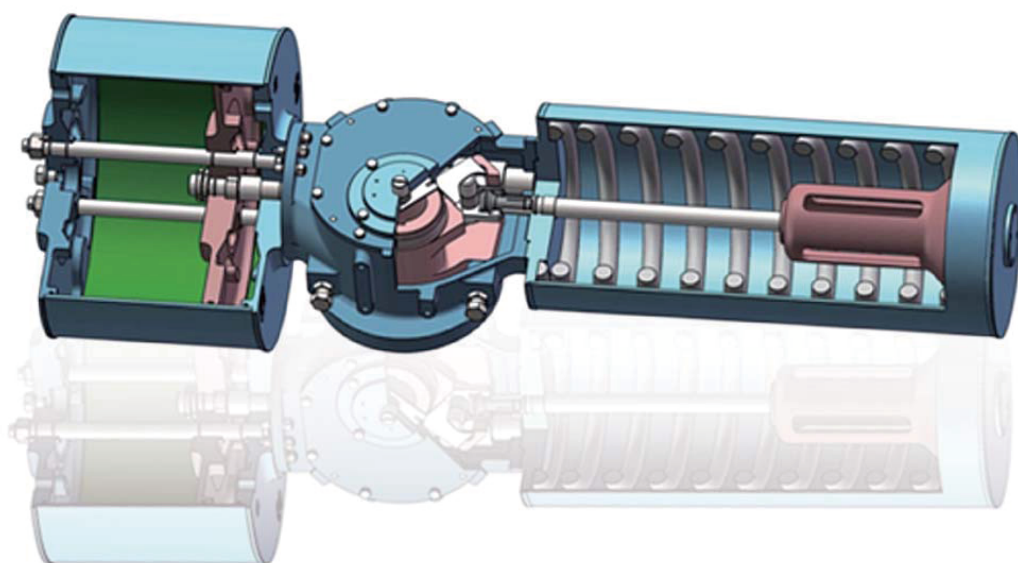




VTS Series Scotch Yoke Actuator



High performance and reliability

Compliant with International Standards

Applicable to wide range of specifications and torque requirements

Compact design reduces space requirements



Features

Modular Design

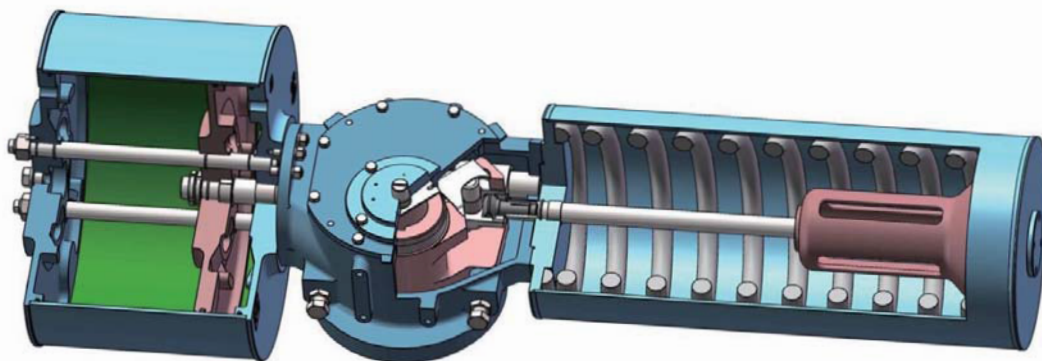
VTS Series utilizes modular concept with Cylinder Module, Drive Module and Spring Module interchangeable to achieve required torque.

Operating Ranges

Torque Outputs: up to 1.1M in-lbs
Operating Pressure: 40 to 110 psig
Operating Temperature: -40F to 302F

Corrosion Resistant

Cylinder wall of Cylinder Module is corrosion resistant for use in harsh environments



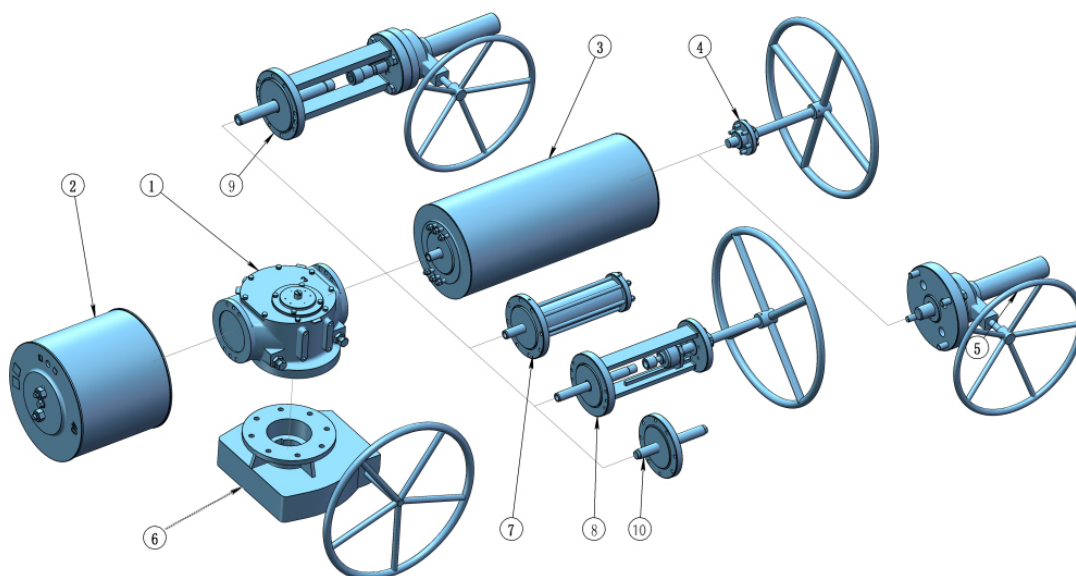
Wear Resistant

Self-lubricating bearings on piston rod, guide bar and other moving parts protect sliding and rotating components

