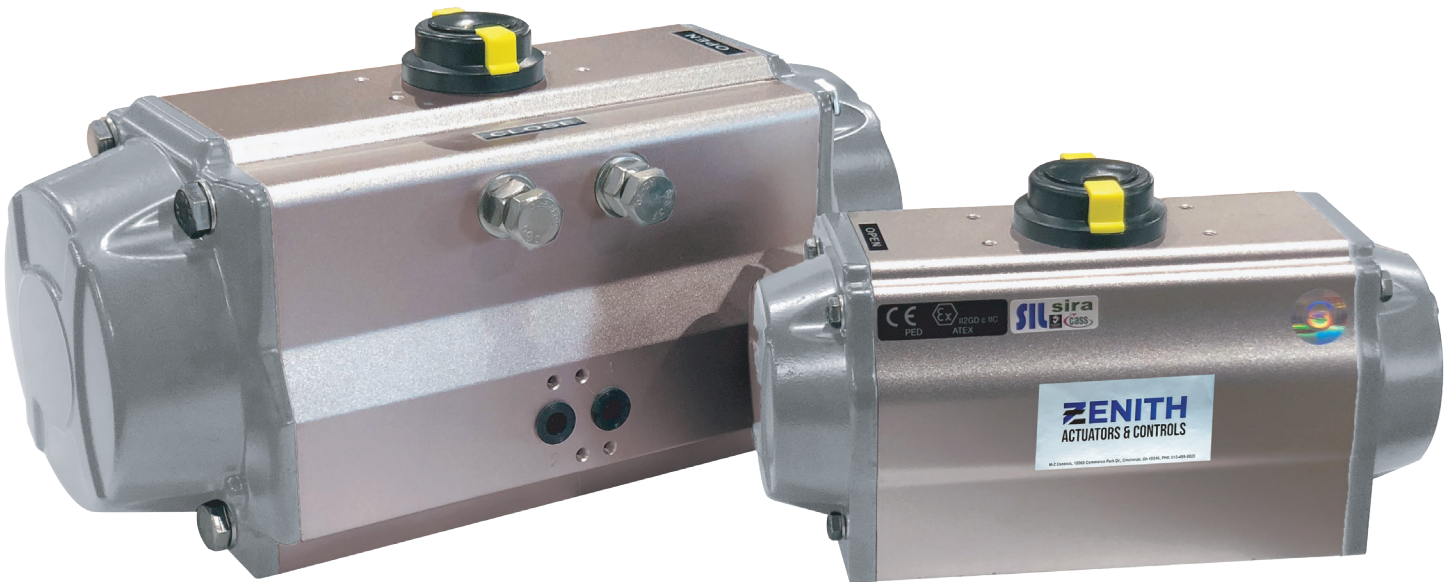


PNEUMATIC

ACTUATORS & CONTROLS

ACTUATORS



ZENITH PNEUMATICS



Zenith pneumatic rack and piston actuators are rugged high cycle actuators. Fourteen sizes provide options for large and small quarter turn valves. Industry standard mounting configurations allow for mounting to direct mount valves as well as those requiring brackets and couplers. Materials of construction are suitable for most environments and options are available for more severe applications.

- Available as double acting and spring return design.
 - Common end caps for both; easily converted.
- Standard construction; hard anodized extruded aluminum body.
 - Epoxy coated end caps, nickel plated pinions.
 - Other options include ENP nickel plating.
- ISO5211 and Namur; VDI VDE mounting conformance.
- Torque values from 37 in lbs to 39,300 in lbs.
- Advanced pinion bearing design for high cycle life.
- Rugged dual travel stops.



