

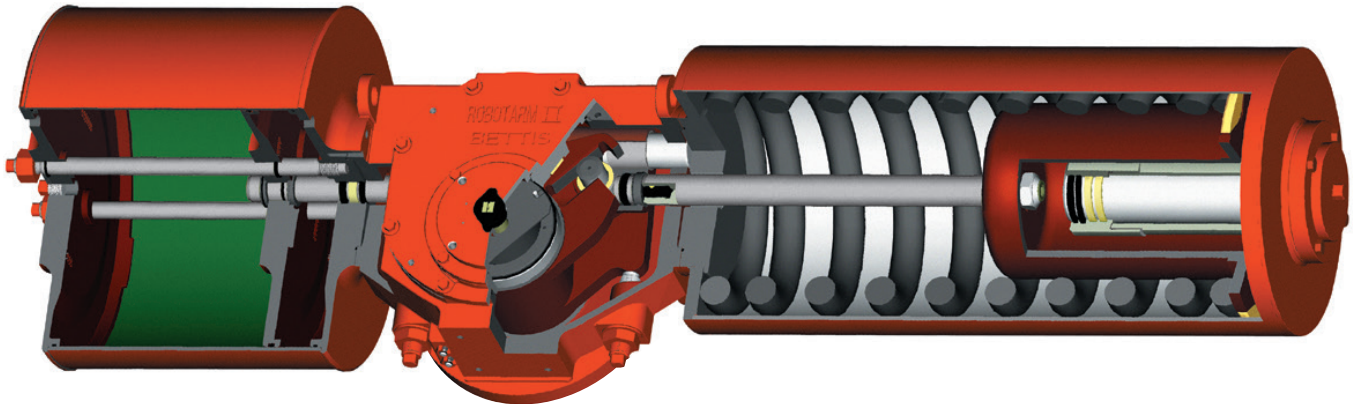
Actuation



section R

SCOTCH-YOKE ACTUATORS

G SERIES



NAMUR

The shaft driven accessory interface conforms to the NAMUR standard and is identical on all G-Series actuators, allowing for standardization of accessory mounting hardware and installation practices

- Pneumatic and hydraulic scotch-yoke actuators
- Automates ball, butterfly, plug valves and any other 90° rotating mechanisms
- Salt Spray Testing per ASTM B117 criteria. Construction features prevent water ingress, allowing G-Series actuators to meet IP 66 and IP 67M specifications and severe high pressure water deluge test.

OPERATING RANGES

G-Series double acting actuators produce guaranteed minimum torque outputs from 10,000 lb-in. up to 6,000,000 lb-in. The spring return units produce spring torques from 2,500 lb-in. to 3,000,000 lb-in.

- Standard operating pressures:
 - Pneumatic — to 200 psig (14 BAR)
 - Standard operating temperature is -20°F to +200°F (-29°C to +93°C)
- Optional trims available:
 - 0°F to +350°F (-18°C to +177°C)
 - -50°F to +180°F (-46°C to +82°C)
- Mechanical and hydraulic manual overrides are available
- MSS and ISO Valve Mounting
 - The G-Series valve interface meets the dimensional requirements of MSS SP-101 or ISO 5211 defined for each torque range

DOUBLE ACTING G1 PNEUMATIC ACTUATOR TORQUE CHART

APOLLO MODEL NO.	REFERENCE NUMBER	STROKE POSITION	OPERATING PRESSURE (PSIG)											
			40	50	60	70	80	90	100	110	120	150	175	200
			OUTPUT TORQUE (IN-LBS)											
3TG100800	G01008	Start/End	12465	14543	16620	18698	20775	22853	24930	31163	36356	41550		
		Minimum			6579	7675	8772	9868	10965	12061	13158	16447	19188	21929
3TG100900	G01009	Start/End	10593	13241	15890	18538	21186	23835	26483	29131	31779	39724		
		Minimum	5591	6989	8386	9784	11182	12579	13977	15375	16772	20966		
3TG101000	G01010	Start/End	14046	17557	21069	24580	28092	31603	35115	38626				
		Minimum	7413	9266	11120	1973	14826	16680	18533	20386				
3TG101200	G01012	Start/End	20133	25166	30199	35232								
		Minimum	10626	13282	15938	18595								
3TG101400	G01014	Start/End	24482	30603	36723									
		Minimum	12921	16152	19382									