Internal Tie Rods

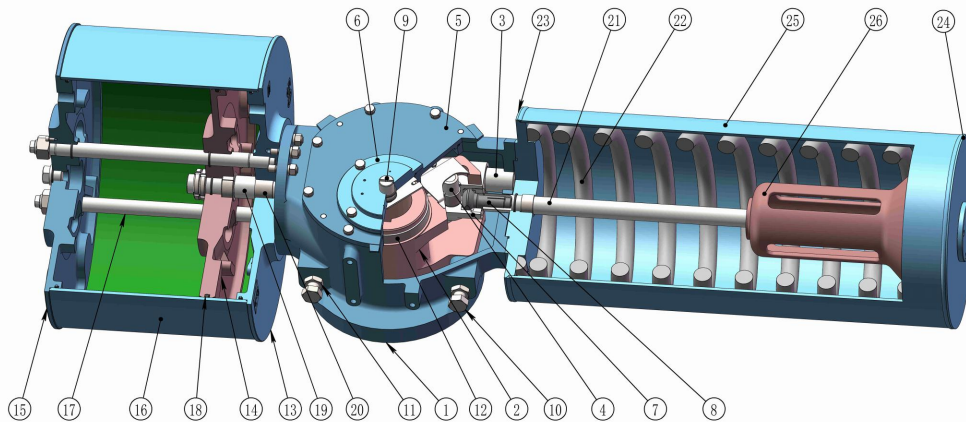
Cylinder Module designed with internal tie rods to reduce the size of the cylinder. Tie Rods support and guide piston to prevent eccentric wear of cylinder wall

Modular Design



1. Drive module	3. Spring module	5. Bevel gear manual module	7. Hydraulic manual module	9. Double-acting bevel gear manual module
2. Cylinder module	4. Screw manual module	6. Clutch manual module	8. Double-acting screw manual module	10. Limit module

Assembly Drawing



No.	Name	Material
1	Body	Ductile Iron
2	Yoke	Ductile Iron
3	Guide Bar	Alloy Steel
4	Pin	Alloy Steel
5	Body Cover	Ductile Iron
6	Cover	Carbon Steel
7	Guide Block	Ductile Iron
8	Connectors	Alloy Steel
9	Drive Shaft	Stainless Steel

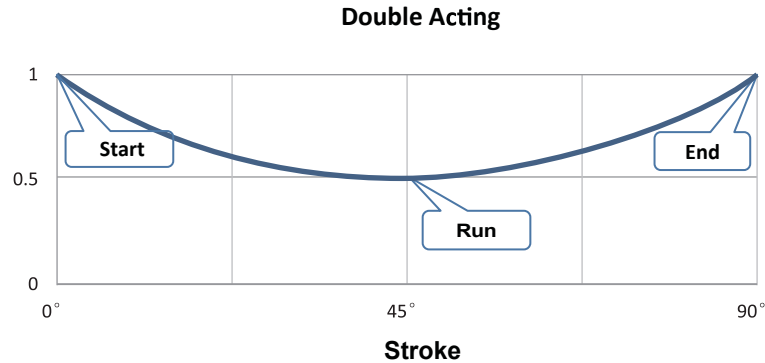
No.	Name	Material
10	Adjust Bolt	Stainless Steel
11	Nut	Stainless Steel
12	Yoke Bearing	DU Bearing
13	Cylinder Cover	Ductile Iron
14	Piston	Ductile Iron
15	Cylinder Cover	Ductile Iron
16	Cylinder	Carbon Steel
17	Cylinder Tie Rod	Alloy Steel
18	Sealing Ring	NBR

No.	Name	Material
19	Piston Rod	Alloy Steel
20	Piston Rod Bearing	DU Bearing
21	Tension Rod	Alloy Steel
22	Spring	Alloy Steel
23	Spring Cover	Carbon Steel
24	Spring Cover	Carbon Steel
25	Spring Cylinder	Carbon Steel
26	Spring Seat	Ductile Iron

Cylinder Volume

Model	Cylinder Effective Volume (in ³)													
	200	250	300	350	400	450	500	600	700	700 D	800	800 D	900	1000
VTS1	415	647	940	1111										
VTS2		647	940	1111	1300	1745								
VTS3			940	1324	1678	2258	2624							
VTS4				1623	2056	2764	3234	4638						
VTS5							4210	6102	8848		11534			
VTS6								7567	10984	21969	14280		18063	
VTS7									13059	26118	16782	33563	21542	26240

