

1. Pressure Ranges

40 psig to 100 psig
3 bar to 8 bar

2. Temperature Ranges

*Std. (NBR O-rings): -20°C (-4°F) to +80°C (+176°F)

*Lower Temp. (Silicone O-rings): -40°C (-40°F) to +80°C (+176°F)

*High Temp. (Viton O-rings): -15°C (+5°F) to +150°C (+300°F)

Note: Special grease is required for low and high temperature service condition.

3. Operating Media

Filtered dry or lubricated air for non-corrosive gas, water or light hydraulic oil. The maximum particle size must not exceed 30 microns.

4. Stroke Adjustment

0° and 90° with standard adjustment $\pm 5^\circ$.

5. Lubrication

All moving parts are factory lubricated for entire life cycle of actuator.

6. Construction

Twin piston rack and pinion actuator design, suitable for indoor and outdoor installation.

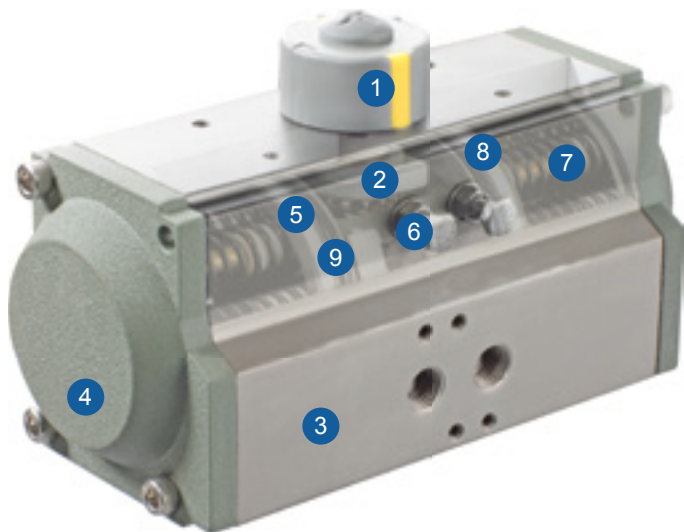
7. Connections

Bottom drilling complies with ISO 5211/DIN 3337 to match valve. Interface for solenoid valve, shaft top end and top drilling for assembling accessories are in accordance with VDI/VDE-3845, NAMUR standard.

8. Inspection

Every actuator is hydraulically tested, certified and guaranteed for a minimum of 500,000 cycles.





1. Indicator

A position indicator with Namur mounting is standard on all HAITIMA pneumatic actuators for mounting accessories.

2. Pinion

The hardened alloy steel pinion is precision ground and Nickel plated (over 25um) in order to reduce friction, provide maximum wear resistance. Full conformance with the newest standards of ISO5211 & DIN3337.

3. Actuator Body

The aluminum extrusion is hard anodized(over 30um) to protect against wear and corrosion while reducing piston friction to the absolute minimum. Other options such as Nickel plating, PTFE and powder polyester painting are available.

4. End Caps

Epoxy coated(over 150um) die cast aluminum end caps provide maximum resistance against potentially corrosive elements. Other treatments such as Nickel plating & PTFE painting are available.

5. Pistons

The precisely-balanced and hard anodized treatment (over 30um) die cast aluminum pistons are fitted with high quality rings and guides. The twin rack and piston design creates a constant torque output on all actuators.

6. Travel Adjustment

The standard adjustment is $\pm 5^\circ$ in both the open and closed positions through easily accessible external adjustment bolts.

7. High Performance Springs

The high tensile steel springs are coated with zinc phosphate for corrosion resistance and longer service. The pre-loaded springs can be safely & rapidly disassembled.

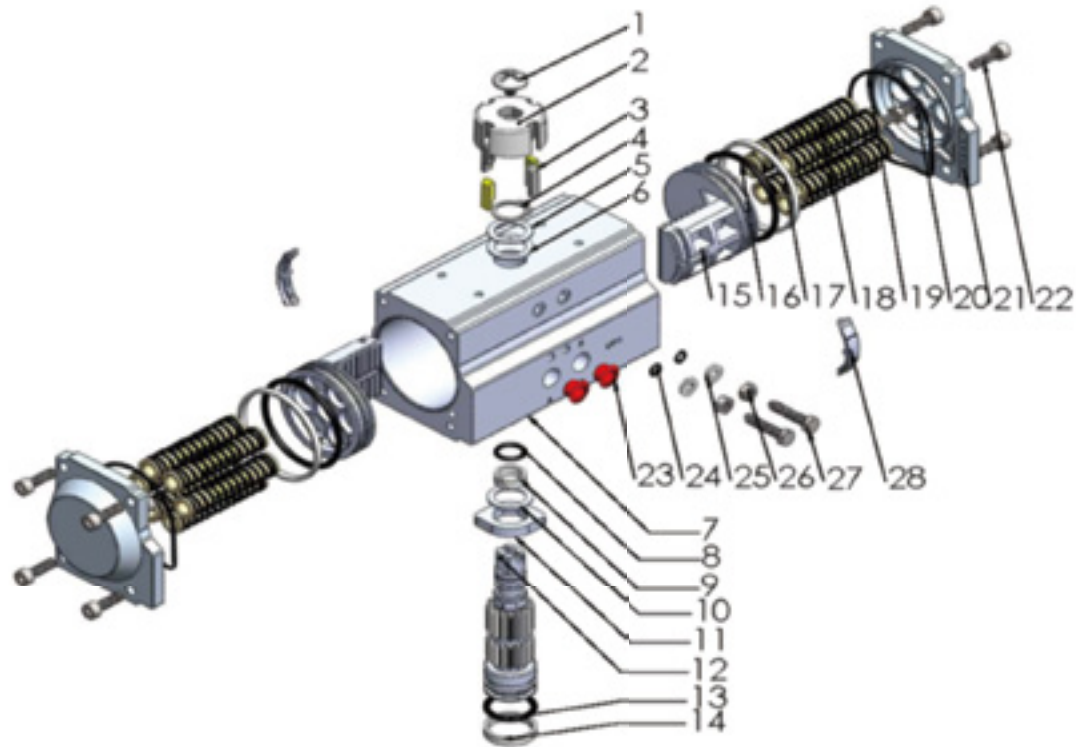
8. Bearings & Guides

The highly durable compound material provides high trust stability with minimum friction and long life.