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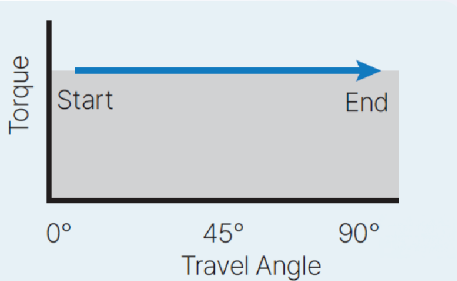
ZENITH INFORMATION & OPTIONS

ZPE SPECIFICATIONS & FEATURES

- Double Acting and Spring Return
- ISO 5211 Mounting Pad
- NAMUR Accessory Mounting
- Hard Anodized Body
 - E.N.P. and other coatings available
- Air Supply range 40 - 150 psi
- 0 to 90 ± 5°
- Temperature range -4°F (-20°C) to 176°F (80°)
 - Low and high temperature options available

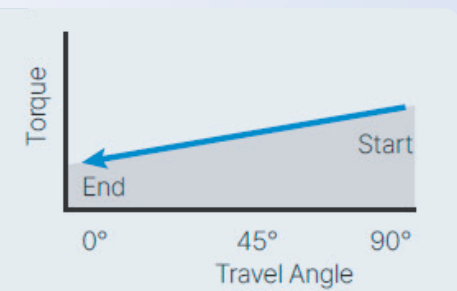
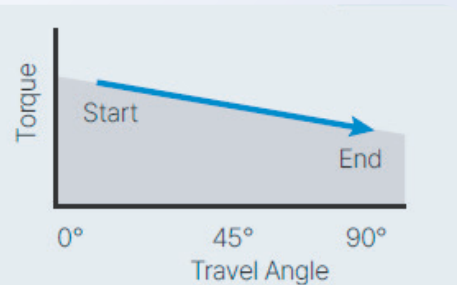
TORQUE SIGNATURE

DOUBLE ACTING



LINEAR THROUGHOUT 90°

SPRING RETURN



EVEN DISTRIBUTION OVER 90°



CERTIFICATIONS & APPROVALS



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ZENITH TORQUE TABLES

DOUBLE ACTING

MODEL	AIR SUPPLY (psi)				
	40	60	80	100	120
ZP-035	37	55	74	92	110
ZP-050	82	122	162	203	243
ZP-063	147	219	290	362	434
ZP-066	207	308	410	511	612
ZP-075	280	420	560	699	839
ZP-088	450	673	897	1120	1344
ZP-100	669	996	1322	1649	1975
ZP-115	1047	1570	2093	2616	3139
ZP-125	1342	2018	2695	3371	4048
ZP-145	2117	3176	4234	5293	6351
ZP-160	2761	4142	5523	6904	8285
ZP-180	3726	5589	7452	9315	11178
ZP-200	5174	7762	10350	12938	15525
ZP-210	5712	8568	11424	14280	17137

ZP-211 & ZP-212 SPRING RETURN TORQUE

MODEL	SPRING			AIR (60 PSI)			MODEL	SPRING			AIR (80 PSI)		
	END (0°)	MIN (45°)	BREAK (90°)	BREAK (0°)	MIN (45°)	END (90°)		END (0°)	MIN (45°)	BREAK (90°)	BREAK (0°)	MIN (45°)	END (90°)
ZP-211S1	9860	4001	5611	6001	2505	3478	ZP-211S2	12258	4753	6408	9081	3947	5523
ZP-212S2	19702	8001	11205	12002	5001	6904	ZP-212S4	24508	9506	12798	18100	7815	11001

ZP-211 & ZP-212 DOUBLE ACTING TORQUE

MODEL	AIR (60 PSI)								
	60			80			100		
	BREAK (0°)	MIN (45°)	END (90°)	BREAK (0°)	MIN (45°)	END (90°)	BREAK (0°)	MIN (45°)	END (90°)
ZP211DA	13338	6665	11612	17781	8895	15090	22224	11108	19356
ZP-212DA	26649	13329	23207	35553	17755	30960	44448	22206	38704



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ZENITH TORQUE TABLES CONTINUED