Torque Data



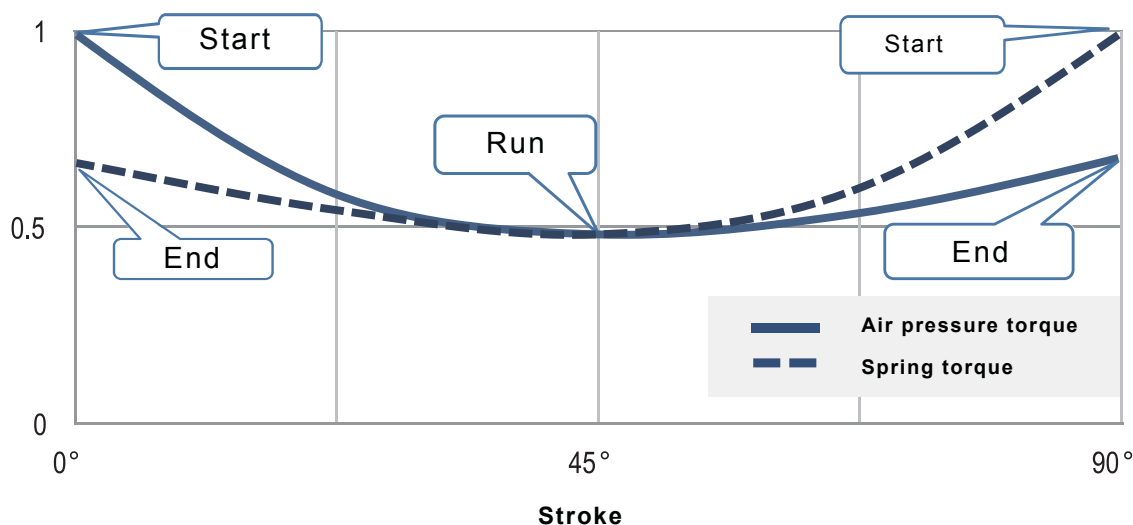
Double Acting

Model		Operating Pressure, (psig)							
		40	50	60	70	80	90	100	110
		Pressure Torque Output (lbf-in)							
VTS1-200	Start/End	10125	11572	13018	14465	15911	17358	20124	22999
	Run	5344	6107	6871	7634	8398	9161	10621	12138
VTS1-250	Start/End	16161	18469	20778	23087	25395	27704		
	Run	8529	9748	10966	12185	13403	14622		
VTS1-300	Start/End	23355	26691						
	Run	12326	14087						
VTS1-350	Start/End	28003							
	Run	14780							
VTS2-250	Start/End	19931	22772	25622	28471	31321	34170	39863	45558
	Run	10519	12025	13523	15021	16527	18042	21039	24044
VTS2-300	Start/End	28804	32919	37034	41149	45264	49379		
	Run	15202	17374	19546	21718	23889	26061		
VTS2-350	Start/End	34537	39471	44405	49339	54273			
	Run	18228	20832	23436	26040	28644			
VTS2-400	Start/End	45580	52091						
	Run	24056	27493						
VTS3-300	Start/End	34643	39592	44541	49490	54439	59388	69286	79184
	Run	18284	20896	23508	26120	28732	31344	36568	41792
VTS3-350	Start/End	41538	47472	53406	59340	65275	71209	83077	94945
	Run	21923	25055	28187	31319	34450	37582	43846	50110
VTS3-400	Start/End	54819	62650	70481	78313	86144	93975		
	Run	28932	33065	37199	41332	45465	49598		
VTS3-450	Start/End	69768	79735	89702	99669				
	Run	36822	42082	47343	52603				
VTS3-500	Start/End	86706	99092						
	Run	45761	52299						
VTS4-350	Start/End	50406	57607	64808	72009	79210	86410	100812	115214
	Run	26603	30404	34204	38005	41805	45605	53206	60807
VTS4-400	Start/End	66522	76025	85528	95031	104534	114037	133044	152050
	Run	35109	40124	45140	50155	55171	60186	70217	80248
VTS4-450	Start/End	84663	96757	108852	120947	133041	145136	169325	
	Run	44683	51066	57450	63833	70216	76600	89366	
Model		40PSI	50PSI	60PSI	70PSI	80PSI	90PSI	100PSI	110PSI

Double Acting

Model		Operating Pressure, (psig)							
		40	50	60	70	80	90	100	110
		Pressure Torque Output (lbf-in)							
VTS4-500	Start/End	105216	120246	135277	150308	165339	180370		
	Run	55530	63463	71396	79329	87262	95195		
VTS4-600	Start/End	152273	174027						
	Run	80367	91847						
VTS5-500	Start/End	136391	155875	175359	194844	214328	233813	272781	311750
	Run	71984	82267	92551	102834	113118	123401	143968	164535
VTS5-600	Start/End	197391	225590	253789	281988	310187	338385		
	Run	104179	119062	133944	148827	163710	178592		
VTS5-700	Start/End	283898	324455	365012					
	Run	149835	171240	192645					
VTS5-800	Start/End	368066							
	Run	194257							
VTS6-600	Start/End	241100	275542	309985	344428	378871	413314	482199	551085
	Run	127247	145425	163603	181781	199960	218138	254494	290850
VTS6-700	Start/End	346761	396298	445836	495373	544910	594447		
	Run	183013	209157	235302	261447	287591	313736		
VTS6-800	Start/End	449567	513790	578014	642238				
	Run	237271	271167	305063	338959				
VTS6-900	Start/End	577438	659930						
	Run	304759	348296						
VTS7-700	Start/End	411652	470459	529267	588074	646882	705689	823304	940919
	Run	217261	248298	279335	310372	341410	372447	434521	496596
VTS7-800	Start/End	533696	609938	686180	762423	838665	914907		
	Run	281673	321912	362151	402390	442629	482868		
VTS7-900	Start/End	685497	783425	881353	979281	1077210	1175138		
	Run	361790	413474	465159	516843	568527	620212		
VTS7-1000	Start/End	831895	950737	1069579	1188421	1307263	1426105		
	Run	439056	501778	564500	627222	689945	752667		
VTS7-700D	Start/End	823304	940919	1058533	1176148	1293763	1411378		
	Run	434521	496596	558670	620745	682819	744894		
Model		40PSI	50PSI	60PSI	70PSI	80PSI	90PSI	100PSI	110PSI

Spring Return Torque Curve



Spring Return

Model	Spring Torque (lbf-in)		Operating Pressure, (psig)							
			40	50	60	70	80	90	100	110
			Pressure Torque Output: (lbf-in)							
VTS1-200-SR4	Start	6354		4868	6408	7948	9488	11028	12568	15617
	Run	3123		2320	3134	3946	4759	5572	6385	7995
	End	5482		3925	5467	7007	8547	10087	11628	14678
VTS1-200-SR3	Start	11619						6099	7636	10710
	Run	5710						2764	3575	5197
	End	10020						4374	5911	8985
VTS1-250-SR3	Start	11619		6503	8981	11454	13928	16401	18875	23822
	Run	5710		2977	507	618	792	8201	1073	1316
	End	10020		4779	7256	9729	12203	14677	17150	22097
VTS1-300-SR3	Start	11619	10640	14216	17790	21365	24939	28514		
	Run	5710	5161	7052	1057	1196	1459	14594		
	End	10020	8916	12493	16065	19640	23215	26789		
VTS1-350-SR3	Start	11619	14910	19196	23482					
	Run	5710	7414	9672	11938					
	End	10020	13185	17472	21757					
VTS1-200-SR2	Start	13530							6150	9224
	Run	6578							2639	4261
	End	11398							3850	6924
VTS1-250-SR2	Start	13530		5023	7494	9968	12442	14915	17389	22336
	Run	6578		2046	3348	4654	5959	7265	8570	11181
	End	11398		2725	5195	7668	10142	12615	15089	20036
VTS1-300-SR2	Start	13530	9154	12728	16304	19878	23453	27028		
	Run	6578	4224	6111	7998	9884	11771	13658		
	End	11398	6854	10429	14004	17579	21153	24728		
VTS1-350-SR2	Start	13530	13423	17707	21996					
	Run	6578	6478	8741	11002					
	End	11398	11123	15409	19696					
VTS1-200-SR1	Start	15424								7533
	Run	7492								3276
	End	12965								4882
VTS1-250-SR1	Start	15424			5804	8277	10751	13224	15698	20645
	Run	7492			2363	3669	4974	6280	7585	10196
	End	12965			3152	5625	8099	10573	13046	17993
VTS1-300-SR1	Start	15424	7464	11039	14613	18188	21762	25337	28912	
	Run	7492	3239	5128	7013	8899	10786	12673	14559	
	End	12965	4812	8384	11961	15536	19111	22685	26260	
VTS1-350-SR1	Start	15424	11733	16018	20305	24591	28877			
	Run	7492	5492	7757	10017	12279	14541			
	End	12965	9081	13363	17653	21939	26226			
VTS2-250-SR3	Start	22448					11953	15000	18056	24155
	Run	10463					4814	6425	8035	11255
	End	17202					6294	9341	12397	18497
VTS2-300-SR3	Start	22448		12310	16715	21124	25533	29942	34351	43168
	Run	10463		5006	7329	9656	11983	14310	16636	21290
	End	17202		6651	11057	15466	19875	24284	28693	37510
Model	Spring Torque (lbf-in)		40PSI	50PSI	60PSI	70PSI	80PSI	90PSI	100PSI	110PSI

