ADVANCED ACTUATORS

+44 (0) 1535 655151
sales@advanced-actuators.com

THE SPECIALISTS IN THE DESIGN & MANUFACTURE OF PRECISION VALVE CONTROL SOLUTIONS & INSTRUMENTATION

HYLINE®-K

DOUBLE-ACTING PNEUMATIC RACK & PINION ACTUATORS

SYSTEM FEATURES

RELIABLE QUARTER-TURN CONTROL, ENGINEERED FOR EFFICIENT INTEGRATION



HYLINE-*K* is a range of compact, double-acting pneumatic actuators developed for dependable control of quarter-turn valves.

An opposed-piston rack-and-pinion mechanism converts compressed air into smooth rotary movement, providing positive powered operation in both directions.

With a broad choice of actuator sizes, body materials, seal options and standardised mounting interfaces, this range can be configured for a variety of applications.

KEY BENEFITS

- Opposed-piston rack-and-pinion design
- Positive powered movement in both directions
- Smooth, repeatable 90° rotary operation
- Broad range of output torques
- NAMUR accessory and air interfaces
- ISO 5211 valve mounting patterns
- Multiple body and seal material options

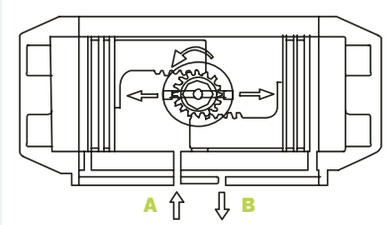
APPLICATIONS

- Oil & Gas
- Chemical & Petrochemical
- Water & Wastewater
- Power Generation
- Marine & Offshore
- General Industrial

OPERATING PRINCIPLES

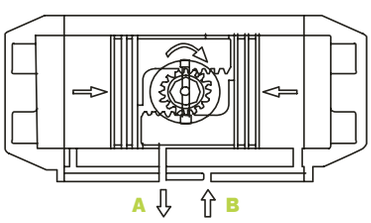
COUNTER-CLOCKWISE

Air to port A forces the pistons outwards, causing the piston to turn counter-clockwise while air is being exhausted from port B.



CLOCKWISE

Air to port B forces the pistons inwards, causing the piston to turn clockwise while air is being exhausted from port A.



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PERFORMANCE

MODEL NUMBER	AIR SUPPLY PRESSURE (bar)							
	3.0	4.0	4.5	5.0	5.5	6.0	7.0	8.0
	OUTPUT TORQUE (Nm)							
AKD-032	4.6	6.1	6.9	7.6	8.4	9.2	10.7	12.2
AKD-040	7.0	10.0	11.0	12.0	13.0	14.0	17.0	19.0
AKD-052	12.0	16.0	18.0	20.0	21.9	23.9	27.9	31.9
AKD-063	21.9	29.2	32.8	36.5	40.1	43.8	51.1	58.4
AKD-075	30.1	40.1	45.1	50.2	55.2	60.2	70.2	80.3
AKD-083	47.0	62.7	70.5	78.4	86.2	94.1	109.7	125.4
AKD-092	67.7	90.3	101.6	112.9	124.1	135.4	158.0	180.6
AKD-105	99.0	132.0	149.0	165.0	182.0	198.0	231.0	265.0
AKD-125	151.0	201.0	226.0	251.0	276.0	301.0	351.0	401.0
AKD-140	257.0	342.0	385.0	428.0	470.0	513.0	599.0	684.0
AKD-160	399.0	532.0	599.0	665.0	732.0	798.0	931.0	1064.0
AKD-190	638.0	851.0	958.0	1064.0	1170.0	1277.0	1490.0	1702.0
AKD-210	798.0	1064.0	1197.0	1330.0	1463.0	1596.0	1862.0	2128.0
AKD-240	1154.0	1539.0	1731.0	1924.0	2116.0	2309.0	2693.0	3078.0
AKD-270	1755.0	2339.0	2632.0	2924.0	3217.0	3509.0	4094.0	4679.0