9. O-Rings

NBR O-rings provide trouble-free operation at standard temperature ranges. Viton and Silicone O-rings are available for high or low temperature applications.

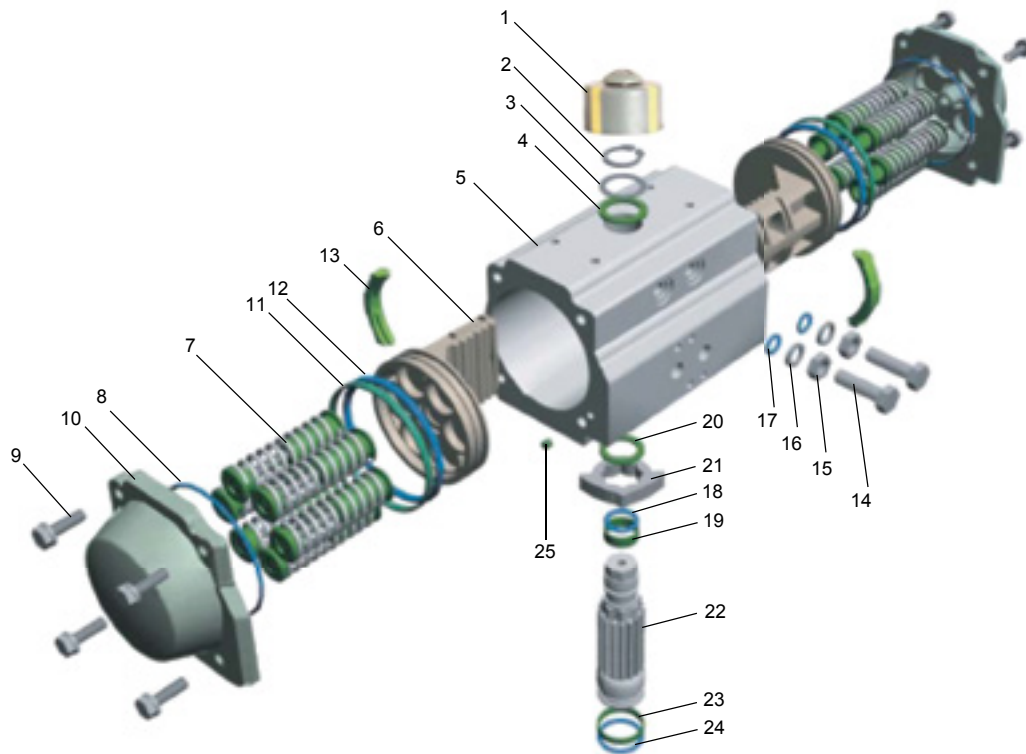
Pneumatic Actuator – HTS052~092 Parts List



Item	Description	Material	Protection	Q'ty	Optional
1	Screw	ABS+304		1	
2	Indicator	Plastic		1	
3	Indicator Pin	ABS		4	
4	Spring Clip	Stainless Steel		1	
5	Thrust Washer (Pinion)	Stainless Steel		1	
6*	Thrust Bearing (Pinion)	POM		1	
7	Actuator Body Extruded	Extruded Aluminum Alloy	Hard Anodized (over 30µm)	1	
8*	O-Ring (Top Pinion)	NBR		1	Viton/Silicone
9*	Bearing (Top Pinion)	POM		1	
10*	Thrust Bearing (Pinion)	POM		1	
11	Stroke Cam	Carbon Steel	Blackening Processed	1	
12	Pinion	Alloy Steel	Nickel Plated (over 25µm)	1	
13*	Bearing (Lower Pinion)	POM		1	
14*	O-Ring (Lower Pinion)	NBR		1	Viton/Silicone
15	Piston	Die Cast Aluminum Alloy	Hard Anodized (over 30µm)	2	
16*	Piston Seal	NBR		2	Viton/Silicone
17*	Piston Bearing	POM		2	
18	Spring (Cartridge)	High Performance Spring Steel	Electrophoretic Paint	0-12	
19*	End Cap Seals	NBR		2	Viton/Silicone
20	Stroke Bolt	Stainless Steel		1	
21	End Cap	Die Cast Aluminum	Epoxy Coated (over 150µm)	2	
22	End Cap Bolts	Stainless Steel		8	
23	Plug	PE		2	
24*	Stroke Bolt O-Ring	NBR		2	Viton/Silicone
25	Stroke Bolt Washer	Stainless Steel		2	
26	Stroke Bolt Retaining Nut	Stainless Steel		2	
27	Stroke Bolt	Stainless Steel		2	
28*	Piston Guide	POM		2	

* Note: Recommended spare parts for maintenance.

Pneumatic Actuator – HTS105 ~270 Parts List



Item	Description	Material	Protection	Q'ty	Optional
1	Indicator	ABS		1	
2	Spring Clip	Stainless Steel		1	
3	Thrust Washer(Pinion)	Stainless Steel		1	
4	Thrust Bearing(Pinion)	PTFE+15%Graphite		1	
5	Actuator Body	Extruded Alluminum Alloy	Hard Anodized(over 30um)	1	Nickel or PTFE Plated
6	Piston	Die Cast Aluminum Alloy	Hard Anodized(over 30um)	2	
7	Spring(Cartridge)	High Performance Spring Steel	Electrophoretic Paint	0-12	
8*	End Cap Seals	NBR		2	Viton / Silicone
9	End Cap Bolts	Stainless Steel		8	
10	End Cap	Die Cast Aluminum	Epoxy Coated(over 150um)	2	Nickel or PTFE Plated
11*	Piston Bearing	POM		2	
12*	Piston Seal	NBR		2	Viton / Silicone
13*	Piston Guide	POM		2	
14	Stroke Bolt	Stainless Steel		2	
15	Stroke Bolt Retaining Nut	Stainless Steel		2	
16	Stroke Bolt Washer	Stainless Steel		2	
17*	Stroke Bolt O-Ring	NBR		2	Viton / Silicone
18*	O-Ring(Top Pinion)	NBR		1	Viton / Silicone
19*	Bearing(Top Pinion)	POM		1	
20*	Thrust Bearing(Pinion)	POM		1	
21	Stroke Cam	Carbon Steel	Blackening Processed	1	
22	Pinion	Alloy Steel	Nickel Plated(over 25um)	1	
23*	Bearing(Lower Pinion)	POM		1	
24*	O-Ring(Lower Pinion)	NBR		1	Viton / Silicone
25*	Plug	NBR		2	Viton / Silicone

* Note: Recommended spare parts for maintenance.