SPRING RETURN

MODEL	SPRING # (PER SIDE)	SPRING		AIR SUPPLY (psi)									
		END (0°)	BREAK (90°)	40		60		80		100		120	
				BREAK (0°)	END (90°)	BREAK (0°)	END (90°)	BREAK (0°)	END (90°)	BREAK (0°)	END (90°)	BREAK (0°)	END (90°)
ZP-050	3	38	54	44	28	85	69	125	109				
	4	50	71	32	11	72	51	113	92	153	132		
	5	62	89					100	74	141	114	181	155
	6	75	107							129	97	169	137
ZP-063	3	59	91	88	57	160	128	232	200				
	4	78	121			141	98	212	170	284	242		
	5	98	151					193	140	265	211	336	283
	6	117	181							245	181	317	253
ZP-066	3	80	128	127	80	229	181	330	282				
	4	107	170			202	138	303	240	404	341		
	5	133	213					277	197	378	298	479	399
	6	160	255							351	256	453	357
ZP-075	3	117	186	163	94	303	234	443	374				
	4	156	248			264	172	404	312	544	452		
	5	195	310					365	250	505	390	645	530
	6	234	372							466	328	606	468
ZP-088	3	197	308	253	142	477	365	700	589				
	4	262	411			411	263	635	486	858	710		
	5	328	514					569	384	793	607	1017	831
	6	393	616							727	504	951	728
ZP-100	3	271	420	399	250	725	576	1051	903				
	4	362	560			635	437	961	763	1288	1089		
	5	452	700					871	623	1197	950	1524	1276
	6	542	840							1107	810	1433	1136
ZP-115	3	436	691	611	356	1134	879	1657	1403				
	4	581	921			989	649	1512	1172	2035	1696		
	5	726	1151					1367	942	1890	1465	2413	1989
	6	871	1381							1745	1235	2268	1759
ZP-125	3	558	903	784	439	1461	1116	2137	1792				
	4	744	1204			1275	815	1951	1491	2628	2168		
	5	930	1505					1766	1190	2442	1867	3118	2543
	6	1116	1806							2256	1566	2933	2242
ZP-145	3	903	1381	1214	736	2273	1795	3331	2853				
	4	1204	1841			1972	1335	3030	2393	4089	3452		
	5	1505	2302					2729	1933	3788	2991	4846	4050
	6	1806	2762							3487	2531	4545	3590
ZP-160	3	1222	1753	1540	1009	2921	2390	4302	3771				
	4	1629	2337			2514	1806	3895	3187	5275	4567		
	5	2036	2921					3487	2602	4868	3983	6249	5364
	6	2443	3505							4461	3399	5842	4780
ZP-180	3	1700	2496	2027	1230	3890	3093	5753	4956				
	4	2266	3328			3323	2261	5186	4124	7049	5987		
	5	2833	4160					4620	3292	6483	5155	8346	7018
	6	3399	4992							5916	4323	7779	6186
ZP-200	3	2284	3346	2891	1829	5479	4417	8067	7004				
	4	3045	4461			4718	3301	7305	5889	9893	8477		
	5	3806	5576			3956	2186	6544	4774	9132	7362	11720	9949
	6	4567	6692					5783	3659	8371	6247	10959	8834
ZP-210	3	2072	3665	3640	2047	6497	4904	9353	7760				
	4	2762	4886			5806	3682	8663	6538	11519	9395		
	5	3452	6107			5116	2461	7972	5317	10829	8173	13685	11030
	6	4143	7329					7282	4096	10138	6952	12994	9808

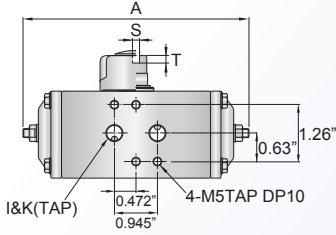


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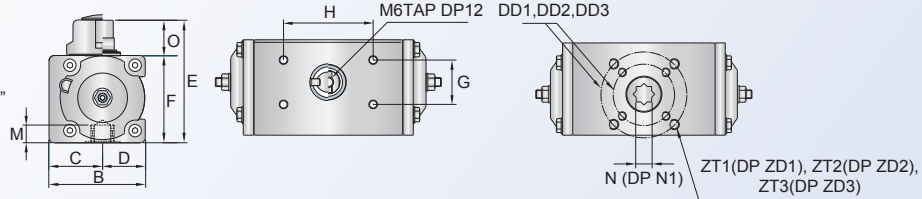
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ZENITH DIMENSIONS

