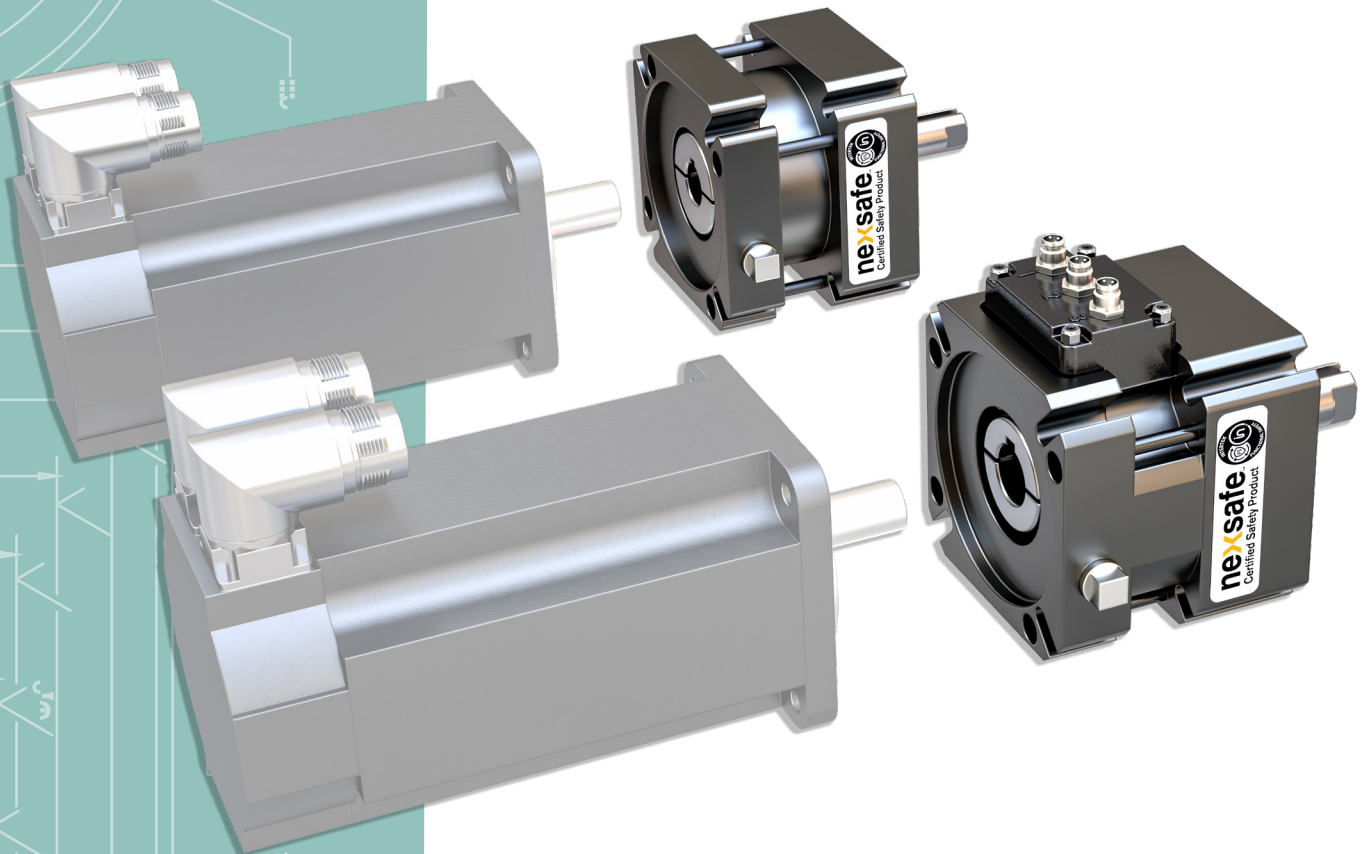




Servomotor Brakes

Technical Data Sheet



Eclipse® Standard Servomotor Brake

Page 5

NexSafe® Safety Rated Servomotor Brakes

Page 16

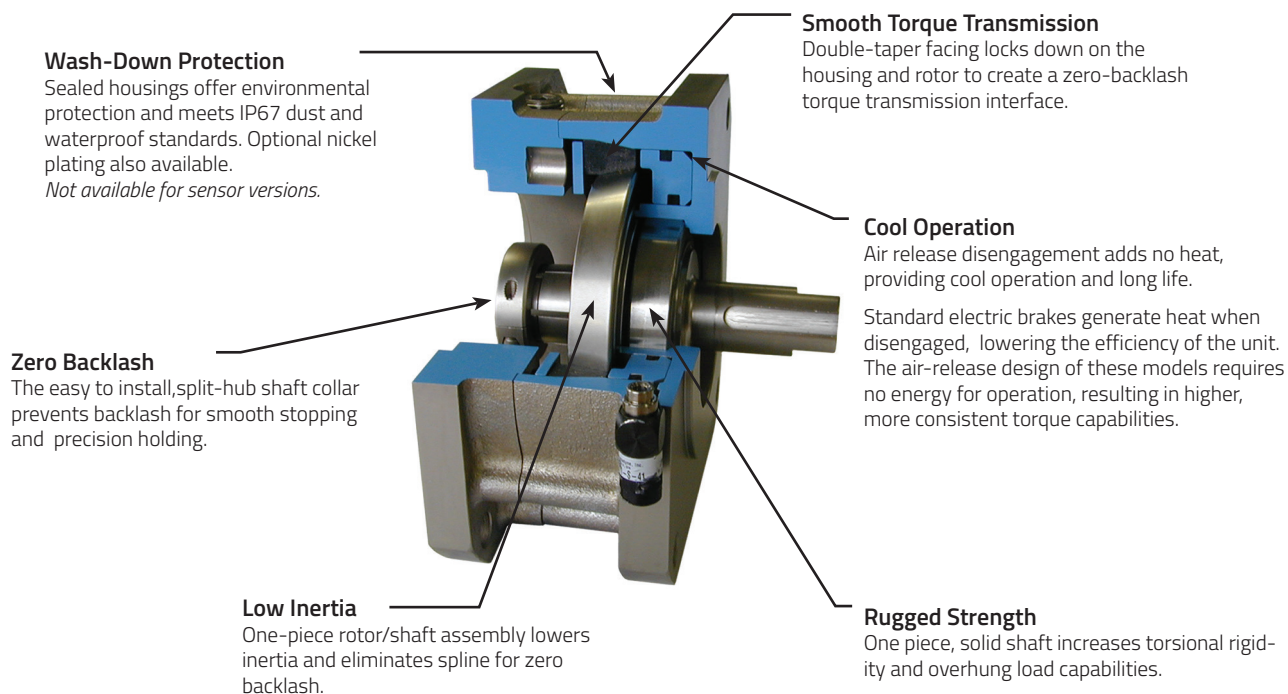
nexsafe
Certified Safety Products



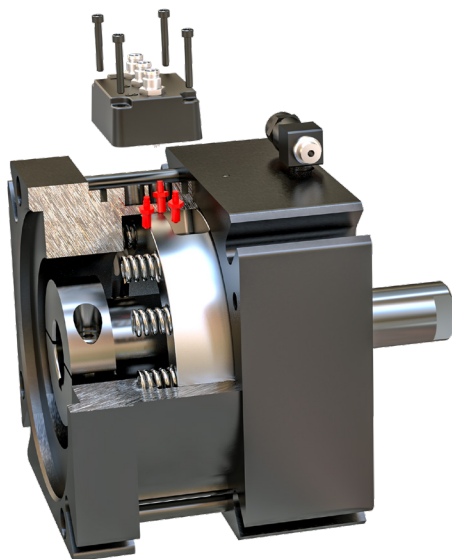
The Nexen Servomotor Brake Advantage

Tracing its roots back to 1902, Nexen's long history of innovation and quality shows a legacy of advancing the motion control industry through its commitment to product development.

Continually testing and improving products and developing new technology, Nexen's contribution to the industry is now illustrated in the line of servomotor brakes. With a large selection of models, Nexen offers an off-the-shelf braking solution for any servo application. These spring-engaged, air-released brakes provide consistent, long-lasting performance.



NexSafe® Certified



Nexen's Spring Engaged, Air Released Servomotor Brakes are available safety rated to comply with international safety standard ISO 13849-1. Category Level up to 4 and Performance Level up to e, able to be achieved using Nexsafe products in recommended configuration. Contact Nexen for Safety Rated Versions of Spring Engaged, Air Released Servomotor Brakes.

- Integral clamp collar with backup keyway
- Three Operating mode sensors available
- Multiple engagement springs
- Default to lock



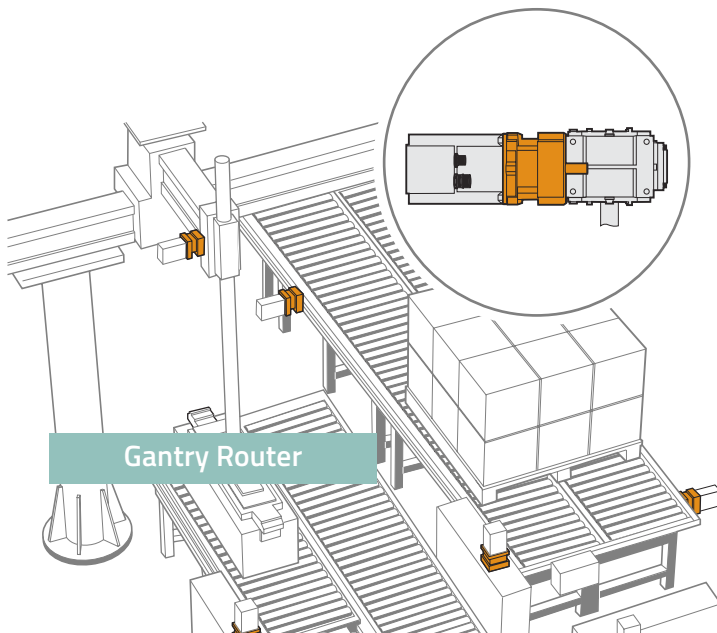
nexsafe
Certified Safety Products



Dependable Power Ensures Safety

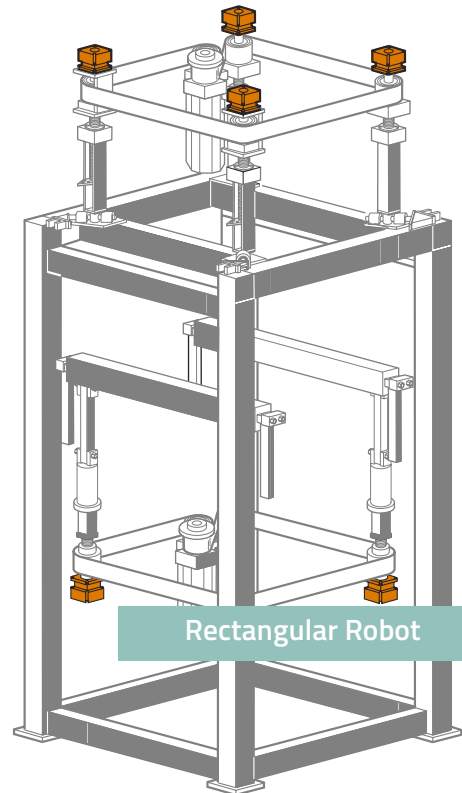
When it comes to service factor, Nexen believes more is better. More torque and high brake stiffness mean operators and equipment are protected.

Strong enough to stall a servomotor in continuous torque mode, the high torque ratings on Nexen's servomotor brakes provide a fast response with a short stopping distance in emergency situations.



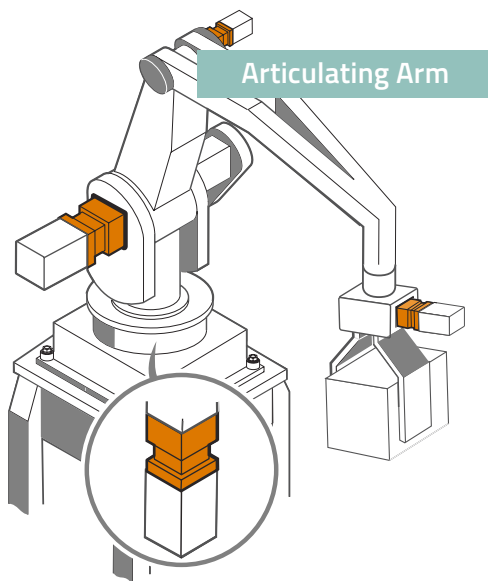
Gantry Router

In emergency stopping situations, Nexen's servomotor stop the load(s) quickly and safely with bidirectional braking capabilities.



Rectangular Robot

Able to repeatedly stop and hold in challenging cyclic operations, Nexen's Servomotor Brakes also offer a safety feature to this robot: if a belt breaks, the servomotor brake(s) instantly engage to hold the load securely.



