QUICK REFERENCE: DD & RAD MODEL STANDARD WITH MOTORS

2D/3D CAD

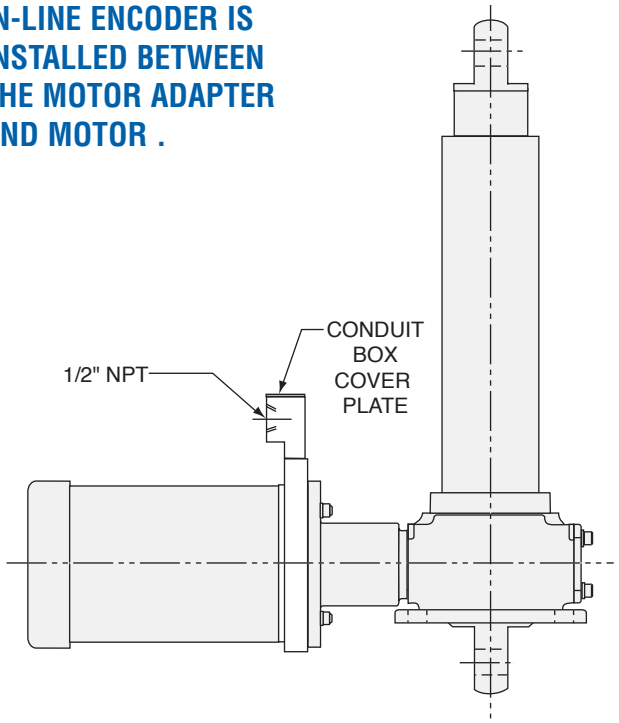
STANDARD DD & RAD MODELS WITH MOTORS

CYLINDER MODEL NUMBER	DYNAMIC CAPACITY (lbf.)	TRAVEL RATE IN/MIN. @ 1725 RPM	PAGE NUMBER
DD-105-HL / 05XX	750	172	391
DD-1020-HL / 02XX	800	43	391
DD-105-A5 / 02XX	850	69	391
DD-1020-A5 / 02XX	900	17	391
DD-256-HL / 10XX	900	287	392
DD-506-SL / 20XX	950	539	392
DD-506-A3 / 10XX	1,000	108	396
DD-1008-SL / 20XX	1,150	404	398
DD-3024-A4 / 05XX	1,200	18	394
DD-2524-HD / 03XX	1,500	18	392
DD-2512-HL / 10XX	1,500	144	392
DD-256-A2 / 15XX	1,725	144	392
DD-256-ML / 10XX	1,800	144	392
DD-256-HL / 20XX	1,800	288	392
DD-2524-A4 / 05XX	1,880	18	392
DD-5024-A3 / 07XX	1,900	27	396
DD-105-HD / 05XX	1,900	69	391
DD-506-A2 / 20XX	1,900	144	396
DD-1020-HD / 02XX	2,000	17	391
DD-2512-HD / 05XX	2,000	36	392
DD-10024-A2 / 15XX	2,000	36	398
DD-1008-A4 / 20XX	2,000	54	398
DD-256-HD / 07XX	2,000	72	392
DD-1008-A2 / 20XX	2,000	108	398
DD-506-HL / 20XX	2,000	288	396
DD-306-A4 / 15XX	2,100	72	394
DD-1008-HL / 20XX	2,175	216	398
DD-3012-A4 / 10XX	2,200	36	394
DD-506-A3 / 20XX	2,200	108	396
DD-256-A4 / 15XX	2,280	72	392
DD-2512-A4 / 10XX	2,500	36	392
DD-20024-A2 / 20XX	2,500	36	400
DD-3012-HD / 07XX	2,500	60	394
DD-306-HD / 15XX	2,500	120	394
DD-506-HL / 30XX	2,500	287	396
RAD-5066-A3 / 10XX	2,700	18	397
DD-3024-HD / 05XX	2,700	30	394
DD-10024-HL / 15XX	2,700	72	398
DD-506-A3 / 30XX	2,900	108	396
DD-508-A4 / 20XX	3,000	54	396
DD-1008-A2 / 30XX	3,000	108	398
DD-306-HD / 15XX	3,275	120	394
DD-5024-HD / 07XX	3,400	34	396
DD-20024-A2 / 30XX	3,500	36	400
RAD-2566-HL / 10XX	3,550	48	393
DD-3012-HD / 10XX	3,600	60	394
DD-256-HD / 10XX	3,600	72	392
DD-256-ML / 20XX	3,600	144	392
RAD-10086-A2 / 10XX	3,800	18	399
RAD-5066-HL / 10XX	4,000	48	397
DD-20024-HL / 20XX	4,000	72	400
DD-506-HD / 20XX	4,000	136	396
DD-2008-A2 / 70XX	4,250	108	400
RAD-10086-HL / 10XX	4,275	36	399
DD-2524-HD / 05XX	4,450	18	392
DD-2512-HD / 07XX	4,450	36	392
RAD-5062-A3 / 10XX	4,500	9	397
DD-1008-A2 / 50XX	4,500	108	398
DD-1008-HD / 20XX	4,600	102	398
DD-2008-A3 / 70XX	4,620	72	400
RAD-3066-HD / 05XX	4,775	20	395
RAD-3062-A4 / 07XX	4,925	6	395
RAD-2546-HD / 02XX	5,000	3	393
RAD-2546-A4 / 05XX	5,000	3	393
RAD-2562-HD / 03XX	5,000	6	393
RAD-2562-A4 / 05XX	5,000	6	393
RAD-2566-A4 / 07XX	5,000	12	393
RAD-5066-HD / 10XX	5,000	23	397
RAD-2566-ML / 05XX	5,000	24	393
RAD-2562-HL / 10XX	5,000	24	393
RAD-3062-HD / 03XX	5,250	10	395
DD-1008-HL / 50XX	5,400	216	398
DD-506-HD / 30XX	5,750	136	396
RAD-3022-A4 / 05XX	6,000	3	395
RAD-3022-HD / 02XX	6,000	5	395
RAD-3066-A4 / 10XX	6,000	12	395
RAD-10082-A2 / 10XX	6,275	9	399
DD-20024-HD / 20XX	7,000	36	400
DD-10024-HD / 15XX	7,150	34	398
RAD-5046-A3 / 10XX	7,200	4.5	397
DD-1008-HD / 30XX	7,500	102	398
RAD-10046-A2 / 10XX	7,800	6	399
RAD-5046-HL / 10XX	8,000	12	397
DD-2008-HL / 70XX	8,000	216	400
RAD-5046-HD / 10XX	9,000	6	397
RAD-5062-HD / 10XX	9,000	11	397
RAD-10046-HL / 10XX	9,750	12	399
RAD-10086-HD / 10XX	10,000	17	399
DD-20024-HD / 30XX	10,000	36	400
DD-2008-HD / 50XX	11,000	108	400
DD-1008-HD / 50XX	12,000	102	398
RAD-20048-A2 / 30XX	12,500	4.5	401
RAD-10082-HD / 10XX	15,000	9	399
DD-2008-HD / 70XX	16,600	108	400
RAD-10046-HD / 10XX	18,750	6	399
RAD-20088-A3 / 50XX	22,250	9	401
RAD-20088-HL / 50XX	30,000	27	401
RAD-20088-A2 / 70XX	31,000	13.5	401
RAD-20048-HL / 30XX	35,000	9	401
RAD-20088-HD / 30XX	35,000	13.5	401
RAD-20048-HD / 20XX	40,000	4.5	401