ZP-035

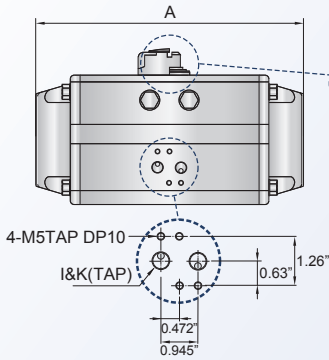


NAMUR STANDARD

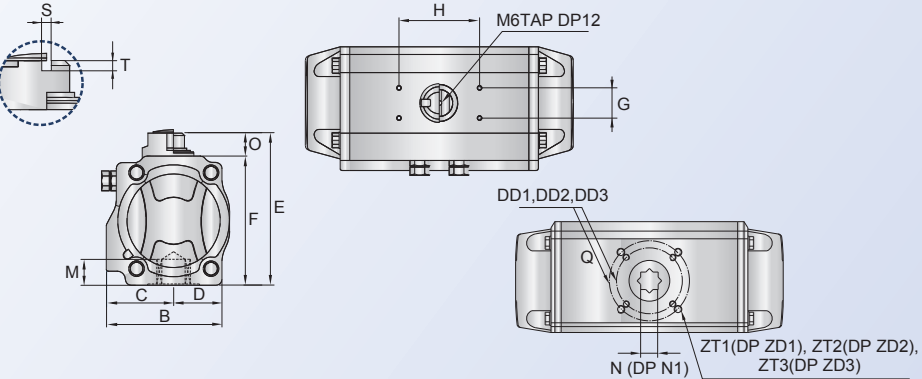


ISO 5211

ZP-050 to ZP-210



NAMUR STANDARD



ISO 5211

DIMENSIONS (IN)

SIZE	A	B	C	D	E	F	ISO 5211	DD1	DD2	DD3	ZT1	ZT2	ZT3	ZD1	ZD2	ZD3	N	N1	H	G	S	T	O	I	K	DA	SPRINGS
ZP-035	4.96	2.13	1.18	0.95	2.717	1.93	F03/F05	1.417	1.969	-	10-24	1/4"-20	-	0.24	0.39	-	0.354	-	1.97	0.98	0.16	0.16	0.79	NPT 1/8"	1.1	-	
ZP-050	5.67	2.84	1.65	1.18	3.661	2.87	F03/F05	1.417	1.969	-	10-24	1/4"-20	-	0.24	0.39	-	0.433	-	3.15	1.18	0.16	0.16	0.79	NPT 1/8"	2.6	0.02	
ZP-063	6.42	3.35	1.85	1.50	4.213	3.43	F05/F07	1.969	2.756	-	1/4"-20	5/16"-18	-	0.39	0.47	-	0.551	-	3.15	1.18	0.16	0.16	0.79	NPT 1/8"	3.7	0.04	
ZP-066	7.95	3.35	1.85	1.50	4.213	3.43	F05/F07	1.969	2.756	-	1/4"-20	5/16"-18	-	0.39	0.47	-	0.551	-	3.15	1.18	0.16	0.16	0.79	NPT 1/8"	5.3	0.05	
ZP-075	8.27	3.78	2.11	1.67	4.882	4.09	F05/F07	1.969	2.756	-	1/4"-20	5/16"-18	-	0.39	0.47	-	0.669	-	3.15	1.18	0.16	0.16	0.79	NPT 1/8"	6.8	0.07	
ZP-088	9.72	4.25	2.30	1.95	5.354	4.57	F05/F07/F10	1.969	2.756	4.016	1/4"-20	5/16"-18	3/8"-16	0.39	0.47	0.63	0.669	-	3.15	1.18	0.16	0.16	0.79	NPT 1/8"	9.5	0.12	
ZP-100	10.55	4.84	2.64	2.21	5.827	5.04	F05/F07/F10	1.969	2.756	4.016	1/4"-20	5/16"-18	3/8"-16	0.39	0.47	0.63	0.669	-	3.15	1.18	0.16	0.16	0.79	NPT 1/4"	13.4	0.17	
ZP-115	12.44	5.55	3.03	2.52	6.535	5.75	F07/F10	2.756	4.016	-	5/16"-18	3/8"-16	-	0.47	0.63	-	0.866	-	3.15	1.18	0.16	0.16	0.79	NPT 1/4"	19.8	0.27	
ZP-125	13.66	5.95	3.23	2.72	7.047	6.26	F07/F10/F12	2.756	4.016	4.921	5/16"-18	3/8"-16	1/2"-13	0.47	0.63	0.79	0.866	-	3.15	1.18	0.16	0.16	0.79	NPT 1/4"	24.9	0.36	
ZP-145	16.30	6.77	3.62	3.15	8.228	7.05	F10/F12	4.016	4.921	-	3/8"-16	1/2"-13	-	-	-	-	1.063	-	5.12	1.18	0.16	0.16	1.18	NPT 1/4"	31.1	0.45	
ZP-160	18.39	7.48	3.98	3.50	8.898	7.72	F10/F12	4.016	4.921	-	3/8"-16	1/2"-13	-	0.63	0.79	-	1.063	-	5.12	1.18	0.16	0.16	1.18	NPT 1/4"	48.5	0.79	
ZP-180	19.57	8.11	4.21	3.90	9.882	8.70	F10/F12	4.016	4.921	-	3/8"-16	1/2"-13	-	0.63	0.79	-	1.417	-	5.12	1.18	0.16	0.16	1.18	NPT 1/4"	58.4	1.15	
ZP-200	21.85	8.94	4.57	4.37	10.906	9.72	F14	5.512	-	-	5/8"-11	-	-	0.98	-	-	1.417	-	5.12	1.18	0.16	0.16	1.18	NPT 1/4"	84.7	1.66	
ZP-210	24.72	9.29	4.72	4.57	11.26	10.08	F14	5.512	-	-	5/8"-11	-	-	0.98	-	-	1.417	-	5.12	1.18	0.16	0.16	1.18	NPT 1/4"	101.	1.94	
ZP-211	*19.92 27.36	9.37	4.76	4.61	11.91	10.12	F16	6.496	-	-	M20	-	-	-	-	-	1.811	-	5.12	1.18	0.16	0.16	1.18	NPT 1/4"	4	30.2 39.5	
ZP-212	*25.43 40.51	9.37	4.76	4.61	11.91	10.12	F16	6.496	-	-	M20	-	-	-	-	-	1.811	-	5.12	1.18	0.16	0.16	1.18	NPT 1/4"	101.	32.6 53.3	

