

92E Series Actuators

Cost effective double acting, single ended fatigue rated linear actuators for static testing of structures and components.

BIA West has completely re-engineered our very popular 92 Series Actuators to provide you with a **value-engineered fatigue rated actuator that is ideally suited for static low-cycle structural testing.**

92E Series Actuators have an unequal area for tensile and compressive forces, and are typically **used in applications where the load is unidirectional** (does not span zero). They are more cost effective than equivalent double ended actuators, and their compact size means that they **can be easily built with long stroke lengths.**

BIA West 92E Series Actuators are fatigue rated, with a **chrome plated heat treated alloy piston rod** and high integrity **polymer bearings.** They are also designed for ease of maintenance with a **removable seal and bearing system.** Seals and bearings can easily be **replaced in the field** by your own technicians, using our reasonably priced repair kit, **reducing the cost of maintenance, and minimizing downtime.**

92E Series Actuators can be sized to meet your specific needs, from 10 inch (250 mm) to 40 inch (1000 mm) stroke lengths, and force ratings from 10 kip (40 kN) to 760 kip (3,400 kN). Other stroke lengths and force ratings up to 2,000 kip (10,000 kN) are available on request.

Standard Configuration

The 92E standard configuration includes the actuator with magnetostrictive displacement transducer, load cell, single servo valve, and swivel base and swivel rod end. Any element may be deleted and options may be added to match your application.

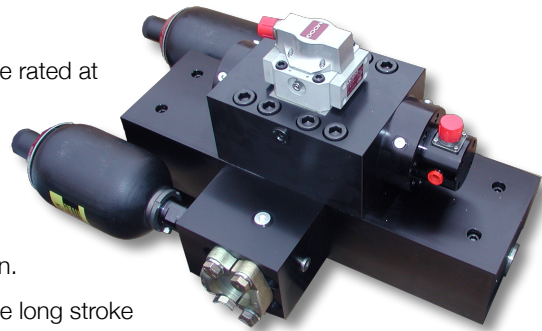


Standard Features

- Construction: single ended with unequal areas and proportional force output in tension and compression. Fatigue rated connection between piston and rod. Oversized rod prevents buckling in compression.
- Bearings: replaceable non-metallic bearings on the piston and rod resist galling failures and provide long life. Rod bearings are field replaceable without actuator disassembly
- Seals: low friction piston seal, high pressure rod seal and compound low pressure rod seal/scrapper. Drain-back between the seals provides bearing lubrication. The gland is field removable without actuator disassembly.
- Displacement Transducer: all actuators have an Integral displacement transducer that provides repeatable and accurate displacement measurements. This magnetostrictive LDT is concentrically mounted, eliminating anti rotation restrictions. Other transducer types are available on request.
- Load Cell: a precision single bridge shear web load cell sized for maximum compressive force with a safety factor is installed and preloaded with a high strength stud and preload washers. Large sizes include an integrated rod end swivel mount for bolt-on connection.
- Manifold and Servo Valve: a single valve manifold is included, with one Moog G761 series servo valve, which is sized to meet your needs. Ratings range from 1-20 gpm (3.8-75 l/min). Porting is ¼ inch (-12) SAE pressure and return.
- Swivel Rod End and Swivel Base: the 98 Series Rod End Swivels and 99 Series Base Ends help reduce side loads and force alignment problems. Swivels come with standard tilt angles. Pre-loadable bearings with backlash adjustment are optional.
- Lifting Kit: lifting rings are standard on the model 923 and larger. Tapped holes for attachment of lifting eyes are provided on the smaller actuators and on all swivels.

Common Options

- Servo Valve Manifolds
 - Dual valve manifold with two Moog G761 servo valves rated at 1-20 gpm (3.8-75 lpm) as required. Porting is 1 inch (-16) SAE pressure and return.
 - Single valve manifold with a larger two stage servo valve rated at 25-60 gpm (95-227 lpm) as required. Porting is 1 ¼ inch (-20) SAE pressure and return.
 - Single valve manifold with three stage servo valve rated at 100-200 gpm (378-757 lpm) as required. Porting is 2 inch (-32) SAE Code 61 pressure and return.
- Custom stroke lengths and rod stop tubes for highly compressive long stroke applications are also available



Specifications

Model #	Rating (kip)	Diameter (in.)		Area (sq. in.)		Overall length at standard mid stroke (in.)				Weight (lb.)	
	Ten/Comp	Rod	Bore	Rod End	Base End	10 in.	20 in.	30 in.	40 in.	10 in.	increase per in.
920	4.9/9.4	1.38	2.00	1.65	3.14	39.3	54.3	69.3	84.3	61	1.1
921	7.5/14	1.75	2.50	2.50	4.91	39.9	54.9	69.9	84.9	72	1.4
922	15/24	2.00	3.25	5.15	8.30	45.9	60.9	75.9	90.9	142	2.1
922.5	22/37	2.50	4.00	7.66	12.57	51.3	66.3	81.3	96.3	259	3.2
923	37/58	3.00	5.00	12.57	19.63	51.7	66.7	81.7	96.7	321	4.9
923.5	55/84	3.50	6.00	18.65	28.27	61.0	76.0	91.0	106.0	580	6.7
924	67/115	4.50	7.00	22.58	38.48	61.5	76.5	91.5	106.5	685	9.6
924.5	100/150	4.50	8.00	34.36	50.27	70.3	85.3	100.3	115.3	1311	11.6
926	150/235	6.00	10.00	50.27	78.54	76.4	92.4	107.4	122.4	2060	18.1
927	220/339	7.00	12.00	74.61	113.10	83.3	102.3	117.3	132.3	3173	25.1
928	310/460	8.00	14.00	103.67	153.94	96.5	111.5	126.5	141.5	4891	35.3
929	410/600	9.00	16.00	137.44	201.06	123.8	138.8	153.8	168.8	10247	46.4
929.5	570/760	9.00	18.00	190.85	254.47	126.8	141.8	156.8	171.8	11328	53.1

Model #	Rating (kN)	Diameter (mm)		Area (sq. cm)		Overall length at standard mid stroke (mm)				Weight (kg)	
	Ten/Comp	Rod	Bore	Rod End	Base End	254 mm	508 mm	762 mm	1016 mm	254 mm	increase per cm
920	22/41.9	349.25	50.80	10.65	20.26	998	1379	1760	2141	28	0.20
921	30/65	44.45	63.50	16.13	31.68	1013	1394	1775	2156	33	0.25
922	68/110	50.80	82.55	33.23	53.55	1166	1547	1928	2309	65	0.38
922.5	102/167	63.50	101.60	49.42	81.10	1303	1684	2065	2446	118	0.57
923	167/262	76.20	127.00	81.10	126.64	1313	1694	2075	2456	146	0.88
923.5	248/377	88.90	152.40	120.32	182.39	1549	1930	2311	2692	264	1.20
924	300/510	114.30	177.80	145.68	248.26	1562	1943	2324	2705	311	1.72
924.5	458/670	114.30	203.20	221.68	324.32	1786	2167	2548	2929	596	2.08
926	670/1048	152.40	254.00	324.32	506.71	1941	2347	2728	3109	936	3.24
927	995/1500	177.80	304.80	481.35	729.68	2116	2598	2979	3360	1442	4.49
928	1380/2050	203.20	355.60	668.84	993.16	2451	2832	3213	3594	2223	6.32
929	1830/2680	228.60	406.40	886.71	1297.16	3145	3526	3907	4288	4658	8.30
929.5	2540/3395	228.60	457.20	1231.29	1641.74	3221	3602	3983	4364	5149	9.50

* Stroke limitation at maximum compressive force