= indicates Acme Models.

XX = motor specification, see page 377

IN-LINE ENCODER IS INSTALLED BETWEEN THE MOTOR ADAPTER AND MOTOR .



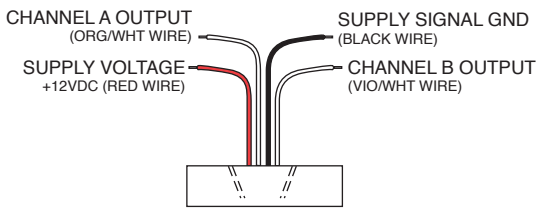
For position sensing at the input shaft, the ActionJac™ in-line encoder option may be factory installed between the motor and motor adapter or Right-Angle Reducer. This low-cost option requires minimal space. When used with worm gear type cylinders, it leaves the extension shaft side of the cylinder free for clearance, for a rotary limit switch, or for coupling to another cylinder .

The In-line encoder's quadrature output design allows detection of both speed and direction of shaft rotation.

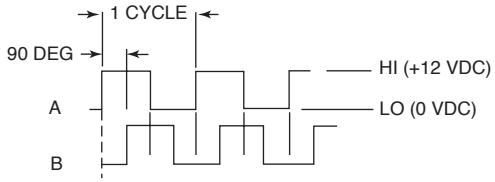
The ActionJac™ in-line encoder option mounts to a motor and therefore requires an optional motor mount or right-angle reducer.

Sensing speed range:	0 -10,000 rpm
Pulse Output:	60 pulses/revolution
Supply voltage:	+12 Volts DC +/-5%
Supply current:	60 mA typical, 115 mA maximum
Output drive capability:	250 mA per channel continuous
Maximum load:	50 ohms per channel

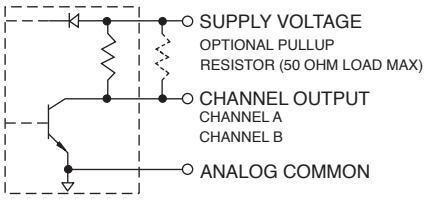
Encoder is face mounted between the motor and motor mount and will offset the length of the motor .61 inches for NEMA 56 and 140 frames and .88 inches for NEMA 180 and 210 frames.



ELECTRICAL CONNECTIONS



OUTPUT CHANNEL WAVEFORMS



OUTPUT CHANNEL SCHEMATIC (CHANNELS A & B)

HOW TO ORDER AN IN-LINE ENCODER:

Specify the Cylinder reference number, using the system described on page 389.