Articulating Arm

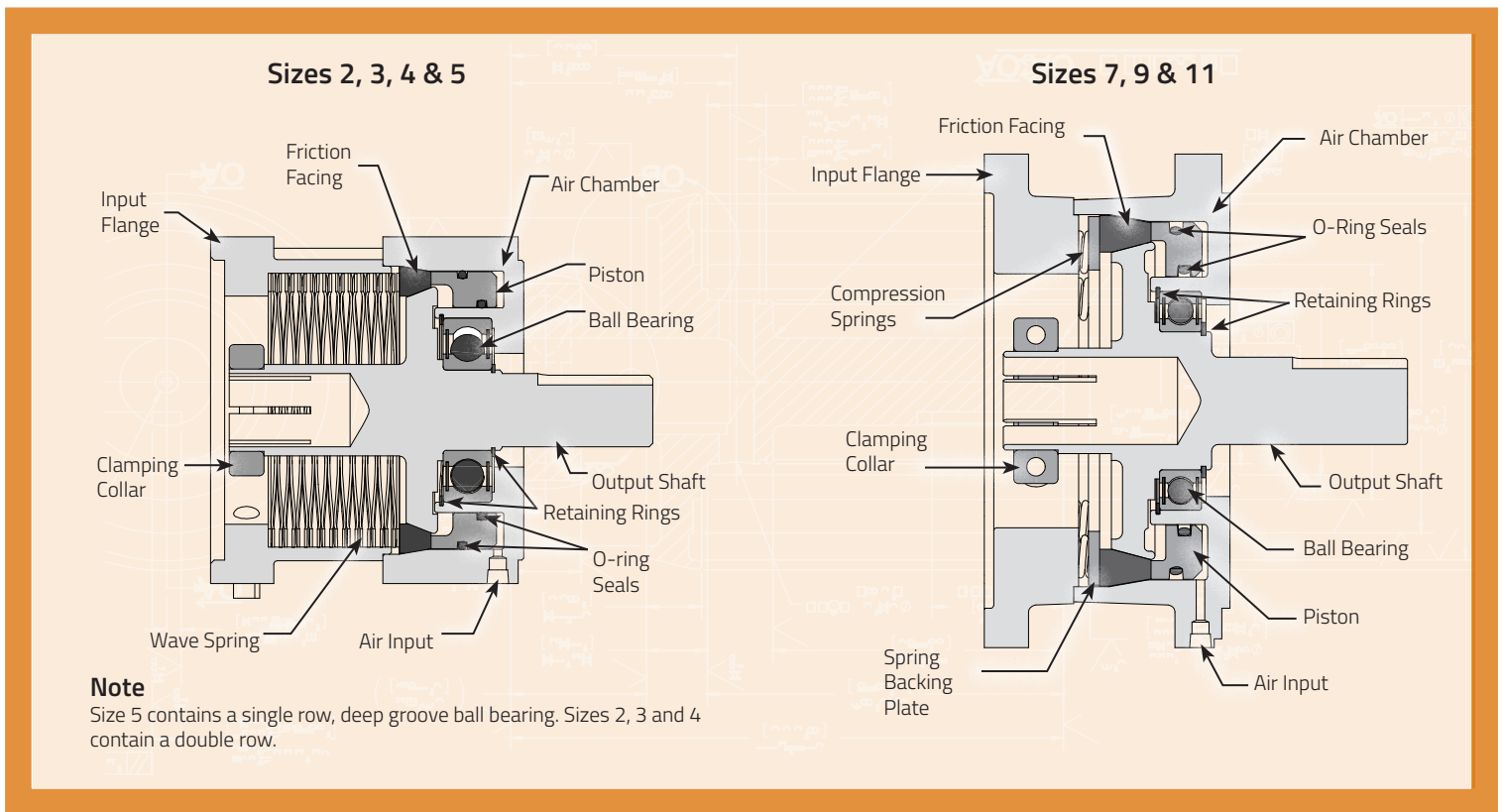
With fail-safe reliability, Nexen's servomotor brakes hold each joint securely to prevent any arm movement during power-off situations.

Applications

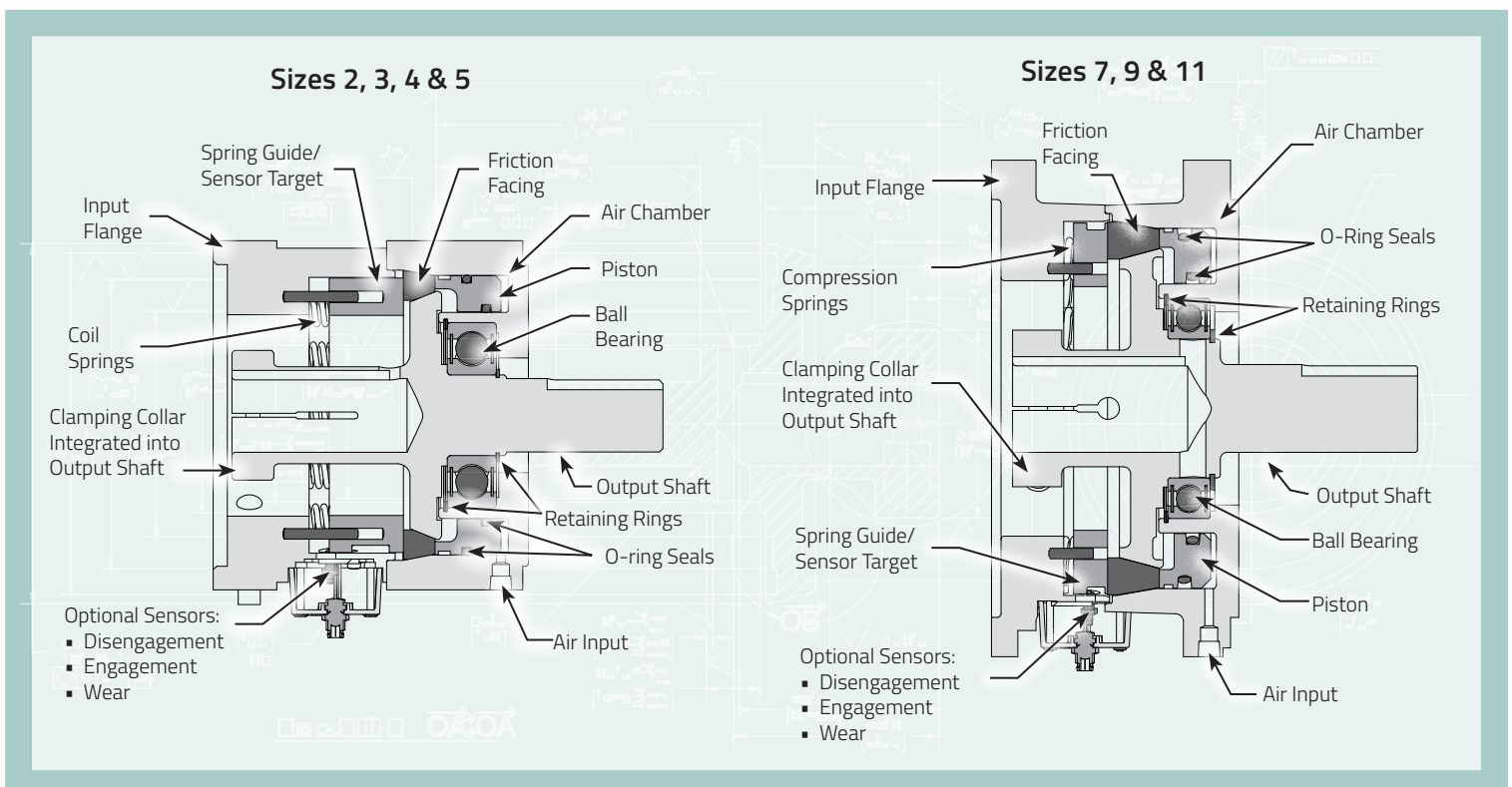
- Medical Devices
- Food Production
- Automotive Parts
- Renewable Energy
- Semiconductors
- Printing
- Paper Converting
- CNC Machining
- Packaging
- Machine Tool
- Robotics
- Woodworking
- Conveying

Servomotor Brake Cross-Sectional Drawings

Standard Units



Sensor Equipped and NexSafe Safety Rated Units

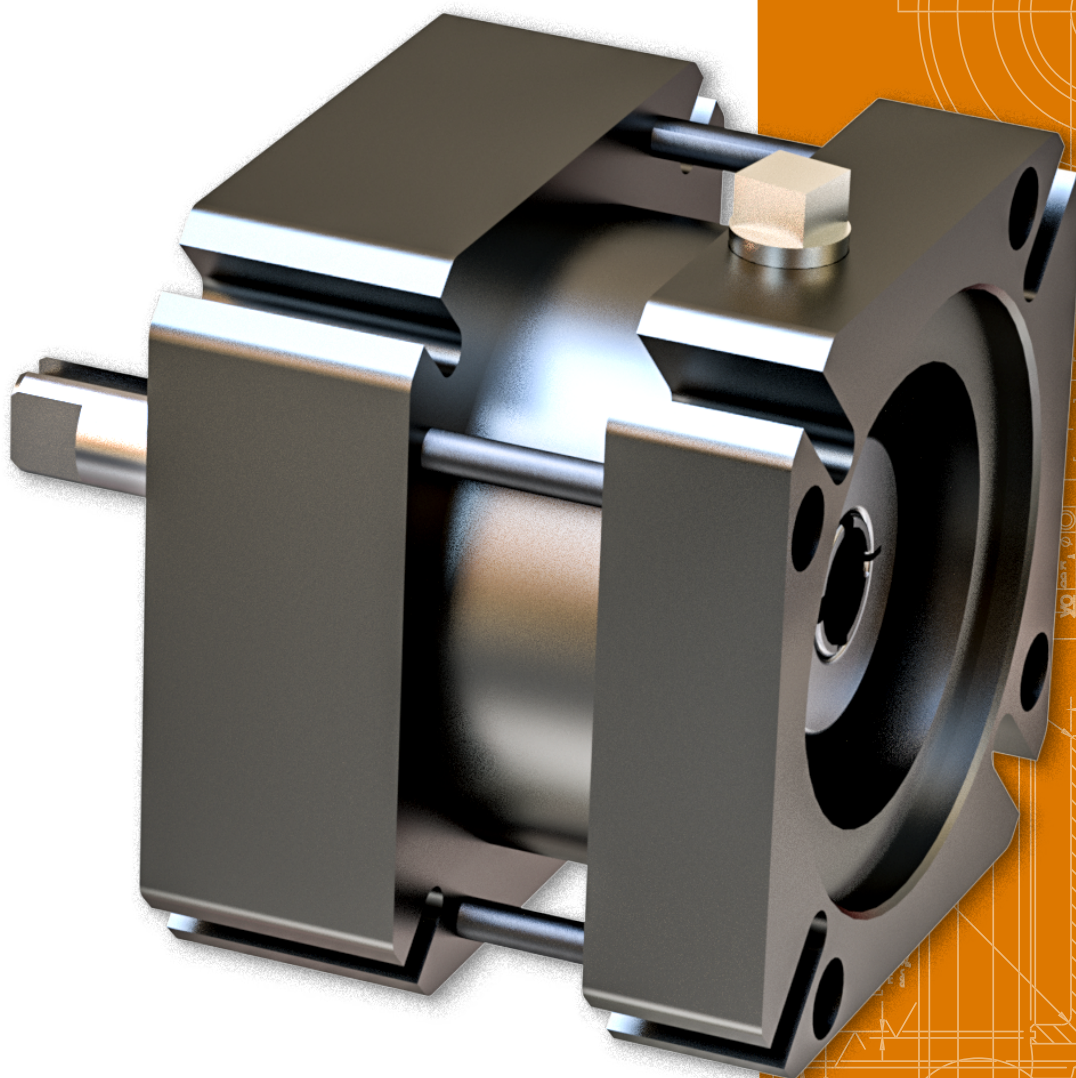




Standard Eclipse Servomotor Brakes

Nexen's Eclipse Servomotor Brakes offer proven, reliable spring engaged, air released performance as an off-the-shelf solution for any servomotor application.

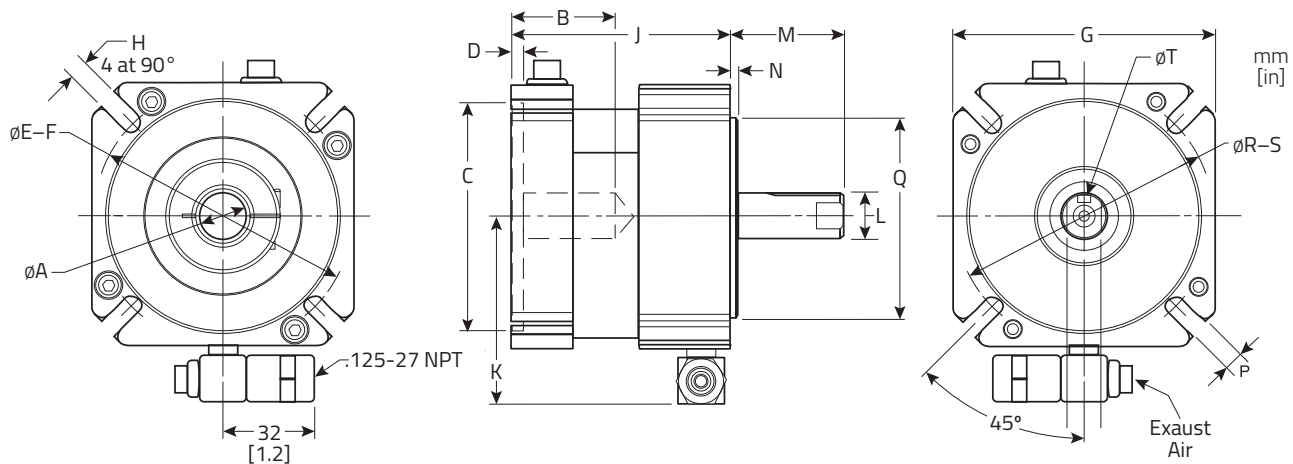
Dimensions	6
Specifications	12
Solenoid Valve	15



Eclipse Dimensions

The following section contains the approximate dimensions for each size of Nexen's Eclipse Servomotor Brakes. Always verify product information with the user manual when specifying a new brake into your application. Refer to www.nexengroup.com for user manuals, product dimensions and specifications.

Servomotor Brake Approximate Dimensions (NEMA Square Flange Motors)



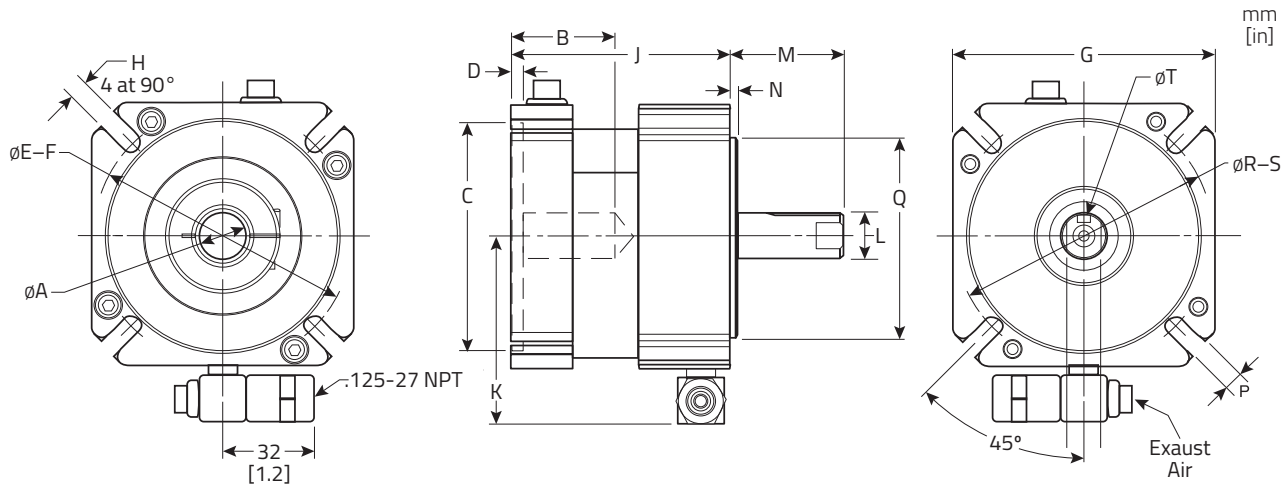
Contact Nexen if one or more of these dimensions must be modified for your application.

