

Bettis G-Series

Pneumatic Double-Acting and Spring-Return Actuator Torque Chart Imperial

BETTIS™



Torque - Pneumatic Double-Acting Actuator

Actuator Model	Stroke Direction Start/Min./End		Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)		
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200	
			Pressure Torque Output: Start/Min./End (lbf-in)																					
G01x08	Outboard	Start	7,758	9,833	11,909	13,984	16,060	18,137	20,213	22,290	24,367	26,445	28,523	30,601	32,680	34,759	36,838	38,918	Exceeds MOP	40	192	7,758	39,334	
		Min	4,220	5,311	6,401	7,492	8,582	9,673	10,764	11,855	12,946	14,037	15,128	16,220	17,311	18,402	19,494	20,586				4,220		20,804
		End	7,751	9,824	11,897	13,971	16,044	18,119	20,193	22,268	24,343	26,419	28,495	30,571	32,648	34,725	36,802	38,879				7,751		39,295
	Inboard	Start	7,625	9,667	11,709	13,751	15,794	17,837	19,880	21,924	23,968	26,012	28,057	30,102	32,147	34,192	36,238	38,285				7,625		38,694
		Min	4,150	5,223	6,297	7,370	8,443	9,516	10,590	11,663	12,737	13,811	14,884	15,958	17,032	18,106	19,180	20,255				4,150		20,469
		End	7,618	9,657	11,697	13,738	15,778	17,819	19,860	21,902	23,944	25,986	28,029	30,072	32,115	34,159	36,203	38,247				7,618		38,656
G01x09	Outboard	Start	9,953	12,592	15,231	17,871	20,511	23,152	25,792	28,434	31,075	33,717	36,360	39,002	Exceeds MOP	40	151	9,953	39,267					
		Min	5,387	6,773	8,159	9,545	10,931	12,318	13,704	15,091	16,478	17,865	19,251	20,638				5,387		20,777				
		End	9,943	12,579	15,216	17,853	20,491	23,129	25,767	28,406	31,045	33,684	36,324	38,964				9,943		39,228				
	Inboard	Start	9,819	12,425	15,031	17,637	20,244	22,851	25,459	28,067	30,675	33,284	35,893	38,502				9,819		38,763				
		Min	5,317	6,685	8,054	9,423	10,792	12,161	13,530	14,899	16,268	17,638	19,007	20,377				5,317		20,514				
		End	9,810	12,413	15,016	17,620	20,224	22,829	25,434	28,039	30,645	33,251	35,857	38,464				9,810		38,725				
G01x10	Outboard	Start	13,293	16,786	20,279	23,773	27,267	30,762	34,257	37,752	Exceeds MOP	40	114	13,293	39,150									
		Min	7,156	8,989	10,823	12,656	14,490	16,324	18,158	19,992				7,156		20,725								
		End	13,280	16,770	20,259	23,750	27,240	30,731	34,223	37,715				13,280		39,112								
	Inboard	Start	13,160	16,620	20,079	23,540	27,001	30,462	33,923	37,386				13,160		38,770								
		Min	7,086	8,902	10,718	12,534	14,351	16,167	17,983	19,800				7,086		20,527								
		End	13,147	16,603	20,060	23,517	26,974	30,432	33,890	37,349				13,147		38,732								
G01x12	Outboard	Start	19,200	24,199	29,198	34,197	39,197	Exceeds MOP	40	80	19,200	39,197												
		Min	10,280	12,902	15,524	18,146	20,769				10,280		20,769											
		End	19,181	24,175	29,169	34,164	39,159				19,181		39,159											
	Inboard	Start	19,067	24,032	28,998	33,964	38,931				19,067		38,931											
		Min	10,210	12,815	15,420	18,024	20,629				10,210		20,629											
		End	19,048	24,008	28,969	33,930	38,892				19,048		38,892											
G01x14	Outboard	Start	23,406	29,480	35,554	Exceeds MOP	40	66	23,406	39,199														
		Min	12,509	15,694	18,880				12,509		20,791													
		End	23,383	29,451	35,519				23,383		39,160													
	Inboard	Start	23,273	29,313	35,354				23,273		38,979													
		Min	12,439	15,607	18,775				12,439		20,676													
		End	23,250	29,284	35,319				23,250		38,940													

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Double-Acting Actuator

Actuator Model	Stroke Direction Start/Min./End	Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)	
		40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200
		Pressure Torque Output: Start/Min./End (lbf-in)																				
G2x09	Start	Outboard	12,048	15,243	18,438	21,634	24,830	28,026	31,223	34,420	37,618	40,816	44,015	47,214	50,414	53,614	56,814	Exceeds MOP	40	187	12,048	59,055
	Min	Outboard	6,520	8,197	9,875	11,553	13,231	14,909	16,587	18,266	19,944	21,623	23,302	24,980	26,659	28,338	30,018				6,520	31,193
	End	Outboard	12,039	15,231	18,423	21,616	24,810	28,004	31,198	34,393	37,588	40,784	43,980	47,176	50,373	53,571	56,769				12,039	59,007
	Start	Inboard	11,887	15,041	18,196	21,351	24,507	27,663	30,819	33,976	37,134	40,291	43,450	46,608	49,768	52,927	56,087				11,887	58,300
	Min	Inboard	6,435	8,092	9,748	11,405	13,062	14,719	16,376	18,034	19,691	21,348	23,006	24,664	26,322	27,980	29,638				6,435	30,798
	End	Inboard	11,877	15,029	18,181	21,334	24,487	27,641	30,794	33,949	37,104	40,259	43,415	46,571	49,728	52,885	56,042				11,877	58,253
G2x10	Start	Outboard	16,092	20,320	24,549	28,778	33,008	37,238	41,469	45,700	49,932	54,165	58,397	Exceeds MOP	40	141	16,092	58,821				
	Min	Outboard	8,661	10,881	13,100	15,319	17,538	19,758	21,978	24,197	26,417	28,637	30,858				8,661	31,080				
	End	Outboard	16,079	20,304	24,529	28,755	32,982	37,209	41,436	45,664	49,892	54,121	58,351				16,079	58,774				
	Start	Inboard	15,931	20,119	24,307	28,496	32,686	36,876	41,066	45,257	49,448	53,640	57,833				15,931	58,252				
	Min	Inboard	8,577	10,775	12,973	15,171	17,370	19,568	21,767	23,966	26,164	28,363	30,563				8,577	30,782				
	End	Inboard	15,918	20,103	24,288	28,473	32,659	36,846	41,033	45,221	49,409	53,597	57,787				15,918	58,206				
G2x12	Start	Outboard	23,241	29,292	35,344	41,396	47,449	53,502	59,556	Exceeds MOP	40	100	23,241	59,556								
	Min	Outboard	12,443	15,616	18,790	21,964	25,138	28,312	31,486				12,443	31,486								
	End	Outboard	23,223	29,269	35,316	41,363	47,411	53,459	59,508				23,223	59,508								
	Start	Inboard	23,080	29,090	35,102	41,113	47,126	53,139	59,152				23,080	59,152								
	Min	Inboard	12,358	15,511	18,663	21,816	24,969	28,122	31,275				12,358	31,275								
	End	Inboard	23,061	29,067	35,073	41,080	47,088	53,096	59,105				23,061	59,105								
G2x14	Start	Outboard	28,335	35,687	43,040	50,393	57,748	Exceeds MOP	40	81	28,335	58,483										
	Min	Outboard	15,141	18,996	22,851	26,707	30,563				15,141	30,949										
	End	Outboard	28,312	35,658	43,005	50,353	57,702				28,312	58,436										
	Start	Inboard	28,173	35,485	42,798	50,111	57,425				28,173	58,156										
	Min	Inboard	15,056	18,890	22,725	26,559	30,394				15,056	30,778										
	End	Inboard	28,151	35,457	42,763	50,071	57,379				28,151	58,110										
G2x16	Start	Outboard	37,577	47,276	56,976	Exceeds MOP	40	61	37,577	57,946												
	Min	Outboard	20,017	25,101	30,185				20,017	30,694												
	End	Outboard	37,547	47,238	56,930				37,547	57,899												
	Start	Inboard	37,415	47,074	56,734				37,415	57,700												
	Min	Inboard	19,933	24,996	30,059				19,933	30,565												
	End	Inboard	37,386	47,037	56,688				37,386	57,654												

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Double-Acting Actuator

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			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200							
Pressure Torque Output: Start/Min./End (lbf-in)																														
G3x10	Outboard	Start	19,471	24,593	29,716	34,839	39,963	45,088	50,213	55,339	60,466	65,593	70,720	75,849	80,978	86,107	91,238	96,368	101,500	40	200	19,471	101,500							
		Min	10,486	13,174	15,863	18,551	21,240	23,928	26,617	29,306	31,996	34,685	37,374	40,064	42,754	45,444	48,134	50,825	53,515			10,486	53,515							
		End	19,462	24,582	29,702	34,823	39,945	45,067	50,190	55,314	60,438	65,563	70,688	75,814	80,941	86,068	91,196	96,324	101,453			19,462	101,453							
	Inboard	Start	19,165	24,210	29,256	34,303	39,350	44,398	49,447	54,496	59,546	64,596	69,647	74,699	79,751	84,804	89,858	94,912	99,967			40	200	19,165	99,967					
		Min	10,326	12,974	15,622	18,271	20,919	23,568	26,217	28,865	31,515	34,164	36,813	39,463	42,113	44,763	47,413	50,063	52,714					10,326	52,714					
		End	19,156	24,199	29,243	34,287	39,332	44,378	49,424	54,471	59,518	64,567	69,615	74,665	79,715	84,765	89,817	94,869	99,921					19,156	99,921					
G3x12	Outboard	Start	28,166	35,505	42,845	50,185	57,526	64,868	72,211	79,554	86,898	94,243	101,589	Exceeds MOP							40			142	28,166	103,058				
		Min	15,085	18,934	22,783	26,632	30,481	34,331	38,181	42,031	45,881	49,732	53,582															15,085	54,353	
		End	28,153	35,489	42,825	50,162	57,500	64,839	72,178	79,518	86,859	94,200	101,542																28,153	103,011
	Inboard	Start	27,859	35,122	42,384	49,648	56,913	64,178	71,444	78,710	85,978	93,246	100,515										40		142	27,859	101,968			
		Min	14,924	18,733	22,542	26,351	30,161	33,970	37,780	41,590	45,400	49,210	53,021																14,924	53,783
		End	27,847	35,105	42,365	49,625	56,887	64,148	71,411	78,674	85,938	93,203	100,469																	27,847
G3x14	Outboard	Start	34,360	43,282	52,204	61,128	70,052	78,977	87,903	96,829	Exceeds MOP										40	117		34,360		103,078				
		Min	18,366	23,044	27,722	32,400	37,079	41,758	46,437	51,116																			18,366	54,392
		End	34,345	43,262	52,181	61,100	70,020	78,941	87,862	96,785																				34,345
	Inboard	Start	34,054	42,899	51,745	60,591	69,439	78,287	87,136	95,986														40	117	34,054	102,181			
		Min	18,205	22,843	27,481	32,120	36,758	41,397	46,036	50,676																			18,205	53,923
		End	34,038	42,879	51,721	60,563	69,407	78,251	87,096	95,942																				34,038
G3x16	Outboard	Start	45,601	57,377	69,154	80,932	92,711	104,491	Exceeds MOP												40	90	45,601			104,491				
		Min	24,296	30,469	36,641	42,814	48,987	55,160																					24,296	55,160
		End	45,580	57,351	69,122	80,895	92,668	104,443																						45,580
	Inboard	Start	45,295	56,994	68,694	80,395	92,098	103,801																40	90	45,295	103,801			
		Min	24,136	30,268	36,401	42,533	48,666	54,800																					24,136	54,800
		End	45,274	56,968	68,663	80,359	92,055	103,753																						45,274
G3x20	Outboard	Start	72,795	91,458	Exceeds MOP															40	56	72,795	102,656							
		Min	38,621	48,398																								38,621	54,264	
		End	72,762	91,416																									72,762	102,609
	Inboard	Start	72,489	91,074																			40	56	72,489	102,226				
		Min	38,461	48,197																									38,461	54,039
		End	72,456	91,033																									72,456	102,180

