

Turn-Dex 1-1/4" Bore

ROTARY VANE ACTUATORS with integral unidirectional clutch:

- 6 base models with torque outputs from 13 in. lbs. to 60 in. lbs.
- Clockwise or Counterclockwise stepped rotations.
- Adjustable Stroke Control is standard.

Turn-Dex Stepper Indexer:

- Highly repeatable (+/- 1/2 degree)*.
- Provide instantaneous and continuous full torque.
- Produce more torque in less space.
- Eliminates gears and pivot points that wear, break or strip.
- Patented Urethane seals for:
 - Long cycle life and Non-lube service.
 - Actual applications with 25 million cycles and more.
- 100s of standard options and modifications.

Just imagine... How Answer Engineering can work for you!



**TURN-DEX ACTUATOR WITH ADJUSTABLE STROKE CONTROL (STD)
SHOWN WITH OPTION 801 (SIDE MOUNTS POS. 2 & 6)**

Torque Chart (IN LBS.)			
180° and 270° Rotations ²			
Actuator Model	Actuator Torque at		
	100 PSI	80 PSI	60 PSI
321	13	10	7
323			
341	32	25	19
343			

Torque Chart (IN LBS.)			
90° Rotations ²			
Actuator Model	Actuator Torque at		
	100 PSI	80 PSI	60 PSI
322	25	20	15
342	60	48	36

*NOTE:

Overrun:

The output shaft can be manually rotated only in its drive direction. Large loads may coast after the actuator has stopped. The output shaft cannot be reverse rotated. Forcing it backwards could damage the Turn-Dex.

Accurate & Repeatable Positioning:

Due to the overrun nature of the clutch, external stops, brakes, roller and detents or shot-pins are required for accurate and repeatable positioning.

SPECIFICATIONS

Unit Materials

Stator/Rotor Seals ..Urethane
Shaft/Tube SealsBuna¹
Shaft 1144 G&P Steel
BodyAnodized Alum.
Bearings.....Full Comp. Needle

Miscellaneous

Inlets 1/8 NPT
Min. Pressure35 psi
Max. Pressure200 psi
Cylinder Bore1-1/4"

Shaft Load Capacities

Max. Side Load125 lbs.
Max. End Load.....10 lbs.

Temperature Range

40°F to 180°F
For applications below 40°F, a variety of seal options are available based upon cycle rates, temperatures and frequency of use. Consult the factory to discuss your cold temperature application for your optimum solution.

Filtration

Air 25-50 microns

Clutch

Type.....Roller, lock in one direction, free overrun in other direction.
Max. Torque Rating...143 in. lbs.

Cycle Rates³

Max. non-lubed rate:
Double Vane.....40 cpm
Single Vane20 cpm

Max. lubed rate:
Consult Factory

Rotary Motion Backlash

All models0 degree

Leak Rates

Air 4 cfm or less@100 psi

1. Viton Optional
2. All rotations are nominal +4/-0 actual
3. Cycle = Start position to end of rotation and returning to the start position.
Stroke = 1/2 cycle

Capacity per Stroke ³ (IN ³)			
270° Rotation ²		90° Rotation ²	
321	0.99	322	0.84
341	1.99	342	1.68

Weights (OZs)			
270° Rotation ²		90° Rotation ²	
321	10	322	10
341	14	342	14

How to Order: Turn-Dex 1-1/4" Bore

MODEL DRIVE DIRECTION OPTIONS OPTIONS

341 - 1 - A02 - XXX

1 2 3 3

1

Model			
Model	Bore	Torque	Rotation
321	1-1/4"	13	270
322	1-1/4"	25	90
323	1-1/4"	13	180
341	1-1/4"	32	270
342	1-1/4"	60	90
343	1-1/4"	32	180

2

Drive Direction	
Based on shaft end view and inlets at 12 O'Clock	
1	Clockwise
2	Counter-clockwise