Pneumatic Actuator – Spring Return (Fail Safe)



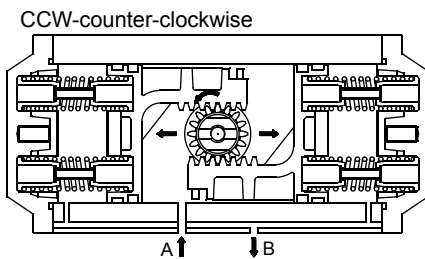
Sizing example of HAITIMA spring return actuator:

Spring to close when air fails (air to open):

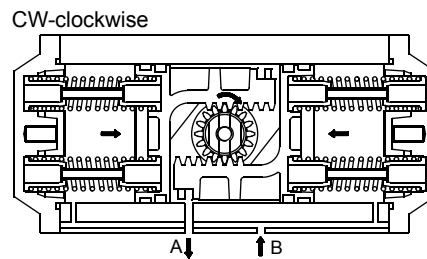
Valve torque 60N.m plus 30% safety factor = 78N.m. Minimum operating pressure: 6bar. The spring return HAITIMA actuator selected is HTS-125-10. The HTS-125-10 has the following output torques:

1. air torque 0° (valve close) = 221.8N.m > 78N.m
2. air torque 90° (valve open) = 154.9N.m > 78N.m
3. spring torque 90° (valve open) = 166.8N.m > 78N.m
4. spring torque 0° (valve close) = 104.5N.m > 78N.m

The operating principle of single acting spring return actuator



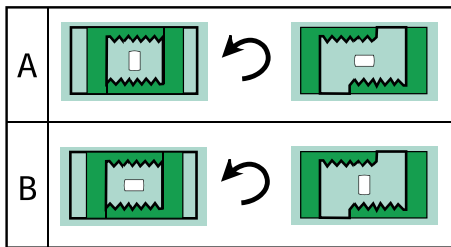
Air to port A forces the pistons outwards, causing the springs to compress. The pinion turns counter-clockwise while air is being exhausted through port B.



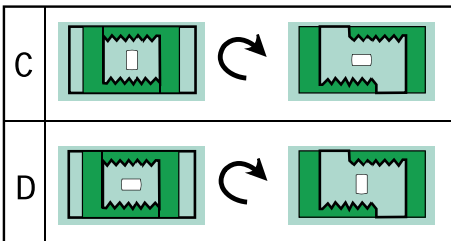
Loss of air pressure through port A allows the stored energy in the springs to force the pistons inwards. The pinion turns clockwise while air is being exhausted through port A.

Mounting Variations

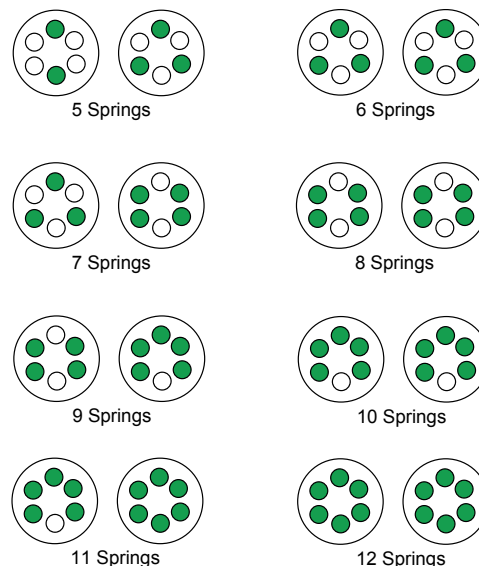
CCW-counter-clockwise



CW-clockwise



Spring Arrangement



Pneumatic Actuator -Torque Table(in.lbs)



Unit: in.lbs

Unit: in.lbs	Spring Set	Spring Torque		Air Supply Pressure															
				40 Psi		50 Psi		60 Psi		70 Psi		80 Psi		90 Psi		100 Psi			
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°		
HTS-052	5	34	54	61	40	84	61	108	83										
	6	40	65	54	30	78	51	101	73										
	7	46	75	49	21	72	42	95	64										
	8	53	86			65	33	89	55	112	77	136	98						
	9	60	97					82	45	106	67	129	88						
	10	66	108					76	35	99	58	123	79	146	101	169	122		
	11	73	119							93	48	116	70	139	91	163	113		
	12	80	129						86	39	109	61	133	82	156	104			
HTS-063	5	55	97	114	69	157	106	200	143										
	6	67	116	101	53	144	90	187	127										
	7	78	136	88	38	131	75	175	112										
	8	89	155			120	59	163	95	206	132	250	169						
	9	100	174			107	43	150	80	194	117	238	154						
	10	110	194					140	64	183	101	226	138	270	175	313	212		
	11	122	213							170	85	213	122	257	159	300	196		
	12	133	233						158	69	201	106	245	143	288	180			
HTS-075	5	100	155	177	119	246	183	315	248										
	6	119	186	157	91	226	156	295	220										
	7	140	217	136	63	205	128	275	192										
	8	160	248			184	99	254	164	324	229	394	294						
	9	179	279			165	72	234	136	304	201	374	266						
	10	199	310					214	108	284	173	353	238	422	302	492	367		
	11	219	341							263	146	333	210	402	274	472	339		
	12	239	372						244	118	313	182	382	246	452	311			
HTS-083	5	122	188	224	157	310	238	397	319										
	6	146	225	201	123	287	204	374	286										
	7	171	264	177	89	263	170	349	251										
	8	195	301			239	136	325	218	411	300	497	381						
	9	219	339			215	102	301	184	387	265	474	347						
	10	244	376					277	150	363	232	450	313	536	395	621	476		
	11	268	414							340	198	426	280	512	362	598	442		
	12	293	452						316	164	402	245	488	326	574	408			
HTS-092	5	194	289	336	241	469	374	601	506										
	6	233	347	297	183	430	316	562	448										
	7	272	405	259	125	391	258	524	390										
	8	311	463			352	200	485	333	617	465	750	598						
	9	349	521			313	143	446	275	579	407	711	540						
	10	388	578					407	217	540	349	672	482	805	615	937	747		
	11	427	636							501	292	633	424	766	557	899	689		
	12	466	694						462	234	595	366	727	499	860	631			
HTS-105	5	264	432	502	327	703	509	905	690										
	6	318	519	446	252	647	434	849	615										
	7	370	604	391	178	592	359	794	541										
	8	423	691			547	293	736	463	925	634	1115	805						
	9	476	775			491	220	680	390	869	561	1059	732						
	10	529	864					625	314	814	484	1008	659	1204	835	1399	1011		
	11	581	951							758	408	953	584	1148	759	1342	936		
	12	635	1036						702	333	897	509	1092	685	1288	862			
HTS-125	5	463	738	861	575	1203	889	1544	1202										
	6	555	886	760	440	1102	753	1443	1066										
	7	647	1033	660	307	1002	619	1343	931										
	8	740	1181			900	483	1242	796	1583	1109	1925	1422						
	9	832	1329			799	347	1141	660	1482	973	1824	1286						
	10	925	1477					1040	525	1381	838	1723	1151	2064	1464	2458	1825		
	11	1017	1624							1281	703	1623	1016	1964	1329	2358	1642		
	12	1110	1771						1180	568	1521	881	1863	1194	2204	1507			
HTS-140	5	705	1110	1290	876	1799	1358	2308	1840										
	6	846	1332	1141	665	1650	1148	2159	1630										
	7	987	1554	936	455	1476	937	2017	1420										
	8	1128	1776			1353	728	1861	1209	2370	1691	2878	2172						
	9	1269	1998			1204	517	1713	999	2221	1480	2729	1962						
	10	1410	2219					1564	789	2072	1270	2581	1752	3089	2233	3603	2715		
	11	1551	2441							1923	1060	2432	1542	2940	2023	3449	2506		
	12	1692	2663						1775	850	2283	1331	2791	1813	3300	2295			