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			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200
			Pressure Torque Output: Start/Min./End (lbf-in)																				
G4x12	Outboard	Start	34,106	42,999	51,894	60,789	69,686	78,583	87,481	96,381	105,281	114,181	123,083	131,986	140,890	149,794	158,700	167,606	176,513	40	200	34,106	176,513
		Min	18,275	22,939	27,604	32,269	36,935	41,600	46,266	50,932	55,599	60,265	64,932	69,599	74,266	78,934	83,602	88,270	92,938			18,275	92,938
		End	34,081	42,968	51,857	60,746	69,636	78,527	87,419	96,312	105,205	114,100	122,995	131,892	140,789	149,687	158,586	167,486	176,387			34,081	176,387
	Inboard	Start	33,569	42,328	51,089	59,850	68,612	77,375	86,139	94,904	103,670	112,437	121,204	129,973	138,742	147,513	156,284	165,056	173,829			33,569	173,829
		Min	17,994	22,588	27,183	31,778	36,373	40,969	45,565	50,161	54,757	59,353	63,950	68,547	73,144	77,741	82,339	86,937	91,535			17,994	91,535
		End	33,545	42,298	51,052	59,807	68,563	77,320	86,078	94,836	103,596	112,356	121,118	129,880	138,643	147,407	156,172	164,938	173,705			33,545	173,705
G4x14	Outboard	Start	41,637	52,455	63,274	74,094	84,915	95,737	106,560	117,384	128,209	139,036	149,863	160,691	171,520	182,351	193,182	204,014	Exceeds MOP	40	194	41,637	208,348
		Min	22,264	27,937	33,610	39,283	44,957	50,631	56,305	61,979	67,654	73,329	79,004	84,680	90,356	96,032	101,708	107,385				22,264	109,655
		End	41,607	52,417	63,228	74,041	84,854	95,668	106,484	117,300	128,118	138,936	149,755	160,576	171,398	182,220	193,044	203,868				41,607	208,198
	Inboard	Start	41,100	51,783	62,468	73,154	83,841	94,528	105,217	115,907	126,598	137,290	147,983	158,677	169,372	180,068	190,765	201,463				41,100	205,742
		Min	21,983	27,586	33,189	38,792	44,395	49,999	55,603	61,207	66,812	72,416	78,021	83,627	89,232	94,838	100,444	106,051				21,983	108,293
		End	41,070	51,746	62,423	73,101	83,781	94,461	105,142	115,824	126,507	137,192	147,877	158,563	169,250	179,939	190,628	201,319				41,070	205,595
G4x16	Outboard	Start	55,305	69,593	83,882	98,173	112,465	126,758	141,052	155,347	169,643	183,941	198,239	Exceeds MOP	40	147	55,305	208,249					
		Min	29,475	36,964	44,454	51,944	59,435	66,926	74,417	81,908	89,400	96,892	104,384				29,475	109,629					
		End	55,265	69,543	83,822	98,103	112,384	126,667	140,951	155,236	169,522	183,809	198,097				55,265	208,100					
	Inboard	Start	54,768	68,922	83,077	97,233	111,391	125,550	139,709	153,870	168,033	182,196	196,360				54,768	206,276					
		Min	29,194	36,614	44,033	51,453	58,873	66,294	73,715	81,136	88,558	95,979	103,401				29,194	108,597					
		End	54,729	68,873	83,018	97,164	111,311	125,460	139,609	153,760	167,912	182,066	196,220				54,729	206,129					
G4x20	Outboard	Start	88,364	111,024	133,685	156,348	179,013	201,679	Exceeds MOP	40	92	88,364	206,212										
		Min	46,890	58,762	70,633	82,506	94,378	106,251				46,890	108,626										
		End	88,300	110,944	133,590	156,236	178,885	201,534				88,300	206,065										
	Inboard	Start	87,827	110,353	132,880	155,409	177,939	200,471				87,827	204,977										
		Min	46,610	58,411	70,212	82,014	93,817	105,619				46,610	107,980										
		End	87,764	110,274	132,785	155,298	177,812	200,327				87,764	204,831										
G4x24	Outboard	Start	129,214	162,163	195,115	Exceeds MOP	40	63	129,214	205,001													
		Min	68,339	85,592	102,846				68,339	108,023													
		End	129,121	162,047	194,975				129,121	204,854													
	Inboard	Start	128,676	161,492	194,309				128,676	204,155													
		Min	68,058	85,241	102,425				68,058	107,580													
		End	128,584	161,376	194,170				128,584	204,009													
G4x28	Outboard	Start	181,955	Exceeds MOP	40	45	181,955	205,188															
		Min	96,348				96,348	108,519															
		End	181,824				181,824	205,041															
	Inboard	Start	181,418				181,418	204,584															
		Min	96,067				96,067	108,203															
		End	181,288				181,288	204,438															

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			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200
			Pressure Torque Output: Start/Min./End (lbf-in)																				
G5x16	Outboard	Start	71,315	89,713	108,113	126,514	144,917	163,321	181,726	200,132	218,540	236,949	255,359	273,771	292,183	310,598	329,013	347,430	365,848	40	200	71,315	365,848
		Min	37,976	47,619	57,262	66,906	76,550	86,194	95,839	105,484	115,130	124,775	134,421	144,068	153,715	163,362	173,009	182,657	192,305			37,976	192,305
		End	71,291	89,684	108,078	126,473	144,870	163,267	181,666	200,067	218,468	236,871	255,276	273,681	292,088	310,496	328,906	347,316	365,728			71,291	365,728
	Inboard	Start	70,080	88,171	106,262	124,355	142,449	160,544	178,641	196,739	214,838	232,938	251,040	269,143	287,247	305,353	323,460	341,568	359,677			70,080	359,677
		Min	37,331	46,812	56,294	65,777	75,259	84,742	94,226	103,709	113,193	122,678	132,163	141,648	151,133	160,619	170,105	179,591	189,078			37,331	189,078
		End	70,058	88,142	106,227	124,314	142,402	160,492	178,582	196,674	214,768	232,862	250,958	269,055	287,153	305,253	323,354	341,456	359,560			70,058	359,560
G5x20	Outboard	Start	114,053	143,275	172,498	201,723	230,950	260,179	289,409	318,641	347,874	377,109	406,346	435,585	464,825	Exceeds MOP	40	164	114,053	476,521			
		Min	60,496	75,805	91,115	106,425	121,736	137,047	152,359	167,671	182,983	198,296	213,609	228,923	244,237				60,496	250,363			
		End	114,016	143,228	172,442	201,658	230,875	260,094	289,314	318,537	347,761	376,986	406,213	435,442	464,673				114,016	476,366			
	Inboard	Start	112,819	141,732	170,647	199,564	228,482	257,402	286,324	315,247	344,172	373,099	402,027	430,957	459,888				112,819	471,462			
		Min	59,851	74,999	90,147	105,296	120,445	135,595	150,745	165,896	181,047	196,198	211,350	226,503	241,655				59,851	247,717			
		End	112,782	141,686	170,591	199,499	228,408	257,318	286,230	315,144	344,060	372,977	401,896	430,816	459,738				112,782	471,308			
G5x24	Outboard	Start	166,863	209,387	251,913	294,441	336,971	379,502	422,036	464,571	Exceeds MOP	40	112	166,863	473,078								
		Min	88,231	110,500	132,770	155,040	177,311	199,582	221,854	244,126				88,231	248,580								
		End	166,808	209,319	251,831	294,345	336,861	379,378	421,898	464,419				166,808	472,924								
	Inboard	Start	165,629	207,844	250,062	292,281	334,503	376,726	418,951	461,177				165,629	469,623								
		Min	87,586	109,694	131,802	153,911	176,020	198,130	220,240	242,351				87,586	246,773								
		End	165,575	207,776	249,980	292,186	334,393	376,603	418,814	461,027				165,575	469,469								
G5x28	Outboard	Start	235,046	295,046	355,049	415,055	475,066	Exceeds MOP	40	80	235,046	475,066											
		Min	124,450	155,887	187,324	218,762	250,201				124,450	250,201											
		End	234,969	294,949	354,933	414,920	474,911				234,969	474,911											
	Inboard	Start	233,812	293,503	353,198	412,896	472,598				233,812	472,598											
		Min	123,805	155,080	186,356	217,633	248,911				123,805	248,911											
		End	233,736	293,407	353,082	412,761	472,443				233,736	472,443											
G5x32	Outboard	Start	308,254	386,730	465,209	Exceeds MOP	40	61	308,254	473,057													
		Min	162,953	204,060	245,168				162,953	249,279													
		End	308,154	386,603	465,057				308,154	472,902													
	Inboard	Start	307,020	385,187	463,358				307,020	471,175													
		Min	162,307	203,253	244,200				162,307	248,295													
		End	306,920	385,061	463,206				306,920	471,021													
G5x36	Outboard	Start	391,335	Exceeds MOP	40	48	391,335	470,869															
		Min	206,618				206,618	248,273															
		End	391,207				391,207	470,715															
	Inboard	Start	390,101				390,101	469,388															
		Min	205,973				205,973	247,499															
		End	389,973				389,973	469,235															

