

Pneumatic Actuator
Technical Data Sheet



 A GFT COMPANY

Series 228



ABZ VALVES & CONTROLS
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ABZ Series 228 Technical Information / Torque Chart

FEATURES

- Rack and Pinion
- Scotch Yoke
- Thirteen Double Acting Sizes
- Twelve Spring Return Sizes
- Five unique START & END torque outputs for each rack & pinion model, and two START & END torque outputs per each scotch yoke model
- Dual travel stops
- NAMUR interface for direct accessory mounting
- Mid body interface minimizes interference with mounted accessories and valves
- Anodized cylinders and epoxy coated end-caps secured with stainless steel fasteners for corrosion resistance
- Large piston guide plates and piston back-up ring provide for minimum cylinder wear and optimum contact between the rack and pinion

ABZ SERIES 228 RACK & PINION STYLE
DOUBLE ACTING TORQUE CHART (inch pounds)

MODEL	40 psi	60 psi	80 psi	100 psi	120 psi	Weight		Volume Cu. In.		Cycle Time (sec. per 90-deg.)
						LBS.	Kg	CW	CCW	
ABZ-10DA	30	45	60	75	90	2.2	1.0	3.0	3.0	0.3
ABZ-20DA	79	118	158	197	237	2.9	1.3	8.0	6.0	0.5
ABZ-40DA	164	245	327	409	491	4.5	2.1	16.5	14.0	0.6
ABZ-80DA	352	528	703	879	1055	9.0	4.1	34.0	23.0	1
ABZ-130DA	527	791	1054	1318	1581	12.0	5.4	52.0	36.0	1.2
ABZ-200DA	716	1073	1431	1789	2147	14.5	6.6	67.0	49.0	1.5
ABZ-300DA	1217	1825	2434	3042	3651	23.0	10.4	116.0	100.0	2
ABZ-500DA	1749	2624	3498	4373	5247	32.0	14.5	183.0	137.0	2.5
ABZ-850DA	3282	4923	6565	8206	9847	59.0	26.8	334.0	259.0	3
ABZ-1200DA	4510	6765	9020	11275	13530	78.0	35.4	505.0	357.0	4
ABZ-1750DA	5729	8586	11448	14311	17173	100.0	45.4	703.0	439.0	5

Air Consumption (scf per 90 Deg) = (Volume/1728) x (Supply Pressure +14.7)/14.7

SPECIFICATIONS

- Pressure Range 40 to 150 psi
- Temperature Range* -20 to 175 degrees F
- Stroke 90 degrees +/- 5 degrees
- Media Clean, dry air, non-corrosive gas or light hydraulic oil
- Lubrication Factory lubricated, no additional lubrication required under normal Conditions
- Construction Suitable for indoor and outdoor installation
- Mounting Dimensions ABZ standard for direct valve mounting

*High temp and low temp configurations available

NOTE: Accessory mounting holes are not intended for manual gear overrides or stop blocks. Cycle times are under no load conditions. Air line size, air capacity and valve torque characteristics affect the cycle times. Faster or slower cycle times can be accomplished using special control components.