G SERIES PNEUMATIC DOUBLE-ACTING ACTUATOR TORQUE CHART

APOLLO MODEL NO.	REFERENCE NUMBER	STROKE POSITION	OPERATING PRESSURE (PSIG)											
			40	50	60	70	80	90	100	110	120	150	175	200
			OUTPUT TORQUE (IN-LB)											
3TG200900	G2009	Start/End			11844	22441	25647	28852	32058	35264	38470	48087	56102	
		Minimum			13536	15228	16920	18612	20304	25379	29609			
3TG201000	G2010	Start/End		21254	25504	29755	34006	38257	42507	46758	51009			
		Minimum		11217	13461	15704	17948	20191	22434	24678	26921			
3TG201200	G2012	Start/End	24371	30464	36556	42649	48742	54835	60927					
		Minimum	12862	16078	19294	22509	25725	28941	32156					
3TG201400	G2014	Start/End	29636	37046	44455	51864	59273							
		Minimum	15641	19552	23462	27373	31283							
3TG201600	G2016	Start/End	39118	48897	58677									
		Minimum	20646	25807	30968									
3TG301000	G3010	Start/End				35888	41015	46142	51269	56396	61523	76903	89721	102538
		Minimum				18941	21647	24353	27059	29764	32470	40588	47352	54117
3TG301200	G3012	Start/End		36847	44216	51585	58955	66324	73693	81063	88432			
		Minimum		19447	23336	27226	31115	35004	38894	42783	46672			
3TG301400	G3014	Start/End	35887	44859	53831	62803	71775	80747	89719	98690				
		Minimum	18941	23676	28411	33146	37881	42616	47351	52087				
3TG301600	G3016	Start/End	47430	59288	71145	83003	94860							
		Minimum	25033	31291	37549	43807	50065							
3TG302000	G3020	Start/End	75266	94082										
		Minimum	39724	49654										

SPRING RETURN G1 PNEUMATIC ACTUATOR TORQUE CHART

APOLLO MODEL NO.	REFERENCE NUMBER	SPRING TORQUE (IN-LB) START/MIN/END	OPERATING PRESSURE (PSIG)											
			40	50	60	70	80	90	100	110	120	150	175	200
			OUTPUT TORQUE START/MIN/END (IN-LB)											
3TG100804	G01008-SR4	11614					5551	7628	9706	11783	13861	20093	25287	30481
		5708					2439	3543	4648	5752	6849	10138	12880	15621
		10015					3783	5861	7938	10016	12093	18326	23520	28713
3TG100904	G01009-SR4	11614			4820	7469	10117	12765	15414	18062	20710	28655		
		5708			2051	3459	4866	6271	7669	9066	10464	14657		
		10015			3053	5701	8350	10998	13646	16295	18943	26888		
3TG101004	G1010-SR4	11614		6488	10000	13511	17023	20534	24046	27557				
		5708		2938	4804	6664	8518	10371	12224	14078				
		10015		4721	4232	11744	15255	18767	22278	25790				
3TG101204	G01012-SR4	11614	9063	14096	19130	24163								
		5708	4306	6973	9630	12286								
		10015	7296	12329	17362	22395								
3TG101404	G01014-SR4	11614	13413	19534	25654									
		5708	6613	9843	13073									
		10015	11646	17766	23887									
3TG100803	G01008-SR3	13598						6048	8126	10203	12281	18513	23707	28901
		6605						2523	3631	4735	5839	9143	11884	14625
		11445						3669	5746	7824	9901	16434	21327	26521
3TG100903	G01009-SR3	13598				5889	8537	11185	13834	16482	19130	27075		
		6605				2437	3850	5257	6665	8071	9469	13662		
		11445				3509	6157	8806	11454	14102	16751	24695		
3TG101003	G01010-SR3	13598		4908	8420	11931	15443	18954	22466	25977				
		6605		1904	3787	5653	7520	9376	11229	13082				
		11445		2529	6040	9552	13063	16574	20086	23597				
3TG101203	G01012-SR3	13598	7483	12516	17550	22583								
		6605	3289	5964	8634	11291								
		11445	5104	10137	15170	20203								
3TG101403	G01014-SR3	13598	11833	17954	24074									
		6605	5601	8848	12078									
		11445	9453	15574	21695									

SPRING RETURN G1 PNEUMATIC ACTUATOR TORQUE CHART (CONT.)