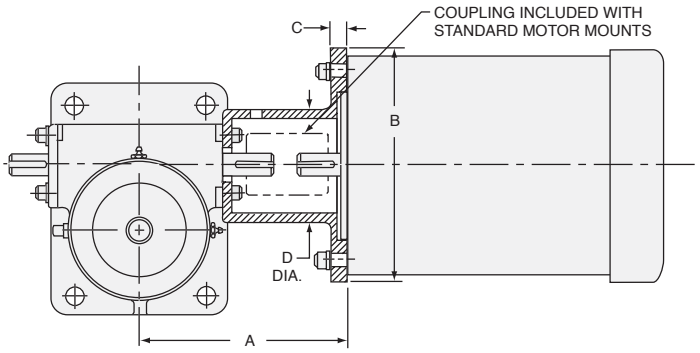
EXAMPLE:

DD-1008-HD / 10BT-2 / 000-1 / CC / 24.0 / S**E**

"E" anywhere in this field indicates Encoder

MOTORS AND MOTOR MOUNTS

MOTOR MOUNTS WITH AND WITHOUT BRAKEMOTORS



ActionJac™ motor mount assemblies are designed for standard motors and include jaw type couplings. These assemblies are stocked for DD-25, DD-50, DD-100 and DD-200 and are available for the cylinder sizes listed in the table. Non-standard motor mounts can be designed for special requirements including, special couplings, small NEMA frame motors, DIN standard motors, stepper motor and servomotor designs, contact Nook Industries for additional information.

STANDARD MOTOR MOUNT SIZES & DIMENSIONS

CYLINDER SERIES	NEMA FRAME SIZE	ORDER CODE WITHOUT MOTOR	DIMENSIONS			
			A	B	C	D
DD-5	42	X02	4.48	4.63	.50	2.69
	48	X08	4.48	4.63	.50	3.12
DD-10	56C	X05	5.71	6.63	.49	3.12
DD-25	56C	X05	6.25	6.63	.63	3.50
	140TC	X14	6.25	6.63	.63	3.50
DD-50	56C	X05	7.25	6.75	.56	3.75
	140TC	X14	7.25	6.75	.56	3.75
	180TC	X18	8.00	9.25	.75	3.75
DD-100	56C	X05	8.25	6.75	.50	4.38
	140TC	X14	8.25	6.75	.50	4.38
	180TC	X18	9.00	9.25	.75	4.38
DD-200	56C	X05	8.66	6.75	.50	3.75
	140TC	X14	8.66	6.75	.50	3.75
	180TC	X18	9.00	9.25	.63	5.19
	213TC	X21	9.68	8.88	.88	5.69

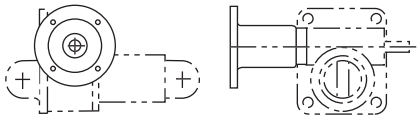
Actionjac™ electric cylinders can be ordered with industrial quality induction motors. Motors with internally and externally wired brake motors are available. Brake motors utilize an integral, spring actuated brake. Standard motors are 3-phase, 230-460 VAC, 60hz, 1725 rpm. Single-phase motors are 115-130 VAC, 60hz, 1725 rpm. All motors are rated for continuous duty. Specific duty motors, as wash down extended duty, may be supplied upon request.

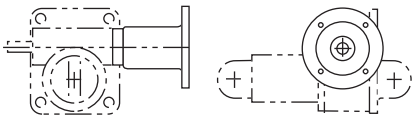
See charts on page 377 for order codes.

CAUTION: Ball screw cylinders are self-lowering. A brake of sufficient torque is required to hold the load with a ball screw cylinder. Be sure to verify that the brakemotor selected has sufficient brake torque for your application.

MOTOR MOUNT POSITIONS

POSITION 1





POSITION 2

HOW TO ORDER A MOTOR ADAPTER WITH OR WITHOUT A BRAKEMOTOR

EXAMPLE:

DD-1008-HD / **10BT-1** / 000-1 / CC / 24.0 / S

Mounting Position (see above & for Right Angle Reducer see page 378)

Order Code for No Motor (see chart above)

See page 377 for Order Code with Motor

ActionJac Electric Cylinders can be supplied with industrial quality brake motors. Brake motors include a spring actuated, electrically released braking mechanism which will hold a load when the power is off. In normal operation, power is applied and removed to the motor windings and brake release simultaneously.

If it is desired to operate the brake separately, as when used with a speed control, the brake needs to be wired externally. Standard for Reliance motors, special order for Baldor motors.

Standard motors are: 3 phase, 208-230 / 460 VAC, 60 Hz. 1725 rpm. Also available are single phase motors at: 115 / 230 VAC, 60 Hz. 1725 rpm. All motors are rated for continuous duty. Note: for inverter duty motors or additional options, contact Nook Industries.