Pneumatic Actuator -Torque Table(in.lbs)



Unit: in.lbs

Unit: in.lbs	Spring Set	Spring Torque		Air Supply Pressure													
				40 Psi		50 Psi		60 Psi		70 Psi		80 Psi		90 Psi		100 Psi	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
HTS-160	5	1099	1697	1973	1370	2756	2137	3539	2904								
	6	1319	2037	1741	1030	2524	1797	3307	2564								
	7	1539	2377	1509	691	2292	1458	3076	2225								
	8	1759	2716	1277	370	2060	1127	2844	1885	3627	2651	4410	3418				
	9	1979	3055			1829	779	2612	1546	3395	2313	4178	3079				
	10	2198	3395					2380	1206	3163	1973	3946	2740	4729	3507	5633	4391
	11	2418	3734							2931	1634	3714	2401	4497	3168	5281	3934
12	2638	4074							2699	1294	3482	2061	4265	2828	5049	3595	
HTS-190	5	1732	2741	3202	2136	4464	3320	5726	4503								
	6	2078	3289	2832	1617	4094	2801	5357	3984								
	7	2424	3837	2462	1098	3725	2281	4987	3465								
	8	2771	4385			3355	1762	4618	2945	5880	4129	7142	5312				
	9	3117	4933			2987	1243	4249	2426	5511	3610	6774	4793				
	10	3463	5481					3879	1907	5142	3090	6404	4274	7666	5457	8929	6641
	11	3809	6030							4772	2571	6034	3754	7297	4938	8559	6121
12	4156	6578							4402	2052	5665	3235	6927	4419	8190	5602	
HTS-210	5	2380	3725	4400	3036	6135	4717	7869	6397								
	6	2856	4470	3892	2299	5627	3982	7361	5665								
	7	3332	5215	3385	1562	5119	3243	6854	4923								
	8	3808	5959			4611	2588	6346	4166	8080	5744	9815	7322				
	9	4283	6730			4104	1744	5839	3424	7573	5105	9308	6785				
	10	4760	7449					5331	2712	7065	4393	8800	6073	10534	7753		
	11	5236	8195							6557	3655	8292	5335	10026	7016	11761	8696
12	5711	8939							6050	2919	7784	4599	9519	6279	11253	7959	
HTS-240	5	3814	5778	6620	4861	9890	7551	13160	10241								
	6	4580	6933	6033	3681	8723	6371	11413	9061								
	7	5339	8089	5249	2500	7940	5190	10630	7881								
	8	6102	9244			7151	4010	9842	6700	12533	9391	15224	12082				
	9	6865	10400			6364	2829	9054	5520	11745	8211	14436	10902				
	10	7628	11555					8267	4340	10957	7031	13648	9721	16339	12412	19029	15102
	11	8391	12711							10170	5850	12861	8541	15551	11232	18241	13922
12	9154	13866							9382	4670	12073	7361	14764	10051	17454	12742	
HTS-270	5	5420	8123	9599	6909	13382	10732	17166	14556								
	6	6503	9748	8492	5232	12275	9055	16059	12879								
	7	7587	11372	7384	3555	11168	7378	14951	11202								
	8	8671	12997			10061	5701	13844	9525	17628	13348	21411	17171				
	9	9755	14622			8953	4024	12737	7848	16520	11671	20304	15494				
	10	10839	16246					12353	6171	15559	9994	19197	13817	22980	17640	26764	21464
	11	11923	17871							14306	8317	18090	12140	21874	15963	25657	19787
12	13007	19495							13199	6640	16982	10463	20766	14286	24549	18110	
HTS-300	5	6448	10114	11867	8035	16418	12097										
	6	7735	12128	10608	6404	15159	10466										
	7	9021	14141	9349	4774	13900	8835	18451	12897								
	8	10307	16164	8089	3136	12641	7197	17190	11258	21736	15315	26281	19371				
	9	11602	18178			11378	5571	15923	9628	20468	13684	25014	17741				
	10	12888	20210			10118	3926	14664	7982	19209	12039	23755	16096	28300	20152	32845	24209
	11	14174	22223							17950	10408	22495	14465	27041	18522	31586	22578
12	15469	24246							16691	8779	21236	12830	25782	16882	30334	20940	
HTS-350	5	9485	15190	18001	12103	25176	18693										
	6	11379	18223	15867	9260	23043	15850										
	7	13273	21256	13734	6416	20910	13006	28085	19596								
	8	15175	24297	11592	3565	18767	10155	25943	16745	33119	23335	40294	29925				
	9	17077	27330			16625	7312	23801	13901	30977	20491	38152	27081				
	10	18963	30372			14501	4460	21676	11050	28852	17640	36023	24226	43193	30810	50370	37402
	11	20857	33396							26711	14798	33881	21382	41051	27967	48228	34558
12	22751	36421							24579	11953	31743	18543	38907	25133	46086	31723	
HTS-400	5	14008	24049	25198	15923	35006	25001										
	6	16596	28184	22611	11519	32419	20597										
	7	19174	32311	20033	7893	29841	16971	39649	26048								
	8	21753	36455	17454	4251	27262	13329	37069	22405	46871	31478	56673	40550				
	9	24340	40581			24679	9707	34482	18779	44284	27851	54086	36924				
	10	26919	44725			22101	6065	31903	15137	41705	24210	51507	33282	61310	42354	71112	51427
	11	29514	48852							39110	20583	48912	29656	58714	38728	68516	47800
12	32093	52978							36514	16966	46317	26033	56119	35100	65936	44181	