APOLLO MODEL NO.	REFERENCE NUMBER	SPRING TORQUE (IN-LB) START/MIN/END	OPERATING PRESSURE (PSIG)												
			40	50	60	70	80	90	100	110	120	150	175	200	
			OUTPUT TORQUE START/MIN/END (IN-LB)												
3TG100802	G01008-SR2	15526									8443	10521	16753	21947	27141
		7352									3692	4796	8109	10857	13598
		13037									5692	7770	14002	19196	24390
3TG100902	G01009-SR2	15526					6777	9425	12074	14722	17370	25315			
		7352					2800	4214	5622	7029	8437	12635			
		13037					4026	6674	3923	11971	14619	22564			
3TG101002	G01010-SR2	15526			6660	10171	13683	17194	20706	24217					
		7352			2736	4611	6477	8348	10202	12055					
		13037			3909	7420	10932	14443	17955	21466					
3TG101202	G01012-SR2	15526	5723	10756	15789	20823									
		7352	2228	4922	7597	10264									
		13037	2972	8005	13039	18072									
3TG101402	G01014-SR2	15526	10073	16194	22314										
		7352	4559	7811	11051										
		13037	7322	13443	19563										
3TG100801	G0108-SR1	18470									8599	14831	20025	25219	
		8749									3364	6703	9463	12223	
		14776									4516	10748	15942	21136	
3TG100901	G0109-SR1	18470						7503	1152	12800	15448	23393			
		8749						2764	4207	5623	7030	11253			
		14776						3420	6069	8717	11365	19310			
3TG101001	G01010-SR1	18470			8249	11761	15272	18784	22295						
		8749			3174	5071	6937	8803	10669						
		14776			4166	7678	11189	14701	18212						
3TG101201	G01012-SR1	18470		8834	13868	18901									
		8749		3492	6190	8865									
		14776		4752	9785	14818									
3TG101401	G01014-SR1	18470	8151	14272	20392										
		8749	3121	6405	9658										
		14776	4068	10189	16309										

SCOTCH-YOKE ACTUATORS

TORQUE RATING - G SERIES

All published torques are guaranteed minimum values.

SPRING-RETURN ACTUATOR

APOLLO MODEL NO.	REFERENCE NUMBER	SPRING TORQUE (IN-LB) START/MIN/END	OPERATING PRESSURE (PSIG)								
			40	50	60	70	80	90	100	110	120
			OUTPUT TORQUE START/MIN/END (IN-LB)								
3TG200902	G2009-SR2	26818									14072
		12882									5964
		22074									8829
3TG201002	G2010-SR2	26818						13859	18810	22361	26611
		12882						5848	8110	10369	12628
		22074						8616	12866	17117	21368
3TG201202	G2012-SR2	26818			12159	18252	24344	30437	36530		
		12882			4926	8185	11423	14661	17896		
		22074			6915	13008	19101	25194	31286		
3TG201402	G2014-SR2	26818		12648	20057	27466	34875				
		12882		5191	9145	13082	17020				
		22071		7404	14814	22223	29632				
3TG201602	G2016-SR2	26818	14720	24500	34279						
		12882	6308	11506	16703						
		22074	9477	19256	29036						
3TG200901	G2009-SR1	30997									
		14742									
		25004									
3TG201001	G2010-SR1	30997						14871	19122	23373	
		14742						5957	8249	10508	
		25004						8248	12498	16749	
3TG201201	G2012-SR1	30997				21106	27199	33291			
		14742				9303	12541	15779			
		25004				14482	20575	26668			
3TG201401	G2014-SR1	30997			16819	24228	31637				
		14742			7014	10962	14900				
		25004			10195	17604	25013				
3TG201601	G2016-SR1	30997		21261	31041						
		14742		9386	14583						
		25004		14638	24417						
3TG200904	G2009-SR4	20678						10155	13361	16567	19772
		9903						4185	5900	7603	9307
		16917						5998	9204	12410	15616
3TG201004	G2010-SR4	20678			11058	15308	19559	23810	28061	32311	
		9903			4675	6935	9194	11453	13712	15956	
		16917			6901	11152	15402	19653	23904	28155	
3TG201204	G2012-SR4	20678		11766	17859	23952	30044	36137	42230		
		9903		5052	8290	11528	14760	17975	21191		
		16917		7609	13702	19795	25888	31980	38073		
3TG201404	G2014-SR4	20678	10939	18348	25757	33166	40575				
		9903	4610	8550	12488	16407	20318				
		16917	6782	14191	21600	29009	36419				
3TG201604	G2016-SR4	20678	20420	30200	39979						
		9903	9652	14842	20003						
		16917	16264	26043	35823						
3TG200903	G2009-SR3	24139								13833	17039
		11457								5833	7539
		19390								8584	11790
3TG201003	G2010-SR3	24139					12575	16826	21077	25327	29578
		11457					5150	7426	9685	11944	14203
		19390					7326	11577	15828	20078	24329
3TG201203	G2012-SR3	24139			15126	21219	27311	33404	39497		
		11457			6522	9760	12998	16236	19460		
		19390			9877	15970	22062	28155	34248		
3TG201403	G2014-SR3	24139		15615	23024	30433	37842				
		11457		6782	10720	14657	18587				
		19390		10366	17775	25184	32593				