BALDOR: INTERNALLY WIRED BRAKE MOTOR ORDER CODE

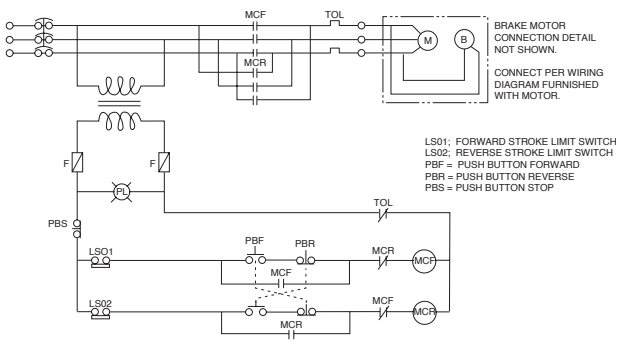
MOTOR HP	STD. MOTOR 208-230/460 3PH	SINGLE PHASE 115/230 1PH	XT EXTRA TUFF 208-230/460 3PH	WASH DOWN MOTOR IP55 208-230/460 3PH	EXPLOSION PROOF • DIVISION 1 • CLASS 1,2 • GROUP F & G • 208/230/460 • 3PH
1/4	02BT	02BS	02BX	02BW	02BE
1/3	03BT	03BS	03BX	03BW	03BE
1/2	05BT	05BS	05BX	05BW	05BE
3/4	07BT	07BS	07BX	07BW	07BE
1	10BT	10BS	10BX	10BW	10BE
1-1/2	15BT	–	15BX	15BW	15BE
2	20BT	–	20BX	20BW	20BE
3	30BT	–	30BX	30BW	30BE
5	50BT	–	50BX	50BW	50BE
7-1/2	75BT	–	75BX	75BW	–

RELIANCE: EXTERNALLY WIRED BRAKE MOTOR ORDER CODE

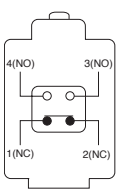
MOTOR HP	STD. MOTOR 208-230/460 3PH	SINGLE PHASE 115/230 1PH	XT EXTRA TUFF 208-230/460 3PH	WASH DOWN MOTOR IP55 208-230/460 3PH	EXPLOSION PROOF • DIVISION 1 • CLASS 1,2 • GROUP F & G • 208/230/460 • 3PH
1/4	02RT	02RS	02RX*	02RW*	02RE*
1/3	03RT	03RS	03RX*	03RW*	03RE*
1/2	05RT	05RS	05RX*	05RW	05RE
3/4	07RT	07RS	07RX*	07RW	07RE
1	10RT	10RS	10RX*	10RW	10RE
1-1/2	15RT	–	15RX*	15RW	15RE
2	20RT	–	20RX*	20RW	20RE
3	30RT	–	30RX*	30RW*	30RE
5	50RT	–	50RX*	50RW*	50RE
7-1/2	75RT*	–	75RX*	75RW*	75RE*

*specify minimum quantity required

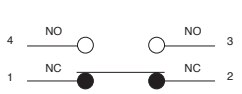
BRAKE MOTOR WIRING

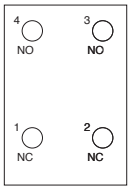


A typical wiring drawing is shown here, for a three-phase brake motor. This example is for reference only, the correct wiring will vary for each application.



CONTACT CONFIGURATION

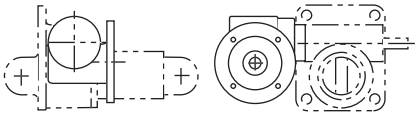
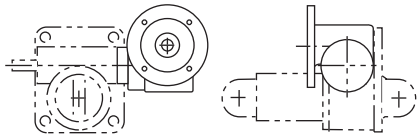
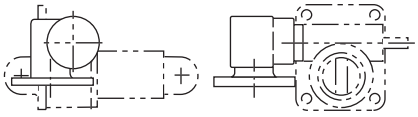
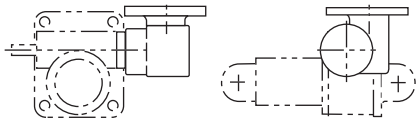
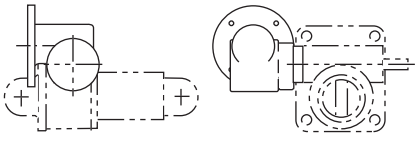
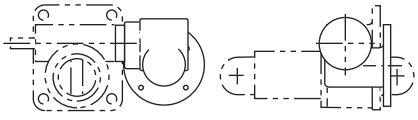
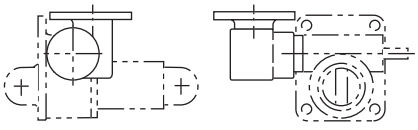
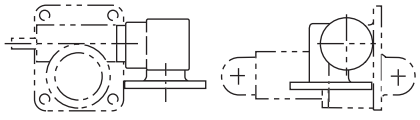




TERMINAL ARRANGEMENT

RIGHT ANGLE REDUCER POSITIONS

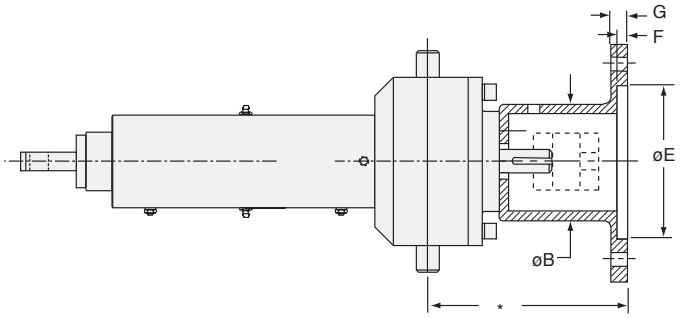
RIGHT-ANGLE REDUCER POSITIONS

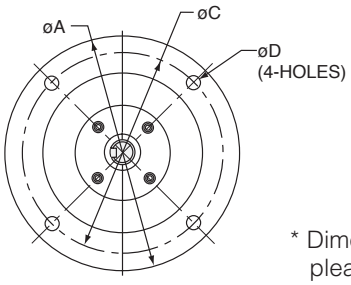
POSITION 1 	 POSITION 2
POSITION 3 	 POSITION 4
POSITION 5 	 POSITION 6
POSITION 7 	 POSITION 8