* Dimension A for ZP-211 & ZP-212: Double Acting | Spring Return

** ZP-035 thru ZP-210: Spring weight is per spring. Weight = DA + (#Spring * SPRING[LBS])

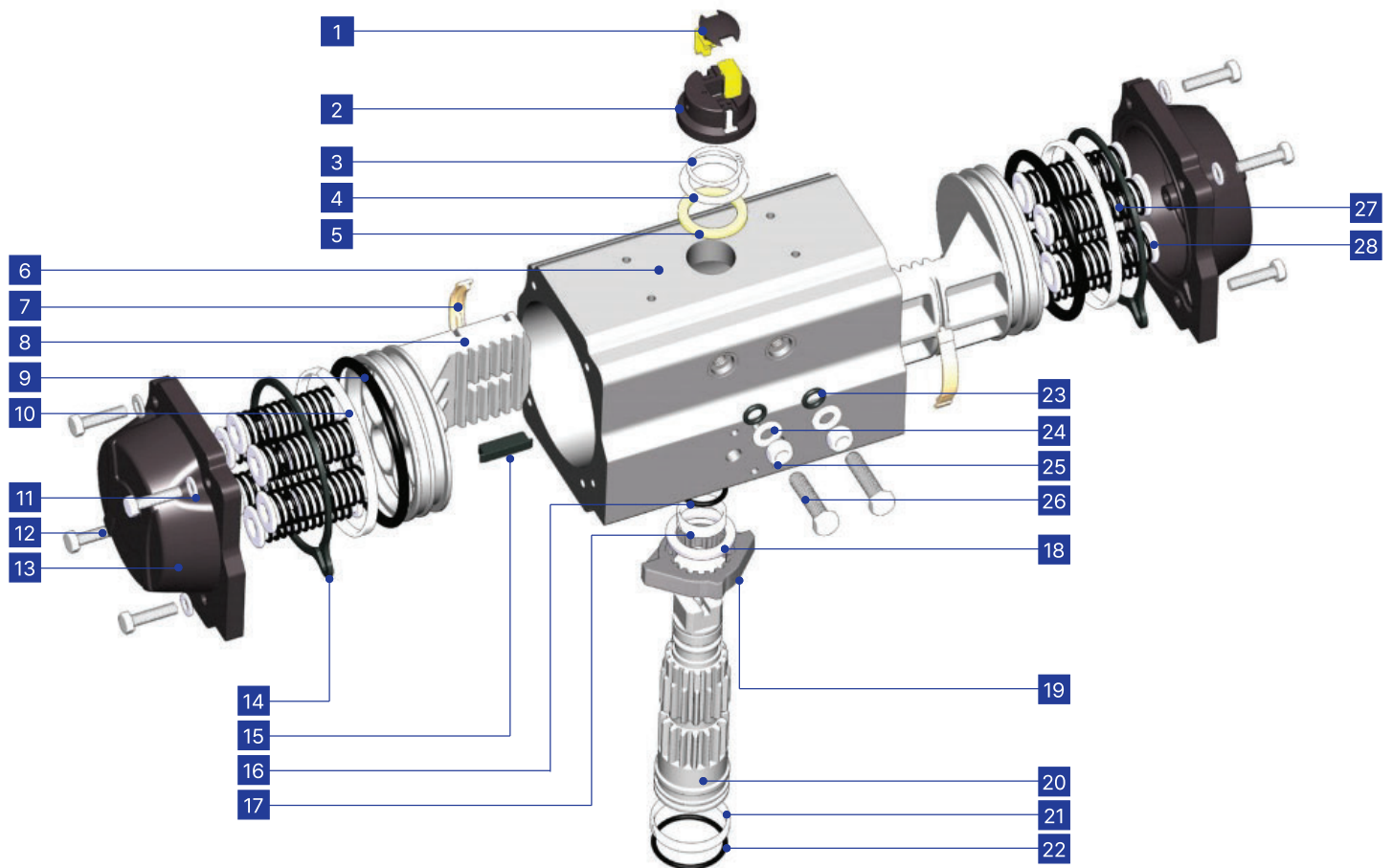
ZP-211 & ZP-212: Spring Weight is 60psi | 80 psi. Weight = DA + (SPINGS[LBS])**