Spring Return

Model	Spring Torque (lbf-in)		Operating Pressure, (psig)							
			40	50	60	70	80	90	100	110
			Pressure Torque Output: (lbf-in)							
VTS2-350-SR3	Start	22448	13163	18447	23736	29022	34308	39595	44881	55454
	Run	10463	5454	8244	11034	13824	16614	19404	22194	27774
	End	17202	7505	12789	18078	23364	28650	33937	39223	49796
VTS2-400-SR3	Start	22448	23304	30278	37257	44233	51210			
	Run	10463	10806	14486	18170	21852	25534			
	End	17202	17646	24620	31599	38575	45552			
VTS2-250-SR2	Start	25228						12147	15198	21299
	Run	11896						4880	6490	9711
	End	19850						6346	9397	15499
VTS2-300-SR2	Start	25228			13860	18268	22677	27086	31495	40313
	Run	11896			5784	8111	10438	12765	15092	19745
	End	19850			8059	12468	16877	21285	25694	34512
VTS2-350-SR2	Start	25228		15592	20880	26166	31452	36739	42025	52598
	Run	11896		6703	9489	12279	15069	17859	20649	26229
	End	19850		9794	15079	20365	25652	30938	36224	46797
VTS2-400-SR2	Start	25228	20448	27423	34401	41377	48354	55330		
	Run	11896	9261	12867	16625	20307	23989	27671		
	End	19850	14647	21625	28600	35577	42553	49530		
VTS2-250-SR1	Start	31980								16193
	Run	14927								6441
	End	24584								8215
VTS2-300-SR1	Start	31980					17571	21980	26389	35207
	Run	14927					7168	9495	11822	16476
	End	24584					9593	14002	18411	27228
VTS2-350-SR1	Start	31980			15774	21060	26346	31633	36919	47492
	Run	14927			6220	9010	11800	14590	17380	22960
	End	24584			7795	13082	18368	23654	28941	39513
VTS2-400-SR1	Start	31980	15342	22321	29295	36271	43248	50224		
	Run	14927	5992	9672	13356	17038	20720	24402		
	End	24584	7364	14338	21316	28293	35269	42246		
VTS2-450-SR1	Start	31980	26757	35636	44515					
	Run	14927	12016	16703	21389					
	End	24584	18779	27658	36537					
VTS3-300-SR3	Start	37114					22338	27641	32943	43548
	Run	17302					9323	12122	14920	20518
	End	28450					12992	18295	23597	34202
VTS3-350-SR3	Start	37114			20176	26534	32892	39250	45608	58324
	Run	17302			8182	11538	14893	18249	21605	28316
	End	28450			10830	17188	23546	29904	36262	48978
VTS3-400-SR3	Start	37114	19657	28050	36438	44829	53220	61610	70001	86782
	Run	17302	7908	12336	16765	21193	25622	30050	34479	43335
	End	28450	10311	18700	27092	35483	43873	52264	60655	77436
VTS3-450-SR3	Start	37114	33386	44065	54744	65423	76101	86780	97459	
	Run	17302	15154	20790	26426	32062	37698	43334	48970	
	End	28450	24040	34719	45398	56076	66755	77434	88113	
Model	Spring Torque (lbf-in)		40PSI	50PSI	60PSI	70PSI	80PSI	90PSI	100PSI	110PSI

Spring Return

Model	Spring Torque (lbf-in)		Operating Pressure, (psig)							
			40	50	60	70	80	90	100	110
			Pressure Torque Output: (lbf-in)							
VTS3-500-SR3	Start	37114	48941	62211	75483	88754	102026			
	Run	17302	23363	30365	37372	44376	51381			
	End	28450	39595	52870	66137	79408	92680			
VTS3-300-SR2	Start	42433						23246	28548	39153
	Run	19780						9448	12247	17844
	End	32524						12557	17860	28465
VTS3-350-SR2	Start	42433					28497	34855	41213	53929
	Run	19780					12220	15575	18931	25642
	End	32524					17809	24167	30525	43240
VTS3-400-SR2	Start	42433		23653	32043	40434	48825	57215	65606	82387
	Run	19780		9663	14091	18520	22948	27376	31805	40662
	End	32524		12963	21355	29745	38136	46527	54917	71699
VTS3-450-SR2	Start	42433	28991	39670	50349	61028	71707	82385	93064	
	Run	19780	12480	18116	23752	29388	35025	40661	46297	
	End	32524	18303	28981	39660	50339	61018	71697	82376	
VTS3-500-SR2	Start	42433	44546	57814	71088	84360	97631			
	Run	19780	20690	27693	34698	41702	48707			
	End	32524	33857	47133	60400	73671	86942			
VTS3-300-SR2A	Start	47959							23982	34587
	Run	22356							9469	15066
	End	36757							11900	22505
VTS3-350-SR2A	Start	47959					23931	30289	36647	49363
	Run	22356					9442	12798	16153	22864
	End	36757					11849	18207	24564	37280
VTS3-400-SR2A	Start	47959			27477	35868	44259	52649	61040	77821
	Run	22356			11313	15742	20170	24599	29027	37884
	End	36757			15395	23785	32176	40567	48957	65739
VTS3-450-SR2A	Start	47959		35104	45783	56462	67141	77819	88498	109856
	Run	22356		15339	20975	26611	32247	37883	43519	54791
	End	36757		23021	33700	44379	55058	65737	76415	97773
VTS3-500-SR2A	Start	47959	39980	53251	66522	79794	93065	106336		
	Run	22356	17912	24916	31920	38925	45929	52933		
	End	36757	27897	41168	54440	67711	80982	94253		
VTS3-300-SR1	Start	55039								28732
	Run	25656								11506
	End	42186								14868
VTS3-350-SR1	Start	55039						24434	30792	43508
	Run	25656						9237	12593	19304
	End	42186						10570	16928	29643
VTS3-400-SR1	Start	55039			21622	30013	38403	46794	55185	71966
	Run	25656			7753	12181	16610	21038	25467	34323
	End	42186			7758	16149	24539	32930	41320	58102
VTS3-450-SR1	Start	55039		29249	39927	50606	61285	71964	82643	104000
	Run	25656		11778	17414	23050	28686	34322	39958	51231
	End	42186		15384	26063	36742	47421	58100	68779	90136
Model	Spring Torque (lbf-in)		40PSI	50PSI	60PSI	70PSI	80PSI	90PSI	100PSI	110PSI