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Torque - Pneumatic

Double-Acting Actuator

Actuator Model	Stroke Direction Start/Min./End		Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)	
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200
			Pressure Torque Output: Start/Min./End (lbf-in)																				
G7x20	Outboard	Start	139,104	174,843	210,584	246,328	282,074	317,823	353,574	389,328	425,084	460,843	496,604	532,367	568,133	603,902	639,673	675,446	711,222	40	200	139,104	711,222
		Min	73,955	92,695	111,436	130,178	148,921	167,664	186,408	205,152	223,897	242,643	261,389	280,137	298,884	317,633	336,381	355,131	373,881			73,955	373,881
		End	139,069	174,799	210,531	246,266	282,003	317,743	353,485	389,230	424,977	460,727	496,479	532,233	567,990	603,750	639,512	675,276	711,043			139,069	711,043
	Inboard	Start	137,185	172,445	207,707	242,971	278,237	313,507	348,778	384,052	419,329	454,608	489,890	525,174	560,460	595,749	631,040	666,334	701,631			137,185	701,631
		Min	72,951	91,440	109,931	128,422	146,913	165,405	183,898	202,392	220,886	239,381	257,876	276,372	294,869	313,367	331,865	350,363	368,863			72,951	368,863
		End	137,151	172,401	207,654	242,910	278,167	313,428	348,691	383,956	419,223	454,494	489,766	525,041	560,319	595,599	630,882	666,167	701,454			137,151	701,454
G7x24	Outboard	Start	203,940	256,017	308,098	360,181	412,266	464,355	516,446	568,540	620,636	672,736	724,838	776,943	829,050	881,160	Exceeds MOP	40	178	203,940	922,850		
		Min	108,033	135,327	162,622	189,917	217,213	244,510	271,808	299,106	326,405	353,705	381,005	408,306	435,608	462,911				108,033	484,753		
		End	203,889	255,953	308,020	360,090	412,163	464,238	516,316	568,397	620,480	672,566	724,655	776,747	828,841	880,938				203,889	922,618		
	Inboard	Start	202,022	253,620	305,220	356,824	408,430	460,039	511,650	563,264	614,881	666,501	718,124	769,749	821,377	873,007				202,022	914,314		
		Min	107,029	134,072	161,116	188,160	215,206	242,252	269,298	296,346	323,394	350,442	377,492	404,542	431,593	458,645				107,029	480,287		
		End	201,971	253,556	305,143	356,734	408,327	459,923	511,521	563,123	614,727	666,333	717,943	769,555	821,170	872,788				201,971	914,084		
G7x28	Outboard	Start	287,732	361,278	434,829	508,385	581,946	655,511	729,082	802,657	876,237	Exceeds MOP	40	126	287,732	920,387							
		Min	152,557	191,118	229,681	268,245	306,810	345,376	383,944	422,513	461,083				152,557	484,225							
		End	287,660	361,187	434,720	508,257	581,799	655,346	728,898	802,455	876,016				287,660	920,155							
	Inboard	Start	285,814	358,880	431,952	505,028	578,109	651,195	724,286	797,381	870,482				285,814	914,344							
		Min	151,553	189,864	228,175	266,488	304,802	343,118	381,434	419,752	458,072				151,553	481,064							
		End	285,742	358,790	431,843	504,901	577,964	651,031	724,104	797,181	870,263				285,742	914,114							
G7x32	Outboard	Start	377,661	473,903	570,150	666,402	762,660	858,923	Exceeds MOP	40	96	377,661	916,684										
		Min	199,878	250,325	300,774	351,224	401,676	452,129				199,878	482,401										
		End	377,566	473,784	570,006	666,235	762,468	858,707				377,566	916,453										
	Inboard	Start	375,743	471,505	567,272	663,045	758,824	854,607				375,743	912,080										
		Min	198,874	249,071	299,269	349,468	399,668	449,871				198,874	479,992										
		End	375,648	471,386	567,130	662,878	758,633	854,392				375,648	911,851										
G7x36	Outboard	Start	479,717	601,686	723,660	845,641	Exceeds MOP	40	76	479,717	918,832												
		Min	253,544	317,464	381,385	445,308				253,544	483,663												
		End	479,596	601,534	723,478	845,428				479,596	918,601												
	Inboard	Start	477,799	599,288	720,783	842,284				477,799	915,187												
		Min	252,541	316,209	379,880	443,552				252,541	481,755												
		End	477,679	599,137	720,601	842,072				477,679	914,957												
G7x228	Outboard	Start	573,546	720,159	866,781	Exceeds MOP	40	63	573,546	910,770													
		Min	304,110	380,982	457,856				304,110	480,919													
		End	573,401	719,977	866,563				573,401	910,540													
	Inboard	Start	573,546	720,159	866,781				573,546	910,770													
		Min	304,110	380,982	457,856				304,110	480,919													
		End	573,401	719,977	866,563				573,401	910,540													

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Torque - Pneumatic Double-Acting Actuator

Actuator Model	Stroke Direction Start/Min./End		Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)	
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200
			Pressure Torque Output: Start/Min./End (lbf-in)																				
G8x24	Start	Outboard	240,785	302,293	363,804	425,318	486,835	548,356	609,880	671,407	732,937	794,471	856,007	917,547	979,091	1,040,637	1,102,187	1,163,740	1,225,297	40	200	240,785	1,225,297
	Min	Outboard	127,558	159,790	192,024	224,258	256,493	288,729	320,966	353,203	385,442	417,681	449,921	482,162	514,404	546,647	578,890	611,135	643,380			127,558	643,380
	End	Outboard	240,750	302,248	363,750	425,255	486,764	548,275	609,790	671,308	732,829	794,354	855,882	917,413	978,947	1,040,485	1,102,025	1,163,569	1,225,117			240,750	1,225,117
	Start	Inboard	237,390	298,049	358,711	419,377	480,045	540,717	601,392	662,071	722,752	783,437	844,125	904,817	965,511	1,026,209	1,086,910	1,147,614	1,208,322			237,390	1,208,322
	Min	Inboard	125,782	157,570	189,360	221,150	252,941	284,733	316,525	348,319	380,113	411,909	443,705	475,502	507,300	539,098	570,898	602,698	634,499			125,782	634,499
	End	Inboard	237,355	298,005	358,659	419,315	479,975	540,638	601,304	661,974	722,646	783,322	844,001	904,684	965,370	1,026,058	1,086,751	1,147,446	1,208,145			237,355	1,208,145
G8x28	Start	Outboard	340,002	426,940	513,882	600,831	687,785	774,745	861,711	948,682	1,035,659	1,122,642	1,209,631	1,296,626	1,383,626	1,470,632	Exceeds MOP	40	172	340,002	1,488,034		
	Min	Outboard	180,283	225,860	271,439	317,020	362,602	408,185	453,770	499,356	544,944	590,533	636,124	681,716	727,310	772,906				180,283	782,025		
	End	Outboard	339,953	426,877	513,807	600,743	687,684	774,631	861,584	948,543	1,035,507	1,122,478	1,209,454	1,296,435	1,383,423	1,470,416				339,953	1,487,815		
	Start	Inboard	336,608	422,696	508,790	594,890	680,995	767,107	853,224	939,346	1,025,475	1,111,609	1,197,749	1,283,895	1,370,046	1,456,203				336,608	1,473,436		
	Min	Inboard	178,507	223,640	268,775	313,911	359,049	404,188	449,329	494,472	539,615	584,761	629,908	675,056	720,206	765,357				178,507	774,387		
	End	Inboard	336,558	422,634	508,715	594,802	680,895	766,994	853,098	939,208	1,025,324	1,111,446	1,197,573	1,283,706	1,369,845	1,455,990				336,558	1,473,219		
G8x32	Start	Outboard	446,532	560,354	674,182	788,017	901,858	1,015,706	1,129,560	1,243,421	1,357,288	1,471,162	Exceeds MOP	40	131	446,532	1,482,550						
	Min	Outboard	236,332	295,988	355,645	415,304	474,965	534,627	594,291	653,957	713,624	773,294				236,332	779,261						
	End	Outboard	446,467	560,272	674,083	787,901	901,726	1,015,557	1,129,394	1,243,238	1,357,089	1,470,946				446,467	1,482,332						
	Start	Inboard	443,137	556,110	669,090	782,076	895,068	1,008,067	1,121,073	1,234,085	1,347,104	1,460,129				443,137	1,471,431						
	Min	Inboard	234,556	293,768	352,981	412,196	471,412	530,631	589,851	649,072	708,296	767,521				234,556	773,444						
	End	Inboard	443,072	556,029	668,992	781,961	894,937	1,007,919	1,120,908	1,233,904	1,346,906	1,459,914				443,072	1,471,216						
G8x36	Start	Outboard	567,426	711,724	856,029	1,000,341	1,144,660	1,288,986	1,433,320	Exceeds MOP	40	103	567,426	1,476,622									
	Min	Outboard	299,896	375,509	451,123	526,740	602,358	677,978	753,601				299,896	776,288									
	End	Outboard	567,343	711,619	855,903	1,000,194	1,144,492	1,288,797	1,433,110				567,343	1,476,405									
	Start	Inboard	564,032	707,480	850,936	994,399	1,137,870	1,281,348	1,424,833				564,032	1,467,880									
	Min	Inboard	298,120	373,289	448,459	523,632	598,806	673,982	749,160				298,120	771,714									
	End	Inboard	563,949	707,376	850,811	994,254	1,137,703	1,281,160	1,424,624				563,949	1,467,665									
G8x40	Start	Outboard	702,685	881,049	1,059,421	1,237,802	1,416,190	Exceeds MOP	40	84	702,685	1,487,548											
	Min	Outboard	370,976	464,424	557,875	651,327	744,782				370,976	782,165											
	End	Outboard	702,582	880,920	1,059,266	1,237,620	1,415,982				702,582	1,487,329											
	Start	Inboard	699,290	876,805	1,054,329	1,231,861	1,409,400				699,290	1,480,418											
	Min	Inboard	369,200	462,204	555,210	648,219	741,230				369,200	778,435											
	End	Inboard	699,187	876,677	1,054,174	1,231,680	1,409,193				699,187	1,480,201											
G8x232	Start	Outboard	889,670	1,116,464	1,343,272	Exceeds MOP	40	65	889,670	1,456,681													
	Min	Outboard	470,888	589,755	708,626				470,888	768,062													
	End	Outboard	889,539	1,116,301	1,343,075				889,539	1,456,467													
	Start	Inboard	889,670	1,116,464	1,343,272				889,670	1,456,681													
	Min	Inboard	470,888	589,755	708,626				470,888	768,062													
	End	Inboard	889,539	1,116,301	1,343,075				889,539	1,456,467													
G8x236	Start	Outboard	1,131,458	1,419,204	Exceeds MOP	40	52	1,131,458	1,476,755														
	Min	Outboard	598,017	748,798				598,017	778,954														
	End	Outboard	1,131,292	1,418,996				1,131,292	1,476,538														
	Start	Inboard	1,131,458	1,419,204				1,131,458	1,476,755														
	Min	Inboard	598,017	748,798				598,017	778,954														
	End	Inboard	1,131,292	1,418,996				1,131,292	1,476,538														