Pneumatic Actuator –Torque Table(Nm)



Unit: N.m

Unit: in.lbs	Spring Set	Spring Torque		Air Supply Pressure									
				3 Bar		4 Bar		5 Bar		6 Bar		7 Bar	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
HTS-052	5	3.8	6.1	7.8	5.3	11.6	8.9						
	6	4.6	7.4	7.1	4.2	10.9	7.8						
	7	5.2	8.5	6.4	3.2	10.2	6.7						
	8	6.0	9.7			9.5	5.7	13.3	9.3				
	9	6.7	11.0			8.8	4.6	12.6	8.2				
	10	7.5	12.2			8.0	3.5	11.9	7.1	15.7	10.7		
	11	8.3	13.4					11.1	6.0	15.0	9.6	18.8	13.1
	12	9.0	14.6					10.4	5.0	14.2	8.6	18.1	12.1
HTS-063	5	6.2	11.0	14.6	9.3	21.6	15.4	28.7	21.4				
	6	7.6	13.1	13.1	7.5	20.2	13.5	27.3	19.7				
	7	8.8	15.3	11.6	5.7	18.8	11.8	25.9	17.8				
	8	10.1	17.6			17.5	10.0	24.5	16.0	31.6	22.1		
	9	11.3	19.7			16.0	8.2	23.2	14.3	30.3	20.4		
	10	12.5	21.9			14.8	6.4	21.9	12.5	29.0	18.5	36.1	24.6
	11	13.8	24.1			13.4	4.6	20.5	10.7	27.5	16.8	34.6	22.8
	12	15.0	26.3					19.1	8.9	26.2	14.9	33.3	21.0
HTS-075	5	11.3	17.5	22.7	16.0	34.0	26.6						
	6	13.5	21.0	20.5	12.9	31.8	23.4						
	7	15.8	24.5	18.1	9.7	29.5	20.3						
	8	18.1	28.0			27.2	17.1	38.6	27.7				
	9	20.2	31.5			24.9	14.0	36.4	24.6				
	10	22.5	35.0			22.6	10.8	34.0	21.4	45.4	32.0	56.8	42.6
	11	24.8	38.5					31.7	18.3	43.1	28.8	54.5	39.4
	12	27.0	42.0					29.5	15.1	40.8	25.7	52.3	36.3
HTS-083	5	13.8	21.3	28.7	20.9	42.9	34.2						
	6	16.5	25.5	26.1	17.2	40.3	30.4						
	7	19.3	29.8	23.4	13.3	37.5	26.6						
	8	22.0	34.0			34.8	22.8	48.9	36.2				
	9	24.8	38.3			32.1	18.9	46.2	32.3				
	10	27.6	42.5			29.4	15.1	43.5	28.5	57.7	41.9	71.7	55.2
	11	30.3	46.7					40.8	24.7	55.0	38.1	69.0	51.4
	12	33.1	51.1					38.1	20.9	52.3	34.1	66.3	47.5
HTS-092	5	21.9	32.7	43.2	32.5	65.0	54.2						
	6	26.3	39.2	38.9	26.0	60.6	47.7						
	7	30.7	45.8	34.5	19.4	56.2	41.1						
	8	35.1	52.3			51.8	34.6	73.5	56.3				
	9	39.5	58.8			47.4	28.1	69.1	49.8				
	10	43.9	65.4			43.0	21.5	64.8	43.3	86.5	65.0	108.2	86.7
	11	48.2	71.9					60.4	36.7	82.1	58.4	103.8	80.2
	12	52.6	78.4					56.0	30.2	77.7	51.9	99.4	73.6
HTS-105	5	29.9	48.8	64.7	44.2	97.7	74.0						
	6	35.9	58.6	58.4	35.7	91.4	65.5						
	7	41.9	68.3	52.1	27.3	85.2	57.0						
	8	47.8	78.1			78.9	48.5	110.0	76.5				
	9	53.8	87.6			72.6	40.3	103.6	68.3				
	10	59.8	97.6			66.4	31.6	97.4	59.6	129.5	88.4	161.4	117.3
	11	65.7	107.4					91.2	51.1	123.2	79.9	155.0	108.8
	12	71.7	117.1					84.9	42.7	116.8	71.5	148.9	100.4
HTS-125	5	52.3	83.4	110.9	77.4	166.8	128.7						
	6	62.7	100.1	99.5	62.1	155.4	113.4						
	7	73.1	116.7	88.1	47.1	144.1	98.2						
	8	83.6	133.4			132.7	82.9	188.6	134.2				
	9	94.1	150.1			121.2	67.6	177.2	118.9				
	10	104.5	166.8			109.8	52.3	165.8	103.6	221.8	154.9	277.7	206.2
	11	114.9	183.5					154.5	88.4	210.4	139.7	266.4	191.0
	12	125.4	200.2					143.0	73.0	199.0	124.3	254.9	175.6
HTS-140	5	79.7	125.4	166.0	118.1	249.4	197.1						
	6	95.6	150.5	149.2	94.3	232.6	173.3						
	7	111.5	175.6	127.2	70.6	215.7	149.6						
	8	127.4	200.6			198.9	125.8	282.2	204.8				
	9	143.4	225.7			182.1	102.1	265.4	181.0				
	10	159.3	250.8			165.3	78.3	248.6	157.2	331.9	236.2	415.9	315.1
	11	175.2	275.9					231.8	133.5	315.1	212.4	398.5	291.4
	12	191.2	301.0					215.0	109.7	298.3	188.6	381.7	267.7