Spring Return

Model	Spring Torque (lbf-in)		Operating Pressure, (psig)							
			40	50	60	70	80	90	100	110
			Pressure Torque Output: (lbf-in)							
VTS3-500-SR1	Start	55039	34124	47394	60667	73938	87209	100481		
	Run	25656	14351	21355	28360	35364	42369	49373		
	End	42186	20260	33534	46803	60074	73345	86616		
VTS4-350-SR4	Start	69401							38671	54102
	Run	31504							14882	23026
	End	49981							17723	33154
VTS4-400-SR4	Start	69401					47908	58090	68272	88635
	Run	31504					19757	25131	30504	41252
	End	49981					26960	37142	47324	67688
VTS4-450-SR4	Start	69401			49757	62716	75674	88633	101592	127509
	Run	31504			20733	27572	34411	41251	48090	61768
	End	49981			28810	41768	54727	67685	80644	106561
VTS4-500-SR4	Start	69401	42715	58816	74924	91029	107133	123238	139342	171551
	Run	31504	17016	25516	34015	42515	51015	59514	68014	85013
	End	49981	21768	37870	53976	70081	86185	102290	118394	150603
VTS4-600-SR4	Start	69401	85932	109239	132546	155853	179160	202467		
	Run	31504	39825	52130	64427	76728	89029	101330		
	End	49981	64984	88293	111598	134905	158213	181520		
VTS4-350-SR3	Start	82617								44979
	Run	37223								16857
	End	58438								18899
VTS4-400-SR3	Start	82617						58178	59149	79513
	Run	37223						20382	24335	35083
	End	58438						19058	33069	53433
VTS4-450-SR3	Start	82617					66552	79511	92469	118386
	Run	37223					28242	35082	41921	55599
	End	58438					40472	53430	66389	92306
VTS4-500-SR3	Start	82617		49701	65802	81906	98011	114115	130219	162428
	Run	37223		19344	27846	36346	44846	53345	61845	78844
	End	58438		23619	39722	55826	71930	88035	104139	136348
VTS4-600-SR3	Start	82617	76809	100115	123423	146731	170038	193345		
	Run	37223	33656	45957	58258	70559	82860	95161		
	End	58438	50729	74033	97343	120650	143958	167265		
VTS4-400-SR2	Start	98884								67289
	Run	44506								27227
	End	69771								35886
VTS4-450-SR2	Start	98884					54328	67287	80245	106162
	Run	44506					20386	27226	34065	47743
	End	69771					22926	35884	48843	74760
VTS4-500-SR2	Start	98884			53578	69682	85787	101891	117996	150205
	Run	44506			19990	28490	36990	45489	53989	70988
	End	69771			22175	38280	54384	70489	86593	118802
VTS4-600-SR2	Start	98884	64585	87893	111200	134507	157814	181121		
	Run	44506	25800	38105	50402	62703	75004	87305		
	End	69771	33183	56491	79797	103104	126411	149719		
Model	Spring Torque (lbf-in)		40PSI	50PSI	60PSI	70PSI	80PSI	90PSI	100PSI	110PSI

Spring Return

Model	Spring Torque (lbf-in)		Operating Pressure, (psig)							
			40	50	60	70	80	90	100	110
			Pressure Torque Output: (lbf-in)							
VTS4-400-SR1	Start	111383								54833
	Run	50852								20382
	End	81318								22404
VTS4-450-SR1	Start	111383						54831	67789	93706
	Run	50852						20381	27220	40898
	End	81318						22401	35360	61277
VTS4-500-SR1	Start	111383					73331	89435	105540	137748
	Run	50852					30145	38644	47144	64143
	End	81318					40902	57006	73110	105319
VTS4-600-SR1	Start	111383		75435	98744	122051	145358	168665	191972	
	Run	50852		31253	43557	55858	68159	80460	92761	
	End	81318		43006	66314	89622	112929	136236	159543	
VTS5-500-SR4	Start	155203						123685	144561	186313
	Run	66878						49060	60078	82114
	End	98227						62228	83104	124857
VTS5-600-SR4	Start	155203		105539	135752	165965	196178	226390	256603	317029
	Run	66878		39483	55429	71375	87320	103266	119212	151103
	End	98227		44082	74295	104508	134721	164934	195147	255573
VTS5-700-SR4	Start	155203	154770	198220	241678	285131	328585	372039		
	Run	66878	65466	88398	111334	134268	157202	180136		
	End	98227	93313	136766	180221	223675	267128	310582		
VTS5-800-SR4	Start	155203	232068	288404	344741					
	Run	66878	106262	135996	165729					
	End	98227	170611	226947	283284					
VTS5-500-SR3	Start	186264							125241	166993
	Run	79801							46139	68175
	End	116139							49601	91354
VTS5-600-SR3	Start	186264			116431	146644	176857	207070	237283	297709
	Run	79801			41489	57435	73381	89327	105272	137164
	End	116139			40792	71005	101218	131431	161644	222070
VTS5-700-SR3	Start	186264	135450	178902	222357	265811	309265	352718		
	Run	79801	51527	74460	97395	120329	143263	166197		
	End	116139	59811	103267	146718	190172	233626	277079		
VTS5-800-SR3	Start	186264	212747	269084	325420					
	Run	79801	92323	122056	151789					
	End	116139	137108	193445	249781					
VTS5-500-SR2	Start	229129								145160
	Run	96454								50212
	End	136380								45117
VTS5-600-SR2	Start	229129					155025	185238	215450	275876
	Run	96454					55418	71364	87310	119201
	End	136380					54981	85194	115407	175833
VTS5-700-SR2	Start	229129		157068	200525	243978	287432	330886	374340	
	Run	96454		56500	79432	102366	125300	148234	171168	
	End	136380		57031	100482	143935	187389	230843	274297	
Model	Spring Torque (lbf-in)		40PSI	50PSI	60PSI	70PSI	80PSI	90PSI	100PSI	110PSI