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Torque - Pneumatic

Double-Acting Actuator

Actuator Model	Stroke Direction Start/Min./End		Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)	
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200
			Pressure Torque Output: Start/Min./End (lbf-in)																				
G10x28	Outboard	Start	444,003	557,611	671,228	784,852	898,483	1,012,123	1,125,770	1,239,424	1,353,087	1,466,757	1,580,434	1,694,120	1,807,813	1,921,513	2,035,222	2,148,937	2,262,661	40	200	444,003	2,262,661
		Min	235,559	295,131	354,705	414,281	473,859	533,439	593,021	652,605	712,191	771,779	831,369	890,961	950,555	1,010,151	1,069,749	1,129,349	1,188,951			235,559	1,188,951
		End	443,906	557,490	671,081	784,680	898,287	1,011,902	1,125,524	1,239,154	1,352,791	1,466,436	1,580,089	1,693,750	1,807,418	1,921,094	2,034,777	2,148,468	2,262,167			443,906	2,262,167
	Inboard	Start	437,774	549,826	661,885	773,952	886,026	998,108	1,110,198	1,222,296	1,334,401	1,446,514	1,558,634	1,670,762	1,782,898	1,895,042	2,007,193	2,119,352	2,231,518			437,774	2,231,518
		Min	232,299	291,057	349,816	408,577	467,340	526,105	584,873	643,642	702,413	761,186	819,962	878,739	937,518	996,299	1,055,083	1,113,868	1,172,655			232,299	1,172,655
		End	437,678	549,705	661,740	773,783	885,833	997,890	1,109,956	1,222,029	1,334,109	1,446,198	1,558,294	1,670,398	1,782,509	1,894,628	2,006,755	2,118,889	2,231,031			437,678	2,231,031
G10x32	Outboard	Start	583,948	732,874	881,809	1,030,752	1,179,705	1,328,666	1,477,635	1,626,613	1,775,600	1,924,596	2,073,600	2,222,613	2,371,635	2,520,666	2,669,705	2,818,752	2,967,809	40	200	583,948	2,967,809
		Min	309,200	387,269	465,340	543,414	621,490	699,568	777,648	855,731	933,816	1,011,903	1,089,992	1,168,084	1,246,178	1,324,274	1,402,373	1,480,474	1,558,577			309,200	1,558,577
		End	583,820	732,714	881,616	1,030,527	1,179,447	1,328,375	1,477,313	1,626,258	1,775,213	1,924,176	2,073,148	2,222,128	2,371,117	2,520,115	2,669,122	2,818,137	2,967,161			583,820	2,967,161
	Inboard	Start	577,719	725,088	872,466	1,019,852	1,167,247	1,314,651	1,462,064	1,609,485	1,756,915	1,904,353	2,051,800	2,199,256	2,346,721	2,494,194	2,641,676	2,789,166	2,936,666			577,719	2,936,666
		Min	305,941	383,195	460,451	537,710	614,971	692,234	769,500	846,768	924,038	1,001,310	1,078,585	1,155,862	1,233,141	1,310,423	1,387,706	1,464,992	1,542,281			305,941	1,542,281
		End	577,593	724,930	872,275	1,019,630	1,166,993	1,314,364	1,461,744	1,609,133	1,756,531	1,903,937	2,051,352	2,198,776	2,346,208	2,493,649	2,641,099	2,788,558	2,936,025			577,593	2,936,025
G10x36	Outboard	Start	742,762	931,723	1,120,693	1,309,674	1,498,664	1,687,664	1,876,673	2,065,693	2,254,721	2,443,760	2,632,808	2,821,866	Exceeds MOP	40	158	742,762	2,973,120				
		Min	392,715	491,749	590,786	689,826	788,868	887,912	986,959	1,086,009	1,185,061	1,284,116	1,383,173	1,482,233				392,715	1,561,483				
		End	742,600	931,519	1,120,449	1,309,388	1,498,337	1,687,295	1,876,264	2,065,242	2,254,229	2,443,227	2,632,234	2,821,250				742,600	2,972,471				
	Inboard	Start	736,533	923,937	1,111,351	1,298,774	1,486,207	1,673,649	1,861,102	2,048,564	2,236,036	2,423,517	2,611,008	2,798,509				736,533	2,948,517				
		Min	389,456	487,675	585,897	684,122	782,349	880,579	978,811	1,077,046	1,175,284	1,273,523	1,371,766	1,470,011				389,456	1,548,609				
		End	736,372	923,735	1,111,108	1,298,490	1,485,882	1,673,284	1,860,695	2,048,117	2,235,547	2,422,988	2,610,438	2,797,898				736,372	2,947,873				
G10x40	Outboard	Start	920,446	1,154,159	1,387,883	1,621,618	1,855,363	2,089,119	2,322,886	2,556,664	2,790,452	Exceeds MOP	40	128	920,446	2,977,490							
		Min	486,104	608,572	731,043	853,517	975,994	1,098,473	1,220,956	1,343,441	1,465,929				486,104	1,563,921							
		End	920,245	1,153,907	1,387,580	1,621,264	1,854,958	2,088,663	2,322,379	2,556,106	2,789,843				920,245	2,976,840							
	Inboard	Start	914,217	1,146,373	1,378,540	1,610,718	1,842,906	2,075,105	2,307,315	2,539,535	2,771,766				914,217	2,957,559							
		Min	482,845	604,498	726,154	847,813	969,475	1,091,140	1,212,808	1,334,478	1,456,151				482,845	1,553,492							
		End	914,017	1,146,123	1,378,239	1,610,366	1,842,503	2,074,652	2,306,811	2,538,981	2,771,161				914,017	2,956,913							
G10x232	Outboard	Start	1,161,667	1,457,962	1,754,275	2,050,605	2,346,952	2,643,317	2,939,699	Exceeds MOP	40	100	1,161,667	2,939,699									
		Min	615,141	770,464	925,792	1,081,124	1,236,461	1,391,802	1,547,148				615,141	1,547,148									
		End	1,161,413	1,457,644	1,753,892	2,050,157	2,346,440	2,642,740	2,939,057				1,161,413	2,939,057									
	Inboard	Start	1,161,667	1,457,962	1,754,275	2,050,605	2,346,952	2,643,317	2,939,699				1,161,667	2,939,699									
		Min	615,141	770,464	925,792	1,081,124	1,236,461	1,391,802	1,547,148				615,141	1,547,148									
		End	1,161,413	1,457,644	1,753,892	2,050,157	2,346,440	2,642,740	2,939,057				1,161,413	2,939,057									
G10x236	Outboard	Start	1,479,295	1,855,660	2,232,044	2,608,448	2,984,871	Exceeds MOP	40	80	1,479,295	2,984,871											
		Min	782,171	979,425	1,176,684	1,373,948	1,571,217				782,171	1,571,217											
		End	1,478,972	1,855,255	2,231,557	2,607,878	2,984,219				1,478,972	2,984,219											
	Inboard	Start	1,479,295	1,855,660	2,232,044	2,608,448	2,984,871				1,479,295	2,984,871											
		Min	782,171	979,425	1,176,684	1,373,948	1,571,217				782,171	1,571,217											
		End	1,478,972	1,855,255	2,231,557	2,607,878	2,984,219				1,478,972	2,984,219											
G10x240	Outboard	Start	1,834,663	2,300,532	2,766,423	Exceeds MOP	40	64	1,834,663	2,952,785													
		Min	968,948	1,213,070	1,457,197				968,948	1,554,850													
		End	1,834,262	2,300,030	2,765,819				1,834,262	2,952,141													
	Inboard	Start	1,834,663	2,300,532	2,766,423				1,834,663	2,952,785													
		Min	968,948	1,213,070	1,457,197				968,948	1,554,850													
		End	1,834,262	2,300,030	2,765,819				1,834,262	2,952,141													

Note: All Published Torques are Guaranteed Minimum Values. Units are Imperial

Torque - Pneumatic Double-Acting Actuator

Actuator Model	Stroke Direction Start/Min./End	Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)		
		40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200	
		Pressure Torque Output: Start/Min./End (lbf-in)																					
G13x40	Start	Outboard	1,180,227	1,480,009	1,779,805	2,079,614	2,379,438	2,679,275	2,979,127	3,278,992	3,578,872	3,878,765	4,178,673	4,478,594	4,778,530	5,078,479	5,378,442	5,678,420	5,978,411	40	200	1,180,227	5,978,411
	Min	Outboard	623,242	780,288	937,338	1,094,392	1,251,449	1,408,510	1,565,575	1,722,643	1,879,715	2,036,790	2,193,870	2,350,952	2,508,039	2,665,129	2,822,223	2,979,320	3,136,422			623,242	3,136,422
	End	Outboard	1,179,463	1,479,050	1,778,652	2,078,267	2,377,897	2,677,540	2,977,197	3,276,869	3,576,554	3,876,253	4,175,966	4,475,694	4,775,435	5,075,190	5,374,959	5,674,742	5,974,539			1,179,463	5,974,539
	Start	Inboard	1,168,087	1,464,834	1,761,594	2,058,369	2,355,157	2,651,960	2,948,776	3,245,606	3,542,451	3,839,309	4,136,182	4,433,068	4,729,968	5,026,883	5,323,811	5,620,753	5,917,709			1,168,087	5,917,709
	Min	Inboard	616,891	772,350	927,812	1,083,278	1,238,748	1,394,221	1,549,698	1,705,178	1,860,662	2,016,150	2,171,642	2,327,137	2,482,636	2,638,138	2,793,644	2,949,154	3,104,668			616,891	3,104,668
	End	Inboard	1,167,330	1,463,885	1,760,453	2,057,035	2,353,632	2,650,242	2,946,866	3,243,504	3,540,157	3,836,823	4,133,503	4,430,197	4,726,905	5,023,627	5,320,363	5,617,113	5,913,877			1,167,330	5,913,877
G13x44	Start	Outboard	1,433,023	1,796,455	2,159,902	2,523,365	2,886,843	3,250,337	3,613,846	3,977,370	4,340,910	4,704,465	5,068,035	5,431,621	5,795,222	Exceeds MOP				40	165	1,433,023	5,977,029
	Min	Outboard	756,047	946,413	1,136,783	1,327,157	1,517,534	1,707,916	1,898,302	2,088,692	2,279,086	2,469,484	2,659,886	2,850,292	3,040,702							756,047	3,135,908
	End	Outboard	1,432,095	1,795,292	2,158,504	2,521,731	2,884,973	3,248,232	3,611,505	3,974,794	4,338,098	4,701,418	5,064,753	5,428,103	5,791,469							1,432,095	5,973,158
	Start	Inboard	1,420,882	1,781,279	2,141,690	2,502,118	2,862,561	3,223,019	3,583,492	3,943,981	4,304,486	4,665,005	5,025,541	5,386,091	5,746,657							1,420,882	5,926,946
	Min	Inboard	749,696	938,474	1,127,256	1,316,042	1,504,832	1,693,626	1,882,424	2,071,226	2,260,032	2,448,842	2,637,656	2,826,474	3,015,297							749,696	3,109,709
	End	Inboard	1,419,962	1,780,125	2,140,303	2,500,497	2,860,707	3,220,931	3,581,171	3,941,427	4,301,698	4,661,984	5,022,286	5,382,603	5,742,935							1,419,962	5,923,107
G13x48	Start	Outboard	1,710,217	2,143,376	2,576,552	3,009,744	3,442,953	3,876,179	4,309,421	4,742,681	5,175,957	5,609,249	6,042,559	Exceeds MOP					40	140	1,710,217	6,042,559	
	Min	Outboard	901,585	1,128,447	1,355,314	1,582,185	1,809,060	2,035,940	2,262,824	2,489,712	2,716,605	2,943,503	3,170,404								901,585	3,170,404	
	End	Outboard	1,709,109	2,141,988	2,574,883	3,007,795	3,440,723	3,873,668	4,306,630	4,739,609	5,172,604	5,605,616	6,038,645								1,709,109	6,038,645	
	Start	Inboard	1,698,077	2,128,201	2,558,341	2,988,498	3,418,672	3,848,863	4,279,071	4,709,295	5,139,536	5,569,793	6,000,068								1,698,077	6,000,068	
	Min	Inboard	895,234	1,120,509	1,345,788	1,571,071	1,796,359	2,021,651	2,246,947	2,472,248	2,697,553	2,922,863	3,148,176								895,234	3,148,176	
	End	Inboard	1,696,977	2,126,822	2,556,684	2,986,563	3,416,458	3,846,370	4,276,299	4,706,245	5,136,207	5,566,186	5,996,182								1,696,977	5,996,182	
G13x52	Start	Outboard	2,011,692	2,520,649	3,029,623	3,538,616	4,047,626	4,556,655	5,065,701	5,574,766	6,083,849	Exceeds MOP							40	120	2,011,692	6,083,849	
	Min	Outboard	1,059,825	1,326,359	1,592,898	1,859,442	2,125,990	2,392,543	2,659,101	2,925,664	3,192,231										1,059,825	3,192,231	
	End	Outboard	2,010,390	2,519,016	3,027,661	3,536,324	4,045,005	4,553,704	5,062,420	5,571,155	6,079,908										2,010,390	6,079,908	
	Start	Inboard	1,999,552	2,505,473	3,011,413	3,517,370	4,023,346	4,529,339	5,035,350	5,541,380	6,047,428										1,999,552	6,047,428	
	Min	Inboard	1,053,474	1,318,421	1,583,372	1,848,328	2,113,289	2,378,254	2,643,224	2,908,199	3,173,179										1,053,474	3,173,179	
	End	Inboard	1,998,257	2,503,851	3,009,462	3,515,092	4,020,740	4,526,405	5,032,089	5,537,791	6,043,511										1,998,257	6,043,511	

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Torque - Pneumatic Double-Acting Actuator