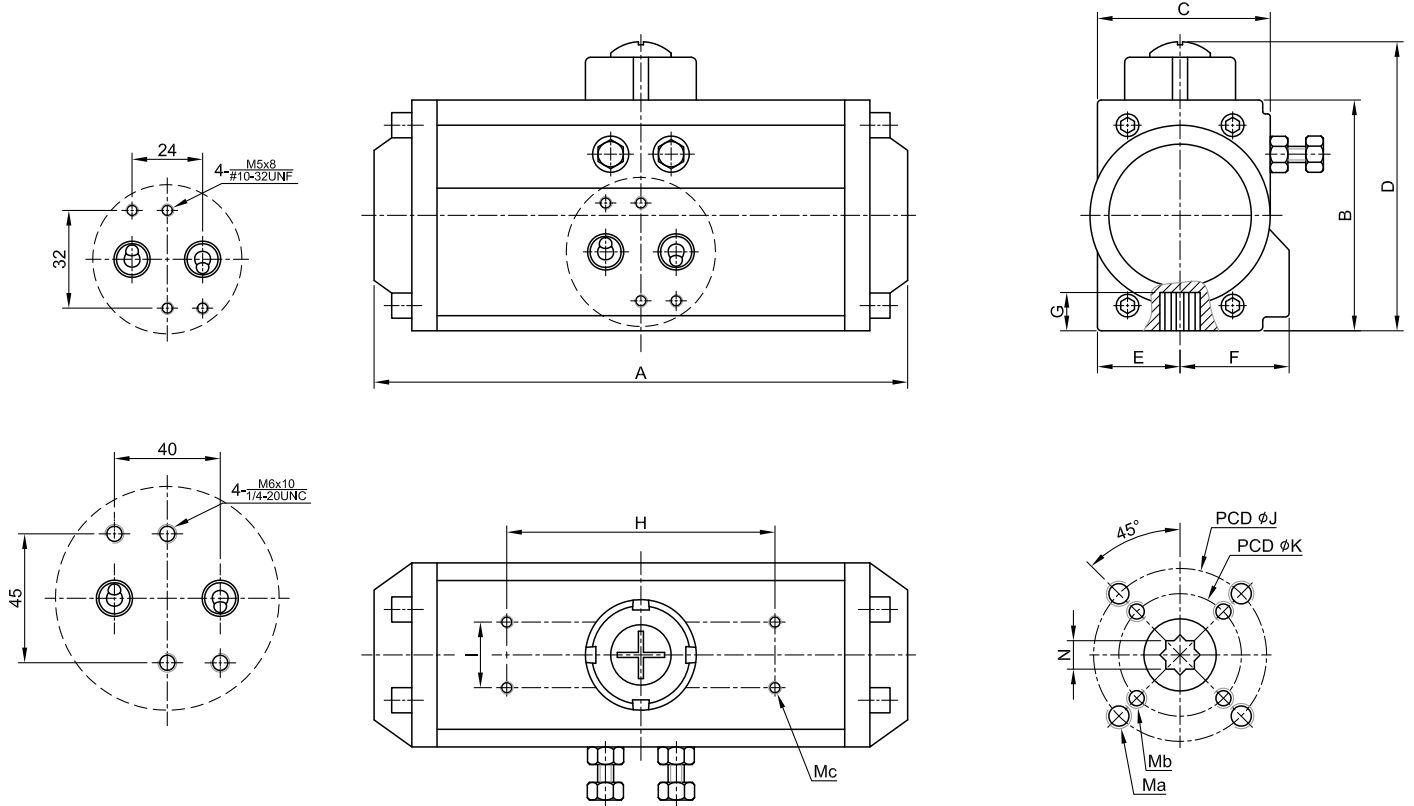
Pneumatic Actuator –Torque Table(Nm)