Spring Return

Model	Spring Torque (lbf-in)		Operating Pressure, (psig)							
			40	50	60	70	80	90	100	110
			Pressure Torque Output: (lbf-in)							
VTS5-800-SR2	Start	229129	190915	247251	303588					
	Run	96454	74360	104093	133827					
	End	136380	90872	147208	203545					
VTS5-500-SR1	Start	255070								
	Run	109739								
	End	160781								
VTS5-600-SR1	Start	255070						158917	189130	249556
	Run	109739						57034	72980	104872
	End	160781						57213	87426	147852
VTS5-700-SR1	Start	255070			174204	217658	261112	304566	348019	
	Run	109739			65103	88037	110970	133904	156838	
	End	160781			72500	115954	159408	202862	246315	
VTS5-800-SR1	Start	255070	164594	220931	277268	333604	389941			
	Run	109739	60031	89764	119497	149230	178964			
	End	160781	62890	119227	175564	231900	288237			
VTS6-600-SR4	Start	306196							239130	312936
	Run	130638							92807	131760
	End	188854							112560	186366
VTS6-700-SR4	Start	306196			220899	273975	327050	380126	433201	539353
	Run	130638			83185	111197	139210	167222	195234	251258
	End	188854			94329	147405	200481	253556	306632	412783
VTS6-800-SR4	Start	306196	209161	277973	346783	415594	484406	553217	622028	
	Run	130638	76990	113305	149624	185941	222258	258575	294892	
	End	188854	82591	151401	220214	289025	357836	426647	495458	
VTS6-900-SR4	Start	306196	326594	414974	503361	591744	680128			
	Run	130638	138969	185614	232262	278909	325556			
	End	188854	200025	288411	376791	465175	553558			
VTS6-600-SR3	Start	363428								277412
	Run	154432								106095
	End	221788								124633
VTS6-700-SR3	Start	363428					291527	344603	397678	503830
	Run	154432					113545	141557	169569	225593
	End	221788					138748	191823	244899	351050
VTS6-800-SR3	Start	363428		242445	311260	380071	448882	517694	586505	
	Run	154432		87640	123959	160276	196593	232910	269227	
	End	221788		89669	158481	227292	296103	364914	433725	
VTS6-900-SR3	Start	363428	291071	379455	467838	556221	644605			
	Run	154432	113304	159950	206598	253244	299891			
	End	221788	138291	226679	315058	403442	491825			
VTS6-700-SR2	Start	441059							349492	455643
	Run	186707							134756	190780
	End	266461							161162	267314
VTS6-800-SR2	Start	441059					400696	469507	538318	675941
	Run	186707					161780	198097	234414	307048
	End	266461					212366	281178	349989	487611
Model	Spring Torque (lbf-in)		40PSI	50PSI	60PSI	70PSI	80PSI	90PSI	100PSI	110PSI

VTS Series Scotch Yoke Actuator



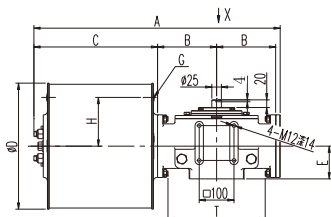
Spring Return

Model	Spring Torque (lbf-in)		Operating Pressure, (psig)							
			40	50	60	70	80	90	100	110
			Pressure Torque Output: (lbf-in)							
VTS6-900-SR2	Start	441059		331269	419651	508035	596418	684801		
	Run	186707		125136	171785	218431	265078	311725		
	End	266461		142939	231322	319705	408089	496472		
VTS6-700D-SR2	Start	441059	349492	455643	561794					
	Run	186707	134756	190780	246805					
	End	266461	161162	267314	373465					
VTS6-700-SR1	Start	498291							313968	420120
	Run	210500							109091	165115
	End	299394							99429	205581
VTS6-800-SR1	Start	498291					365173	433984	502795	640417
	Run	210500					136115	172432	208750	281384
	End	299394					150633	219445	288256	425878
VTS6-900-SR1	Start	498291			384128	472511	560895	649278		
	Run	210500			146120	192766	239413	286060		
	End	299394			169589	257972	346356	434739		
VTS6-700D-SR1	Start	498291	313968	420120	526271					
	Run	210500	109091	165115	221140					
	End	299394	99429	205581	311732					
VTS7-700-SR3	Start	504564						304382	367390	493406
	Run	228245						119601	152855	219364
	End	360365						148843	211851	337867
VTS7-800-SR3	Start	504564			264800	346488	428176	509864	591552	754929
	Run	228245			98710	141824	184937	228050	271163	357390
	End	360365			109261	190949	272637	354325	436013	599390
VTS7-900-SR3	Start	504564		345755	450679	555602	660525	765448	870371	1080217
	Run	228245		141441	196813	252189	307565	362941	418317	529069
	End	360365		190219	295139	400062	504985	609908	714831	924677
VTS7-1000-SR3	Start	504564	375280	502614	629941	757272	884603	1011934	1139265	
	Run	228245	157019	224224	291424	358626	425829	493031	560233	
	End	360365	219740	347070	474402	601733	729064	856395	983725	
VTS7-700-SR2	Start	593881							299255	425271
	Run	268484							109452	175960
	End	423532							115510	241526
VTS7-800-SR2	Start	593881					360042	441730	523418	686794
	Run	268484					141533	184647	227760	313986
	End	423532					176296	257984	339672	503048
VTS7-900-SR2	Start	593881		277624	382544	487467	592390	697313	802236	1012082
	Run	268484		98035	153410	208786	264162	319538	374914	485666
	End	423532		93873	198798	303721	408644	513567	618490	828336
VTS7-1000-SR2	Start	593881	307145	434475	561807	689138	816468	943799	1071130	
	Run	268484	113616	180817	248021	315223	382425	449628	516830	
	End	423532	123399	250733	378061	505392	632723	760054	887384	
VTS7-800D-SR2	Start	593881	523418	686794	850170					
	Run	268484	227760	313986	400213					
	End	423532	339672	503048	666425					
Model	Spring Torque (lbf-in)		40PSI	50PSI	60PSI	70PSI	80PSI	90PSI	100PSI	110PSI