Download Accurate Moveable Assembly 3D Models and 2D Drawings For ActionJac™ Worm Gear Screw Jacks and Electric Cylinders:

- **Configure** specific requirements for your worm gear screw jack or electric cylinder application in a simple interface, including motor adapter, right angle reducer, bellows boots and limit switch accessories.
- **View** complete assemblies on-line with zoom, pan and rotate capabilities.
- **Download** true assembly models with full range of motion in native AutoCAD®, SolidWorks®, Pro/E®, CATIA®, ParaSolids®, SAT® and many other formats.
- **Order** complete jack assemblies with generated part number.

ILA SERIES MOTOR MOUNTS





* Dimension is application dependent, please contact factory.

Actionjac™ ILA Series cylinders can be supplied with motor mounts. The sizes listed in the chart are mounts designed to match up to common motor faces. Application torque requirements and coupling size, style and attachment method will affect the size of the motor mount. See reference number page 376-377 for motor mount/ cylinder model availability. A custom motor mount can be manufactured to your specifications, please contact Nook Industries.

MODEL	NEMA FRAME MOTOR SIZE	øA	øB	øC	øD	øE	F	G
ILA-5	48	4.63	3.12	3.75	.28	3.00	.16	.50
	48	4.63	3.12	3.75	.28	3.00	.16	.50
ILA-10	56C	6.75	3.50	5.88	.41	4.50	.16	.50
ILA-25	56C	6.75	3.75	5.88	.41	4.50	.16	.50
	140TC	6.75	3.75	5.88	.41	4.50	.16	.50
	180TC	9.25	3.75	7.25	.56	8.50	.28	.75
ILA-100	56TC	6.75	4.38	5.88	.41	4.50	.16	.50
	140TC	6.75	4.38	5.88	.41	4.50	.16	.50
	180TC	9.25	4.38	7.25	.56	8.50	.28	.75
ILA-200	180TC	9.25	5.19	7.25	.56	8.50	.28	.75
	213TC	8.88	5.69	7.25	.56	8.50	.28	.88

Dimensions in inches
Other NEMA and Custom Frame Motor Sizes available upon request.

MODEL	IEC FRAME MOTOR SIZE	øA	øB	øC	øD	øE	F	G
ILA-5	56B5	120	64	100	8.5	80	3.5	7
	56B14	80	64	65	6	50	3.0	6
ILA-10	63B5	140	70	115	9	95	4	8
	63B14	90	70	75	6	60	3.5	8
	71B5	160	85	130	9	110	4.5	10
	71B14	105	85	85	7	70	4	10
ILA-25	71B5	160	85	130	9	110	4.5	10
	71B14	105	85	85	7	70	4	10
	80B5	200	85	165	11	130	4.5	12
	80B14	120	85	100	7	80	4	12
ILA-100	80B5	200	96	165	11	130	4.5	12
	80B14	120	96	100	7	80	4	12
	90B5	200	116	165	11	130	4.5	12
	90B14	140	116	115	9	95	4.5	12
	100B5	250	116	215	13	180	5	14
	100B14	160	116	130	9	110	5	14
ILA-200	100B5	250	134	215	13	180	5	14
	100B14	160	134	130	9	110	5	14

Dimensions in mm
Other IEC Motor Sizes available upon request.

ROTARY LIMIT SWITCH

Every motorized Electric Cylinder must be controlled so that power to the motor is turned off and the brake engaged before the limits of mechanical travel are reached.

The ActionJac™ rotary limit switch senses extension shaft rotation and provides switch contact closures that can be used to control motors.

This sturdy, durable assembly is available with two or four circuits or two circuits and a potentiometer. Each circuit has a separate rotating cam that actuates a high quality switch. The switch actuation may be individually and infinitely adjusted anywhere within the travel of the cylinder.

These assemblies contain gear reducers with ratios that vary according to the model and travel of the jack. Nook selects ratios that result in maximum cam rotation for best accuracy, repeatability and minimum hysteresis. In most cases, with full travel of the actuator, the cam will rotate 3/8 to 7/8 of a revolution to actuate a switch. In the event that the cam continues to rotate, the switch returns to its original state after approximately 25° of rotation, with no damage to the limit switch assembly.

A 2-circuit switch assembly is useful for limiting the maximum and minimum extension. A 4-circuit assembly gives the possibility of additional signals for other user purposes. The potentiometer version is used to provide an analog signal for sensing cylinder position.

Single Pole Double Throw (SPDT) switches are standard and Double Pole Double Throw (DPDT) switches are optional. These assemblies are dust protected and meet NEMA 4 and 5 standards for oil and water tightness.

An ActionJac™ Rotary Limit Switch assembly is mounted to the extension shaft side of the ActionJac™ Worm Gear Screw Cylinder opposite the motor.