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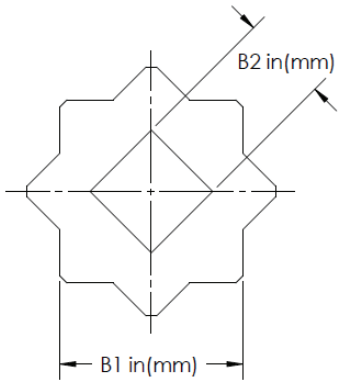
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#	PART	MATERIALS	QTY.	#	PART	MATERIALS	QTY.
1	INDICATOR	Polypropylene(GF)	2	15	PISTON GUIDE	Polyphthalamide	2
2	INDICATOR HOLDER	Polypropylene(GF)	1	16	PINION O-RING (TOP)	Stainless Steel	1
3	PINION SNAP RING	Stainless Steel	1	17	PINION BEARING (TOP)	Nylon 46	1
4	PINION THRUST WASHER	Stainless Steel	1	18	PINION THRUST BEARING (TOP)	Polyphthalamide	1
5	PINION THRUST BEARING	Polyphthalamide	1	19	PINION STOP CAM	Stainless Steel	1
6	BODY	Hard Anodized Al/Ni Plated	1	20	PISTON	Alloy Steel	1
7	PISTON BEARING (RACK END)	Polyphthalamide	2	21	PINION BEARING (BOTTOM)	Nylon 46	1
8	PISTON	Aluminum Die Cast	2	22	PINION O-RING (BOTTOM)	NBR70	1
9	PISTON O-RING	NBR70	2	23	STOP BOLT O-RING	NBR70	2
10	PISTON BEARING (PISTON END)	Polyphthalamide	2	24	STOP BOLT WASHER	Stainless Steel	2
11	BODY END CAP BOLT WASHER	Stainless Steel	8	25	STOP BOLT NUT	Stainless Steel	2
12	BODY END CAP BOLT	Stainless Steel	8	26	STOP BOLT	Stainless Steel	2
13	BODY END CAP	Aluminum Die Cast	2	27	SPRING	High Alloy Spring Steel	*
14	BODY END CAP O-RING	NBR70	2	28	SPRING END CAP	Polypropylene(GF)	*