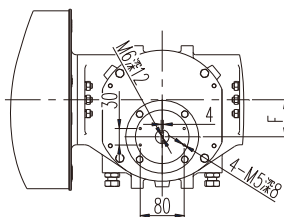
Spring Return

Model	Spring Torque (lbf-in)		Operating Pressure, (psig)							
			40	50	60	70	80	90	100	110
			Pressure Torque Output: (lbf-in)							
VTS7-800-SR1	Start	737338							441881	605258
	Run	326288							165409	251636
	End	499124							184933	348309
VTS7-900-SR1	Start	737338					510854	615777	720700	930546
	Run	326288					201811	257187	312563	423316
	End	499124					253905	358828	463751	673597
VTS7-1000-SR1	Start	737338			480270	607601	734932	862263	989594	
	Run	326288			185670	252873	320075	387277	454480	
	End	499124			223322	350653	477984	605314	732645	
VTS7-700D-SR1	Start	737338			470665	595449	720233	845018	969802	
	Run	326288			181957	247815	313673	379532	445390	
	End	499124			218855	343640	468424	593208	717992	
VTS7-700D-SR1A	Start	911319					601626	727893	854161	1106704
	Run	402212					232568	299212	365857	499138
	End	612858					279699	405966	532233	784768
VTS7-800D-SR1	Start	737338	441881	605258	768634	932010	1095387			
	Run	326288	165409	251636	337862	424089	510315			
	End	499124	184933	348309	511686	675062	838438			
VTS7-900D-SR1A	Start	911319	600544	810807	1021078	1231349	1441620			
	Run	402212	232001	342976	453943	564910	675877			
	End	612858	278608	488879	699142	909404	1119667			
VTS7-800D-SR1A	Start	911319		484867	648574	975979	1303385			
	Run	402212		170947	257350	430147	602943			
	End	612858		162939	326647	654052	981457			
VTS7-900-SR1A	Start	911319						495413	600544	810807
	Run	402212						176513	232001	342976
	End	612858						173477	278608	488879
VTS7-1000-SR1A	Start	911319					614807	742391	869976	1125145
	Run	402212					239529	306862	374196	508873
	End	612858					292871	420455	548048	803218
Model	Spring Torque (lbf-in)		40PSI	50PSI	60PSI	70PSI	80PSI	90PSI	100PSI	110PSI

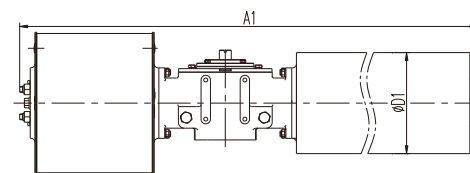
Dimensional Drawing



Double acting



View X



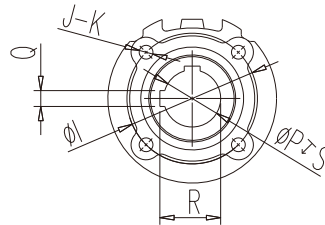
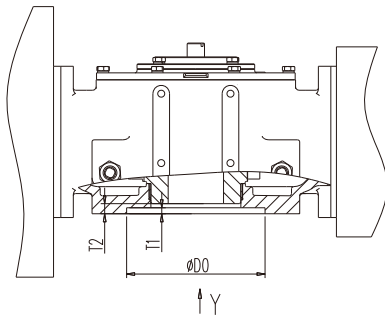
Spring return acting