A rotary limit switch is available for ActionJac™ Electric Cylinder Series DD-25 and RAD-25 and larger. Most cylinder models have close and extended mounts for the switches to provide clearance around the switch housing. See the charts below for dimensions.

Switches are factory installed to assure proper assembly in the correct orientation for the specified mounting position. **CAUTION:** Limit switches are not adjusted at the factory. Switches should be set after installation.

HOW TO ORDER ROTARY LIMIT SWITCH:

SPECIFY:
- 2-circuits, 4-circuits, or 2-circuits with potentiometer
- SPDT or DPDT
- Mounting Position

Insert the correct designation in the ActionJac™ Electric Cylinder reference number (see page 000 for more information on jack reference numbers).

EXAMPLE: RAD-10086-HD / 10BT-1 / **2CA-4C** / CC / 24.5 / S

Extension shaft designation

ORDER CODE	NUMBER OF CIRCUITS	SWITCH TYPE	POTENTIOMETER
2CA	2	SPDT	NO
2CC	2	DPDT	NO
4CA	4	SPDT	NO
4CE	4	DPDT	NO
PTA	2	SPDT	YES
PTC	2	DPDT	YES

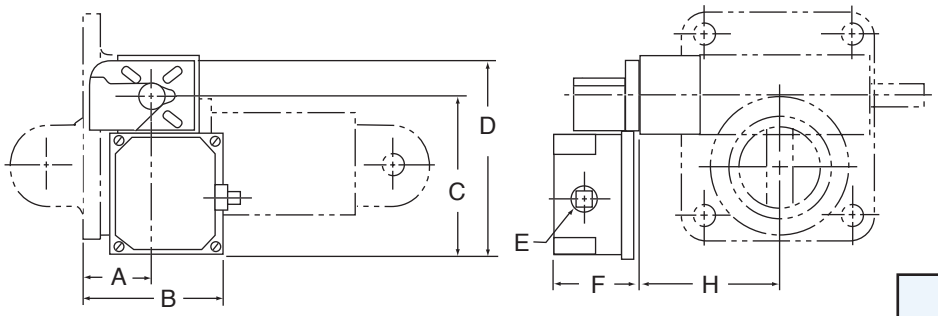
Examples of rotary limit switch designations:

2CA-4 = Rotary Limit Switch, 2-circuit, SPDT, position 4
4CE-1 = Rotary Limit Switch, 4-circuit, DPDT, position 1
PTA-8 = Rotary Limit Switch with potentiometer, 2 SPDT's, position 8

"dash" number designates mounting position (see following page)

IMPORTANT: These designation numbers are not complete part numbers. These assemblies contain gear reducers with ratios that vary according to the model and travel of the cylinder. If you are ordering a replacement switch assembly, complete information on the cylinder is required.