ZENITH OPTIONS

INSERTS



PART NUMBER	B1		B2	
	in	mm	in	mm
MZI-11X9	0.433	11	0.354	9
MZI-14X9	0.551	14	0.354	9
MZI-14X11	0.551	14	0.433	11
MZI-17X11	0.669	17	0.433	11
MZI-17X14	0.669	17	0.551	14
MZI-19X9	0.748	19	0.354	9
MZI-19X14	0.748	19	0.551	14
MZI-19X11	0.748	19	0.433	11
MZI-19X17	0.748	19	0.669	17
MZI-27X17	1.063	27	0.669	17
MZI-27X22	1.063	27	0.866	22

ELECTROLESS NICKEL PLATING



- 316 S.S. pinion

APPLICATIONS

- Caustics
- Acid wash
- Potash
- Food & beverage washdowns
- Oxygen services



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ZENITH PNEUMATIC ACCESSORIES

SOLENOIDS

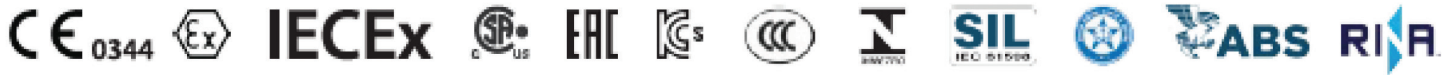
- Direct mount & pipe mount
- Weatherproof, explosion-proof, intrinsically safe
- Aluminum & stainless



LIMIT SWITCHES

Multiple Switch Options

- ZLS-2
 - Weatherproof
- ZLS-3
 - Weatherproof
- ZLS-5
 - Explosion proof
- ZLS-9
 - Weatherproof



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ZENITH POSITIONERS

PNEUMATIC & ELECTRO-PNEUMATIC

- ZPP
 - Pneumatic positioner
 - 3-15psi
- ZEP
 - Electro-Pneumatic positioner
 - 4-20mA input



SMART POSITIONERS

- HART (Ver. 7)
 - Quick auto-calibration with one button
- ZSD5
 - Fail-freeze option
 - Intrinsically safe
 - EX ia IIC Gb & EX ia IIIC Db option
- ZSD7
 - Flameproof Ex db IIC T5/T6 Gb
 - Dustproof Ex tb IIIC T85°C/T100°C Db



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DECLUTCHABLE OVERRIDES

- In case of air failure, the ZDGO Series enables manual operation of the pneumatic actuator.
- The ZDGO Series is installed between a pneumatic actuator and quarter-turn valves, including ball, butterfly, and plug valves.
- To rapidly discharge the residual air used in the actuator, a block-bleed valve is employed.
- The self-lubricating worn shaft guide ensures high reliability and stability of the product.



HOW TO ORDER

1) Series	2) Body Material	3) Model	4) Action
ZP	D - Hard Anodized Aluminum N - Electroless Nickel Plated Hard Anodized Aluminum (ENP)	035 - 035 050 - 050 063 - 063 066 - 066 075 - 075 088 - 088 100 - 100 115 - 115 125 - 125 145 - 145 160 - 160 180 - 180 200 - 200 210 - 210 211 - 211 212 - 212	DA - Double Acting S4 - Spring Return (4 springs/side) S3 - Spring Return (3 springs/side) S5 - Spring Return (5 springs/side) S6 - Spring Return (6 springs/side) R3 - Spring Open (3 springs/side) R4 - Spring Open (4 springs/side) R5 - Spring Open (5 springs/side) R6 - Spring Open (6 springs/side) S1 - Spring Return (1 spring) ZP/ZN-211 Only S2 - Spring Return (2 springs) ZP/ZN-211 & 212 Only
5) O-Rings	6) Ports	7) Attachments	
B - Buna -4°F to +176°F (-20°C to +80°C) S - Silicone -40°F to +176°F (-40°C to +80°C) V - FKM/VITON -4°F to +302°F (-20°C to +150°C)	A - 1/8" NPT X - 1/4" NPT B - 3/8" NPT C - 1/2" NPT D - 3/4" NPT E - 1" NPT	BLANK - None G - GEAR OVERRIDE F - FUSIBLE LINK	

How to Order: {1}{2}-{3}{4}{5}{6}
Example: ZPD-050S5BA