Actuator Model	Stroke Direction Start/Min./End		Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190				
Pressure Torque Output: Start/Min./End (lbf-in)																						
G13x240	Start	Outboard	2,348,314	2,944,843	3,541,399	4,137,983	4,734,595	5,331,235	5,927,903	Exceeds MOP									40	2,348,314	100	5,927,903
	Min		1,240,133	1,552,638	1,865,150	2,177,670	2,490,197	2,802,731	3,115,272		1,240,133	3,115,272										
	End		2,346,793	2,942,935	3,539,105	4,135,303	4,731,528	5,327,782	5,924,064		2,346,793	5,924,064										
	Start	Inboard	2,348,314	2,944,843	3,541,399	4,137,983	4,734,595	5,331,235	5,927,903		2,348,314	5,927,903										
	Min		1,240,133	1,552,638	1,865,150	2,177,670	2,490,197	2,802,731	3,115,272		1,240,133	3,115,272										
	End		2,346,793	2,942,935	3,539,105	4,135,303	4,731,528	5,327,782	5,924,064		2,346,793	5,924,064										
G13x244	Start	Outboard	2,853,905	3,577,734	4,301,593	5,025,483	5,749,404	Exceeds MOP											40	2,853,905	83	5,966,586
	Min		1,505,744	1,884,887	2,264,039	2,643,199	3,022,366		1,505,744	3,136,118												
	End		2,852,057	3,575,417	4,298,807	5,022,228	5,745,680		2,852,057	5,962,722												
	Start	Inboard	2,853,905	3,577,734	4,301,593	5,025,483	5,749,404		2,853,905	5,966,586												
	Min		1,505,744	1,884,887	2,264,039	2,643,199	3,022,366		1,505,744	3,136,118												
	End		2,852,057	3,575,417	4,298,807	5,022,228	5,745,680		2,852,057	5,962,722												
G13x248	Start	Outboard	3,408,294	4,271,577	5,134,893	5,998,242	Exceeds MOP												40	3,408,294	70	5,998,242
	Min		1,796,820	2,248,956	2,701,102	3,153,256		1,796,820	3,153,256													
	End		3,406,086	4,268,810	5,131,567	5,994,357		3,406,086	5,994,357													
	Start	Inboard	3,408,294	4,271,577	5,134,893	5,998,242		3,408,294	5,998,242													
	Min		1,796,820	2,248,956	2,701,102	3,153,256		1,796,820	3,153,256													
	End		3,406,086	4,268,810	5,131,567	5,994,357		3,406,086	5,994,357													
G13x252	Start	Outboard	4,011,245	5,026,122	6,041,036	Exceeds MOP													40	4,011,245	60	6,041,036
	Min		2,113,299	2,644,780	3,176,270		2,113,299	3,176,270														
	End		4,008,647	5,022,867	6,037,123		4,008,647	6,037,123														
	Start	Inboard	4,011,245	5,026,122	6,041,036		4,011,245	6,041,036														
	Min		2,113,299	2,644,780	3,176,270		2,113,299	3,176,270														
	End		4,008,647	5,022,867	6,037,123		4,008,647	6,037,123														

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)	Operating Pressure, (psig)																	MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)					
		40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200									
		Pressure Torque Output: Start/Min./End (lbf-in)																									
G01x08-SR0	Start	24,151																	Please consult factory	15,182	17,164	19,147	Exceeds MOP	169	14,983	192	19,544
	Min	10,918																6,245		7,309	8,366	6,139			8,577		
	End	17,415																		8,454	10,435	12,416			8,256		12,812
G01x08-SR1	Start	18,180																	Please consult factory	10,248	12,229	14,211	Exceeds MOP	128	9,851	192	22,538
	Min	8,628																4,515		5,567	6,616	4,303			11,005		
	End	14,424																		6,499	8,479	10,459			6,103		18,777
G01x08-SR2	Start	15,199																	Please consult factory	8,046	10,027	12,008	Exceeds MOP	107	7,452	192	24,297
	Min	7,405																3,703		4,751	5,797	3,388			12,261		
	End	12,666																		5,520	7,499	9,478			4,926		21,755
G01x08-SR3	Start	13,246																	Please consult factory	7,677	9,658	11,639	Exceeds MOP	94	6,489	192	25,909
	Min	6,476																3,604		4,650	5,694	2,974			13,197		
	End	11,055																		5,493	7,471	9,450			4,306		23,707
G01x08-SR4	Start	11,239																	Please consult factory	5,165	7,145	9,125	Exceeds MOP	80	5,165	192	27,357
	Min	5,579																2,432		3,479	4,522	2,432			14,104		
	End	9,609																		3,541	5,519	7,497			3,541		25,711
G01x09-SR0	Start	24,092																	Please consult factory	16,829	19,358	21,887	Exceeds MOP	132	14,806	200	32,007
	Min	10,902																7,138		8,486	9,828	6,052			15,171		
	End	17,355																		10,100	12,626	15,153			8,079		25,262
G01x09-SR1	Start	18,121																	Please consult factory	9,712	12,239	14,767	Exceeds MOP	100	9,712	200	35,000
	Min	8,612																4,238		5,582	6,918	4,238			17,562		
	End	14,365																		5,964	8,489	11,014			5,964		31,227
G01x09-SR2	Start	15,140																	Please consult factory	8,945	11,472	13,999	Exceeds MOP	84	7,429	200	36,760
	Min	7,390																4,189		5,524	6,855	3,386			18,813		
	End	12,606																		6,418	8,942	11,467			4,903		34,206
G01x09-SR3	Start	13,186																	Please consult factory	8,030	10,557	13,084	Exceeds MOP	74	6,515	200	38,372
	Min	6,460																3,801		5,134	6,464	2,998			19,747		
	End	10,996																		5,845	8,369	10,893			4,331		36,157
G01x09-SR4	Start	11,180																	Please consult factory	4,426	6,952	9,478	Exceeds MOP	60	4,426	200	39,819
	Min	5,563																2,051		3,388	4,719	2,051			20,653		
	End	9,550																		2,803	5,326	7,850			2,803		38,162

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)		Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)			
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200		
Pressure Torque Output: Start/Min./End (lbf-in)																									
G01x10-SR0	Start	24,019							Please consult factory	14,921	18,276	21,631	24,987	28,343	31,700	35,057				Exceeds MOP	100	14,921	166	37,071	
	Min	10,883							6,123	7,919	9,701	11,477	13,248	15,016	16,784				6,123			17,844			
	End	17,283							8,194	11,545	14,897	18,250	21,603	24,956	28,310				8,194			30,322			
G01x10-SR1	Start	18,049						Please consult factory	11,206	14,560	17,915	21,270	24,625	27,981	31,337	34,693	38,050				Exceeds MOP	76	9,864	166	40,065
	Min	8,593						5,045	6,820	8,588	10,355	12,119	13,883	15,646	17,408	19,170				4,331			20,228		
	End	14,293						7,456	10,807	14,159	17,510	20,862	24,215	27,568	30,921	34,275				6,116			36,287		
G01x10-SR2	Start	15,067			Please consult factory	9,612	12,966	16,320	19,675	23,029	26,385	29,741	33,097	36,453	39,810				Exceeds MOP	64	7,600	166	41,825		
	Min	7,371				4,554	6,322	8,086	9,850	11,612	13,374	15,136	16,898	18,659	20,420						3,489		21,477		
	End	12,534				7,084	10,435	13,786	17,137	20,489	23,841	27,193	30,546	33,899	37,253						5,074		39,265		
G01x10-SR3	Start	13,114		Please consult factory	7,871	11,224	14,578	17,932	21,286	24,641	27,997	31,353	34,709	38,065	41,422				Exceeds MOP	56	6,529	166	43,437		
	Min	6,441			3,729	5,497	7,261	9,024	10,786	12,548	14,310	16,071	17,832	19,593	21,354						3,019		22,411		
	End	10,924			5,686	9,036	12,386	15,737	19,088	22,440	25,792	29,144	32,497	35,851	39,204						4,346		41,217		
G01x10-SR4	Start	11,107	Please consult factory	5,965	9,318	12,671	16,025	19,379	22,734	26,089	29,444	32,800	36,156	39,513	42,870				Exceeds MOP	48	5,295	166	44,884		
	Min	5,544			2,880	4,647	6,410	8,172	9,933	11,695	13,456	15,216	16,977	18,738	20,499	22,260							2,526	23,317	
	End	9,478			4,341	7,690	11,040	14,391	17,742	21,093	24,445	27,797	31,149	34,502	37,855	41,209							3,671	43,221	
G01x12-SR0	Start	23,908		Please consult factory	14,960	19,773	24,587	29,401	34,215	Exceeds MOP										70	14,960	116	37,104		
	Min	10,854			6,164	8,733	11,282	13,822	16,356														6,164	17,876	
	End	17,171			8,233	13,041	17,850	22,659	27,469														8,233	30,355	
G01x12-SR1	Start	17,937		Please consult factory	13,141	17,954	22,767	27,580	32,394	37,209	Exceeds MOP									53	9,772	116	40,098		
	Min	8,564			6,090	8,628	11,160	13,690	16,217	18,744											4,304		20,260		
	End	14,181			9,390	14,198	19,006	23,815	28,624	33,434											6,025		36,320		
G01x12-SR2	Start	14,956	Please consult factory	10,089	14,901	19,714	24,527	29,340	34,154	38,969	Exceeds MOP									44	7,202	116	41,858		
	Min	7,341			4,827	7,361	9,890	12,416	14,942	17,469		19,994									3,300		21,509		
	End	12,423			7,561	12,368	17,176	21,984	26,793	31,603		36,412									4,676		39,298		
G01x12-SR3	Start	13,002	6,889	11,701	16,513	21,326	26,139	30,952	35,766	40,581	Exceeds MOP									39	6,408	116	43,470		
	Min	6,412	3,233	5,770	8,299	10,826	13,352	15,878	18,403	20,928								2,978			22,443				
	End	10,812	4,705	9,512	14,319	19,127	23,936	28,744	33,554	38,364								4,224			41,250				
G01x12-SR4	Start	10,996	8,337	13,148	17,960	22,773	27,586	32,400	37,214	42,028	Exceeds MOP									33	4,969	116	44,917		
	Min	5,515	4,154	6,683	9,209	11,735	14,259	16,784	19,309	21,834								2,377			23,349				
	End	9,366	6,710	11,517	16,324	21,132	25,940	30,749	35,559	40,368								3,345			43,254				

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)		Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)					
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200				
			Pressure Torque Output: Start/Min./End (lbf-in)																								
G01x14-SR0	Start	23,818																		57	14,551	91	34,458				
	Min	10,830	Please consult factory																				5,965	16,504			
	End	17,082																						7,824	27,711		
G01x14-SR1	Start	17,847	Please consult factory																	43	9,349	91	37,451				
	Min	8,541																						4,100	18,891		
	End	14,091																							5,602	33,676	
G01x14-SR2	Start	14,866	9,353																	36	7,012	91	39,211				
	Min	7,318	4,461																					3,222	20,141		
	End	12,333	6,826																						4,487	36,654	
G01x14-SR3	Start	12,912	10,965																	32	6,283	91	40,823				
	Min	6,389	5,405																						2,934	21,075	
	End	10,723	8,777																							4,100	38,606
G01x14-SR4	Start	10,906	12,413																	27	4,804	91	42,271				
	Min	5,491	6,318																							2,313	21,981
	End	9,276	10,782																								3,181