Unit: N.m

Unit: in.lbs	Spring Set	Spring Torque		Air Supply Pressure									
				3 Bar		4 Bar		5 Bar		6 Bar		7 Bar	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
HTS-160	5	124.2	191.8	254.0	185.3	382.4	311.0						
	6	149.1	230.2	227.8	146.8	356.2	272.5						
	7	173.9	268.6	201.6	108.5	330.0	234.2						
	8	198.7	306.9	175.4	71.8	303.7	195.8	432.1	321.4				
	9	223.6	345.3			277.5	157.5	405.9	283.1				
	10	248.4	383.6			251.3	119.1	379.7	244.8	508.0	370.5	636.4	496.1
	11	273.3	422.0					353.5	206.4	481.8	332.1	610.2	457.8
	12	298.1	460.3					327.3	168.1	455.6	293.8	584.0	419.4
HTS-190	5	195.7	309.7	411.8	288.4	618.7	482.3						
	6	234.8	371.6	370.1	229.7	577.0	423.6						
	7	274.0	433.6	328.3	171.0	535.2	365.0						
	8	313.1	495.5			493.4	306.3	700.3	500.2				
	9	352.2	557.5			451.8	247.6	658.7	441.5				
	10	391.3	619.4			410.0	188.9	616.9	382.9	823.8	576.8	1030.7	770.8
	11	430.5	681.3					575.1	324.2	782.0	518.1	988.9	712.1
	12	469.6	743.3					533.4	265.5	740.3	459.5	947.1	653.4
HTS-210	5	268.9	420.9	566.0	409.8	850.3	685.1						
	6	322.7	505.1	508.6	326.5	792.9	602.4						
	7	376.5	589.3	451.3	243.2	735.6	518.6						
	8	430.3	673.4			678.1	435.3	962.4	694.0				
	9	484.0	760.5			620.8	349.2	905.1	624.6				
	10	537.8	841.8			563.4	268.8	847.7	544.1	1131.9	819.5	1416.2	1094.9
	11	591.7	926.0					790.3	460.8	1074.5	736.2	1358.8	1011.6
	12	645.3	1010.1					733.0	377.6	1017.2	653.0	1301.5	928.3
HTS-240	5	431.0	652.9	877.8	656.0	1413.7	1096.9						
	6	517.6	783.4	788.4	522.6	1229.3	963.5						
	7	603.3	914.0	699.9	389.2	1140.8	830.1						
	8	689.5	1044.6			1051.7	696.7	1492.7	1137.7				
	9	775.7	1175.1			962.7	563.4	1403.7	1004.3				
	10	861.9	1305.7			873.7	430.0	1314.7	871.0	1755.7	1312.0	2196.6	1752.8
	11	948.2	1436.3					1225.7	737.6	1666.7	1178.6	2107.6	1619.5
	12	1034.4	1566.9					1136.7	604.2	1577.7	1045.2	2018.6	1486.1
HTS-270	5	612.4	917.9	1234.7	932.4	1854.8	1558.9						
	6	734.9	1101.5	1109.6	742.8	1729.7	1369.4						
	7	857.4	1285.1	984.5	553.3	1604.6	1179.9						
	8	979.8	1468.7			1479.4	990.4	2099.5	1617.0				
	9	1102.3	1652.2			1354.3	800.9	1974.4	1427.5				
	10	1224.8	1835.8			1323.9	611.4	1849.3	1238.0	2469.3	1864.6	3089.4	2491.2
	11	1347.3	2019.4					1724.2	1048.5	2344.3	1675.1	2964.3	2301.7
	12	1469.8	2203.0					1599.0	859.0	2219.1	1485.6	2839.2	2112.2
HTS-300	5	729	1143	1521	1069								
	6	874	1370	1379	885								
	7	1019	1598	1237	701	1983	1366						
	8	1165	1827	1095	515	1840	1181	2585	1846				
	9	1311	2054			1697	997	2442	1662	3187	2326		
	10	1456	2284			1555	811	2300	1476	3045	2141	3790	2805
	11	1602	2511					2158	1291	2903	1956	3647	2621
	12	1748	2740					2015	1107	2760	1771	3506	2436
HTS-350	5	1072	1716	2319	1629								
	6	1286	2059	2078	1308								
	7	1500	2402	1837	986	3013	2066						
	8	1715	2746	1594	664	2770	1744	3946	2824				
	9	1930	3088			2528	1423	3704	2503	4879	3582		
	10	2143	3432			2288	1101	3464	2181	4639	3260	5815	4340
	11	2357	3774					3222	1859	4397	2939	5573	4019
	12	2571	4116					2981	1538	4155	2618	5331	3698
HTS-400	5	1583	2718	3236	2159								
	6	1875	3185	2944	1662								
	7	2167	3651	2653	1252	4260	2740						
	8	2458	4119	2361	840	3969	2328	5575	3815				
	9	2750	4586			3676	1918	5283	3405	6889	4892		
	10	3042	5054			3385	1507	4991	2994	6598	4481	8204	5967
	11	3335	5520					4698	2584	6305	4071	7911	5558
	12	3627	5987					4405	2175	6011	3661	7620	5149

Pneumatic Actuator – Dimension Table



Dimension Table

Unit: mm
inch

Model	A	B	C	D	E	F	G	H	I	N	J	K	Ma	Mb	Mc	Air Inlet
HT-032	114	46	49	70	24.5	24.5	11	50	25	9	-	F03	-	M5x8	M5x10	1/8"
	4.49	1.81	1.93	2.76	0.96	0.96	0.43	1.97	0.98	0.35	-	F03	-	#10-24UNC	#10-24UNC	1/8"
HT-052	156.4	74	60	99	30	41	14	80	30	11	-	F05	M6x11	M5x10	M5x10	1/4"
	6.16	2.91	2.36	3.9	1.18	1.61	0.55	3.15	1.18	0.43	-	F05	1/4"-20UNC	#10-24UNC	#10-24UNC	1/4"
HT-063	189	88	69	113	36	45	18	80	30	14	-	F07	M8x15	M6x12	M5x10	1/4"
	7.44	3.46	2.72	4.45	1.42	1.77	0.71	3.15	1.18	0.55	-	F07	5/16"-18UNC	1/4"-20UNC	#10-24UNC	1/4"
HT-075	204	100	79	125	42	52	20	80	30	14	-	F07	M8x13	M6x11	M5x10	1/4"
	8.03	3.94	3.11	4.92	1.65	2.05	0.79	3.15	1.18	0.55	-	F07	5/16"-18UNC	1/4"-20UNC	#10-24UNC	1/4"
HT-083	211	109	88	134	46	52.5	20	80	30	17	-	F07	M8x15	M6x12	M5x10	1/4"
	8.31	4.29	3.46	5.28	1.81	2.07	0.79	3.15	1.18	0.67	-	F07	5/16"-18UNC	1/4"-20UNC	#10-24UNC	1/4"
HT-092	259	120	97.5	145	51	57.5	22	80	30	17	-	F07	M8x13	M6x12	M5x10	1/4"
	10.2	4.72	3.84	5.71	2.01	2.26	0.87	3.15	1.18	0.67	-	F07	5/16"-18UNC	1/4"-20UNC	#10-24UNC	1/4"
HT-105	285	133	105.5	158	57.5	64	24	80	30	22	-	F10	M10x18	M8x14	M5x10	1/4"
	11.22	5.24	4.15	6.22	2.26	2.52	0.94	3.15	1.18	0.87	-	F10	3/8"-16UNC	5/16"-18UNC	#10-24UNC	1/4"
HT-125	340	155	120.5	182	67.5	70	27.5	80	30	22	-	F10	M10x18	M8x14	M5x10	1/4"
	13.39	6.1	4.74	7.17	2.66	2.76	1.08	3.15	1.18	0.87	-	F10	3/8"-16UNC	5/16"-18UNC	#10-24UNC	1/4"
HT-140	411	171.5	137	198	76	77	32	80	30	27	-	F12	M12x22	M10x18	M5x10	1/4"
	16.18	6.75	5.39	7.8	2.99	3.03	1.26	3.15	1.18	1.06	-	F12	1/2"-13UNC	3/8"-16UNC	#10-24UNC	1/4"
HT-160	476	197	159.5	224	86.5	87.5	34	80	30	27	-	F12	M12x22	M10x18	M5x10	1/4"
	18.74	7.76	6.28	8.82	3.41	3.44	1.34	3.15	1.18	1.06	-	F12	1/2"-13UNC	3/8"-16UNC	#10-24UNC	1/4"
HT-190	524	230	186	269	103	103	40	130	30	36	-	F14	M16x23	-	M5x10	1/4"
	20.63	9.06	7.32	10.59	4.06	4.06	1.57	5.12	1.18	1.42	-	F14	5/8"-11UNC	-	#10-24UNC	1/4"
HT-210	559	255	202	294	113	113	40	130	30	36	-	F14	M16x25	-	M5x10	1/4"
	22.01	10.04	7.95	11.57	4.45	4.45	1.57	5.12	1.18	1.42	-	F14	5/8"-11UNC	-	#10-24UNC	1/4"
HT-240	668	291	233	330	129	129	50	130	30	46	-	F16	M20x28	-	M5x10	1/4" or 3/8"
	26.3	11.46	9.17	12.99	5.08	5.08	1.97	5.12	1.18	1.81	-	F16	3/4"-10UNC	-	#10-24UNC	1/4" or 3/8"
HT-270	744	320	264	359	146	146	57	130	30	46	-	F16	M20x28	-	M5x10	1/4" or 1/2"
	29.29	12.6	10.39	14.13	5.75	5.75	2.24	5.12	1.18	1.81	-	F16	3/4"-10UNC	-	#10-24UNC	1/4" or 1/2"
HT-300	782	350	312	380	162	174	57	130	30	46	-	F16	-	M20x28	M5x10	1/2"
	30.79	13.78	12.28	14.96	6.38	6.85	2.24	5.12	1.18	1.81	-	F16	-	3/4"-10UNC	#10-24UNC	1/2"
HT-350	920	410	365	440	190	195	60	130	30	46	-	F25	M16x24	M20x28	M5x10	1/2"
	36.22	16.14	14.37	17.32	7.48	7.68	2.36	5.12	1.18	1.81	-	F25	5/8"-11UNC	3/4"-10UNC	#10-24UNC	1/2"
HT-400	940	466	298	496	260	260	60	130	30	46	-	F25	M16x24	M20x28	M5x10	1/2"
	37.01	18.35	11.73	19.53	10.24	10.24	2.36	5.12	1.18	1.81	-	F25	5/8"-11UNC	3/4"-10UNC	#10-24UNC	1/2"