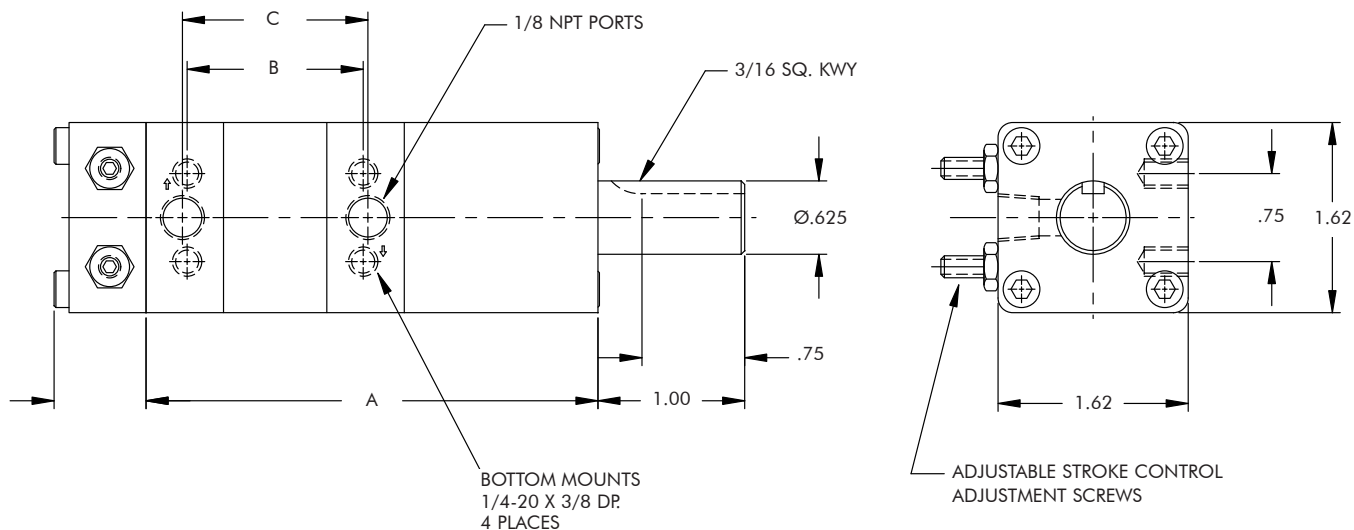
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Options	
Additional options available on pg. 9	
Option #	Description
000	No Options
100	Front Flange
101	Rear Flange
200	Side Angle Brackets, Mounting Surface 3 & 7
201	Side Angle Brackets, Mounting Surface 2 & 6
202	Side Angle Brackets, Mounting Surface 4 & 8
203	Side Angle Brackets, Mounting Surface 1 & 5
800	Side Mounts, Sides 1 & 5
801	Side Mounts, Sides 2 & 6
803	Side Mounts, Sides 4 & 8
804	Side Mounts, Sides 2, 4, 6 & 8
806	Side Mounts, Sides 6 & 8
807	Side Mounts, Sides 2 & 4
810	No Bottom Mounts
Cap Sensor Options (See pg. 13)	
A00	Sensor System – No Sensors
A05	Sensor System – 2 Sourcing Sensors
A08	Sensor System – 2 Sinking Sensors
A02	Sensor System – 2 Reed Sensors
A25	Sensor System – 2 Sourcing Sensors*
A28	Sensor System – 2 Sinking Sensors*
A22	Sensor System – 2 Reed Sensors*

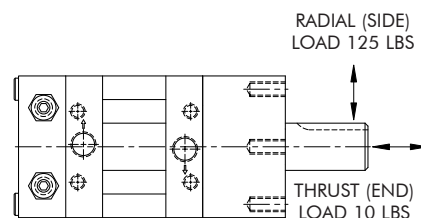
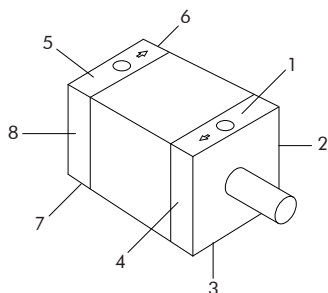
*NOTE: See page 13 for Lead Type variation

Dimensional Data: Turn-Dex 1-1/4" Bore

Basic Dimensions



Dimensional Specifications			
Actuator	A	B	C
321	3.84	1.50	1.57
322	3.84	1.50	1.57
323	3.84	1.50	1.57
341	4.84	2.50	2.57
342	4.84	2.50	2.57
343	4.84	2.50	2.57



Port & Mounting Position References

Shaft Load Capacity

Turn-Dex 2-1/2" Bore

ROTARY VANE ACTUATORS

with integral unidirectional clutch:

- 10 base models with torque outputs from 87 in. lbs. to 350 in. lbs.
- Clockwise or Counterclockwise stepped rotations.
- Adjustable Stroke Control is standard.