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)	Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)																		
		40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200																	
Pressure Torque Output: Start/Min./End (lbf-in)																																							
G2x09-SR1	Start	31,250																			Please consult factory	20,526	23,588	26,650	29,712	Exceeds MOP	141	35,838	187	31,856									
	Min	14,530																					8,977	10,602	12,223			13,840		7,507	14,971								
	End	23,918																						13,203	16,262			19,322		22,382	10,451	24,524							
G2x09-SR2	Start	26,989																			Please consult factory	17,143	20,203	23,264	26,326	29,388	32,450	Exceeds MOP	123	15,000	187	34,594							
	Min	12,723																					7,627	9,249	10,867	12,482	14,094			15,707		6,487	16,834						
	End	21,182																						11,344	14,402	17,461	20,520			23,580		26,639	9,204	28,782					
G2x09-SR3	Start	24,181																			Please consult factory	13,293	16,352	19,413	22,473	25,534	28,596	31,658	34,720	Exceeds MOP	110	13,293	187	36,864					
	Min	11,400																					5,734	7,362	8,982	10,598	12,211	13,824	15,434			17,044		5,734	18,171				
	End	18,914																						8,034	11,092	14,150	17,208	20,266	23,325			26,385		29,445	8,034	31,587			
G2x09-SR4	Start	21,573																			Please consult factory	12,737	15,796	18,856	21,916	24,977	28,038	31,100	34,161	37,224	Exceeds MOP	99	12,431	187	39,368				
	Min	10,059																					5,464	7,093	8,714	10,329	11,942	13,555	15,165	16,775			18,385		5,300	19,512			
	End	16,412																						7,584	10,641	13,698	16,756	19,814	22,873	25,932			28,991		32,051	7,278	34,193		
G2x10-SR1	Start	31,162																			Please consult factory	19,217	23,279	27,341	31,404	Exceeds MOP	107	55,791	141	31,810									
	Min	14,507																					8,290	10,449	12,597			14,741							7,639	14,956			
	End	23,831																						11,895	15,953			20,012		24,072						10,677	24,478		
G2x10-SR2	Start	26,901																			Please consult factory	17,893	21,955	26,016	30,079	34,142	Exceeds MOP	92	58,529	141	34,548								
	Min	12,700																					8,037	10,186	12,329	14,468			16,605							6,309	16,818		
	End	21,095																						12,094	16,152	20,211			24,270		28,330						8,848	28,736	
G2x10-SR3	Start	24,094																			Please consult factory	16,102	20,163	24,225	28,286	32,349	36,411	Exceeds MOP	83	60,799	141	36,818							
	Min	11,377																					7,242	9,390	11,532	13,671	15,807			17,942							5,730	18,156	
	End	18,827																						10,842	14,900	18,958	23,016			27,075		31,135						8,002	31,541
G2x10-SR4	Start	21,485																			Please consult factory	14,546	18,606	22,667	26,728	30,790	34,853	38,915	Exceeds MOP	74	63,303	141	39,322						
	Min	10,036																					6,442	8,594	10,737	12,876	15,012	17,148			19,283							5,142	19,496
	End	16,325																						9,391	13,448	17,506	21,564	25,623			29,682		33,741						6,957
G2x12-SR1	Start	31,026																			Please consult factory	21,028	26,855	32,682	Exceeds MOP	74	90,990	100	32,682										
	Min	14,471																					9,277	12,362			15,435								7,413	15,435			
	End	23,695																						13,704			19,527		25,350							10,211	25,350		
G2x12-SR2	Start	26,765																			Please consult factory	17,939	23,766	29,593	35,420	Exceeds MOP	65	15,026	100	35,420									
	Min	12,664																					8,086	11,164	14,233			17,297							6,538	17,297			
	End	20,959																						12,140	17,962			23,784		29,607						9,229	29,607		
G2x12-SR3	Start	23,957																			Please consult factory	14,383	20,209	26,035	31,863	37,690	Exceeds MOP	58	13,218	100	37,690								
	Min	11,341																					6,354	9,438	12,508	15,573			18,634							5,733	18,634		
	End	18,691																						9,124	14,945	20,767			26,590		32,412						7,960	32,412	
G2x12-SR4	Start	21,349																			Please consult factory	16,887	22,713	28,539	34,366	40,194	Exceeds MOP	52	98,502	100	40,194								
	Min	10,000																					7,709	10,785	13,851	16,913			19,975							5,231	19,975		
	End	16,189																						11,731	17,552	23,374			29,196		35,019						7,074	35,019	

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)		Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)	
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200
			Pressure Torque Output: Start/Min./End (lbf-in)																				
G2x14-SR1	Start	30,918	Please consult factory	16,834	23,921	31,009	Exceeds MOP													60	16,834	81	31,718
	Min	14,443		7,065	10,835	14,577		7,065	14,951														
	End	23,587		9,514	16,595	23,677		9,514	24,386														
G2x14-SR2	Start	26,657	Please consult factory	19,572	26,659	33,747	Exceeds MOP													53	14,611	81	34,455
	Min	12,636		8,975	12,713	16,442		6,342	16,814														
	End	20,851		13,771	20,853	27,935		8,815	28,643														
G2x14-SR3	Start	23,850	Please consult factory	14,755	21,842	28,929	Exceeds MOP													48	13,338	81	36,725
	Min	11,313		6,577	10,324	14,055		17,779	5,823	18,151													
	End	18,583		9,496	16,577	23,658		30,740	8,080	31,448													
G2x14-SR4	Start	21,241	Please consult factory	17,259	24,345	31,433	Exceeds MOP													43	12,299	81	39,229
	Min	9,972		7,931	11,669	15,396		19,120	5,296	19,492													
	End	16,081		12,102	19,183	26,264		33,347	7,146	34,055													
G2x16-SR1	Start	30,778	Please consult factory	20,978	30,339	Exceeds MOP														46	17,234	61	31,275
	Min	14,406		9,303	14,250		7,308	14,744															
	End	23,447		13,654	23,008		9,913	23,943															
G2x16-SR2	Start	26,517	14,356	23,716	33,077	Exceeds MOP														40	14,356	61	34,013
	Min	12,599	6,235	11,190	16,116		6,235	16,608															
	End	20,712	8,560	17,912	27,265		8,560	28,201															
G2x16-SR3	Start	23,710	16,626	25,986	35,346	Exceeds MOP														36	12,882	61	36,283
	Min	11,276	7,599	12,534	17,453		5,610	17,945															
	End	18,443	11,365	20,717	30,071		7,624	31,006															
G2x16-SR4	Start	21,101	19,129	28,490	37,850	Exceeds MOP														32	11,642	61	38,786
	Min	9,935	8,949	13,878	18,794		4,976	19,286															
	End	15,942	13,971	23,324	32,677		6,490	33,612															

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)		Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)													
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200												
Pressure Torque Output: Start/Min./End (lbf-in)																																			
G3x10-SR1	Start	54,852																	Please consult factory	34,481	39,378	44,275	49,173	54,072	155	32,033	200	54,072							
	Min	25,381																14,780		17,383	19,977	22,566	25,150	13,473		25,150									
	End	41,804																		21,443	26,337	31,232	36,128	41,024		18,996		41,024							
G3x10-SR2	Start	47,805																	Please consult factory	30,090	34,986	39,882	44,779	49,676	54,574	59,472	135	27,643	200	59,472					
	Min	22,145																12,930		15,532	18,124	20,710	23,294	25,872	28,450	11,622		28,450							
	End	36,406																		18,700	23,593	28,487	33,381	38,276	43,172	48,068		16,253		48,068					
G3x10-SR3	Start	41,745																	Please consult factory	24,951	29,845	34,740	39,635	44,531	49,428	54,325	59,223	64,122	118	23,972	200	64,122			
	Min	19,361																10,609		13,214	15,807	18,393	20,975	23,552	26,130	28,705	31,278	10,085		31,278					
	End	31,759																		14,973	19,865	24,757	29,651	34,544	39,439	44,334	49,229	54,126		13,994		54,126			
G3x10-SR4	Start	36,532																	Please consult factory	24,053	28,947	33,841	38,736	43,631	48,527	53,424	58,321	63,219	68,118	104	21,117	200	68,118		
	Min	16,968																10,493		13,089	15,676	18,259	20,836	23,413	25,987	28,560	31,133	33,707	8,925		33,707				
	End	27,765																		15,292	20,183	25,075	29,968	34,861	39,755	44,649	49,544	54,440	59,336		12,357		59,336		
G3x12-SR1	Start	54,686																	Please consult factory	33,473	40,515	47,559	54,603	Exceeds MOP					108	32,064	142	56,012			
	Min	25,337																14,265		18,008	21,734	25,449	Exceeds MOP					13,512		26,192					
	End	41,638																		20,435	27,474	34,514	41,555	Exceeds MOP						19,027		42,963			
G3x12-SR2	Start	47,639																	Please consult factory	31,831	38,873	45,916	52,959	60,003	Exceeds MOP					94	27,606	142	61,412		
	Min	22,102																13,881		17,613	21,331	25,042	28,749	Exceeds MOP					11,628		29,490				
	End	36,241																		20,440	27,479	34,518	41,558	48,599	Exceeds MOP						16,217		50,007		
G3x12-SR3	Start	41,579																	Please consult factory	29,440	36,481	43,523	50,565	57,609	64,653	Exceeds MOP					82	23,807	142	66,062	
	Min	19,318																13,024		16,752	20,466	24,172	27,877	31,577	Exceeds MOP					10,023		32,317			
	End	31,593																		19,459	26,497	33,536	40,575	47,616	54,656	Exceeds MOP						13,830		56,065	
G3x12-SR4	Start	36,366																	Please consult factory	26,395	33,435	40,477	47,518	54,561	61,604	68,648	Exceeds MOP					72	20,763	142	70,057
	Min	16,924																11,764		15,487	19,199	22,905	26,605	30,305	34,005	Exceeds MOP					8,764		34,744		
	End	27,599																		17,632	24,670	31,708	38,746	45,786	52,826	59,867	Exceeds MOP						12,003		61,275
G3x14-SR1	Start	54,555																	Please consult factory	33,062	41,638	50,214	Exceeds MOP					88	31,347	117	56,218				
	Min	25,303																14,075		18,632	23,163	Exceeds MOP					13,158		26,329						
	End	41,507																		20,025	28,596	37,168	Exceeds MOP						18,310		43,170				
G3x14-SR2	Start	47,508																	Please consult factory	29,888	38,463	47,038	55,614	Exceeds MOP					77	27,316	117	61,618			
	Min	22,067																12,876		17,425	21,952	26,468	Exceeds MOP					11,502		29,627					
	End	36,110																		18,498	27,068	35,640	44,212	Exceeds MOP						15,927		50,213			
G3x14-SR3	Start	41,448																	Please consult factory	25,964	34,538	43,112	51,688	60,264	Exceeds MOP					68	24,249	117	66,268		
	Min	19,283																11,206		15,753	20,278	24,791	29,299	Exceeds MOP					10,290		32,453				
	End	31,462																		15,985	24,555	33,126	41,697	50,270	Exceeds MOP						14,271		56,271		
G3x14-SR4	Start	36,235																	Please consult factory	21,387	29,960	38,534	47,108	55,684	64,260	Exceeds MOP					59	20,529	117	70,264	
	Min	16,890																9,128		13,681	18,205	22,717	27,223	31,728	Exceeds MOP					8,670		34,880			
	End	27,468																		12,627	21,196	29,766	38,336	46,908	55,480	Exceeds MOP						11,770		61,481	