WEIGHT	OPERATION TIME		AIR VOLUME	
(KG)	(SECONDS)		(LITRES)	
	90° - 0°	0° - 90°	Opening	Closing
0.47	0.40	0.30	0.03	0.04
1.00	0.50	0.50	0.08	0.11
1.38	0.53	0.60	0.12	0.16
2.03	0.58	0.66	0.21	0.23
2.70	0.64	0.72	0.30	0.34
3.13	0.73	0.83	0.43	0.47
4.60	0.86	1.00	0.64	0.73
6.77	1.30	1.35	0.95	0.88
8.90	1.79	2.40	1.60	1.40
13.25	2.10	2.50	2.50	2.20
20.14	2.60	3.93	3.70	3.20
31.30	3.45	4.55	5.90	5.40
46.80	4.35	5.50	7.50	7.50
67.28	8.33	8.40	11.00	9.00
96.90	8.53	10.90	17.00	14.00

WHEN SELECTING A MODEL, ADD 20% SAFETY FACTOR TO THE REQUIRED VALVE TORQUE. IN THE COLUMN MATCHING THE MINIMUM OPERATING PRESSURE, CHOOSE THE FIRST MODEL WITH AN OUTPUT TORQUE EXCEEDING YOUR NEW SAFE VALVE TORQUE FIGURE.

L/MIN=AIR VOLUME (AIR VOLUME OPENING + AIR VOLUME CLOSING) X [(AIR SUPPLY(K-PA)+101.3)/101.3] X ACTION CYCLE TIME (/MIN)

ORDERING INFORMATION

Model and part number convention:

BODY - MODEL - COATING - SEALS - OPTIONS

FEATURES

- Double-Acting
- 15 Sizes, 9.2 Nm to 3,509 Nm (6 bar)
- Aluminium, 304SS & 316SS Options
- Multiple Protective Coatings
- Tested to 1 Million Cycles

ACTUATOR BODY	MODEL	OFFSHORE COATING	SEALS	OPTIONS
Aluminium Alloy Body AKD	AKD-032	C5M	Standard: NBR	0-120° Operation
316SS Body AKD-S6	AKD-040		HT (High Temp) Viton	0-180° Operation
304SS Body AKD-S4	AKD-052		LT (Low Temp) HNBR	
	AKD-063			
	AKD-075			
	AKD-083			
	AKD-092			
	AKD-105			
	AKD-125			
	AKD-140			
	AKD-160			
	AKD-190			
	AKD-210			
	AKD-240			
	AKD-270			

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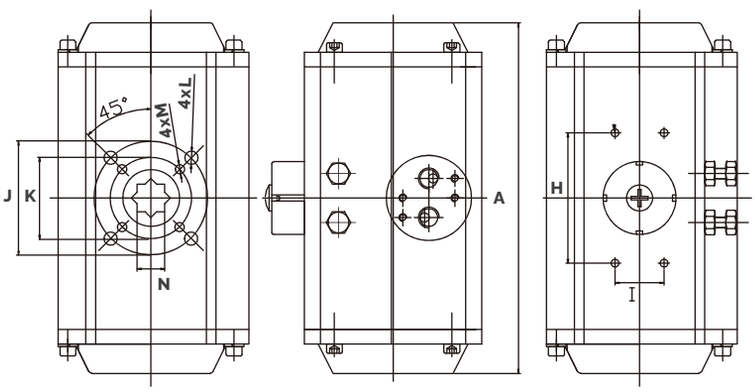
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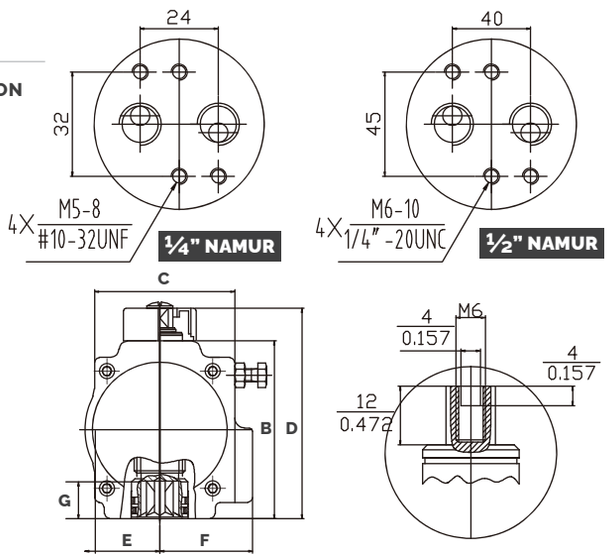
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DIMENSIONS & CONNECTIONS