NEMA Square Flange		NEMA Size 23			NEMA Size 34				NEMA Size 42	
Nexen Model		SBP-2			SBP-3				SBP-4	
A	Bore Diameter	0.25	0.312	0.375	0.375	0.5	0.5	0.625	0.625	
B	Bore Depth	1.43			1.46				2.2	2.5
C	Pilot (female)	1.5			2.875				4.331	2.189
D	Pilot Depth	0.11 ⁽¹⁾	0.11	0.09 ⁽¹⁾	0.16	0.2	0.16	0.2	0.138	--
E-F	Bolt Circle Diameter	2.625			3.346–4.280				4.950–5.904	
G	Flange Width	2.25			3.62				4.92	
H	Bolt Hole	10–24			0.28				0.49	
J	Length	2.77			3.06				4.23	
K	Quick Exhaust	1.99			2.6	2.6	3.62	2.3	3.2	
L	Shaft Diameter	0.25	0.312	0.375	0.375	0.5	0.5	0.625	0.625	
M	Shaft Length	0.81	0.81	1.25	1.25	1.2	1.2	1.18	1.5	2.063
N	Pilot Extension	0.095			0.12	0.12	0.16	0.12	0.12	0.18
P	Bolt Hole	0.197			0.233				0.39	0.375–16
Q	Pilot (male)	1.5			2.875				2.187	4.5
R-S	Bolt Circle Diameter	2.625			3.875–4.280				4.950–5.904	5.875
T	Keyway	none			none	0.125	0.125	0.189	0.189	
Product Number		964606	964611	964605	964729	964728	964722	964726	964833	964835

Note: Dimensions for NEMA brakes are shown in inches.

⁽¹⁾See drawing for details on pilot depth.

Servomotor Brake Approximate Dimensions (Metric Square Flange Motors, Sizes 2 & 3)



Contact Nexen if one or more of these dimensions must be modified for your application.

Size 2

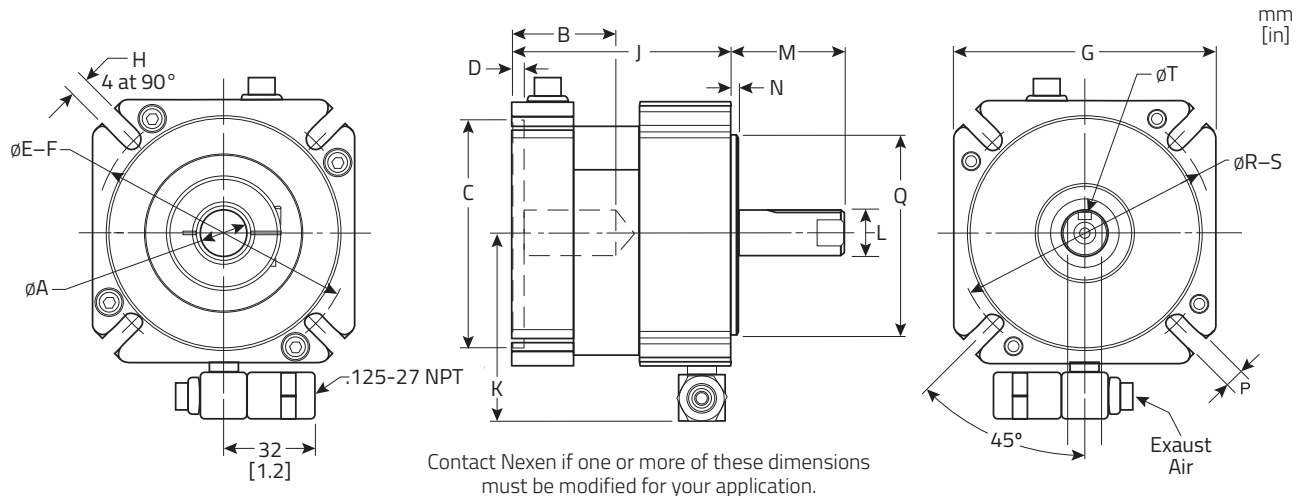
Product Number	Bore Dia.	Bore Depth	Pilot (Female)	Pilot Depth	Bolt Circle Dia.	Flange Width	Bolt Hole	Length	Quick Exhaust	Shaft Dia.	Shaft Length	Pilot Ext.	Bolt Hole	Pilot (Male)	Bolt Circle Dia.	Keyway
	A	B	C	D	E-F	G	H	J	K	L	M	N	P	Q	R-S	T
964610	9.0	35.9	40	2.4	63	57.2	10-24	70.4	50.6	9.0	20	2.4	0.205 ⁽¹⁾	40	63	no key
964615	9.0	35.9	40	2.4	63	57.2	M4	70.4	50.6	9.0	20	2.4	0.205 ⁽¹⁾	40	63	no key
964612	9.0	37	50	3.5	70	57.2	M5	70.4	50.6	9.0	25	2.4	0.250 ⁽¹⁾	50	63	no key
964617	11.0	33.1	60	3.5	70-91.5	74.2	0.250*	74.5	57	11.0	23	1.5	6	60	75-91.5	4.0
964614	11.0	33.1	60	3.5	70-91.5	74.2	0.250*	74.5	57	14.0	30	1.5	6	60	75-91.5	5.0
964613	14.0	33.1	50	3.5	63-91.5	74.2	0.250*	74.5	56	14.0	30	1.5	6	50	70-91.5	5.0

Size 3

Product Number	Bore Dia.	Bore Depth	Pilot (Female)	Pilot Depth	Bolt Circle Dia.	Flange Width	Bolt Hole	Length	Quick Exhaust	Shaft Dia.	Shaft Length	Pilot Ext.	Bolt Hole	Pilot (Male)	Bolt Circle Dia.	Keyway
	A	B	C	D	E-F	G	H	J	K	L	M	N	P	Q	R-S	T
964721	10	37	80	5	90-109	92	7.0	77.7	65	10	30	3.0	7.0	80	100-109	3.0
964717	13	37	2.875 ⁽¹⁾	4	85-109	92	7.0	77.7	65	13	30	3.0	5.9	2.875 ⁽¹⁾	100-109	5.0
964713	14	37	50	5	95-109	92	7.0	77.7	65	14	30	3.0	7.0	50	95-109	5.0
964714	14	37	70	4	85-109	92	7.0	77.7	65	14	30	3.0	7.0	70	85-109	5.0
964709	14	37	80	5	90-109	92	7.0	77.7	65	14	30	3.0	7.0	80	100-109	5.0
964710	14	37	80	5	90-109	92	7.0	77.7	65	14	30	3.0	7.0	80	100-109	5.0
964724	14	40	80	8	90-109	92	7.0	80.7	65	14	30	3.0	7.0	80	100-109	5.0
964718	14	37	2.875 ⁽¹⁾	4	85-109	92	7.0	77.7	65	14	30	3.0	5.9	2.875*	98-109	5.0
964725	14	37	60	4	85-115	92	7.0	77.7	65	14	30	3.0	5.9	2.875 ⁽¹⁾	98-109	5.0
964727	14	37	80	5	90-109	92	7.0	77.7	65	14	30	3.0	7.0	80	100-109	5.0
964716	0.625 ⁽¹⁾	37	80	5	90-109	92	7.0	77.7	65	0.625 ⁽¹⁾	30	3.0	5.9	2.875 ⁽¹⁾	98-109	0.188 ⁽¹⁾
964720	16	42	80	5	90-109	92	7.0	77.7	65	16	40	3.0	7.0	80	100-109	5.0
964712	16	42	80	5	90-109	92	7.0	77.7	65	16	40	3.0	7.0	70	90-109	5.0
964711	16	45	80	5	90-109	92	7.0	69.9	65	16	40	3.0	7.0	70	90-109	5.0
964715	16	42	80	5	90-109	92	7.0	77.7	65	16	40	3.0	7.0	80	100-109	5.0
964730	16	48	80	6	90-109	92	7.0	83.7	65	16	40	3.0	7.0	80	100-109	5.0
964732	19	51.6	80	5	90-109	92	7.0	77.7	65	16	40	3.0	7.0	80	100-109	5.0
964723	19	57	110	11	126-150	125/92	10.0	88.2	65	16	40	3.0	7.0	70	90-109	5.0
964719	19	40.7	2.875 ⁽¹⁾	5	90-109	92	7.0	77.7	65	16	40	3.0	7.0	70	90-109	5.0
964733	19	51	80	5	90-109	92	7.0	84.2	65	19	40	3.0	7.0	80	100-109	6.0

⁽¹⁾ Inch, all other dimensions are millimeter

Servomotor Brake Approximate Dimensions (Metric Square Flange Motors: Size 4)