Turn-Dex Stepper Indexer:

- Highly repeatable (+/- 1/2 degree)*.
- Provide instantaneous and continuous full torque.
- Produce more torque in less space.
- Eliminates gears and pivotpoints that wear, break or strip.
- Patented Urethane seals for:
 - Long cycle life and Non-lube service.
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TURN-DEX ACTUATOR WITH ADJUSTABLE STROKE CONTROL (STD)

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SPECIFICATIONS

Unit Materials

Stator/Rotor Seals..Urethane
Shaft/Tube SealsBuna¹
Shaft1144 G&P steel
BodyAnodized Alum.
Bearings .Full Comp. Needle

Miscellaneous

Inlets.....1/4 NPT
Min. Pressure35 psi
Max. Pressure200 psi⁴
Cylinder Bore2-1/2"

Shaft Load Capacities

Max. Side Load250 lbs.
Max. End Load.....25 lbs.

Temperature Range

40°F to 180°F
For applications below 40°F, a variety of seal options are available based upon cycle rates, temperatures and frequency of use. Consult the factory to discuss your cold temperature application for your optimum solution.

Filtration

Air25-50 microns

Clutch

Type.....Roller, lock in one direction, free overrun in other direction

Max. Torque Rating...412 in. lbs.

Cycle Rates³

Max. non-lubed rate:
Double Vane.....40 cpm
Single Vane20 cpm

Max. lubed rate:
Consult Factory

Rotary Motion Backlash

All models0 degree

Leak Rates

Air4 cfm or less@100 psi

1. Viton Optional
2. All rotations are nominal +4/-0 actual
3. Cycle = Start position to end of rotation and returning to the start position.
Stroke = 1/2 cycle
4. Pressure Rating for 41X and 42X is 500 psi max.

Torque Chart (IN. LBS.)			
180° and 270° Rotations ²			
Actuator Model	Actuator Torque at		
	100 PSI	80 PSI	60 PSI
411	87	70	52
413			
421	175	140	105
423			
431	350	280	210
433			

Torque Chart (IN. LBS.)			
45° AND 90° Rotations ²			
Actuator Model	Actuator Torque at		
	100 PSI	80 PSI	60 PSI
412	175	140	105
414			
422	350	280	210
424			

*NOTE:

Overrun:

The output shaft can be manually rotated only in its drive direction. Large loads may coast after the actuator has stopped. The output shaft cannot be reverse rotated. Forcing it backwards could damage the Turn-Dex.

Accurate & Repeatable Positioning:

Due to the overrun nature of the clutch, external stops, brakes, roller and detents or shot-pins are required for accurate and repeatable positioning.

Capacity per Stroke ³ (IN ³)			
	270° Rotation ²		90° Rotation ²
411	4.52	412	2.75
421	8.50	422	5.50
431	17.0	N/A	N/A

Weights (LBS.)			
	270° Rotation ²		90° Rotation ²
411	2.5	412	2.5
421	3.3	422	3.5
431	6.0	N/A	N/A

How to Order: Turn-Dex 2-1/2" Bore

MODEL DRIVE DIRECTION OPTIONS OPTIONS

413 - 2 - 200 - XXX

1 2 3 3

1

Model			
Model	Bore	Torque	Rotation
411	2-1/2"	87	270
412	2-1/2"	175	90
413	2-1/2"	87	180
414	2-1/2"	175	45
421	2-1/2"	175	270
422	2-1/2"	350	90
423	2-1/2"	175	180
424	2-1/2"	350	45
431	2-1/2"	350	270
433	2-1/2"	350	180

2

Drive Direction	
Based on shaft end view and inlets at 12 O'Clock	
1	Clockwise
2	Counter-clockwise