UNITS: mm | inch

MODEL	A	B	C	D	E	F	G	H	I	N	J	K	L	M	CONNECTION
AKD-032	110	45	45	65	22.5	22.5	11	50	25	9	F03	-	M5*8	-	1/8"
	4.33	1.77	1.77	2.65	0.89	0.89	0.43	1.97	0.98	0.35			#10-24UNF		
AKD-040	122	60	52	80	24	36.5	14	80	30	11	F05	F03	M6*10	M5*8	1/4"
	4.80	2.36	2.05	3.15	0.94	1.44	0.55	3.15	1.18	0.43			1/4"-20UNC	#10-24UNF	
AKD-052	146	72	60	92	26	41.5	14	80	30	11	F05	F03	M6*10	M5*8	1/4"
	5.74	2.83	2.36	3.62	1.02	1.63	0.55	3.15	1.18	0.43			1/4"-20UNC	#10-24UNF	
AKD-063	169	88	69.5	108	33.5	47	17	80	30	14	F07	F05	M8*13	M6*10	1/4"
	6.65	3.46	2.74	4.25	1.31	1.85	0.66	3.15	1.18	0.55			5/16"-20UNC	1/4"-20UNC	
AKD-075	186	100	78	120	39	53	17	80	30	14	F07	F05	M8*13	M6*10	1/4"
	7.32	3.93	3.07	4.72	1.53	2.08	0.66	3.15	1.18	0.55			5/16"-20UNC	1/4"-20UNC	
AKD-083	210	109	86	129	40	57	20	80	30	17	F07	F05	M8*13	M6*10	1/4"
	8.26	4.29	3.38	5.07	1.57	2.24	0.79	3.15	1.18	0.67			5/16"-20UNC	1/4"-20UNC	
AKD-092	264	117	90.5	137	44.5	58.5	20	80	30	17	F07	F05	M8*13	M6*10	1/4"
	10.39	4.6	3.56	5.39	1.75	2.3	0.79	3.15	1.18	0.67			5/16"-20UNC	1/4"-20UNC	
AKD-105	272	133	104	153	52	64	26	80	30	22	F10	F07	M10*16	M8*13	1/4"
	10.70	5.23	4.09	6.02	2.04	2.51	1.02	3.15	1.18	0.87			3/8"-20UNC	5/16"-20UNC	
AKD-125	302	155	120	185	60	74.5	25	130	30	22	F10	F07	M10*16	M8*13	1/4"
	11.88	6.1	4.72	7.28	2.36	2.93	0.98	5.11	1.18	0.87			3/8"-20UNC	5/16"-20UNC	
AKD-140	398	172	125	202	65	77	30	130	30	27	F12	F10	M12*20	M10*16	1/4"
	15.66	6.77	4.92	7.95	2.55	3.03	1.18	5.11	1.18	1.06			1/2"-20UNC	3/8"-20UNC	
AKD-160	456	197	142	227	74	87	30	130	30	27	F12	F10	M12*20	M10*16	1/4"
	17.95	7.75	5.59	8.93	2.91	3.42	1.18	5.11	1.18	1.06			1/2"-20UNC	3/8"-20UNC	
AKD-190	534	230	172	260	83	103	40	130	30	36	F14	-	M16*23	-	1/4"
	21.02	9.05	6.77	10.23	3.38	4.05	1.57	5.11	1.18	1.42			5/8"-20UNC		
AKD-210	536	255	194	285	97	113	43	130	30	36	F14	-	M16*23	-	1/4"
	21.10	10.03	7.63	11.22	3.81	4.44	1.69	5.11	1.18	1.42			5/8"-20UNC		
AKD-240	612	290	230	320	115	130	50	130	30	46	F16	-	M20*25	-	1/4" or 3/8"(std)
	24.09	11.41	9.05	12.59	4.52	5.11	1.97	5.11	1.18	1.81			3/4"-20UNC		
AKD-270	718	330	252	360	126	147	50	130	30	46	F16	-	M20*25	-	1/2"
	28.26	12.99	9.92	14.17	4.96	5.78	1.97	5.11	1.18	1.81			3/4"-20UNC		