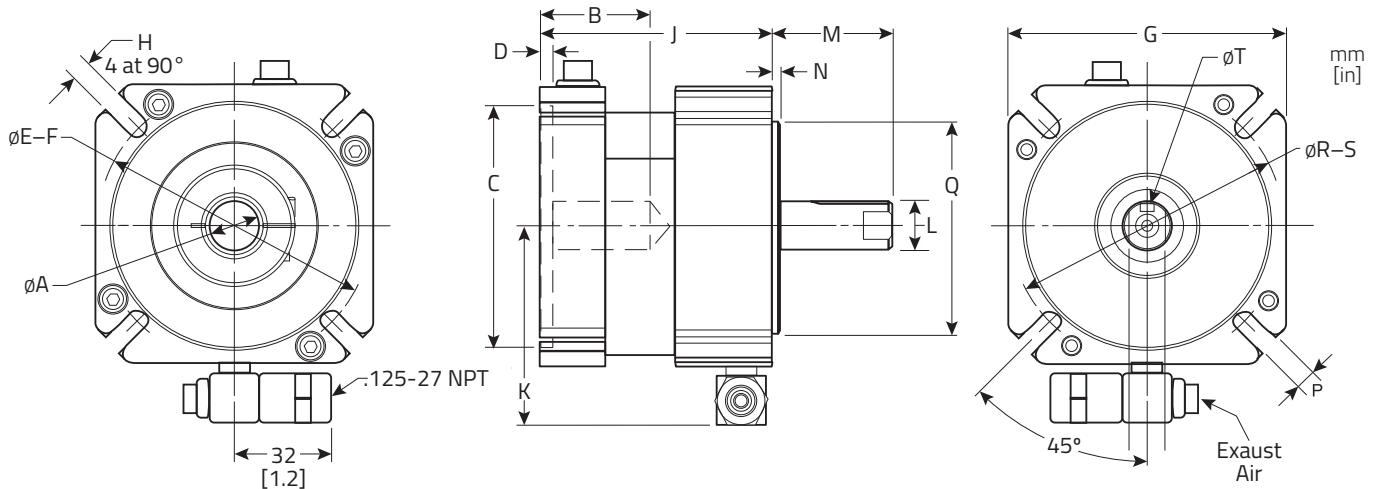


Size 4

Product Number	Bore Dia.	Bore Depth	Pilot (Female)	Pilot Depth	Bolt Circle Dia.	Flange Width	Bolt Hole	Length	Quick Exhaust	Shaft Dia.	Shaft Length	Pilot Ext.	Bolt Hole	Pilot (Male)	Bolt Circle Dia.	Keyway
	A	B	C	D	E-F	G	H	J	K	L	M	N	P	Q	R-S	T
964865	14	36	80	3.5	115-150	125	10.0	105.7	82	14	20.5	2.3	10.0	80	115-150	none
964867	14	63	95	6	115-150	125	10.0	113.2	82	14	36	2.3	10.0	95	115-150	5.0
964824	14	55.5	80	3.5	115-150	125	10.0	105.7	82	14	30	2.3	10.0	80	115-150	5.0
964852	16	56.3	110	3.5	126-150	125	10.0	105.7	82	16	40	2.3	10.0	110	130-150	5.0
964834	0.625 ⁽¹⁾	56.1	2.500 ⁽¹⁾	3.5	127-150	125	10.0	107.4	82	0.625 ⁽¹⁾	2.000 ⁽¹⁾	2.5	10.0	2.500 ⁽¹⁾	127-150	0.188 ⁽¹⁾
964826	0.625 ⁽¹⁾	56.2	4.500 ⁽¹⁾	3.5	5.875 in	125	0.405 ⁽¹⁾	106.5	82	19	40	2.3	10.0	110	130-150	6.0
964818	19	55.5	95	3.5	115-150	125	10.0	105.7	82	19	40	2.3	10.0	95	115-150	6.0
964823	19	55.5	95	3.5	115-150	125	10.0	105.7	82	19	40	2.3	10.0	95	115-150	6.0
964843	19	55.5	95	3.5	115-150	125	10.0	105.7	82	19	40	2.3	10.0	96	115-150	6.0
964866	19	55.6	110	3.5	126-150	125	10.0	106.5	82	19	70	2.3	10.0	110	130-150	6.0
964864	19	55.6	110	3.5	126-150	125	10.0	106.5	82	19	70	2.3	10.0	110	130-150	6.0
964826	0.625 ⁽¹⁾	56.3	4.500 ⁽¹⁾	3.5	5.875 in	125	0.405 ⁽¹⁾	106.5	82	19	40	2.3	10.0	110	130-150	6.0
964837	19	56.3	110	3.5	126-150	125	10.0	106.5	82	19	40	2.3	10.0	110	130-150	6.0
964814	19	55.5	110	3.5	126-150	125	10.0	106.5	82	19	50	2.3	10.0	110	130-150	6.0
964819	19	55.5	110	3.5	126-150	125	10.0	106.5	82	19	50	2.3	10.0	110	130-150	6.0
964832	19	60.5	95	3.5	115-150	125	10.0	105.7	82	19	55	2.3	10.0	95	115-150	6.0
964844	19	61.3	110	7	126-150	125	10.0	106.5	82	19	55	2.3	10.0	110	130-150	6.0
964856	19	64.5	110	16	126-150	125	10.0	115.5	82	19	50	2.3	10.0	110	130-150	6.0
964838	19	60.5	95	3.5	115-150	125	10.0	105.7	82	20	62	2.3	10.0	95	115-130	none
964849	19	60.5	95	3.5	115	125/150	.375 - 16	105.7	95	24	50	2.3	10.0	130	165-186	8.0
964851	19	70.3	110	16	126-150	125	10.0	115.5	82	24	50	2.3	10.0	110	130-150	8.0
964839	19	55.6	95	3.5	115-150	125	10.0	104.8	82	0.625 ⁽¹⁾	2.063 ⁽¹⁾	4.1	.375-16	4.500 ⁽¹⁾	5.875 ⁽¹⁾	0.188 ⁽¹⁾
964816	19	42.9	95	3	126-150	125	10.0	104	82	0.875 ⁽¹⁾	2.125 ⁽¹⁾	4.1	.375-16	4.500 ⁽¹⁾	5.875 ⁽¹⁾	0.188 ⁽¹⁾
964820	22	55.5	110	3.5	126-150	125	10.0	105.6	82	0.625 ⁽¹⁾	2.063 ⁽¹⁾	4.1	.375-16	4.500 ⁽¹⁾	5.875 ⁽¹⁾	0.188 ⁽¹⁾
964821	22	67.1	110	3.5	126-150	125	10.0	99.2	82	22	50	2.3	10.0	110	130-150	6.0
964822	22	73.5	110	6.5	145	125	9.0	124.5	79	22	58	6.0	10.0	110	130-150	6.0
964836	24	56.5	110	3.5	126-150	125	10.0	105.6	82	0.875 ⁽¹⁾	2.125 ⁽¹⁾	4.1	.375-16	4.500 ⁽¹⁾	5.875 ⁽¹⁾	0.188 ⁽¹⁾
964815	24	55.9	110	4	150-186	150/125	12.0	105	82	0.875 ⁽¹⁾	2.125 ⁽¹⁾	4.1	.375-16	4.500 ⁽¹⁾	5.875 ⁽¹⁾	0.188 ⁽¹⁾
964817	24	55.5	110	3.5	126-150	125	10.0	106.5	82	24	50	2.3	10	110	130-150	0.188 ⁽¹⁾
964851	19	70.3	110	16	126-150	125	10.0	115.5	82	24	50	2.3	10.0	110	130-150	8.0
964842	28	67.1	110	7	126-150	125	10.0	106.5	82	28	60	2.3	10.0	110	130-150	none
964848	24	59	110	7	126-150	125	10.0	106.5	82	24	50	2.3	10.0	110	130-150	8.0
964853	24	55.5	110	3.5	126-150	125	10.0	106.5	82	19	35	2.3	10.0	110	130-150	6.0
964830	24	54.7	95	3.5	115-150	125	10.0	105.7	82	24	45	2.3	7.0	95	115-150	8.0
964825	24	54.7	95	3.5	115-150	125	10.0	105.7	82	24	50	2.3	10.0	95	115-150	8.0
964828	24	55.5	110	3.5	126-150	125	10.0	106.5	95	24	50	2.3	10.0	110	130-150	8.0
964829	24	55.5	110	3.5	126-150	125	10.0	106.5	82	24	50	2.3	10.0	110	130-150	8.0
964860	24	58.1	110	3.5	126-150	125	10.0	106.5	82	24	50	2.3	10.0	110	130-150	8.0
964855	28	85.7	110	7	126-150	125	10.0	125	82	28	60	2.3	10.0	110	130-150	none

*Inch, all other dimensions are millimeter

Servomotor Brake Approximate Dimensions (Metric Square Flange Motors: Size 5)



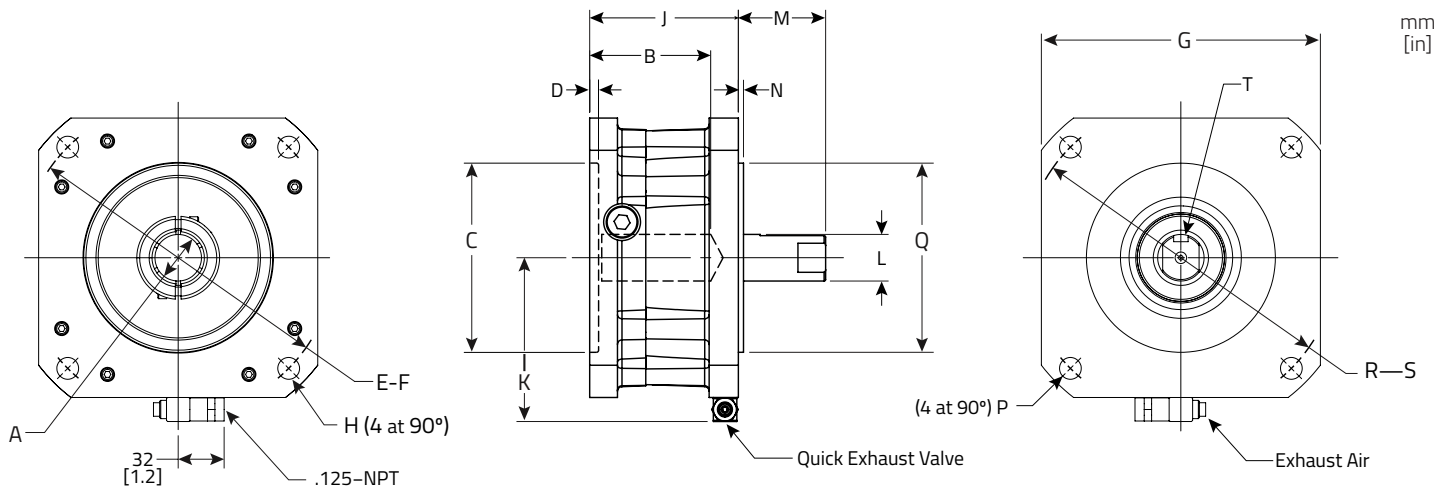
Contact Nexen if one or more of these dimensions must be modified for your application.

Size 5

Product Number	Bore Dia.	Bore Depth	Pilot (Female)	Pilot Depth	Bolt Circle Diameter	Flange Width	Bolt Hole	Length	Quick Exhaust	Shaft Dia.	Shaft Length	Pilot Ext.	Bolt Hole	Pilot (Male)	Bolt Circle Dia.	Keyway
	A	B	C	D	E-F	G	H	J	K	L	M	N	P	Q	R-S	T
964933	24	63	110	6.2	130	150.5	M8	132.5	95	24	50	2.4	12.0	110	165-186	8.0
964934	24	63	110	6.2	145	150.4	M8	132.5	95	24	50	2.4	12.0	110	165-186	8.0
964909	24	58	110	6.2	150-186	150.4	12.0	132.5	95	24	50	2.4	12.0	110	165-186	8.0
964913	24	58	110	6.2	150-186	150.4	12.0	132.5	95	24	50	2.4	12.0	110	165-186	8.0
964907	24	58	130	6.2	150-186	150.4	12.0	132.5	95	24	50	2.4	12.0	130	165-186	8.0
964908	24	58	130	6.2	150-186	150.4	12.0	132.5	95	24	50	2.4	12.0	130	165-186	8.0
964930	24/kwy	66.7	110	6.2	150-186	150.4	12.0	132.5	95	24	50	2.4	12.0	110	165-186	8.0
964912	24	66.7	130	6.2	150-186	150.4	12.0	132.5	95	24	50	2.4	12.0	130	165-186	8.0
964916	24	64	130	6.2	150-186	150.4	12.0	131.9	95	0.875 ⁽¹⁾	2.125 ⁽¹⁾	4.1	.375-16	4.500 ⁽¹⁾	5.875 ⁽¹⁾	0.188 ⁽¹⁾
964923	24	58	130	6.2	150-186	150.4	12.0	131.9	95	1.062 ⁽¹⁾	1.950 ⁽¹⁾	4.1	.375-16	4.500 ⁽¹⁾	5.875 ⁽¹⁾	0.250 ⁽¹⁾
964917	1.125 ⁽¹⁾	60.5	4.500 in	6.2	150-186	150.4	12.0	132.5	95	24	50	2.4	12.0	110	165-186	8.0
964929	28	66.7	130	6.2	150-186	150.4	12.0	132.5	95	24	50	2.4	12.0	130	165-186	8.0
964915	28	66.7	130	6.2	150-186	150.4	12.0	132.5	95	28	60	2.4	12.0	130	165-186	8.0
964920	28	66.7	130	6.2	150-186	150.4	12.0	132.5	95	28	60	2.4	12.0	130	165-186	8.0
964928	28	66.7	130	6.2	150-186	150.4	12.0	131.9	95	1.062 ⁽¹⁾	1.950 ⁽¹⁾	4.1	.375-16	4.500 ⁽¹⁾	5.875 in	0.250 ⁽¹⁾
964932	28	71.7	130	6.2	150-186	150.4	12.0	132.5	95	28	60	2.4	12.0	130	165-186	8.0
964918	32	58	130	6.2	150-186	150.4	12.0	132.5	95	32	54	2.4	12.0	130	165-186	10.0
964931	32	58	130	6.2	150-186	150.4	12.0	132.5	95	32	54	2.4	12.0	130	165-186	10.0
964925	32	82	130	6.2	150-186	150.4	12.0	132.5	95	24	50	2.4	12.0	130	165-186	none
964906	32	65.7	130	4.0	215	178/150.4	15.0	140.5	95	0.875 ⁽¹⁾	2.125 ⁽¹⁾	4.1	.375-16	4.500 ⁽¹⁾	5.875 in	0.188 ⁽¹⁾
964921	32	75.2	130	4.0	215	178/150.4	15.0	141	95	32	60	2.4	12.0	130	165-186	10.0
964919	32	66.7	130	6.2	150-186	150.4	12.0	132.5	95	32	60	2.4	12.0	130	165-186	10.0
964937	32/kwy	83	130	6.2	150-186	150.4	12.0	148.5	95	32	80	2.4	12.0	130	165-186	10.0

⁽¹⁾Inch, all other dimensions are millimeter

Servomotor Brake Approximate Dimensions (Metric Square Flange Motors: Size 7)



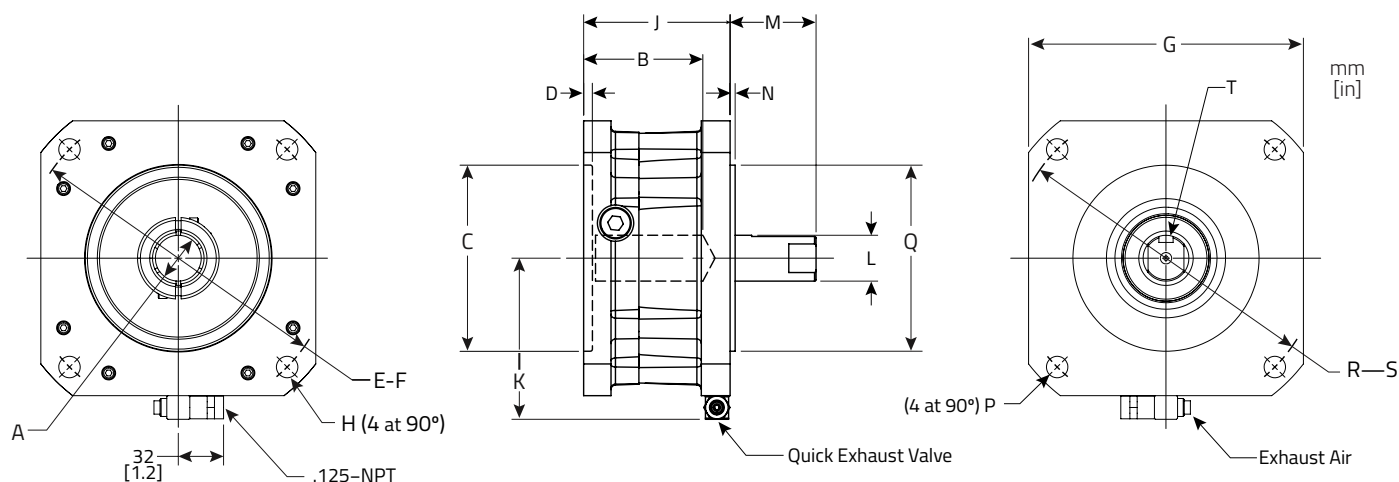
Contact Nexen if one or more of these dimensions must be modified for your application.