Air Consumption - Air Volume Opening & Closing

Model	Air Volume@opening (liter/cu.in)	Air Volume@closing (liter/cu.in)	Model	Air Volume@opening (liter/cu.in)	Air Volume@closing (liter/cu.in)
HT-32	0.03	0.04	HT-125	1.20	1.60
	1.71	2.32		73.22	97.62
HT-52	0.09	0.12	HT-140	1.70	2.40
	5.49	7.32		103.72	146.43
HT-63	0.14	0.20	HT-160	2.60	3.70
	8.54	12.20		158.63	225.75
HT-75	0.21	0.30	HT-190	4.20	5.90
	12.81	18.30		256.25	359.98
HT-83	0.29	0.41	HT-210	5.70	8.20
	17.69	25.02		347.77	500.31
HT-92	0.49	0.71	HT-240	9.00	12.80
	29.90	43.32		549.12	780.97
HT-105	0.70	0.99	HT-270	12.60	17.90
	42.71	60.40		768.76	1092.13

The Table of Actuators Weight & Opening Closing Time

Model	HT-032		HT-052		HT-063		HT-075		HT-083		HT-092		HT-105	
	D	S	D	S	D	S	D	S	D	S	D	S	D	S
Screw stroke adj. for 1° adj. need	----		1/5 turn		1/5 turn		1/5 turn		1/5 turn		1/4 turn		1/4 turn	
Opening time (Sec.)	0.03	---	0.2	0.25	0.25	0.3	0.3	0.35	0.4	0.5	0.5	0.6	0.7	0.8
Closing time (Sec.)	0.03	---	0.25	0.3	0.3	0.35	0.4	0.5	0.5	0.6	0.7	0.9	0.9	1.1
Approximate weight (Kg/Lbs)	0.5/1.1	---	1.0/2.2	1.0/2.2	1.6/3.5	1.8/4.0	2.6/5.7	3.1/6.8	3.1/6.8	3.6/7.9	4.9/10.8	5.7/12.5	6.5/14.3	7.7/16.9

Model	HT-125		HT-140		HT-160		HT-190		HT-210		HT-240		HT-270	
	D	S	D	S	D	S	D	S	D	S	D	S	D	S
Screw stroke adj. for 1° adj. need	1/4 turn		1/4 turn		1/4 turn		1/3 turn		1/3 turn		1/3 turn		1/3 turn	
Opening time (Sec.)	0.9	1.1	1.3	1.5	1.6	1.8	2.2	2.4	2.9	3.4	3.8	4.3	4.5	5.0
Closing time (Sec.)	1.2	1.4	1.6	1.9	1.9	2.2	2.6	3.0	3.8	4.1	4.4	5.0	5.0	5.5
Approximate weight (Kg/Lbs)	9.9/21.8	11/24.2	13.8/30.4	16.3/35.9	19/41.8	24/52.8	28/61.6	34/74.8	37/81.4	45/99	52/114.4	64/140.8	85/187	104/228.8

Order Information

Type	Model	Spring Set	Seals	Options
HTD	032	Blank	Blank	120
Double Acting Actuator	052	(Double Acting Actuator)	(standard NBR seals)	120°operation
	063	05		180
HTS	075	06	HT= Viton seals	180°operation
Spring Return Actuator	083	07	(for high temperature)	SS
	092	08		Stainless Steel Housing
HTDN	105	09	LT= Silicone seals	
Double Acting Actuator	125	10	(for low temperature)	
(Nickel Plated Housing)	140	11		
	160	12		
HTSN	190			
Spring Return Actuator	210			
(Nickel Plated Housing)	240			
	270			

Note: The part numbers are represented as the following: Type-Model-Spring Set-Seals-Options