Dimensions

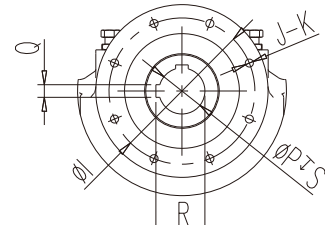
Model	Spring return (in)										
	Double acting(in)										
	A	B	Φ	D	E	F	G	H	T		
VTS1-200	25.9	5.7	14.0	8.8	3.5	2.4	NPT 3/8	3.1	9.3	53.9	8.7
VTS1-250	25.9	5.7	14.0	11.0	3.5	2.4	NPT 1/2	4.3	9.3	53.9	8.7
VTS1-300	25.9	5.7	14.0	13.1	3.5	2.4	NPT 1/2	4.9	9.3	53.9	8.7
VTS1-350	25.9	5.7	14.0	14.3	3.5	2.4	NPT 1/2	5.2	9.3	53.9	8.7
VTS2-250	27.9	6.7	14.0	11.0	3.7	2.9	NPT 1/2	4.3	11.2	56.7	10.8
VTS2-300	27.9	6.7	14.0	13.1	3.7	2.9	NPT 1/2	4.9	11.2	56.7	10.8
VTS2-350	27.9	6.7	14.0	14.3	3.7	2.9	NPT 1/2	5.2	11.2	56.7	10.8
VTS2-400	28.5	6.7	14.6	16.3	3.7	2.9	NPT 3/4	6.2	11.2	57.3	10.8
VTS2-450	30.6	6.7	16.7	18.2	3.7	2.9	NPT 3/4	7.0	11.2	59.4	10.8
VTS3-300	32.1	7.7	16.2	13.1	3.9	3.5	NPT 1/2	4.9	12.6	62.6	12.9
VTS3-350	32.1	7.7	16.2	14.3	3.9	3.5	NPT 1/2	5.2	12.6	62.6	12.9
VTS3-400	32.6	7.7	16.6	16.3	3.9	3.5	NPT 3/4	6.2	12.6	63.1	12.9
VTS3-450	32.7	7.7	16.7	18.2	3.9	3.5	NPT 3/4	7.0	12.6	63.2	12.9
VTS3-500	32.7	7.7	16.7	20.2	3.9	3.5	NPT 3/4	8.0	12.6	63.2	12.9
VTS4-350	38.5	9.4	19.2	14.3	4.5	4.3	NPT 1/2	5.2	15.6	75.9	16.1
VTS4-400	38.5	9.4	19.2	16.3	4.5	4.3	NPT 3/4	6.2	15.6	75.9	16.1
VTS4-450	38.6	9.4	19.3	18.2	4.5	4.3	NPT 3/4	7.0	15.6	76.0	16.1
VTS4-500	38.6	9.4	19.3	20.2	4.5	4.3	NPT 3/4	8.0	15.6	76.0	16.1
VTS4-600	39.4	9.4	20.1	24.3	4.5	4.3	NPT 3/4	9.6	15.6	76.8	16.1
VTS5-500	46.9	11.7	22.8	20.2	6.4	5.5	NPT 3/4	8.0	19.9	88.5	20.0
VTS5-600	47.7	11.7	23.6	24.3	6.4	5.5	NPT 3/4	9.6	19.9	89.3	20.0
VTS5-700	49.0	11.7	24.9	29.1	6.4	5.5	NPT 1	12.0	19.9	90.6	20.0
VTS5-800	50.4	11.7	26.7	33.0	6.4	5.5	NPT 1-1/2	14.0	19.9	92.4	20.0
VTS6-600	57.9	14.6	27.6	24.3	8.0	6.7	NPT 3/4	9.6	24.4	103.8	26.9
VTS6-700	60.0	14.6	29.6	29.1	8.0	6.7	NPT 1	12.0	24.4	105.9	26.9
VTS6-800	60.3	14.6	30.0	33.0	8.0	6.7	NPT 1-1/2	14.0	24.4	106.2	26.9
VTS6-900	60.5	14.6	30.2	37.3	8.0	6.7	NPT 1-1/2	15.8	24.4	106.4	26.9
VTS6-700D	-	14.6	59.1	29.1	8.0	6.7	NPT 1	12.0	24.4	135.3	26.9
VTS7-700	69.3	16.7	34.6	29.1	8.4	8.0	NPT 1	12.0	27.2	141.3	26.9
VTS7-800	69.3	16.7	34.6	33.0	8.4	8.0	NPT 1-1/2	14.0	27.2	141.3	26.9
VTS7-900	69.3	16.7	34.6	37.3	8.4	8.0	NPT 1-1/2	15.8	27.2	141.3	26.9
VTS7-1000	69.3	16.7	34.6	41.3	8.4	8.0	NPT 2	18.0	27.2	141.3	26.9
VTS7-800D	-	16.7	67.9	33.0	8.4	8.0	NPT 1-1/2	14.0	27.2	174.6	26.9

Note: Air source interface standard configuration RC, optional configuration G , if you need special thread and diameter should be specified in the order.

Mounting Dimensions



VTS 1-2



VTS 3-7

View Y

(The actuator moves clockwise)

Connection dimensions

Model	Dimension (in)								
	ØI	J-K	ØP	S	Q	R	ØD0	T1	T2
VTS1	5.5	4-M16	2.36	5.71	0.71	2.54	3.94	0.4	0.55
VTS2	6.5	4-M20	2.83	6.10	0.79	3.03	5.12	0.4	0.59
VTS3	10.0	8-M16	3.15	6.89	0.87	3.36	7.87	0.2	0.28
VTS4	11.7	8-M20	3.94	7.87	1.10	4.19	9.06	0.4	0.47
VTS5	14.0	8-M30	6.30	11.61	1.57	6.67	10.24	0.4	0.59
VTS6	16.0	8-M36	7.09	14.17	1.77	7.50	11.81	0.4	0.83
VTS7	19.0	12-M36	8.66	14.96	1.97	9.11	14.57	0.4	0.79

Manual override data

Model	ISO flange connection	Torque Range (in-lbs)	Double Acting (DA)				Spring Return Acting (SR)			
			Screw		Worm gear manual override MW	Hydraulic	Screw		Worm gear manual override MW	Hydraulic
			Jack screw manual override MS D	Gearbox manual override MGD			Jack screw manual override MS	Gearbox manual override MG		
VTS1	F14	17700	√ ^c	—	√	—	√ ^c	—	√	—
VTS2	F16	35400	√ ^c	—	√	—	√ ^c	—	√	—
VTS3	F25	70800	√ ^c	—	√	√	√ ^c	√ ^c	—	√
VTS4	F30	141600	—	√ ^c	—	√	—	√ ^c	—	√
VTS5	F35	283200	—	√	—	√ ^c	—	√	—	√ ^c
VTS6	F40	557550	—	—	—	√ ^c	—	—	—	√ ^c
VTS7	F48	1106250	—	—	—	√ ^c	—	—	—	√ ^c

Note: √^c Recommended configuration .

Double acting switch time requirements, try to avoid the selection of hydraulic.

Turbine worm clutch handwheel is optional when the actuator has space requirement in the length direction.

Actuator in the adjustment occasions, there are precision requirements, avoid choosing turbine worm clutch handwheel.

VTS3-SR recommends MS for SR3 and MG for SR2 and above.

Model Designation

Scotch Yoke Type Actuator	VTS	X	—	XXX	—	XX	X	XX	—	XX	—	X
Drive Housing	Connection flange F14	1										
	Connection flange F16	2										
	Connection flange F25	3										
	Connection flangeF30	4										
	Connection flangeF35	5										
	Connection flangeF40	6										
	Connection flangeF48	7										
Cylinder Size	Select the cylinder according to the torque sheet			200-1000								
Actuator Type	Spring return type					SR						
	Double acting type					/						
Spring No.	Select the spring according to the torque sheet						1~4					
	Double acting type						/					
Fail Position	Fail to close							FC				
	Fail to open							FO				
	Double acting							/				
Manual Mode [□]	Jack screw manual override									MS/MSD [□]		
	Gearbox manual override									MG/MGD [□]		
	Worm gear manual override									MW		
	Hydraulic manual override									MH/MHD [□]		
	Without manual override									/		
Temperature Range	Standard temperature -20°C~+80°C											/
	High temperature -20°C~+150°C											H
	Low temperature type -40°C~+80°C											L

Note a:MS、MG、MH for spring return acting,MSD、MHD for double acting.

⚠ Notice.

Pressure-temperature ratings and other performance data published in this catalog have been developed from our design calculation, in-house testing, field reports provided by our customers and/or published official standards or specifications. They are good only to cover typical applications as a general guideline to users of V-TORK products introduced in this catalog.

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