Size 7

Product Number	Bore Dia.	Bore Depth	Pilot (Female)	Pilot Depth	Bolt Circle Dia.	Flange Width	Bolt Hole	Length	Quick Exhaust	Shaft Dia.	Shaft Length	Pilot Ext.	Bolt Hole	Pilot (Male)	Bolt Circle Dia.	Keyway
	A	B	C	D	E-F	G	H	J	K	L	M	N	P	Q	R-S	T
965008	24	83.2	130	6.1	165	192	M10	102.3	113	24	50	3.5	12.0	130	180	8.0
965010	32	83.2	130	6.1	165	192	M10	102.3	113	32	60	3.5	15.0	130	215	10.0
965001	32	83.2	180	6.1	215	192	15.0	102.3	113	32	60	3.5	15.0	180	215	10.0
965006	32	83.2	180	6.1	215	192	15.0	102.3	113	32	60	3.5	15.0	180	215	10.0
965004	32	83.2	130	6.1	215	192	15.0	102.3	113	32	60	3.5	15.0	130	215	10.0
965014	32	82	130	6.1	165	174	0.438-14	102.3	105	1.250 ⁽¹⁾	80	3.2	13.5	4.500 ⁽¹⁾	200	0.250 ⁽¹⁾
965015	1.375 ⁽¹⁾	88.2	4.500 ⁽¹⁾	6.1	200	174	0.500-13	102.3	105	1.375 ⁽¹⁾	3.875 ⁽¹⁾	3.2	13.5	4.500 ⁽¹⁾	200	0.314 ⁽¹⁾
965011	1.375 ⁽¹⁾	88.2	4.500 ⁽¹⁾	6.1	200	174	0.500-13	102.3	105	1.375 ⁽¹⁾	3.875 ⁽¹⁾	3.2	13.5	4.500 ⁽¹⁾	200	0.314 ⁽¹⁾
965017	1.375 ⁽¹⁾	84.6	4.500 ⁽¹⁾	6.1	7.750 ⁽¹⁾	174	0.375-16	102.3	105	1.375 ⁽¹⁾	66.5	3.2	.375-16	4.500 ⁽¹⁾	7.750 ⁽¹⁾	0.314 ⁽¹⁾
965005	35	88.2	4.500 ⁽¹⁾	6.1	200	174	M12	102.3	104	35	79	3.2	13.5	4.500 ⁽¹⁾	200	10.0
965007	32	84.9	180	6.1	215	192	15.0	102.3	NA	1.375 ⁽¹⁾	3.37 ⁽¹⁾	0.250 ⁽¹⁾	.500 ⁽¹⁾	8.500 ⁽¹⁾	7.250 ⁽¹⁾	0.314 ⁽¹⁾
965012	32	83.2	130	6.1	215	192	15.0	102.3	132	1.125 ⁽¹⁾	2.89 ⁽¹⁾	0.250 ⁽¹⁾	.500-13	8.500 ⁽¹⁾	7.250 ⁽¹⁾	0.250 ⁽¹⁾
965013	32	83.2	130	6.1	215	192	15.0	102.3	113	32	60	3.5	15.0	130	215	10.0
965000	32	83.2	130	6.1	215	192	15.0	102.3	113	32	60	3.5	15.0	130	215	10.0
965026	32/ kwy	82.1	130	6.1	215	192	0.500-13	102.3	113	35	95	3.5	.500-13	130	215	10.0
965003	35	88.2	4.500 ⁽¹⁾	6.1	200	174	M12	102.3	104	35	79	3.2	13.5	4.500 ⁽¹⁾	200	10.0
965002	35	88.2	4.500 ⁽¹⁾	6.1	200	192	13.0	102.3	113	35	80	3.5	13.0	4.500 ⁽¹⁾	200	10.0
965019	38	83.2	180	6.1	215	192	15.0	102.3	113	38	80	3.5	15.0	180	215	12.0
965009	42	114.1	4.500 ⁽¹⁾	5.0	200	174	12.8	128.2	104	35	79	3.2	13.5	4.500 ⁽¹⁾	200	10.0
965016	42	114.1	4.500 ⁽¹⁾	5.0	200	174	12.8	128.2	104	42	113	3.2	13.5	4.500 ⁽¹⁾	200	12.0
965021	1.188 ⁽¹⁾	88.2	4.500 ⁽¹⁾	6.1	200	192/ 174	13.0	102.3	104	35	79	3.2	13.5	4.500 ⁽¹⁾	200	10.0
965020	42	114.1	4.500 ⁽¹⁾	5.0	200	174	12.8	128.2	104	42	113	3.2	13.5	4.500 ⁽¹⁾	200	12.0

⁽¹⁾ Inch, all other dimensions are millimeter

Servomotor Brake Approximate Dimensions (Metric Square Flange Motors: Sizes 9 & 11)



Contact Nexen if one or more of these dimensions must be modified for your application.

Size 9

Product Number	Bore Dia.	Bore Depth	Pilot (Female)	Pilot Depth	Bolt Circle Dia.	Flange Width	Bolt Hole	Length	Quick Exhaust	Shaft Dia.	Shaft Length	Pilot Ext.	Bolt Hole	Pilot (Male)	Bolt Circle Dia.	Keyway
	A	B	C	D	E-F	G	H	J	K	L	M	N	P	Q	R-S	T
965100	38	83.2	180	4.1	215	214	13.0	102.3	124	38	60	3.5	13.0	180	215	12.0
965110	38	83.2	180	4.1	215	214	13.0	102.3	124	38	60	3.5	13.0	180	215	10.0
965111	38	83.2	180	4.1	215	214	13.0	102.3	124	38	60	3.5	13.0	180	215	10.0
965102	38	83.2	180	4.1	215	214	13.0	102.3	124	38	60	3.5	13.0	180	215	12.0
965104	38	83.2	180	4.1	215	214	13.0	102.3	124	38	60	3.5	13.0	180	215	12.0
965103	38	83.2	180	4.1	215	214	M14	102.3	124	38	80	3.5	11.0	180	215	12.0
965107	38	83.2	180	4.1	215	214	13.0	102.3	124	38	80	3.5	13.0	180	215	none
965101	38	83.2	180	5.0	215	214	M12	102.3	124	1.375 ⁽¹⁾	60	3.5	13.0	180	215	none
965208	38	83.2	180	5.0	215	214	M12	102.3	124	38	80	3.5	14.0	180	215	12.0
965109	38	83.2	180	4.1	215	214	M14	102.3	124	38	80	3.5	14.75	180	215	12.0
965105	42	117.1	200	5.0	235	220/ 214	13.5	136.2	124	42	116	3.5	13.5	200	235	12.0
965106	55	117.1	200	5.0	235	220/ 214	13.5	154.5	124	42	80.9	3.5	14.0	180	8.434 ⁽¹⁾	12.0

Size 11

Product Number	Bore Dia.	Bore Depth	Pilot (Female)	Pilot Depth	Bolt Circle Dia.	Flange Width	Bolt Hole	Length	Quick Exhaust	Shaft Dia.	Shaft Length	Pilot Ext.	Bolt Hole	Pilot (Male)	Bolt Circle Dia.	Keyway
	A	B	C	D	E-F	G	H	J	K	L	M	N	P	Q	R-S	T
965201	35	92.1	230	9.1	265	262.9	M12	123.3	158	35	92	5.0	14.0	230	265	none
965202	42	110.1	230	5	265	262.9	12.8	143.3	148	42	92	5.0	14.0	230	265	12.0
965204	42/kyw	106.56	250	9.1	300	262.9	0.625- 11	123.3	148	45	100	5.0	.625- 11	250	300	14.0
965200	48	91.56	250	9.1	300	262.9	15.0	123.3	148	48	60	5.0	15.0	250	300	14.0
965205	48	91.56	250	9.1	300	262.9	15.0	123.3	148	48	60	5.0	15.0	250	300	14.0
965203	48	91.56	250	9.1	300	262.9	15.0	123.3	148	48	82	5.0	15.0	250	300	14.0

*Inch, all other dimensions are millimeter

Eclipse Performance

Servomotor Brake Specifications

NEMA Square Flange Compatible

Product Number	Static Torque (inlbf)	Transmittable Torque Rating (inlbf)	Torsional Rigidity (lbfft/rad)	Engage Time (msec)	Release Time (msec)	Max (RPM)	Overhung Load (lbf)	Shaft Inertia (lbfft ²)	Minimum Release Pressure (psi)
Nexen Model SBP-2 for NEMA 23									
964606	20	20	1,000	8	92	10,000	Not Recommended	0.0005	80
964611	20	20	1,000	8	92	10,000		0.0005	80
964605	20	20	1,000	8	92	10,000		0.0005	80
Nexen Model SBP-3 for NEMA 34									
964729	70	70	3,900	12	75	10,000	240	0.0012	80
964728	70	70	3,900	12	75	10,000	240	0.0012	80
964722	70	70	3,900	12	75	10,000	240	0.0012	80
964726	70	70	5,700	12	75	10,000	240	0.0012	80
Nexen Model SBP-4 for NEMA 42									
964833	200	200	6,200	50	80	10,000	210	0.0074	80
964835	200	200	6,200	50	80	10,000	210	0.0074	80

Metric Square Flange Sizes

Product Number	Static Torque (Nm)	Transmittable Torque Rating (Nm)	Torsional Rigidity (Nm/rad)	Engage Time (msec)	Release Time (msec)	Max (RPM)	Overhung Load (N)	Shaft Inertia (kgm ²)	Minimum Release Pressure (bar)
Size 2									
964610	2.3	2.3	1,000	8	92	10,000	Not Recommended	0.00002	5.5
964615	2.3	2.3	1,000	8	92	10,000		0.00002	5.5
964612	2.3	2.3	1,000	8	92	10,000		0.00002	5.5
964617	2.3	2.3	2,700	8	92	10,000	845	0.00002	5.5
964614	2.3	2.3	2,700	8	92	10,000	845	0.00002	5.5
964613	2.3	2.3	3,700	8	92	10,000	845	0.00002	5.5
Size 3									
964721	5.0	7.9	1,800	12	75	10,000	400	0.00005	3.4
964717	7.9	7.9	3,900	12	75	10,000	1,070	0.00005	5.5
964713	5.0	7.9	4,500	12	75	10,000	1,070	0.00005	3.4
964714	7.9	7.9	4,500	12	75	10,000	1,070	0.00005	5.5
964709	7.9	7.9	4,500	12	75	10,000	1,070	0.00005	5.5
964710	5.0	7.9	4,500	12	75	10,000	1,070	0.00005	3.4
964724	5.0	7.9	4,500	12	75	10,000	1,070	0.00005	3.4
964718	7.9	7.9	4,500	12	75	10,000	1,070	0.00005	5.5
964725	7.9	7.9	4,500	12	75	10,000	1,070	0.00005	5.5
964727	7.9	7.9	4,500	12	75	10,000	1,070	0.00005	5.5
964716	7.9	7.9	5,700	12	75	10,000	1,070	0.00005	5.5
964720	5.0	7.9	5,700	12	75	10,000	1,070	0.00005	3.4
964712	7.9	7.9	5,700	12	75	10,000	1,070	0.00005	5.5
964711	7.9	7.9	5,700	12	75	10,000	1,070	0.00005	5.5
964715	7.9	7.9	5,700	12	75	10,000	1,070	0.00005	5.5
964730	7.9	7.9	5,700	12	75	10,000	1,070	0.00005	5.5
964732	7.9	7.9	7,200	12	75	10,000	1,070	0.00005	5.5
964723	5.0	7.9	7,200	12	75	10,000	1,070	0.00005	3.4
964719	7.9	7.9	7,200	12	75	10,000	1,070	0.00005	5.5
964733	8.0	8.0	11,500	12	75	10,000	1,070	0.00005	5.5

- Contact Nexen if one or more of these specifications must be modified for your application or if a NexSafe safety rating is required.
- See appendix for specification definitions

Servomotor Brake Specifications (Metric Square Flange Motors: Size 4)

Product Number	Static Torque (Nm)	Transmittable Torque Rating (Nm)	Torsional Rigidity (Nm/rad)	Engage Time (msec)	Release Time (msec)	Max (RPM)	Overhung Load (N)	Shaft Inertia (kgm ²)	Minimum Release Pressure (bar)
Size 4									
964865	22	22	4,300	50	80	10,000	845	0.00027	5.5
964867	22	22	4,300	50	80	10,000	845	0.00027	5.5
964824	22	22	4,300	50	80	10,000	845	0.00027	5.5
964852	22	22	6,200	50	80	10,000	1,423	0.00027	5.5
964834	22	22	6,200	50	80	10,000	934	0.00027	5.5
964826	22	22	6,200	50	80	10,000	2,334	0.00027	5.5
964818	22	22	11,800	50	80	10,000	2,334	0.00031	5.5
964823	14.1	22	11,800	50	80	10,000	2,334	0.00031	3.4
964843	22	22	11,800	50	80	10,000	2,334	0.00031	5.5
964866	22	22	11,800	50	80	10,000	1,423	0.00031	5.5
964864	14.1	22	11,800	50	80	10,000	1,423	0.00031	3.4
964826	22	22	11,800	50	80	10,000	2,334	0.00031	5.5
964837	22	22	11,800	50	80	10,000	2,334	0.00031	5.5
964814	22	22	11,800	50	80	10,000	1,780	0.00031	5.5
964819	14.1	22	11,800	50	80	10,000	1,780	0.00031	3.4
964832	22	22	11,800	50	80	10,000	1,780	0.00031	5.5
964844	22	22	11,800	50	80	10,000	1,780	0.00031	5.5
964856	22	22	11,800	50	80	10,000	1,780	0.00031	5.5
964838	22	22	11,800	50	80	10,000	1,780	0.00031	5.5
964849	22	22	20,700	50	80	10,000	2,334	0.00031	5.5
964851	22	22	20,700	50	80	10,000	2,334	0.00031	5.5
964839	22	22	11,800	50	80	10,000	934	0.00031	5.5
964816	22	22	11,800	50	80	10,000	2,334	0.00031	5.5
964820	22	22	16,300	50	80	10,000	934	0.00031	5.5
964821	22	22	16,300	50	80	10,000	2,334	0.00031	5.5
964822	14.1	22	16,300	50	80	10,000	2,334	0.00031	3.4
964836	22	22	20,700	50	80	10,000	2,334	0.00031	5.5
964815	22	22	20,700	50	80	10,000	2,334	0.00031	5.5
964817	22	22	20,700	50	80	10,000	2,334	0.00031	5.5
964851	22	22	20,700	50	80	10,000	2,334	0.00031	5.5
964842	22	22	37,000	50	80	10,000	2,334	0.00041	5.5
964848	22	22	20,700	50	80	10,000	2,334	0.00031	5.5
964853	22	22	20,700	50	80	10,000	2,334	0.00031	5.5
964830	22	22	20,700	50	80	10,000	2,334	0.00031	5.5
964825	22	22	20,700	50	80	10,000	2,334	0.00031	5.5
964828	22	22	20,700	50	80	10,000	2,334	0.00031	5.5
964829	14.1	22	20,700	50	80	10,000	2,334	0.00031	3.4
964860	22	22	20,700	50	80	10,000	2,334	0.00031	5.5
964855	22	22	37,000	50	80	10,000	2,334	0.00041	5.5

- Contact Nexen if one or more of these specifications must be modified for your application, or if a NexSafe safety rating is required.
- See appendix for specification definitions.