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)		Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)	
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200
			Pressure Torque Output: Start/Min./End (lbf-in)																				
G3x16-SR1	Start	54,385			Please consult factory	35,106	46,446	57,787	Exceeds MOP											67	31,704	90	57,787
	Min	25,258				15,194	21,203	27,183		13,379	27,183												
	End	41,338				22,067	33,402	44,738		18,667	44,738												
G3x16-SR2	Start	47,338		Please consult factory	29,167	40,506	51,846	63,187	Exceeds MOP											58	26,899	90	63,187
	Min	22,023				12,523	18,535	24,513		30,479	11,311	30,479											
	End	35,940				17,777	29,111	40,446		51,782	15,510	51,782											
G3x16-SR3	Start	41,278		Please consult factory	33,816	45,156	56,496	67,837	Exceeds MOP											51	23,612	90	67,837
	Min	19,239				15,404	21,384	27,348		33,304	9,983	33,304											
	End	31,292				23,834	35,168	46,503		57,839	13,634	57,839											
G3x16-SR4	Start	36,065	Please consult factory	26,474	37,812	49,151	60,492	71,833	Exceeds MOP											45	20,805	90	71,833
	Min	16,845				11,869	17,857	23,822		29,777	35,730	8,852	35,730										
	End	27,298				17,711	29,044	40,379		51,714	63,050	12,045	63,050										
G3x20-SR1	Start	54,047	Please consult factory	45,454	Exceeds MOP														42	31,046	56	56,262	
	Min	25,169					20,744															13,097	26,442
	End	40,999					32,411															18,009	43,213
G3x20-SR2	Start	47,000	32,844	50,855	Exceeds MOP														37	27,441	56	61,662	
	Min	21,934	14,549	24,057																11,673		29,739	
	End	35,602	21,452	39,455																16,052		50,257	
G3x20-SR3	Start	40,939	37,494	55,504	Exceeds MOP														32	23,086	56	66,312	
	Min	19,150	17,416	26,893																9,776		32,565	
	End	30,954	27,510	45,512																13,108		56,314	
G3x20-SR4	Start	35,727	41,489	59,500	Exceeds MOP														28	19,878	56	70,307	
	Min	16,756	19,861	29,321																8,432		34,993	
	End	26,960	32,720	50,723																11,118		61,525	

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)	Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)												
		40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200											
		Pressure Torque Output: Start/Min./End (lbf-in)																															
G4x12-SR2	Start	98,222																	Please consult factory	64,145	72,644	81,144	89,645	98,147	159	63,295	200	98,147					
	Min	43,627																25,740		30,300	34,833	39,346	43,848	25,281		43,848							
	End	68,842																		34,789	43,282	51,776	60,271	68,766		33,940		68,766					
G4x12-SR3	Start	82,692																	Please consult factory	57,947	66,445	74,943	83,442	91,942	100,443	108,944	134	52,849	200	108,944			
	Min	36,816																23,886		28,423	32,938	37,439	41,931	46,413	50,895	21,142		50,895					
	End	58,052																		33,325	41,816	50,308	58,801	67,295	75,790	84,286		28,231		84,286			
G4x12-SR4	Start	68,243																	Please consult factory	50,295	58,791	67,288	75,785	84,283	92,782	101,282	109,783	118,285	111	42,650	200	118,285	
	Min	30,684																21,356		25,873	30,372	34,860	39,341	43,815	48,287	52,759	57,223	17,259		57,223			
	End	48,718																		30,783	39,273	47,763	56,254	64,746	73,239	81,733	90,228	98,724		23,143		98,724	
G4x14-SR1	Start	112,239																	Please consult factory	70,663	81,028	91,393	101,759	112,126	Exceeds MOP		149	69,627	194	116,273			
	Min	50,660																28,861		34,403	39,914	45,405	50,886	28,304	53,074								
	End	81,473																		39,927	50,284	60,642	71,001	81,360	38,892	85,505							
G4x14-SR2	Start	98,063																	Please consult factory	73,100	83,463	93,827	104,192	114,559	124,926	Exceeds MOP		131	63,774	194	129,073		
	Min	43,585																30,577		36,100	41,597	47,077	52,548	58,013	25,573	60,199							
	End	68,683																		43,737	54,093	64,450	74,808	85,167	95,526	34,418	99,671						
G4x14-SR3	Start	82,532																	Please consult factory	52,814	63,174	73,535	83,897	94,261	104,625	114,990	125,356	135,724	110	52,814	194	139,871	
	Min	36,774																21,158		26,715	32,225	37,713	43,187	48,651	54,109	59,561	65,014	21,158		67,194			
	End	57,893																		28,195	38,548	48,902	59,257	69,612	79,969	90,327	100,686	111,046		28,195		115,190	
G4x14-SR4	Start	68,084																	Please consult factory	51,795	62,154	72,514	82,875	93,238	103,601	113,965	124,330	134,697	145,064	91	42,472	194	149,211
	Min	30,642																22,189		27,691	33,169	38,632	44,088	49,539	54,988	60,431	65,874	71,318	17,198		73,496		
	End	48,559																		32,281	42,633	52,986	63,340	73,695	84,050	94,407	104,765	115,124	125,484		22,966		129,628
G4x16-SR1	Start	112,034																	Please consult factory	79,730	93,455	107,182	Exceeds MOP		113	70,123	147	116,791					
	Min	50,606																33,739		41,033	48,296	Exceeds MOP		28,599		53,370							
	End	81,268																		48,987	62,703	76,419	Exceeds MOP			39,387		86,022					
G4x16-SR2	Start	97,858																	Please consult factory	65,082	78,805	92,530	106,255	119,981	Exceeds MOP		99	63,710	147	129,590			
	Min	43,531																26,308		33,649	40,936	48,193	55,431	25,569	60,495								
	End	68,478																		35,726	49,439	63,153	76,869	90,585	34,354	100,188							
G4x16-SR3	Start	82,327																	Please consult factory	62,158	75,880	89,603	103,327	117,052	130,779	Exceeds MOP		83	52,553	147	140,388		
	Min	36,720																26,204		33,499	40,757	47,993	55,219	62,438	21,050	67,489							
	End	57,688																		37,533	51,245	64,958	78,672	92,388	106,105	27,935	115,707						
G4x16-SR4	Start	67,879																	Please consult factory	44,058	57,778	71,498	85,220	98,943	112,667	126,393	140,119	Exceeds MOP		69	42,686	147	149,728
	Min	30,588																18,086		25,403	32,664	39,898	47,117	54,333	61,539	68,746	17,349	73,791					
	End	48,354																		24,550	38,260	51,971	65,683	79,396	93,111	106,826	120,543	23,179	130,145				

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)		Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)			
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200		
			Pressure Torque Output: Start/Min./End (lbf-in)																						
G4x20-SR1	Start	111,621				Please consult factory	89,330	111,165	Exceeds MOP											71	69,680	92	115,532		
	Min	50,497					38,912	50,464															28,432	52,769	
	End	80,856					58,581	80,400																38,944	84,764
G4x20-SR2	Start	97,445		Please consult factory	58,464	80,296	102,130	123,965	Exceeds MOP											60	58,464	92	128,332		
	Min	43,422			22,806	34,513	46,079	57,593															22,806	59,894	
	End	68,065			29,112	50,929	72,747	94,566																29,112	98,930
G4x20-SR3	Start	81,914		Please consult factory	69,262	91,094	112,927	134,762	Exceeds MOP											52	51,797	92	139,129		
	Min	36,611			30,063	41,615	53,115	64,595															20,722	66,890	
	End	57,275			44,631	66,448	88,266	110,085																27,179	114,449
G4x20-SR4	Start	67,466	Please consult factory	56,771	78,602	100,434	122,268	144,103	Exceeds MOP											43	41,491	92	148,470		
	Min	30,479		24,949	36,484	47,971	59,439	70,899															16,789	73,191	
	End	47,941		37,255	59,070	80,886	102,704	124,523																21,985	128,887
G4x24-SR1	Start	111,323	Please consult factory	73,392	105,194	Exceeds MOP			Exceeds MOP											49	70,211	63	114,735		
	Min	50,419		30,462	47,342																			28,758	52,379
	End	80,558		42,654	74,433																				39,476
G4x24-SR2	Start	97,147	Please consult factory	86,191	117,993	Exceeds MOP			Exceeds MOP											43	63,931	63	127,534		
	Min	43,344		37,683	54,479																			25,809	59,504
	End	67,767		56,819	88,599																				34,575
G4x24-SR3	Start	81,616	65,188	96,989	128,791	Exceeds MOP			Exceeds MOP											36	52,468	63	138,332		
	Min	36,532	27,942	44,761	61,488																			21,135	66,502
	End	56,977	40,561	72,339	104,118																				27,850
G4x24-SR4	Start	67,168	74,528	106,329	138,131	Exceeds MOP			Exceeds MOP											30	42,729	63	147,672		
	Min	30,401	34,383	51,110	67,798																			17,512	72,803
	End	47,644	54,999	86,777	118,556																				23,222
G4x28-SR1	Start	110,048	92,701	Exceeds MOP					Exceeds MOP											34	65,762	45	115,151		
	Min	50,083	41,119																					26,750	52,986
	End	79,284	61,949																						35,030
G4x28-SR2	Start	95,872	105,501	Exceeds MOP					Exceeds MOP											30	60,603	45	127,950		
	Min	43,007	48,278																					24,393	60,112
	End	66,493	76,115																						31,250
G4x28-SR3	Start	80,341	116,298	Exceeds MOP					Exceeds MOP											25	48,953	45	138,748		
	Min	36,196	55,304																					19,610	67,107
	End	55,703	91,634																						24,338

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)	Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)				
		40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200			
		Pressure Torque Output: Start/Min./End (lbf-in)																							
G5x16-SR2	Start	228,703																Please consult factory	175,940	193,488	211,037	179	174,185	200	211,037
	Min	93,776															65,664		75,229	84,696	64,701		84,696		
	End	135,275															82,529		100,071	117,615	80,775		117,615		
G5x16-SR3	Start	183,905																Please consult factory	144,703	162,247	179,793	144	134,177	200	232,437
	Min	77,094														56,388	65,844		75,235	50,656	103,175				
	End	113,882														74,693	92,231		109,771	64,170	162,398				
G5x16-SR4	Start	153,351																Please consult factory	127,221	144,763	162,306	121	111,435	200	250,041
	Min	64,784														51,092	60,492		69,835	42,545	116,180				
	End	96,284														70,163	87,699		105,237	54,382	192,942				
G5x20-SR1	Start	254,555																Please consult factory	199,246	227,280	255,315	Exceeds MOP	185,230	164	294,567
	Min	107,205														77,940	93,025		107,985	70,327	128,824				
	End	159,530														104,239	132,264		160,290	90,228	199,529				
G5x20-SR2	Start	228,169																Please consult factory	196,011	224,043	252,077	Exceeds MOP	173,587	164	319,364
	Min	93,634														76,684	91,766		106,724	64,466	142,387				
	End	134,741														102,594	130,617		158,641	80,177	225,906				
G5x20-SR3	Start	183,371																Please consult factory	133,325	161,352	189,381	Exceeds MOP	133,325	164	340,764
	Min	76,952														50,290	65,459		80,432	50,290	160,342				
	End	113,348														63,319	91,337		119,356	63,319	270,690				
G5x20-SR4	Start	152,817																Please consult factory	122,903	150,929	178,956	Exceeds MOP	111,693	164	358,368
	Min	64,642														48,866	63,876		78,758	42,790	173,185				
	End	95,750														65,846	93,863		121,881	54,640	301,234				
G5x24-SR1	Start	254,170																Please consult factory	202,761	243,680	284,601	Exceeds MOP	186,394	112	292,785
	Min	107,102														79,871	101,816		123,561	70,998	127,898				
	End	159,145														107,753	148,658		189,566	91,391	197,748				
G5x24-SR2	Start	227,784																Please consult factory	186,641	227,558	268,477	Exceeds MOP	174,366	112	317,582
	Min	93,531														71,638	93,676		115,472	64,937	141,464				
	End	134,356														93,226	134,130		175,036	80,956	224,125				
G5x24-SR3	Start	182,985																Please consult factory	126,212	167,126	208,041	Exceeds MOP	126,212	112	338,982
	Min	76,850														46,434	68,601		90,382	46,434	159,424				
	End	112,963														56,208	97,108		138,010	56,208	268,909				
G5x24-SR4	Start	152,431																Please consult factory	143,815	184,729	225,644	Exceeds MOP	111,086	112	356,586
	Min	64,539														60,135	81,859		103,450	42,518	172,269				
	End	95,365														86,752	127,652		168,554	54,033	299,453				

