
		2000	2000	–	–

Lead: The distance traveled axially in one rotation of the lifting screw.

Pitch: The distance from a point on a screw thread to a corresponding point on the next thread, measured axially.

Important Note: *BIA & HBIA models are not self-locking. Brake motors or external locking systems are required.

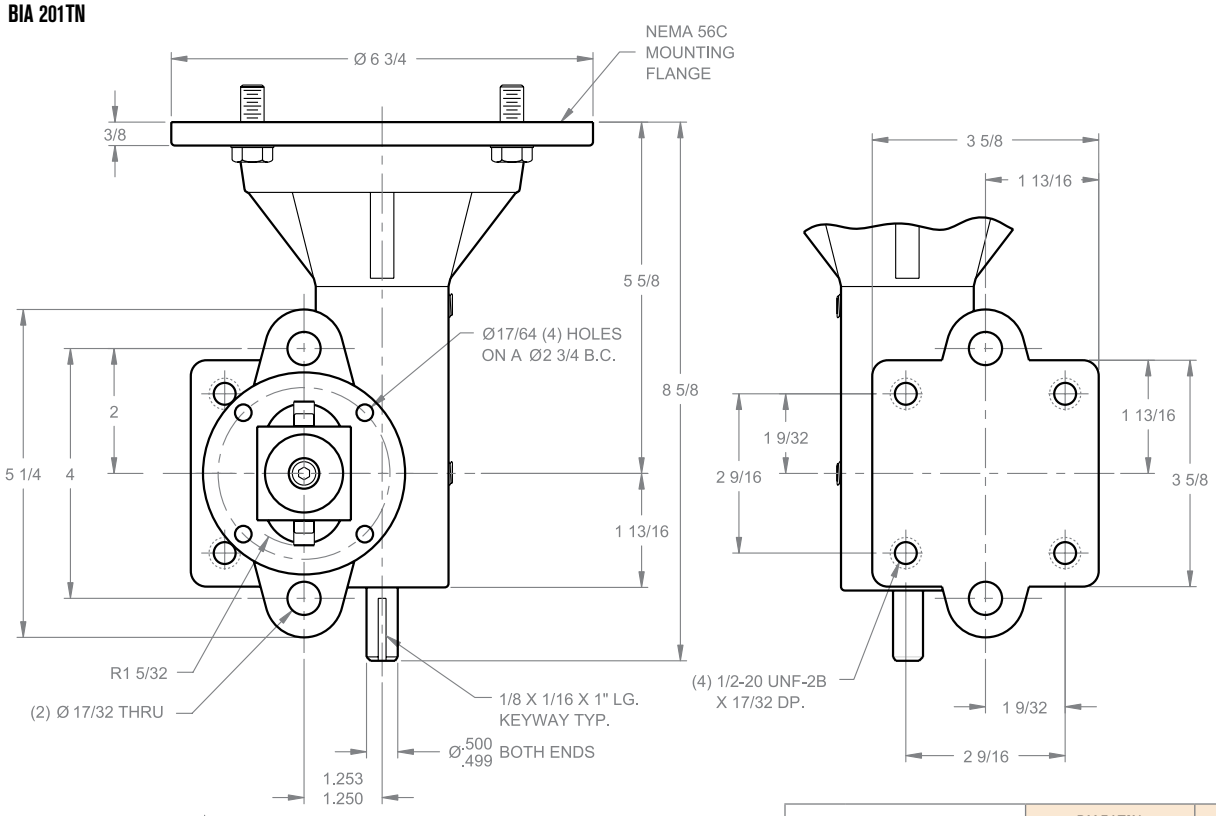
Note: Drawings are artist's conception — not for certification; dimensions are subject to change without notice.

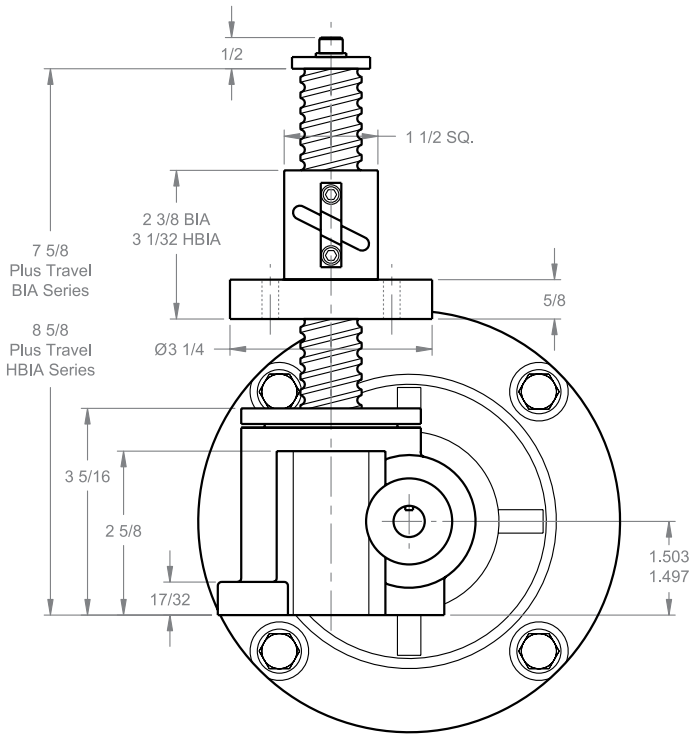
An Illustration and ordering information are on pages 136 and 137

INTEGRATED ACTUATORS

100-2000 POUND INTEGRATED BALL SCREW

BIA 51TN / HBIA 51TN
BIA 201TN





Model Number		BIA51TN*		HBIA51TN*	
		BIA201TN*		–	
Ball Screw		1" diameter .250" lead ball screw		1" diameter 1.000" lead ball screw	
Wormgear Ratio		5:1		5:1	
		20:1		–	
Worm Shaft Turns/1" Travel		20		5	
		80		–	
Motor RPM		1140	1725	1140	1725
Lifting Speed Inches/Minute		57	86	228	345
		14	21	–	–
Rated Loads (Lbs.)	1/4 HP Motor	925	625	225	100
		2000	2000	–	–
	1/3 HP Motor	1225	825	300	200
		2000	2000	–	–
	1/2 HP Motor	1850	1250	450	300
		2000	2000	–	–
	3/4 HP Motor	2000	1875	700	450
		2000	2000	–	–

Lead: The distance traveled axially in one rotation of the lifting screw.

Pitch: The distance from a point on a screw thread to a corresponding point on the next thread, measured axially.

Important Note: *BIA & HBIA models are not self-locking. Brake motors or external locking systems are required.

Note: Drawings are artist's conception — not for certification; dimensions are subject to change without notice.