Servomotor Brake Specifications (Metric Square Flange Motors: Size 5 & 7)

Product Number	Static Torque (Nm)	Transmittable Torque Rating (Nm)	Torsional Rigidity (Nm/rad)	Engage Time (msec)	Release Time (msec)	Max (RPM)	Overhung Load (N)	Shaft Inertia (kgm ²)	Minimum Release Pressure (bar)
Size 5									
964933	45	45	20,600	60	100	10,000	NOTE: These models are intended for direct mounting. Side loading is not recommended. Consult Nexen Engineering with questions.	0.00117	5.5
964934	45	45	20,600	60	100	10,000		0.00117	5.5
964909	45	45	20,600	60	100	10,000		0.00117	5.5
964913	28.3	45	20,600	60	100	10,000		0.00117	3.4
964907	45	45	20,600	60	100	10,000		0.00117	5.5
964908	28.3	45	20,600	60	100	10,000		0.00117	3.4
964930	45	45	20,600	60	100	10,000		0.00117	5.5
964912	45	45	20,600	60	100	10,000		0.00117	5.5
964916	45	45	20,600	60	100	10,000		0.00117	5.5
964923	45	45	20,600	60	100	10,000		0.00117	5.5
964917	45	45	40,000	60	100	10,000		0.00130	5.5
964929	45	45	40,000	60	100	10,000		0.00130	5.5
964915	28.3	45	40,000	60	1 00	10,000		0.00130	3.4
964920	45	45	40,000	60	100	10,000		0.00130	5.5
964928	45	45	40,000	60	100	10,000		0.00130	5.5
964932	45	45	40,000	60	100	10,000		0.00130	5.5
964918	45	45	52,400	60	100	10,000		0.00130	5.5
964931	45	45	52,400	60	100	10,000		0.00130	3.4
964925	45	45	52,400	60	100	10,000		0.00130	5.5
964906	45	45	52,400	60	100	10,000		0.00130	5.5
964921	45	45	52,400	60	100	10,000		0.00130	5.5
964919	45	45	52,400	60	100	10,000		0.00130	5.5
964937	45	150	54,200	60	100	10,000	3100	0.00159	5.5
Size 7									
965008	100	100	24,600	85	145	5,000	NOTE: These models are intended for direct mounting. Side loading is not recommended. Consult Nexen Engineering with questions.	0.00325	4.4
965010	100	125	55,300	85	145	5,000		0.00333	4.4
965001	125	125	55,300	85	145	5,000		0.00333	5.5
965006	100	125	55,300	85	145	5,000		0.00333	4.4
965004	75	125	55,300	85	145	5,000		0.00333	3.3
965014	125	125	55,300	85	145	5,000		0.00333	5.5
965015	125	125	83,300	85	145	5,000		0.00346	5.5
965011	75	125	83,300	85	145	5,000		0.00346	3.3
965017	125	125	83,300	85	145	5,000		0.00346	5.5
965005	125	125	76,500	85	145	5,000		0.00346	5.5
965007	125	125	55,300	85	145	5,000		0.00333	5.5
965012	75	125	55,300	85	145	5,000		0.00333	3.3
965014	125	125	55,300	85	145	5,000		0.00333	5.5
965013	125	125	55,300	85	145	5,000		0.00333	5.5
965000	125	125	55,300	85	145	5,000		0.00333	5.5
965026	125	150	76,500	85	145	5,000		0.00352	5.5
965003	75	125	76,500	85	145	5,000		0.00346	3.3
965002	50	125	76,500	85	145	5,000		0.00346	2.2
965019	87	125	98,700	85	145	5,000		0.00362	3.9
965009	125	125	108,600	85	145	5,000		0.00379	5.5
965016	125	125	108,600	85	145	5,000		0.00379	5.5
965021	75	100	65,800	85	145	5,000		0.0034	3.3
965020	100	125	108,600	85	145	5,000		0.00379	4.4

- Contact Nexen if one or more of these specifications must be modified for your application, or if a NexSafe safety rating is required.
- See appendix for specification definitions.

Servomotor Brake Specifications (Metric Square Flange Motors: Size 9 & 11)

Product Number	Static Torque (Nm)	Transmittable Torque Rating (Nm)	Torsional Rigidity (Nm/rad)	Engage Time (msec)	Release Time (msec)	Max (RPM)	Overhung Load (N)	Shaft Inertia (kgm²)	Minimum Release Pressure (bar)
Size 9									
965100	125	125	114,000	85	145	5,000	NOTE: These models are intended for direct mounting. Side loading is not recommended. Consult Nexen Engineering with questions.	0.00362	5.5
965110	125	125	114,000	85	145	5,000		0.00362	5.5
965111	50	125	114,000	85	145	5,000		0.00362	2.2
965102	75	125	114,000	85	145	5,000		0.00362	3.3
965104	100	125	114,000	85	145	5,000		0.00362	4.4
965103	125	125	97,900	85	145	5,000		0.00362	5.5
965107	125	125	97,900	85	145	5,000		0.00362	5.5
965101	100	125	97,900	85	145	5,000		0.00362	4.4
965208	100	125	97,900	85	145	5,000		0.00362	4.4
965105	125	125	119,000	85	145	5,000		0.00379	5.5
965106	125	125	188,000	85	145	5,000		0.00554	5.5
Size 11									
965201	75	125	63,600	85	145	5,000	NOTE: Intended for direct mounting. Side loading is not recommended.	0.00346	3.3
965202	75	125	156,000	85	145	5,000		0.00379	3.3
965204	125	125	156,000	85	145	5,000		0.00379	5.5
965200	125	125	216,000	85	145	5,000		0.00404	5.5
965205	100	125	216,000	85	145	5,000		0.00404	4.4
965203	125	125	216,000	85	145	5,000		0.00411	5.5

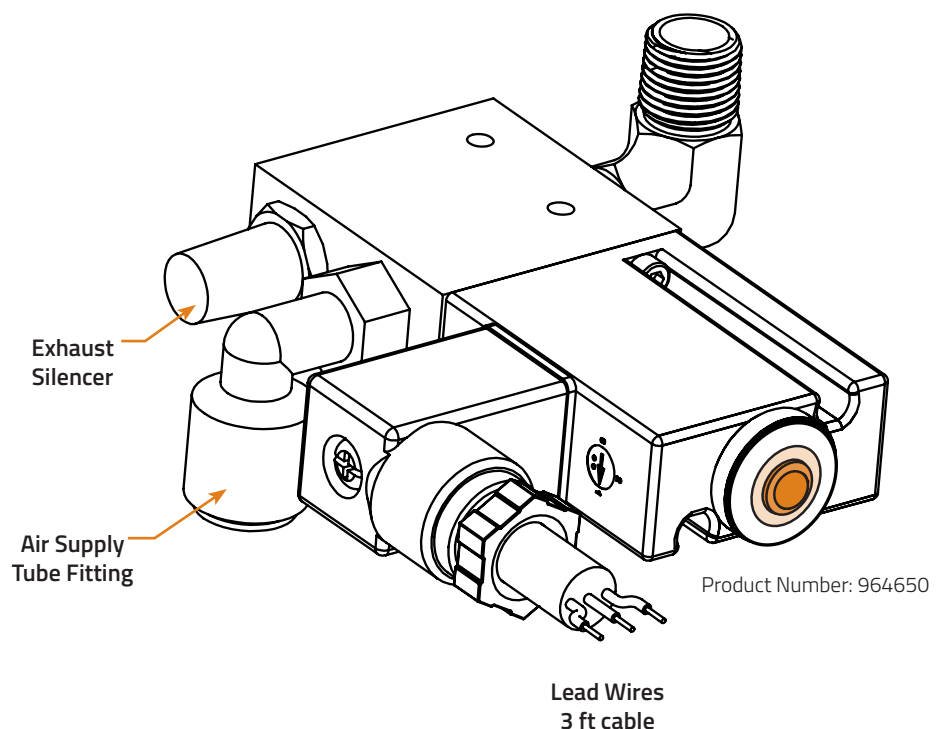
- Contact Nexen if one or more of these specifications must be modified for your application, or if a NexSafe safety rating is required.
- See appendix for specification definitions.

Optional Solenoid Valve

Nexen's optional solenoid valve offers machine operators additional safety and peace of mind by allowing users to see at a glance whether or not the brake is disengaged. The manual override button provides an easy option for manual brake disengagement.

Nexen's solenoid valve mounts easily on any Eclipse® servomotor brake and operates using standard 80 PSIG compressed air and 24VDC controls.

- Visual Disengagement Indication
- Manual Disengagement Button
- Simple Connections:
 - 24VDC control
 - 80 PSIG shop air

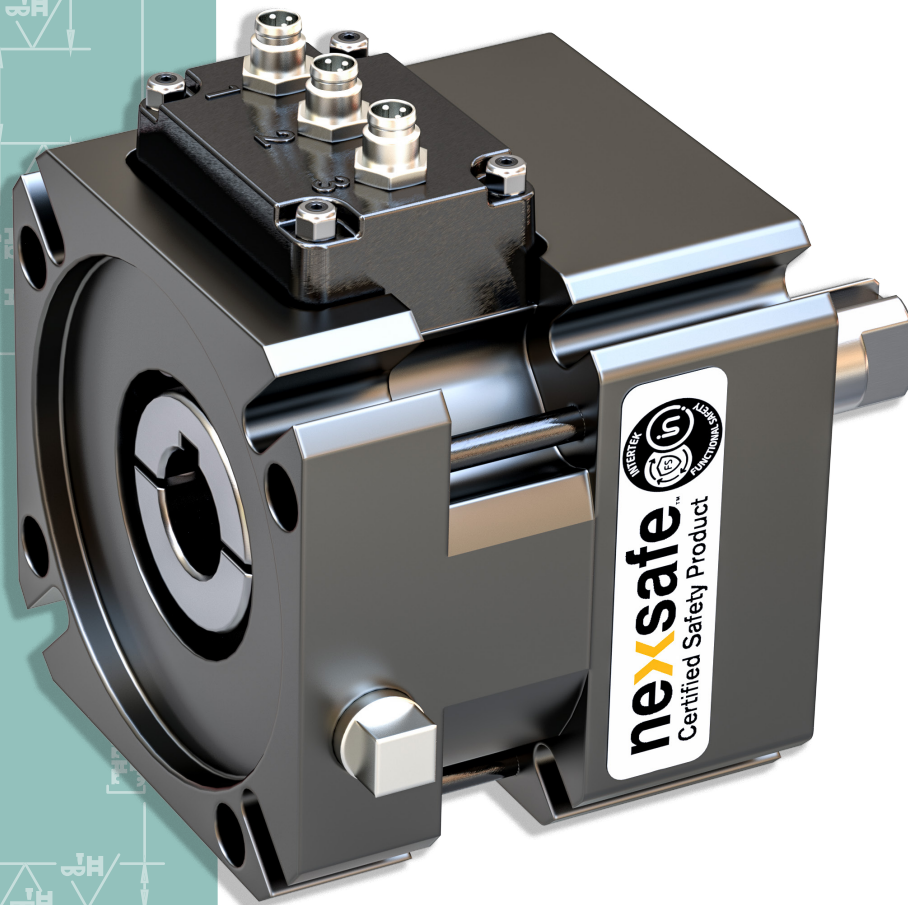




NexSafe® Safety Rated Servomotor Brakes

Nexen's NexSafe® Safety Rated Servomotor Brakes are third party safety rated by Intertek to comply with international safety standard ISO 13849-1. Category Level up to 4 and Performance Level up to e, able to be achieved using Nexsafe products in recommended configuration. Multiple engagement springs, an integrated clamp collar with backup keyways and up to three operating mode sensors for feedback ensure confident, safe emergency stopping and holding.

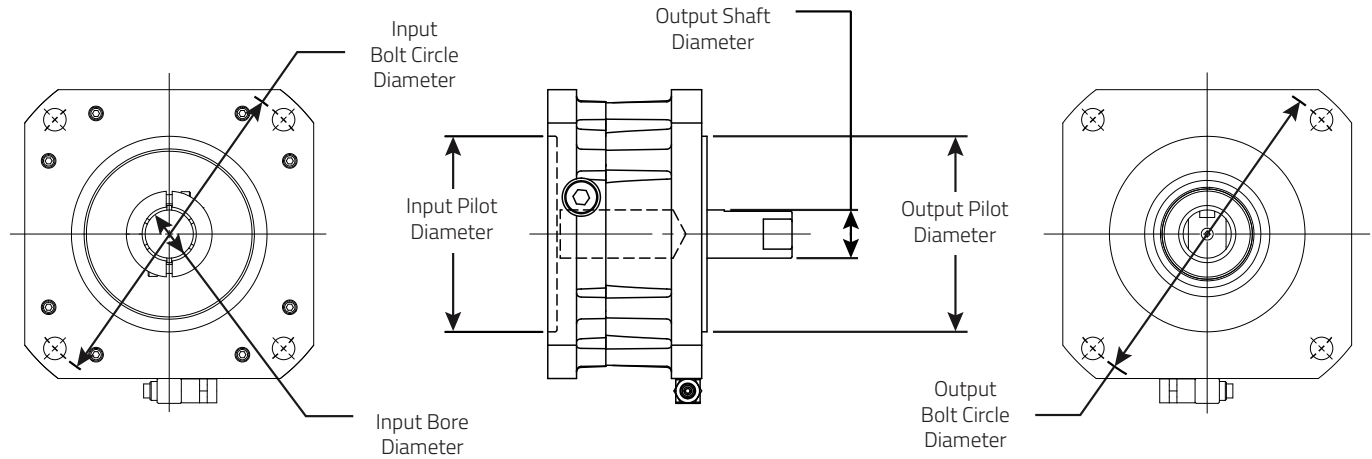
Brake Dimensions & Specifications.....	17
Safety Ratings	18
Optional Operating Mode Sensors	21
Optional Sensors, Dimensions	22



nexsafe®
Certified Safety Products



Safety Rated Servomotor Dimensions & Specifications



Input and output dimensions may differ if your application requires it.