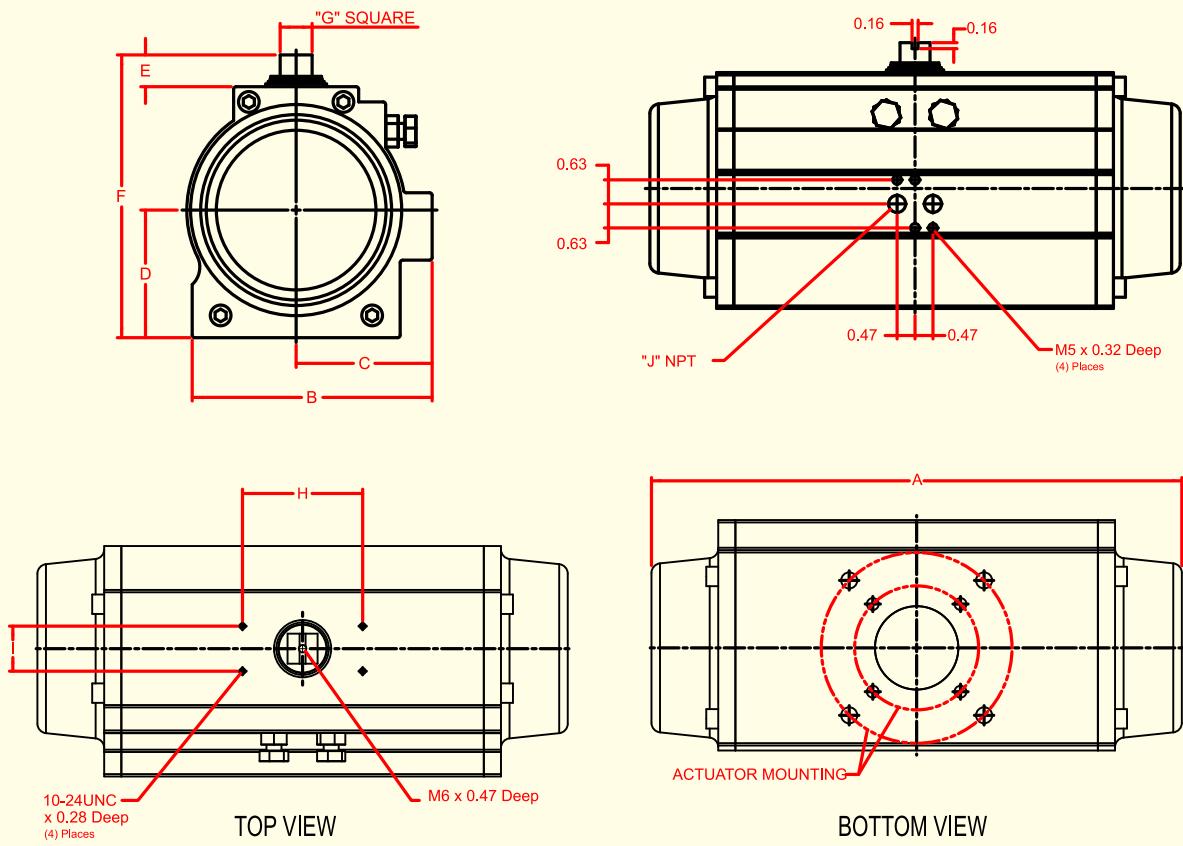
ABZ Series 228 Torque Chart

ABZ SERIES 228 RACK & PINION STYLE
SPRING RETURN TORQUE CHART (INCH POUNDS)

MODEL	Set	Spring Torque Inch LBS.		40 psi		60 psi		80 psi		100 psi		Weight		Volume Cu. In.		Cycle Time (sec. per 90-deg.)
		Start	End	Start	End	Start	End	Start	End	Start	End	LBS.	Kg	Spring	Air	
ABZ-20SR	2/2	31	19	48	36	89	77					3.5	1.6	8.0	6.0	0.5
	3/3	49	29	40	20	80	60	115	94	160	139					
	4/4	67	39			70	42	106	78	145	113					
	5/5	84	49			60	25	96	61	135	105					
6/6	101	59					85	43	121	88						
ABZ-40SR	2/2	59	33	89	63	151	125					6.0	2.7	16.5	14.0	0.6
	3/3	87	49	54	27	135	98	196	159							
	4/4	114	65			119	70	180	131	243	194					
	5/5	142	82			103	43	164	103	226	165					
6/6	170	98					147	75	209	137						
ABZ-80SR	2/2	160	86	259	185	432	358					11.0	5.0	34.0	23.0	1
	3/3	245	128	218	101	390	273	564	447							
	4/4	330	170			348	188	522	362	696	536					
	5/5	410	215			304	109	477	282	651	455					
6/6	490	260					432	202	605	375						
ABZ-130SR	2/2	226	120	339	233	579	473					14.0	6.4	52.0	36.0	1.2
	3/3	343	185	275	117	514	356	744	586							
	4/4	460	250			449	239	679	469	930	720					
	5/5	573	315			385	127	614	357	864	607					
6/6	685	380					549	244	799	494						
ABZ-200SR	2/2	310	168	481	339	811	669					17.0	7.7	67.0	49.0	1.5
	3/3	460	252	398	190	727	519	1057	849							
	4/4	610	336			643	369	973	699	1304	1030					
	5/5	760	420			560	220	889	549	1219	879					
6/6	910	504					805	399	1135	729						
ABZ-300SR	2/2	644	350	1039	745	1739	1445					26.0	11.8	116.0	100.0	2
	3/3	962	525	865	428	1564	1127	2264	1827							
	4/4	1280	700			1389	809	2089	1509	2780	2200					
	5/5	1605	880			1210	485	1909	1184	2599	1874					
6/6	1930	1060					1729	859	2419	1549						
ABZ-500SR	2/2	920	530	1499	1109	2519	2129					38.0	17.2	183.0	137.0	2.5
	3/3	1380	795	1235	650	2254	1669	3264	2679							
	4/4	1840	1060			1989	1209	2999	2219	4010	3231					
	5/5	2300	1325			1725	750	2734	1759	3744	2769					
6/6	2760	1590					2469	1299	3479	2309						
ABZ-850SR	2/2	1230	740	1989	1499	3419	2929					68.0	30.8	334.0	259.0	3
	3/3	1835	1100	1830	1095	3059	2324	4379	3644							
	4/4	2440	1460			2699	1719	4019	3039	4300	4320					
	5/5	3050	1815			2345	1110	3664	2429	4944	3709					
6/6	3660	2170					3309	1819	4589	3099						
ABZ-1200SR	2/2	1820	1050	2799	2029	4959	4189					91.0	41.3	505.0	357.0	4
	3/3	2730	1575	2275	1120	4434	3279	6324	5169							
	4/4	3640	2100			3909	2369	5799	4259	7680	6140					
	5/5	4550	2625			3385	1460	5274	3349	7094	5169					
6/6	5460	3150					4749	2439	6569	4259						
ABZ-1750SR	2/2	2430	1390	4089	3049	7164	6124					117.0	53.1	703.0	439.0	5
	3/3	3645	2085	3395	1835	6469	4909	9224	7664							
	4/4	4860	2780			5774	3694	8529	6449	11180	9100					
	5/5	6075	3475			5080	2480	7834	5234	10484	7884					
6/6	7290	4170					7139	4019	9789	6669						