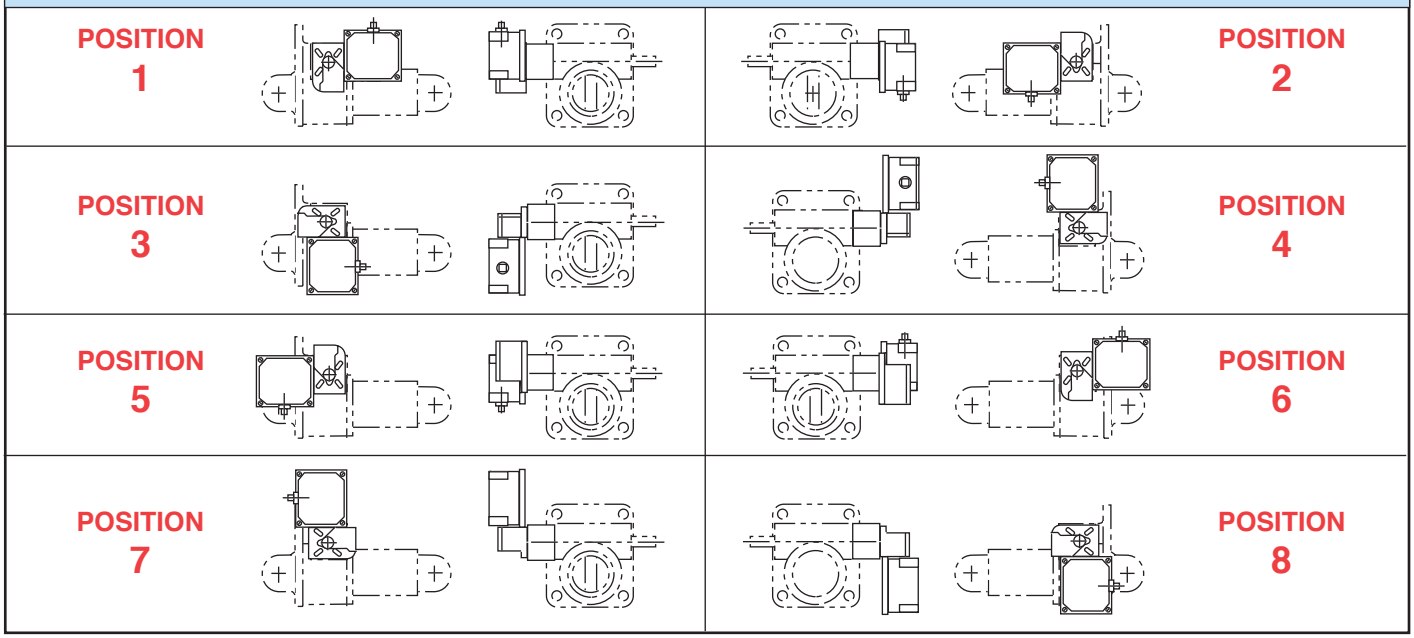
ROTARY LIMIT SWITCH



CIRCUITS	DIMENSIONS					
	A	B	C	D	E	F
2 CIRCUIT	2.46	5.25	6.24	7.62	3/4-NPT	3.25
4 CIRCUIT OR 2 CIRCUIT WITH POTENTIOMETER	2.46	5.25	8.24	9.62	1-NPT	3.88

SERIES	DIMENSION "H" CLOSE MOUNT	DIMENSION "H" EXT. MOUNT
DD & RAD 25	2.75	3.56
DD & RAD 30	2.75	3.56
DD & RAD 50	3.56	4.56
DD & RAD 100	3.88	5.56
DD & RAD 200	4.41	5.81

ROTARY LIMIT SWITCH POSITIONS



ELECTRICAL RATINGS:

SWITCHES:

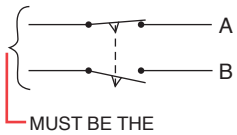
DC Current — 115 Volts SPDT, .50 amps
DPDT, .80 amps
AC Current — 115 Volts SPDT, 15 amps
DPDT, 10 amps

10-TURN POTENTIOMETER:

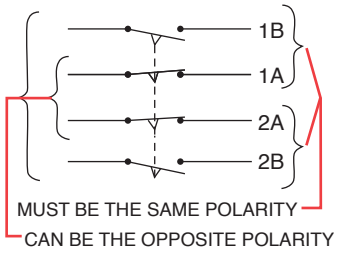
0-500 OHM, 2 Watt

WIRING DIAGRAMS:

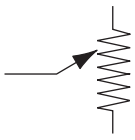
S.P.D.T.



D.P.D.T.



POTENTIOMETER



NOTE: While the 10-turn potentiometer is rated for 0-500 Ohms, as implemented in the rotary limit switch assembly, it can not and should not operate over its full range. Minimum and maximum resistance values can not be known until the cylinder is installed and final travel limit adjustments have been made, therefore, the device connected to the potentiometer should include provisions for trimming to compensate for these values.

ROD-TYPE LIMIT SWITCH ASSEMBLIES

2D/3D CAD

Actionjac ELECTRIC CYLINDERS

The Rod-Type Limit Switch provides two SPDT switches used to limit the maximum and minimum cylinder extension. The switch assembly mounts to the cylinder tubes for convenient access and leaves the extension shaft free for other purposes. The simple design permits easy installation and maintenance. Independent adjustment allows for quick and easy fine tuning of the travel limits.

Every ActionJac™ Electric Cylinder should be installed so that electrical power to the motor is turned off and the brake engaged before the travel limits are reached, or damage to the cylinder can result.

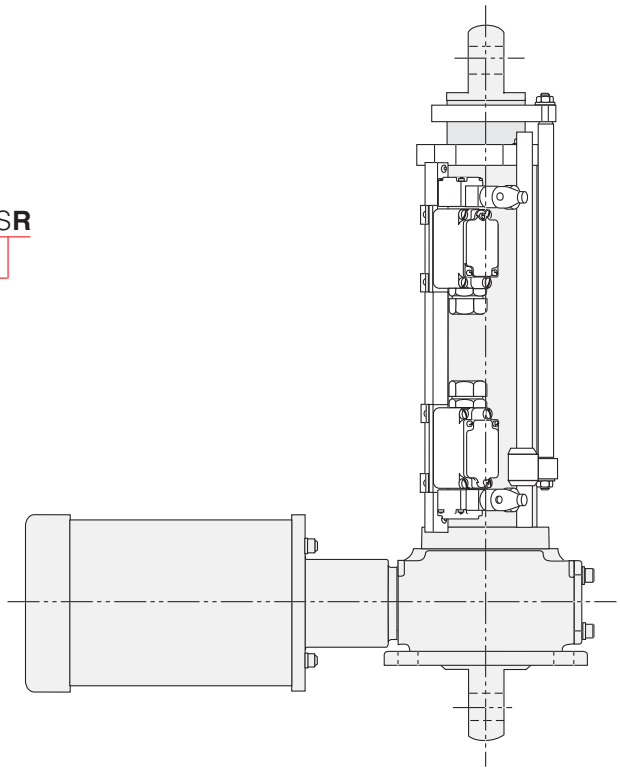
Minimum travel is 6" and maximum travel is 72" for all ACTIONJAC™ ELECTRIC CYLINDERS equipped with rod-type limit switches.

HOW TO ORDER A ROD-TYPE LIMIT SWITCH:

Specify the Electric Cylinder reference number, using the system described on page 389.