NEMA Square Flange Compatible

Safety Rated Servomotor Brake	Available Bore/Shaft Dia. (in)	Available Pilot Dia. (in)	Available Bolt Circle Dia. (in)	Static Torque ⁽²⁾ (inlbf)	Transmit-Table Torque Rating (inlbf)	Torsional Rigidity	Engage Time (msec)	Release Time (msec)	Max Speed (RPM)	Overhung Load (lbf)	Shaft Inertia ⁽¹⁾ (lbfft ²)	Minimum Release Pressure ⁽²⁾ (psi)
Size 3	0.375 to 0.750	2.875	3.346 to 4.280	70	70	3,900	12	75	10,000	Not suggested, contact Nexen if required	0.0019 to 0.0020	80
Size 4	0.563 to 1.063	2.187 to 4.500	4.950 to 5.904	135	200	6,200	50	80	10,000		0.008 to 0.011	

Metric Square Flange Sizes

Safety Rated Servomotor Brake	Available Bore/Shaft Dia. (mm)	Available Pilot Dia. (mm)	Available Bolt Circle Dia.	Static Torque ⁽²⁾ (Nm)	Transmittable Torque (Nm)	Torsional Rigidity	Engage Time (Nm/rad)	Release Time (msec)	Max Speed (RPM)	Overhung Load (N)	Shaft Inertia ⁽¹⁾ (kgm ²)	Minimum Release Pressure ⁽²⁾ (bar)
Size 3	9 to 19	50 to 80	85 to 115	7.9	7.9	1,800 to 11,500	12	75	10,000	Not Suggested	0.00008	5.5
Size 4	14 to 28	63.5 to 114.3	115 to 150	15.3	22	4,300 to 37,000	50	80			0.00034 to 0.00044	
Size 5	19 to 38	110 to 130	149.2 to 186	32.8	45	20,600 to 52,400	60	100			0.0014 to 0.0015	
Size 7	24 to 42	114.3 to 180	196.9 to 215	88.1	125	24,600 to 108,600	85	145	5,000	Contact Nexen if required	0.005 to 0.006	
Size 9	32 to 55	180 to 200	215 to 235	88.1	125	97,900 to 188,000	85	145			0.0053 to 0.0067	
Size 11	35 to 65	230 to 250	265 to 300	88.1	125	63,600 to 216,000	85	145			0.0041 to 0.0046	

Contact Nexen if one or more of these specifications must be modified for your application.

⁽¹⁾Dependent on unit shaft and bore diameter.

⁽²⁾Brakes with lower release pressures/static torques are available.

Safety Ratings

With third party certification carried out by Intertek, Nexen's Servomotor Brakes are safety certified components capable of meeting the following ratings per safety standard ISO 13849-1:2015.

Cycle Life (B_{100}) of 2 million cycles

Common Cause Failure (CCF) is 75%

Mission Time is 10 Years

Average Cycle Rate (t_{cycle}) is the mean operation time between two cycles defined by your system.

Mean Time to Dangerous Failure ($MTTF_D$) is dependent on average operation time with a maximum of 100 years.

Maximum Operation Time (T_{10D}) is $MTTF_D / 10$

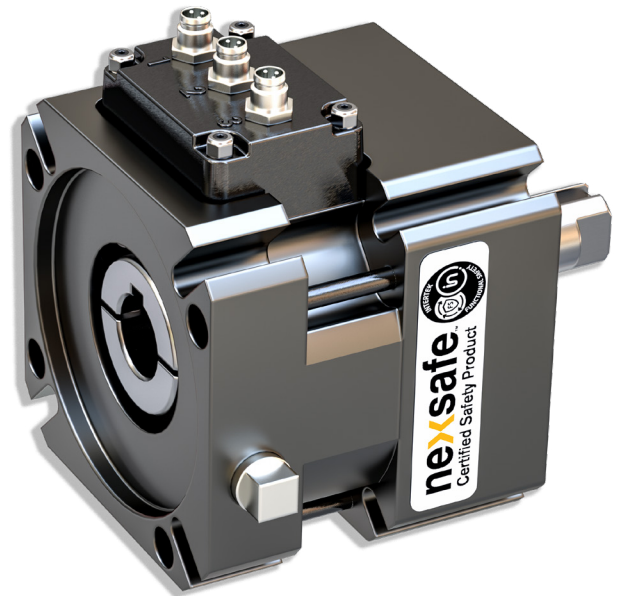
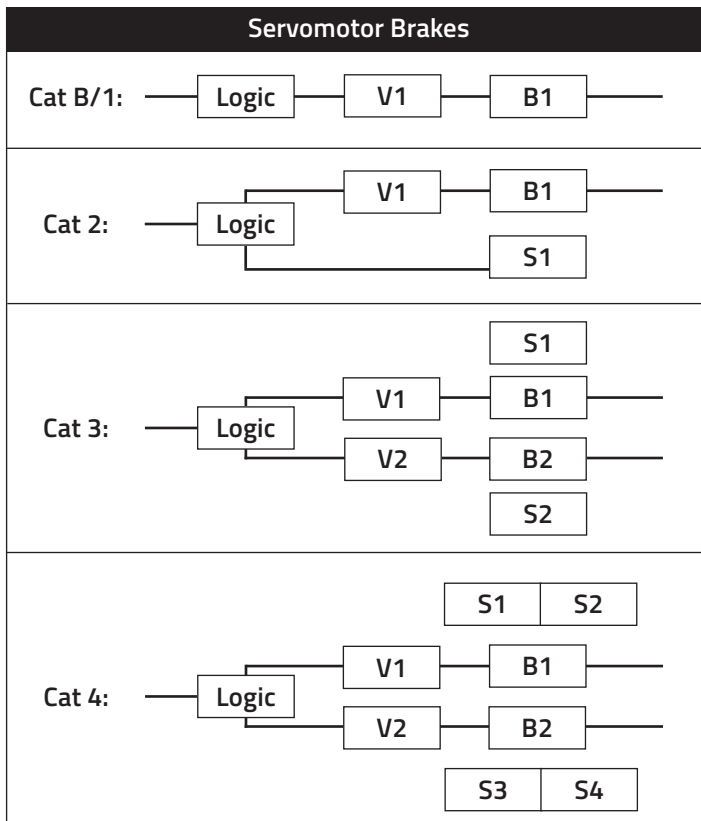
Diagnostic Coverage (DC) is dependent on brake redundancy and sensor setup:

If DC is 0%	If DC is 60%	If DC is 90%	If DC is 99%
No sensor feedback necessary.	Feedback sensor shall be used to monitor the operating mode of brake.	Feedback sensor shall be used to monitor the operating mode of brake. The brake must be cycled engaged and disengaged at least this often to check for brake functionality:	
		every 3 months	once every day

Calculation Assumptions:

- System can be reduced to a single channel with Logic, Valve, and Brake
- $MTTF_D$ is selected based on the category, performance level and diagnostic coverage; t_{cycle} is back figured to provide a maximum cycle rate (rounded up)
- B_{100} for a pneumatic valve is 20,000,000 per 13849-1:2015(E), Annex C, Table C.1
- PFH for logic is 1.5×10^{-8} based on common industry manufacturers
- 260 operational days per year (5 days per week)
- 16 operation hours per day (two-8 hour shifts)

Example Block Diagrams

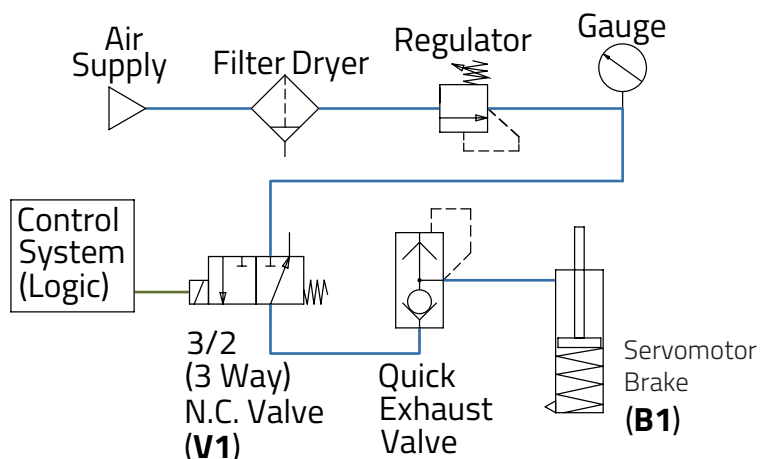


Key	
Logic=	Customer Logic and Controls
B=	Rod Lock
V=	Pneumatic Control Valve
S=	Operating Mode Sensor

Safety Ratings

Category B or Category 1 Example: One Brake, No Sensors Required

Safety Rated Servomotor Brake Control Circuit



Category B

Performance Level		a	b
If DC is		0%	
MTTF _D	years	3.3	13
Maximum average cycle rate	sec/cycle	2.8	10.8
Maximum operation time	years	0.3	1.3

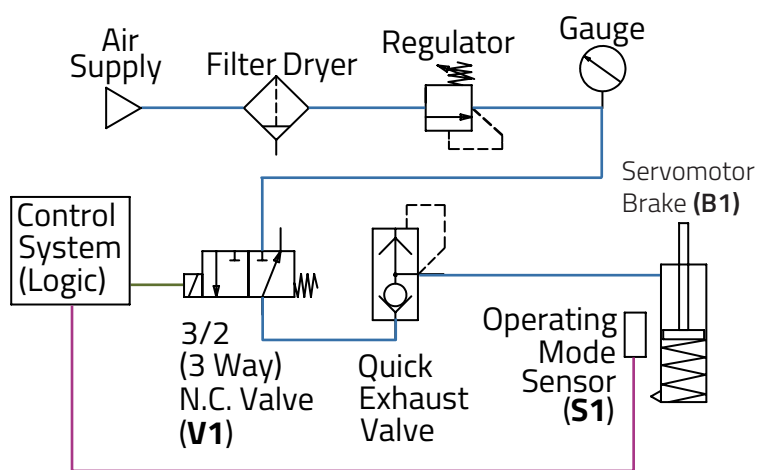
Category 1

Performance Level		b	c
If DC is		0%	
MTTF _D	years	33	43
Maximum average cycle rate	sec/cycle	27.3	35.7
Maximum operation time	years	3.3	4.3

Air to Disengage Servomotor Brake
Control Wiring
Sensor Feedback Wiring

Category 2 Example: One Brake, One Sensor

Safety Rated Servomotor Brake Control Circuit



Note

- Valve power signal must be compared with Sensor output signal
- Calculation is for Functional channel only. Test channel MTTF_D is 100 years.

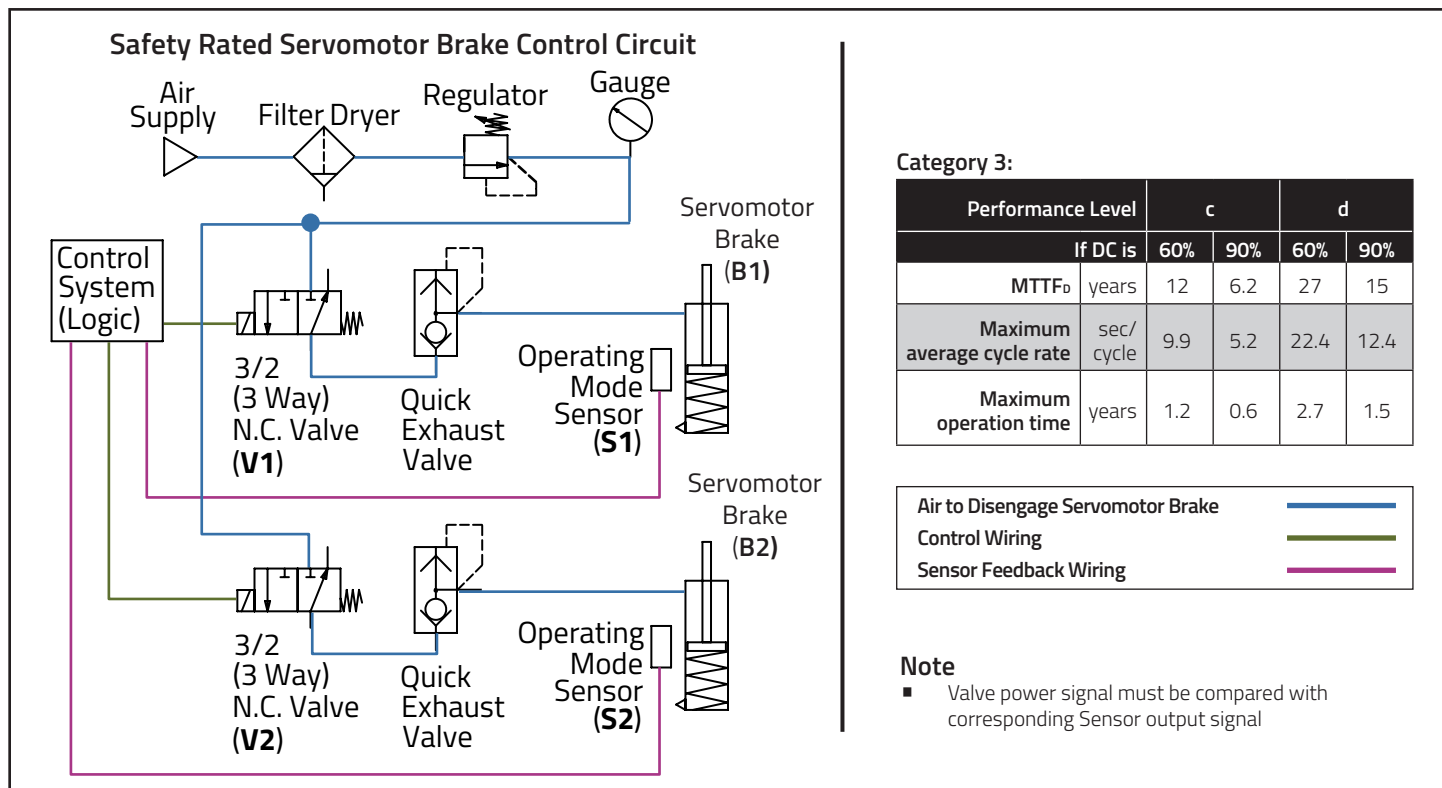
Category 2

Performance Level		c		d	
If DC is		60%	90%	60%	90%
MTTF _D	years	27	18	68	39
Maximum average cycle rate	sec/cycle	22.4	14.9	56.6	32.3
Maximum operation time	years	2.7	1.8	68	3.9