Air Consumption
(scf per 90 Deg) = (Volume/1728) x (Supply Pressure +14.7)/14.7

ABZ Series 228 Dimensional Information



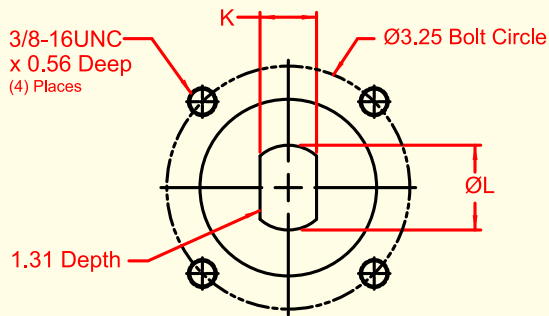
ABZ SERIES 228 RACK & PINION STYLE

MODEL	DIMENSIONS									
	A	B	C	D	E	F	G	H	I	J
ABZ-40	7.95	3.29	1.79	1.70	0.787	4.21	0.630	3.150	1.181	1/8"
ABZ-80	9.29	4.41	2.48	2.21	0.787	5.27	0.630	3.150	1.181	1/4"
ABZ-130	10.87	4.69	2.72	2.54	0.787	5.66	0.630	3.150	1.181	1/4"
ABZ-200	11.46	5.06	2.89	2.69	0.787	6.06	0.630	3.150	1.181	1/4"
ABZ-300	13.90	5.91	3.35	3.14	0.787	6.96	0.787	3.150	1.181	1/4"
ABZ-500	15.16	6.50	3.70	3.56	1.181	8.11	0.787	5.118	1.181	1/4"
ABZ-850	20.95	6.89	3.90	4.15	1.181	9.49	0.787	5.118	1.181	1/4"
ABZ-1200	22.68	7.60	4.29	4.59	1.181	10.35	1.260	5.118	1.181	1/4"
ABZ-1750	24.37	8.31	4.72	5.24	1.181	11.30	1.260	5.118	1.181	1/4"