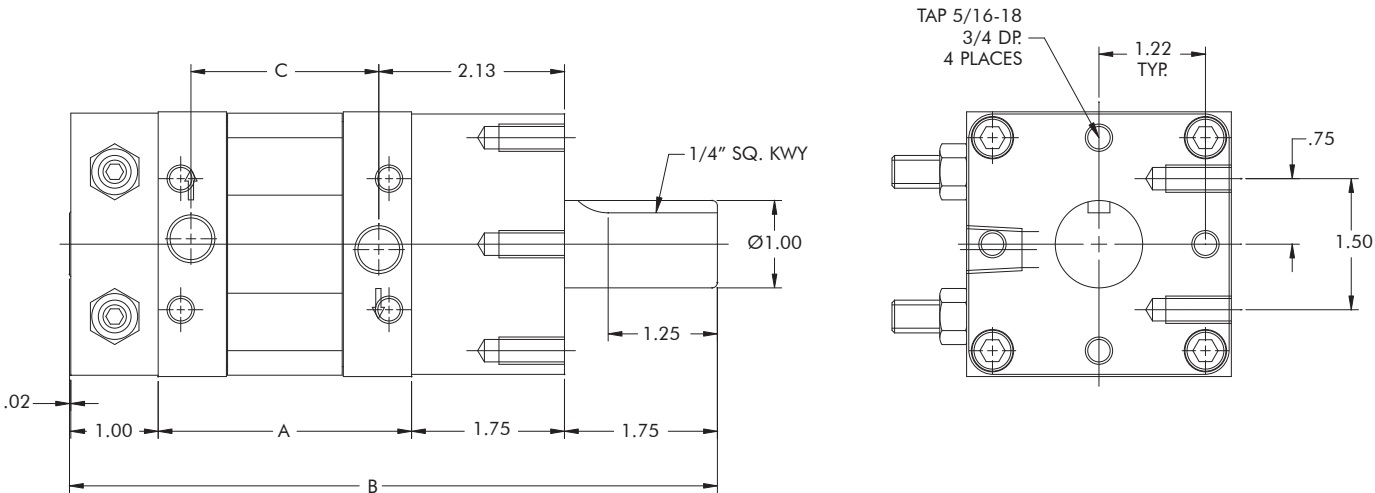
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Options	
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203	Side Angle Brackets, Mounting Surface 1 & 5
800	Side Mounts, Sides 1 & 5
801	Side Mounts, Sides 2 & 6
803	Side Mounts, Sides 4 & 8
804	Side Mounts, Sides 2, 4, 6 & 8
806	Side Mounts, Sides 6 & 8
807	Side Mounts, Sides 2 & 4
810	No Side Mounts
900	Cap End
Cap Sensor Options (See pg. 13)	
A00	Sensor System – No Sensors
A05	Sensor System – 2 Sourcing Sensors
A08	Sensor System – 2 Sinking Sensors
A02	Sensor System – 2 Reed Sensors
A25	Sensor System – 2 Sourcing Sensors*
A28	Sensor System – 2 Sinking Sensors*
A22	Sensor System – 2 Reed Sensors*

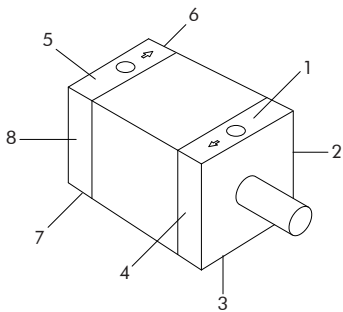
*NOTE: See page 13 for Lead Type variation

Dimensional Data: Turn-Dex 2-1/2" Bore

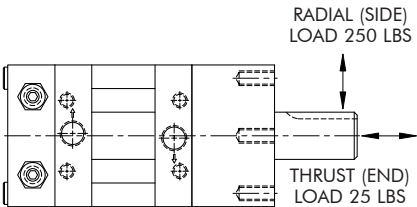
Basic Dimensions



Dimensional Specifications				
Actuator	A	B	C	D
41X	2.90	7.40	2.15	2.38
42X	4.40	8.90	3.64	3.88
43X	7.42	11.92	6.67	6.91
44X	10.38	14.88	9.63	9.86



Port & Mounting Position References



Shaft Load Capacity