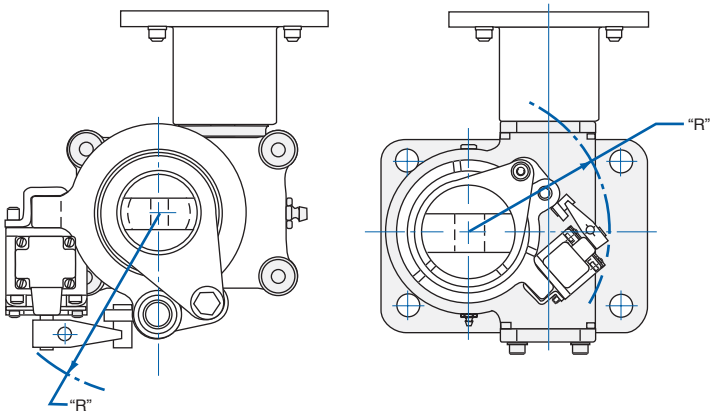
EXAMPLE: DD-1008-HD / 10BT-2 / 000-1 / CC / 24.0 / S**R**

"R" anywhere in this field indicates Rod-Type Limit Switch Assembly



SWITCH ENCLOSURE RATINGS	
NEMA	1,2,3,3R,4,5,6,12,13
IEC	IP67

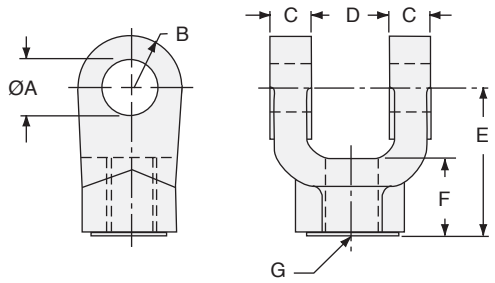
ROD-TYPE LIMIT SWITCH DIMENSIONS



SERIES	CLEARANCE RADIUS "R"
DD-5	4.00
DD-10	3.66
DD & RAD-25	4.00
DD & RAD-30	4.20
DD & RAD-50	4.66
DD & RAD-100	4.60
DD & RAD-200	5.40

DD & RAD ACCESSORIES

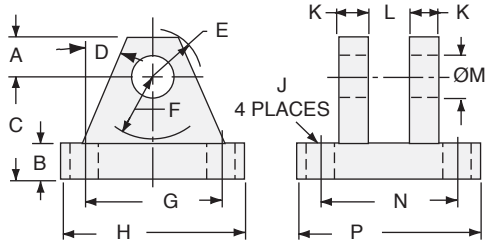
FEMALE ROD CLEVIS



FEMALE ROD CLEVIS								
CYLINDER SERIES	PART NUMBER	DIMENSIONS						
		øA	B radius	C	D	E	F	G thread
SERIES 5	B9012-5	.3145/.3165	19/64	13/64	11/32	2 1/4	13/16	5/16-24
SERIES 10	B-9012-8	.504/.502	1/2	1/2	3/4	1 1/2	3/4	7/16-20
SERIES 25 SERIES 30	B-9012-12	.752/.754	3/4	5/8	1 1/4	2 1/8	1 1/8	3/4-16
SERIES 50 SERIES 100	B-9012-16	1.002/1.004	1	3/4	1 1/2	2 15/16	1 5/8	1-14
SERIES 200	B-9012-22	1.377/1.379	1 3/8	1	2	3 3/4	2	1 1/4-12

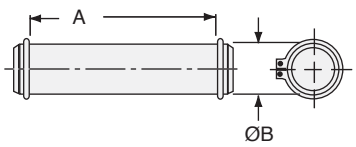
Note: Rod Clevis' with swivel bearings can be supplied. Contact Nook Engineering.

CLEVIS BRACKET



CLEVIS BRACKET FOR KNUCKLE															
CYLINDER SERIES	PART NUMBER	DIMENSIONS													
		A	B	C	D	E	F	G	H	øJ	K	L	øM	N	P
SERIES 5	B-9013-7	3/8	3/8	1	25°	1/2	5/8	1.75	2 1/4	17/64	3/8	15/32	.4395/.4415	1.75	2 1/4
SERIES 10	B-9013-8	1/2	1/2	1 1/2	25°	5/8	3/4	2.55	3 1/2	13/32	1/2	3/4	.504/.502	2.55	3 1/2
SERIES 25 SERIES 30	B-9013-12	3/4	5/8	1 7/8	25°	29/32	3/4	3.82	5	17/32	5/8	1 1/4	.752/.754	3.82	5
SERIES 50 SERIES 100	B-9013-16	1	3/4	2 1/4	25°	1 1/4	1 1/2	4.95	6 1/2	21/32	3/4	1 1/2	1.002/1.004	4.95	6 1/2
SERIES 200	B-9013-22	1 3/8	7/8	3	25°	1 21/32	2	5.73	7 1/2	21/32	1	2	1.377/1.379	5.73	7 1/2

PIVOT PIN



PIVOT PIN			
CYLINDER SERIES	PART NUMBER	DIMENSIONS	
		A	øB
SERIES 5	B9014-7	1 15/16	.4385/.4355
SERIES 10	B-9014-8	1 7/8	.501/.498
SERIES 25 SERIES 30	B-9014-12	2 5/8	.751/.748
SERIES 50 SERIES 100	B-9014-16	3 1/8	1.001/0.999
SERIES 200	B-9014-22	4 1/8	1.376/1.373