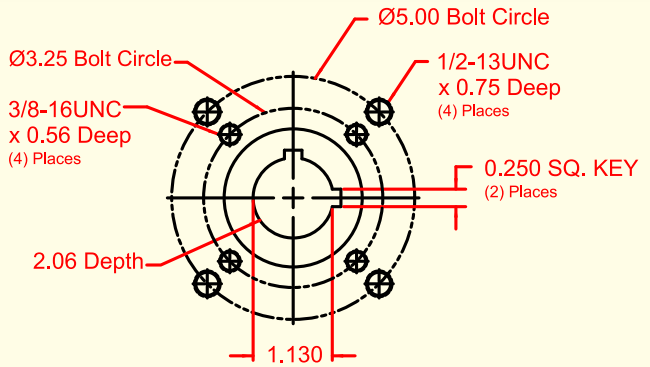
Dimensions shown in inches



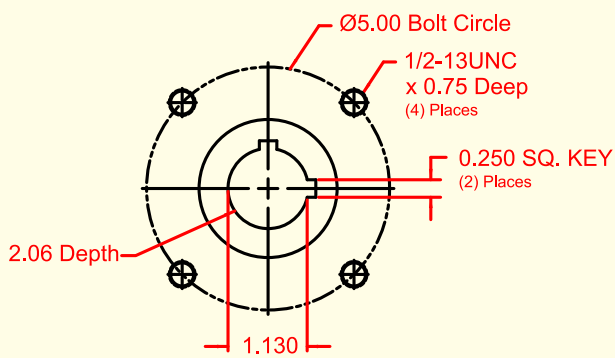
ABZ Series 228 Dimensional Information



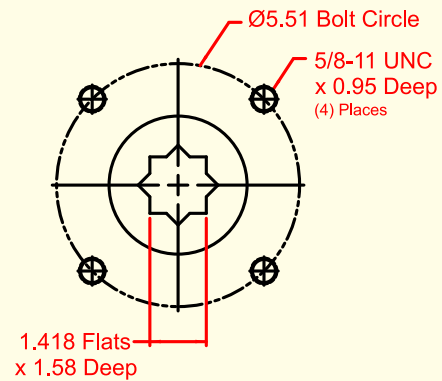
ACTUATOR MOUNTING
MODELS 40 thru 200



ACTUATOR MOUNTING
MODELS 300 & 500



ACTUATOR MOUNTING
MODEL 850 & 1200



ACTUATOR MOUNTING
MODEL 1750

Note:

Stem adaptors available for direct mounting.

ABZ SERIES 228

MODEL	DIMENSIONS	
	K	L
ABZ40	0.378	0.568
ABZ80	0.503	0.755
ABZ130	0.503	0.755
ABZ200	0.503	0.755

ABZ Series 228 Scotch Yoke Style Torque Chart



DOUBLE ACTING TORQUE CHART (inch pounds)

ABZ-2500DA			
Supply Air	0 degree	Min	90-degree
60-PSI	13334	6667	11610
80-PSI	17778	8890	15483
100-PSI	22223	11110	19350
ABZ-3500DA			
Supply Air	0 degree	Min	90-degree
60-PSI	26650	13330	23200
80-PSI	35550	17750	30960
100-PSI	44440	22200	38700

ABZ SERIES 228 SCOTCH YOKE STYLE SPRING RETURN CLOCKWISE (inch pounds)

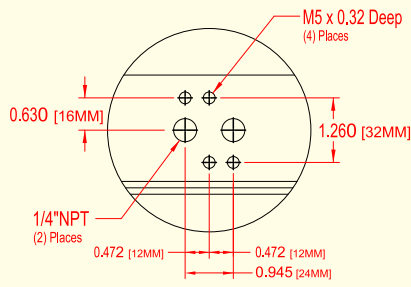
ABZ-2500SR						
Supply Air	Spring Start	Run	Spring End	Air Start	Run	Air End
60-PSI	6000	2500	3480	9854	4000	5612
80-PSI	9080	3950	5520	12258	4750	6403
ABZ-3500SR						
Supply Air	Spring Start	Run	Spring End	Air Start	Run	Air End
60-PSI	12000	5000	6900	19700	8000	11200
80-PSI	18100	7900	11000	24500	9500	12800

ABZ SERIES 228 SCOTCH YOKE STYLE SPRING RETURN COUNTER-CLOCKWISE (inch pounds)