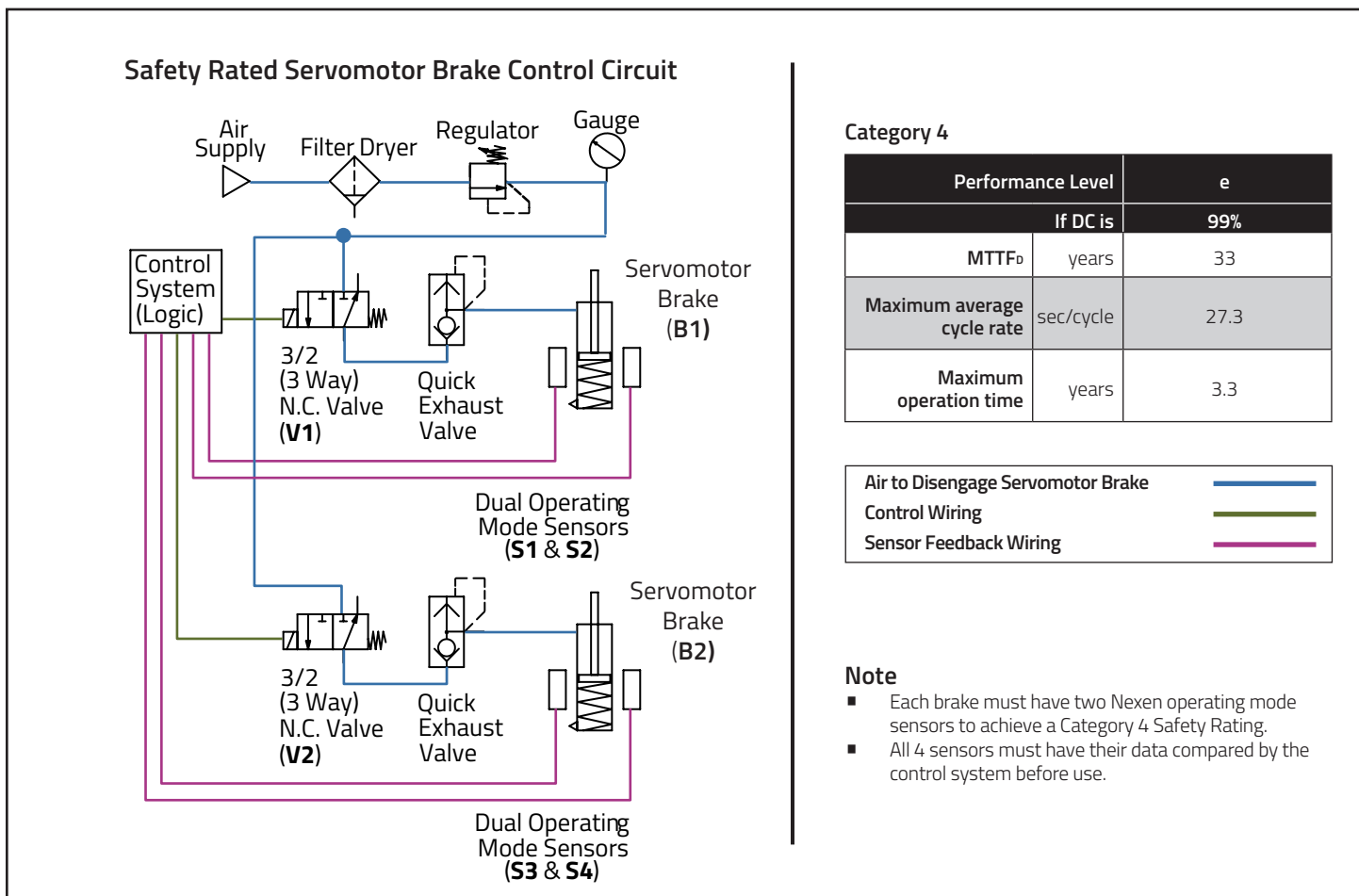
Air to Disengage Servomotor Brake
Control Wiring
Sensor Feedback Wiring

Safety Ratings

Category 3 Example: Two Redundant Brakes, One Sensor on Each



Category 4 Example: Two Redundant Brakes, Two Sensors on Each



Optional Operating Mode Sensors

Safety Rating Compliance

Nexen's Servomotor Brakes are Safety Rated by Intertek and available with Operating Mode Sensors to maximize machine safety and efficiency. By using the Engagement, Disengagement and Wear operating mode sensors, system manufacturers are able to gain higher safety category ratings per ISO 13849-1. Rating of the safety function is the responsibility of the system manufacturer.

Industry 4.0 Operating Mode Sensors

Nexen's Servomotor Brake Operating Mode Sensors for Engagement, Disengagement and Wear are Industry 4.0 compatible and can provide information to maximize machine efficiency.

Having this information available aides with:

- Motor/Drive Programming
- Predictive Maintenance
- Operational Feedback

In an effort to give the system manufacturer the most versatility, combinations of these mode sensors, up to 3 sensors total, can be specified. The sensors are factory installed to ensure precision of the switching position.

The Servomotor Brake can come equipped with up to three proximity sensors to sense the following functions of the Brake:

Disengagement Sensor Definition

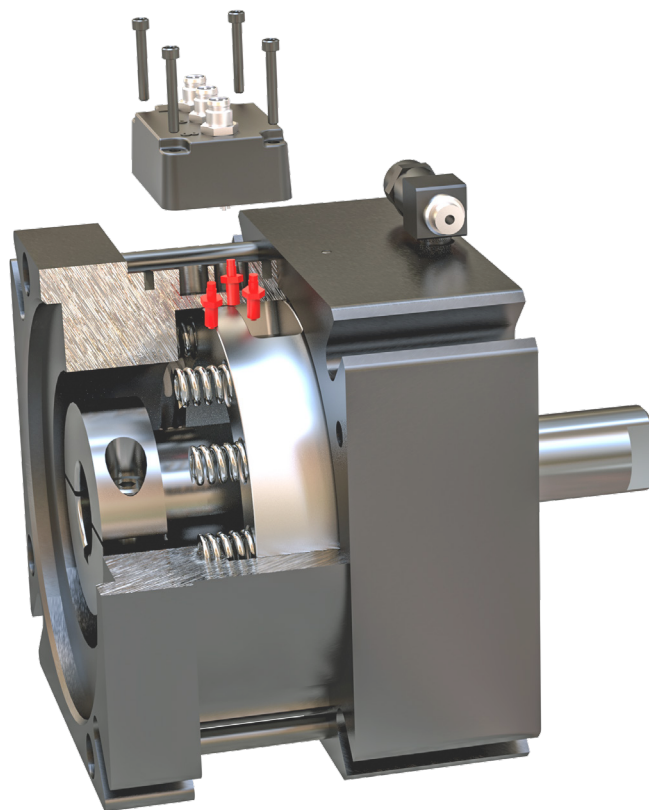
Sensor is activated when the rated air pressure is applied and the piston and facing pair move to a disengaged position.

Engagement Sensor Definition

Sensor is activated when the piston and facing pair move out of the disengaged position into a position in which the facing will transmit torque.

Wear Sensor Definition

The sensor is deactivated when the product is engaged and the facing is worn to a state that the brake should be replaced.



Disengagement, Engagement and Wear Sensors

Operating Principal	Inductive Proximity Sensor
Sensor Output Options	PNP Normally Open
Supply Voltage	10 to 30 VDC
Output Current	100 mA
Protection	Short-Circuit & Voltage Reversal Protection
Fieldbus Connectivity*	IO-Link v1.0
Connector	3 Pin M8 DIN

*If using the PNP N.O. sensor version, optional IO-Link functionality is available. If connected to an IO-Link sensor hub, IO-Link is automatically enabled. If not using IO-Link, sensor defaults to standard PNP NO operation.

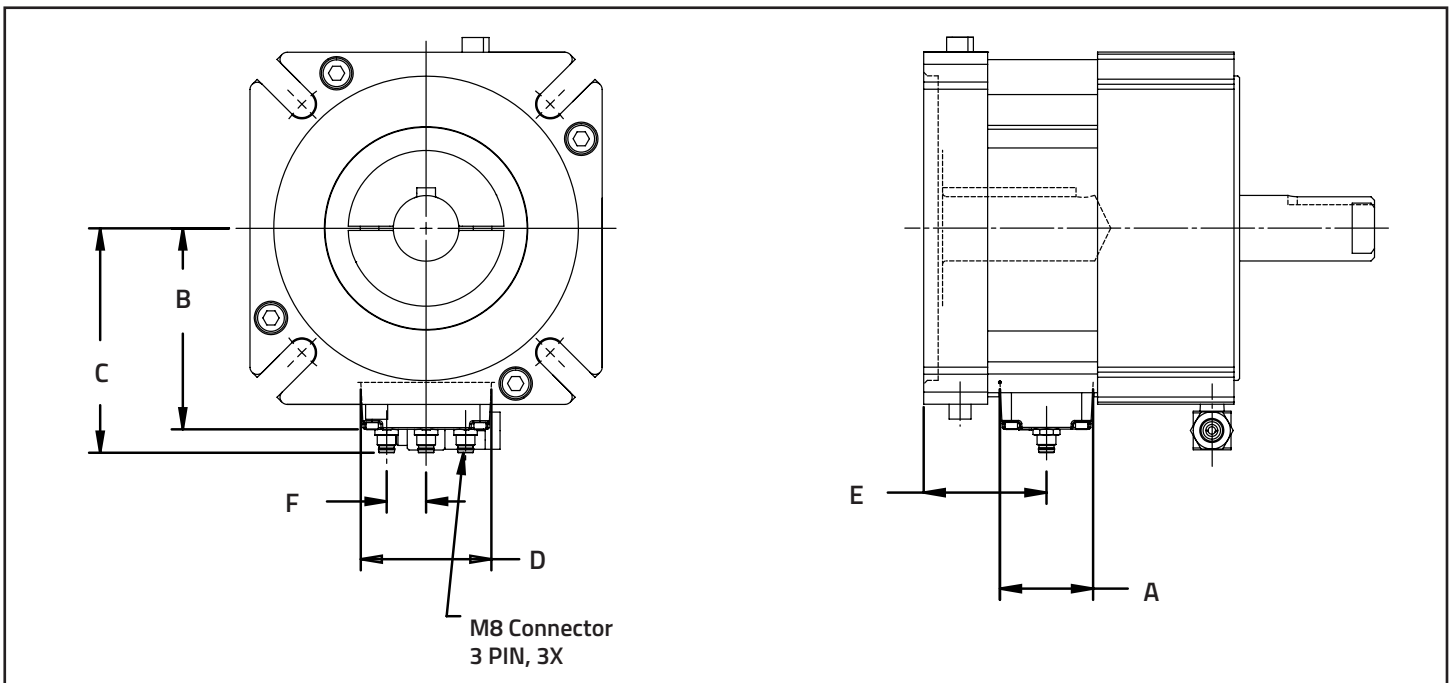
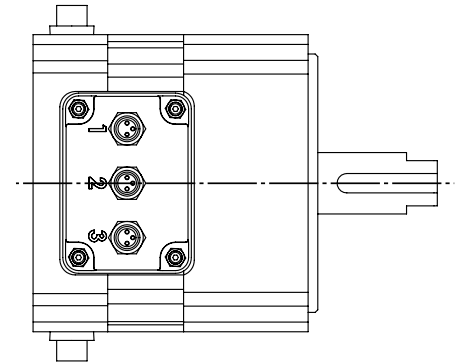
Optional Sensors, Approximate Dimensions

The following dimensions apply only to NexSafe Safety Rated Servomotor Brakes with the optional operating mode sensors.

See Standard Servomotor Brake Dimension Section on Page 7 for all other dimensions.

Additional dimensions and tolerances are available in the drawings and CAD models on the product pages on Nexen's website, www.nexengroup.com

Sensor Electrical Box Connections	
Connector 1	Engagement Sensor, Normally Open
Connector 2	Disengagement Sensor, Normally Open
Connector 3	Wear Sensor, Normally Open (Applied in a normally closed state)



Approximate Dimensions: Safety Rated Units with Metric Square Flanges

Dimensions mm (in)

SBP Size	Electrical Box Width	Electrical Box Height	Electrical Connector Height, 3X	Electrical Box Length	Electrical Connector Location	Electrical Connector Spacing, 2X
	A	B	C	D	E	F
SBP3	39.8 [1.57]	58.3 [2.29]	68.3 [2.69]	55.8 [2.20]	29.1 [1.15]	16.9 [0.66]
SBP4		68.7 [2.70]	78.7 [3.10]		42.1 [1.66]	
SBP5		85.8 [3.38]	95.8 [3.77]		52.4 [2.06]	
SBP7		103.0 [4.06]	113.0 [4.45]		40.1 [1.58]	
SBP9		103.0 [4.06]	113.0 [4.45]		40.1 [1.58]	
SBP11		103.0 [4.06]	113.0 [4.45]		60.0 [2.36]	

This table contains approximate dimensions for each size of Nexen's NexSafe Servomotor Brakes with sensors. Always verify product information with the user manual when specifying a new brake into your application.

Visit www.nexengroup.com for user manuals, product dimensions and specifications.

Appendix: Definitions

Backlash

Because zero backlash is impossible to measure, industry standard maintains that anything under 3.2 microns is considered zero.

Nexen's servomotor brakes have two design features that facilitate backlash-free performance. Both the split-hub clamping collar and the one piece rotor/shaft work to create a backlash free environment. The unique rotor/shaft actually lowers inertia and minimizes moving parts.

Corrosion Resistance

Nexen offers various corrosion countermeasures that include stainless steel and various surface treatments or coatings. Nexen will convey all material and coating specifications, but it is up to the customer to determine application suitability based on this information and/or thorough sample testing. Nexen makes no corrosion resistance claims for specific applications.

Transmittable Torque rating

Transmittable torque is the maximum rated amount of torque that can be passed from a motor through the brake and into a gearbox or other output. Transmittable torque accounts for clamp-collar holding force and output shaft strength.

IP67 Dust and Waterproof Standards

This international rating was developed to provide machine builders with standards by which to properly select products to operate in specific conditions. Nexen's Servomotor Brakes are completely enclosed and offer highest standard of protection against dust and water. They have been independently tested to withstand full immersion in water for up to 30 minutes at a depth of up to 1 meter and can withstand even the dirtiest environments with no degradation on efficiency, performance or life of the brake.

Note: Products with sensors do not maintain the IP67 rating.

Overhung Load (also called Side Loading)

In overhung load applications the force of the load is applied to the shaft beyond the support point and is perpendicular to the shaft. Nexen ratings assume the load is applied at the shaft extension midpoint. Not all brakes are suitable for overhung loads. Refer to product specifications to determine suitability.

Torsional Rigidity

Nexen's Servomotor Brakes offer high torsional rigidity, meaning they can withstand a great amount of twisting force without it affecting performance. High torsional rigidity is beneficial in any system where precision positioning is required.

Industries and Applications



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In accordance with Nexen's established policy of constant product improvement, the specifications contained in this document are subject to change without notice. Technical data listed in this document are based on the latest information available at the time of printing and are also subject to change without notice. For current information, please consult www.nexengroup.com or contact Nexen's Technical Support Group.

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