SPRING-RETURN ACTUATOR (CONT.)

APOLLO MODEL NO.	REFERENCE NUMBER	SPRING TORQUE (IN-LB) START/MIN/END	OPERATING PRESSURE (PSIG)								
			40	50	60	70	80	90	100	110	120
			OUTPUT TORQUE START/MIN/END (IN-LBS)								
3TG201603	G2016-SR3	24139	17687	27467	37246						
		11457	7883	13081	18273						
		19390	12438	22218	31997						
3TG301002	G3010-SR2	49017									20655
		22571									6848
		36975									7346
3TG301202	G3012-SR2	49017						25456	32826	40195	47564
		22571						9568	13568	17516	21433
		36975						12147	19516	26886	34255
3TG301402	G3014-SR2	49017				21936	30907	39879	48851	57823	
		22571				7591	12527	17349	22117	26885	
		36975				8626	17598	26570	35542	44514	
3TG301602	G3016-SR2	49017			30278	42135	53993				
		22571			12185	18548	24849				
		36975			16968	28826	40683				
3TG302002	G3020-SR2	49017	34398	53215							
		22571	14422	24436							
		36975	21089	39905							
3TG301001	G3010-SR1	54045									
		25307									
		42224									
3TG301201	G3012-SR1	54045							27024	34394	41763
		25307							10497	14497	18420
		42224							13960	21329	28698
3TG301401	G3014-SR1	54045				25106	34078	43050	52022		
		25307				9456	14326	19104	23873		
		42224				12041	21013	29985	38957		
3TG301601	G3016-SR1	54045			24476	36334	48191				
		25307			9107	15535	21837				
		42224			11412	23269	35127				
3TG302001	G3020-SR1	54045	28597	47413							
		25307	11351	21423							
		42224	15532	34349							
3TG301004	G3010-SR4	36568							19695	24822	29949
		17123							7867	10637	13361
		28566							10851	15978	21105
3TG301204	G3012-SR4	36568			20012	27381	34751	42120	49489	56858	
		17123			8038	11996	15913	19830	23746	27663	
		28566			11168	18537	25906	33276	40676	48014	
3TG301404	G3014-SR4	36568			22258	31239	40201	49173	58145	67117	
		17123			9257	14042	18810	23578	28347	33089	
		28566			13414	22385	31357	40329	49301	58273	
3TG301604	G3016-SR4	36568	15857	27714	39572	51429	63287				
		17123	5764	12174	18475	24777	31068				
		28566	7013	18870	30728	42585	54443				
3TG301003	G3010-SR3	42128								20609	25735
		19573								7746	10528
		32379								9833	14960
3TG301203	G3012-SR3	42128				23167	30537	37906	45275	52645	
		19573				9135	13115	17032	20949	24865	
		32379				12392	19761	27130	34500	41869	
3TG301403	G3014-SR3	42128			18044	27016	35988	44960	53931	62903	
		19573			6305	11223	16012	20781	25549	30317	
		32379			7268	15240	25212	34184	43156	52127	
3TG301603	G3016-SR3	42128		23501	35358	47216	59073				
		19573		9315	15678	21980	28282				
		32379		12725	24582	36440	48297				
3TG302003	G3020-SR3	42128	39479	58295							
		19573	17868	27868							
		32379	28703	47519							