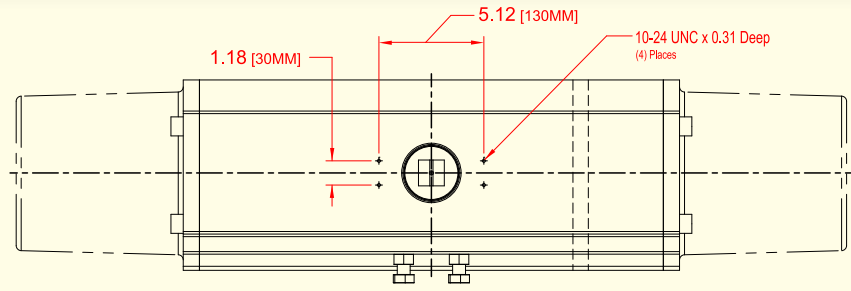
ABZ-2500SR						
Supply Air	Spring Start	Run	Spring End	Air Start	Run	Air End
60-PSI	6240	2330	2760	7522	4160	6000
80-PSI	7800	3600	4200	9500	5110	6432
ABZ-3500SR						
Supply Air	Spring Start	Run	Spring End	Air Start	Run	Air End
60-PSI	12400	4600	5410	15000	8200	12000
80-PSI	15600	7200	8400	19000	10200	12800



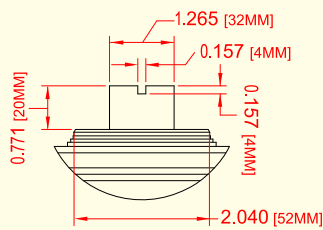
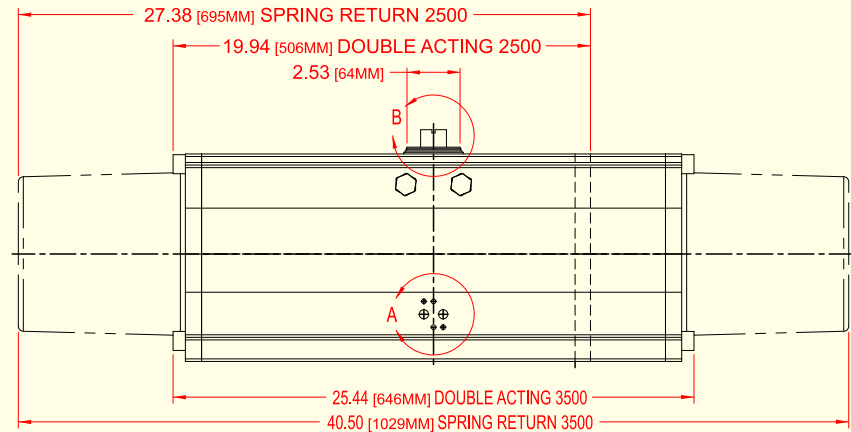
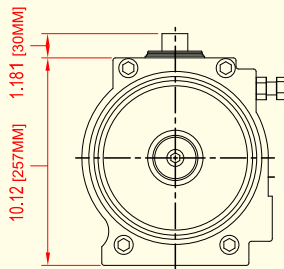
ABZ Series 228 Scotch Yoke Style Dimensional Information



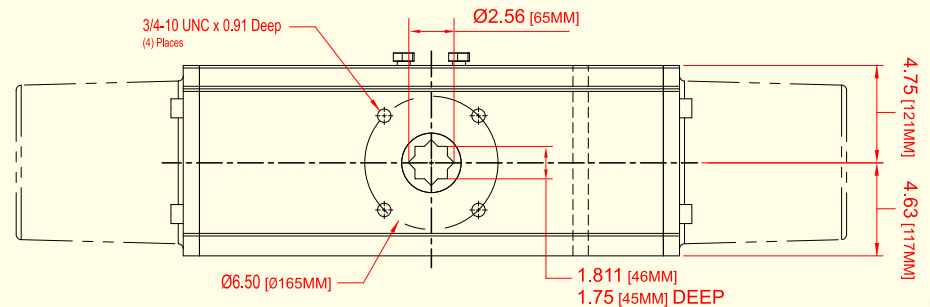
DETAIL A



TOP VIEW



DETAIL B



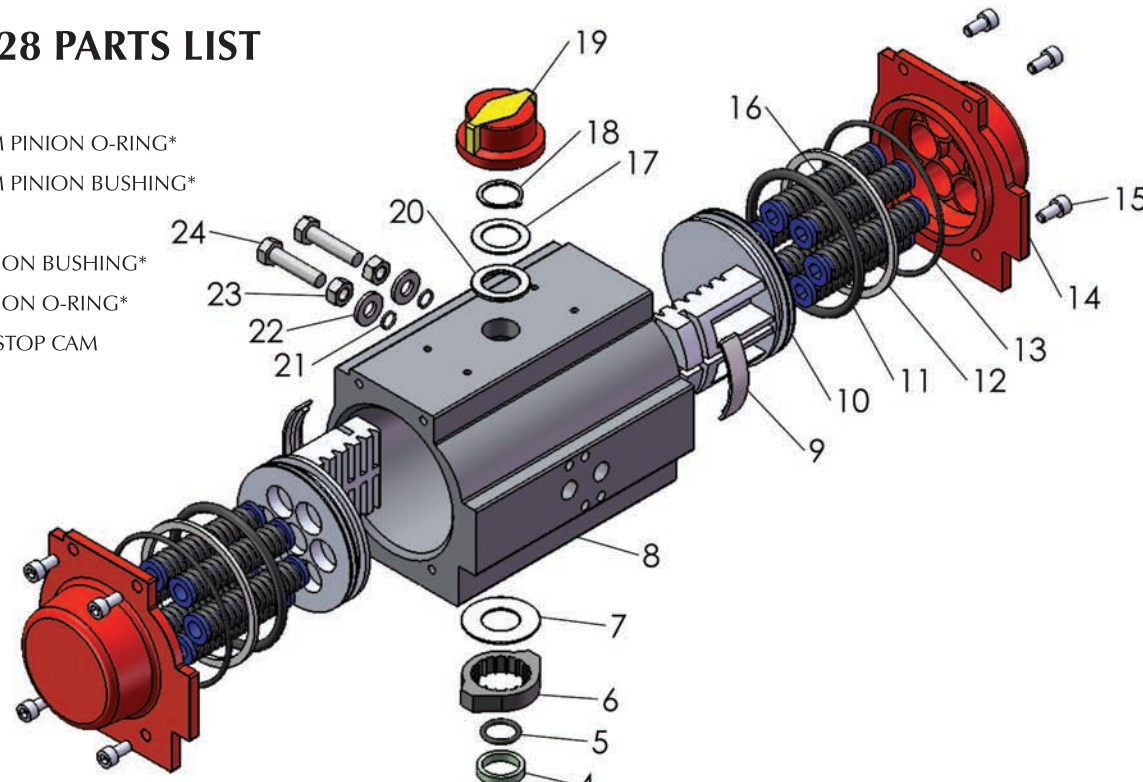
BOTTOM VIEW

Model	Weight (pounds)		Volume (cu.in per 90-deg.)		Cycle Time (sec. per 90-deg.)	
	DA	SR	CW	CCW	CW	CCW
ABZ-2500	98	137	525	310	5	5
ABZ-3500	125	195	650	585	9	9

SERIES 228 PARTS LIST

NO. NAME

- 1 ☆ BOTTOM PINION O-RING*
- 2 ▲ BOTTOM PINION BUSHING*
- 3 ○ PINION
- 4 ▲ TOP PINION BUSHING*
- 5 ☆ TOP PINION O-RING*
- 6 ▽ TRAVEL STOP CAM



- 7 ★ STOP CAM SPACER
- 8 □ CYLINDER BODY
- 9 ▲ PISTON GUIDE PLATE*
- 10 ● PISTON
- 11 ☆ PISTON O-RING*
- 12 ◇ PISTON GUIDE RING*
- 13 ☆ END CAP SEAL*
- 14 ■ END CAP
- 15 △ END CAP BOLT
- 16 ▼ SPRING CARTRIDGE
- 17 △ PINION WASHER*
- 18 ○ PINION SNAP RING*
- 19 ◆ POSITION INDICATOR
- 20 ★ TOP PINION SPACER*
- 21 ☆ TRAVEL STOP O-RING*
- 22 △ TRAVEL STOP WASHER
- 23 △ TRAVEL STOP NUT
- 24 △ TRAVEL STOP BOLT

*Recommended Spare Parts

Materials of Construction

- Aluminum.....Hard Anodized
- Die Cast Aluminum.....Epoxy Coated
- Steel.....Electroless Nickel Plated
- Die Cast Aluminum.....Dichromated Dipped
- ▽ SCM21.....Phosphate Coated
- ▼ Spring Steel.....Epoxy Coated
- △ 304 Stainless Steel.....Natural
- ▲ Nylon.....Natural
- ☆ Nitrile BunaNatural
- ★ RTFENatural
- ◇ PTFE.....Natural
- ◆ Polyethylene.....Natural



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