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)		Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)	
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200
Pressure Torque Output: Start/Min./End (lbf-in)																							
G5x28-SR1	Start	252,521	Please consult factory	179,961	237,813	295,668	Exceeds MOP												60	179,961	80	295,668	
	Min	106,664		68,033	99,238	129,995		68,033	129,995														
	End	157,497		84,960	142,793	200,629		84,960	200,629														
G5x28-SR2	Start	226,135	Please consult factory	204,758	262,610	320,465	Exceeds MOP												54	170,048	80	320,465	
	Min	93,091		81,990	112,910	143,554		81,990	143,554														
	End	132,708		111,337	169,170	227,007		111,337	227,007														
G5x28-SR3	Start	181,337	Please consult factory	168,309	226,158	284,010	341,865	Exceeds MOP											44	133,602	80	341,865	
	Min	76,412		69,757	100,514	131,051	69,757		131,051														
	End	111,315		98,292	156,121	213,954	98,292		213,954														
G5x28-SR4	Start	150,783	128,068	185,913	243,761	301,613	359,468	Exceeds MOP											37	110,715	80	359,468	
	Min	64,102	52,212	83,002	113,526	143,958	174,344		64,102	174,344													
	End	93,717	71,010	128,836	186,665	244,498	302,335		93,717	302,335													
G5x32-SR1	Start	251,855	Please consult factory	210,961	286,714	Exceeds MOP													46	180,661	61	294,289	
	Min	106,487		84,983	125,375																	68,558	129,391
	End	156,831		115,950	191,678																		85,660
G5x32-SR2	Start	225,469	Please consult factory	235,758	311,511	Exceeds MOP													41	167,583	61	319,086	
	Min	92,913		98,743	138,949																	61,893	142,952
	End	132,042		142,327	218,056																		74,175
G5x32-SR3	Start	180,670	181,409	257,158	332,911	Exceeds MOP													33	128,387	61	340,486	
	Min	76,235	76,899	117,032	156,922															48,314		160,905	
	End	110,649	111,387	187,111	262,839																	58,382	270,412
G5x32-SR4	Start	150,116	199,012	274,761	350,514	Exceeds MOP													28	108,119	61	358,090	
	Min	63,924	90,067	129,971	169,771															41,565		173,747	
	End	93,051	141,931	217,655	293,383																	51,067	300,956
G5x36-SR1	Start	251,188	215,722	Exceeds MOP															36	177,306	48	292,558	
	Min	106,310	87,685																	66,873		128,610	
	End	156,164	120,710																			82,306	197,520
G5x36-SR2	Start	224,802	240,519	Exceeds MOP															33	173,291	48	317,355	
	Min	92,735	101,430																	65,191		142,174	
	End	131,375	147,087																			79,881	223,898
G5x36-SR3	Start	180,004	261,920	Exceeds MOP															26	127,465	48	338,755	
	Min	76,058	119,684																	47,965		160,130	
	End	109,982	191,871																			57,460	268,681

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)	Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)											
		40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200										
		Pressure Torque Output: Start/Min./End (lbf-in)																														
G7x20-SR3	Start	366,531																Please consult factory	283,257	317,453	351,650	385,850	420,052	454,257	147	272,999	200	454,257				
	Min	151,987															107,763		126,304	144,671	162,935	181,133	199,276	102,148					199,276			
	End	221,909															138,657		172,843	207,032	241,223	275,417	309,613	128,401					309,613			
G7x20-SR4	Start	307,573																Please consult factory	248,725	282,915	317,108	351,303	385,501	419,700	453,903	488,107	124	228,212	200	488,107		
	Min	128,271														97,212	115,636		133,908	152,097	170,235	188,318	206,385	224,419	86,037	224,419						
	End	188,067														129,234	163,415		197,600	231,786	265,975	300,166	334,360	368,556	108,726	368,556						
G7x24-SR1	Start	503,373																Please consult factory	391,341	441,370	491,401	541,435	Exceeds MOP	138	381,336	178	581,464					
	Min	207,111													147,332	174,494	201,380		228,094	141,857	249,399											
	End	300,288													188,284	238,300	288,319		338,340	178,282	378,359											
G7x24-SR2	Start	444,416																Please consult factory	375,166	425,192	475,220	525,251	575,285	Exceeds MOP	122	335,147	178	615,314				
	Min	183,396													146,789	173,720	200,434		227,033	253,559	124,998	274,715										
	End	266,446													197,214	247,227	297,243		347,262	397,283	157,205	437,302										
G7x24-SR3	Start	366,031																Please consult factory	320,170	370,191	420,214	470,240	520,268	570,300	620,334	Exceeds MOP	101	275,154	178	660,362		
	Min	151,853													127,778	154,587	181,211		207,730	234,172	260,567	286,937	103,341	308,015								
	End	221,410													175,560	225,568	275,579		325,592	375,608	425,627	475,648	130,555	515,667								
G7x24-SR4	Start	307,073																Please consult factory	253,987	304,003	354,021	404,041	454,064	504,090	554,119	604,150	654,184	Exceeds MOP	85	228,981	178	694,213
	Min	128,138													100,080	126,933	153,545		180,037	206,462	232,831	259,174	285,485	311,797	86,487	332,829						
	End	187,568													134,495	184,498	234,503		284,511	334,522	384,535	434,551	484,570	534,591	109,495	574,610						
G7x28-SR1	Start	501,375																Please consult factory	397,313	468,148	538,987	Exceeds MOP	97	376,063	126	581,493						
	Min	206,578													151,322	189,634	227,529		139,674	250,161												
	End	298,290													194,254	265,071	335,893		173,010	378,388												
G7x28-SR2	Start	442,417																Please consult factory	360,333	431,163	501,998	572,838	Exceeds MOP	86	332,002	126	615,343					
	Min	182,863													139,443	177,618	215,409		252,999	123,973	275,474											
	End	264,448													182,385	253,197	324,014		394,836	154,061	437,331											
G7x28-SR3	Start	364,033																Please consult factory	334,556	405,381	476,211	547,046	617,886	Exceeds MOP	71	270,817	126	660,392				
	Min	151,320													136,182	174,014	211,584		249,024	286,379	101,638	308,770										
	End	219,412													189,942	260,750	331,562		402,379	473,201	126,219	515,696										
G7x28-SR4	Start	305,075																Please consult factory	226,769	297,585	368,406	439,232	510,062	580,897	651,736	Exceeds MOP	60	226,769	126	694,242		
	Min	127,605													85,927	124,154	161,839		199,318	236,674	273,968	311,239	85,927	333,583								
	End	185,570													107,284	178,082	248,885		319,693	390,505	461,322	532,144	107,284	574,639								

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)	Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)	
		40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200
		Pressure Torque Output: Start/Min./End (lbf-in)																				
G7x32-SR1	Start	500,556				Please consult factory	430,782	523,604	Exceeds MOP										74	375,092	96	579,299
	Min	206,359					169,624	219,453		139,275	249,111											
	End	297,472					227,716	320,514		172,039	376,195											
G7x32-SR2	Start	441,598			Please consult factory	371,817	464,633	557,454	Exceeds MOP									66	334,692	96	613,149	
	Min	182,644				145,815	195,636	244,959		125,590	274,427											
	End	263,630				193,866	286,659	379,457		156,750	435,138											
G7x32-SR3	Start	363,214		Please consult factory	324,054	416,865	509,681	602,502	Exceeds MOP									54	268,370	96	658,198	
	Min	151,101			130,683	180,255	229,408	278,384		100,451	307,729											
	End	218,593			179,443	272,231	365,023	457,821		123,773	513,503											
G7x32-SR4	Start	304,256	Please consult factory	265,099	357,905	450,715	543,531	636,353	Exceeds MOP									46	227,978	96	692,048	
	Min	127,386		106,886	156,412	205,512	254,433	303,262		86,754	332,543											
	End	184,751		145,604	238,386	331,174	423,966	516,764		108,493	572,446											
G7x36-SR1	Start	499,737	Please consult factory	393,918	511,661	Exceeds MOP											59	382,144	76	582,310		
	Min	206,141		149,748	213,205		143,304	250,840														
	End	296,653		190,860	308,574		179,089	379,205														
G7x36-SR2	Start	440,779	Please consult factory	427,768	545,512	Exceeds MOP											52	333,578	76	616,160		
	Min	182,425		176,081	238,761		125,140	276,150														
	End	262,811		249,803	367,517		155,637	438,148														
G7x36-SR3	Start	362,395	Please consult factory	355,079	472,817	590,560	Exceeds MOP										43	272,667	76	661,209		
	Min	150,882		147,482	210,064	272,224		102,975	309,443													
	End	217,774		210,460	328,168	445,882		128,069	516,513													
G7x36-SR4	Start	303,437	271,198	388,930	506,667	624,410	Exceeds MOP										36	224,107	76	695,059		
	Min	127,167	110,334	173,014	235,159	297,116		84,812	334,255													
	End	183,932	151,702	269,403	387,111	504,825		104,623	575,456													
G7XT28-SR1	Start	495,168	Please consult factory	390,989	532,612	Exceeds MOP											49	376,828	63	575,101		
	Min	204,921		149,594	225,835		141,839	248,467														
	End	292,085		187,933	329,520		173,775	371,998														
G7XT28-SR2	Start	436,210	Please consult factory	424,840	566,463	Exceeds MOP											43	325,709	63	608,952		
	Min	181,206		175,930	251,314		122,241	273,787														
	End	258,243		246,876	388,463		147,770	430,941														
G7XT28-SR3	Start	357,826	328,274	469,888	611,511	Exceeds MOP											36	271,631	63	654,000		
	Min	149,663	134,496	209,915	284,701		103,803	307,092														
	End	213,206	183,662	325,240	466,828		127,034	509,306														
G7XT28-SR4	Start	298,868	362,125	503,739	645,362	Exceeds MOP											30	220,520	63	687,850		
	Min	125,947	160,176	235,010	309,565		84,220	331,907														
	End	179,364	242,605	384,183	525,771		101,036	568,249														

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)	Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)				
		40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200			
		Pressure Torque Output: Start/Min./End (lbf-in)																							
G8x24-SR1	Start	744,286																Please consult factory	546,171	604,998	663,828	173	504,994	200	663,828
	Min	323,449															218,840		250,367	281,728	196,626		281,728		
	End	501,998															303,912		362,730	421,552	262,741		421,552		
G8x24-SR2	Start	598,913																Please consult factory	387,396	446,211	505,028	140	387,396	200	740,329
	Min	266,872														155,213	186,721		218,009	155,213	342,302				
	End	425,508														214,022	272,828		331,637	214,022	566,903				
G8x24-SR3	Start	507,818																Please consult factory	334,066	392,874	451,685	119	328,185	200	804,618
	Min	226,612														134,968	166,411		197,646	131,808	383,626				
	End	361,228														187,502	246,302		305,104	181,623	657,985				
G8x28-SR1	Start	741,887																Please consult factory	570,106	653,582	737,064	122	503,330	172	920,742
	Min	322,814														232,617	277,207		321,563	196,632	418,700				
	End	499,599														327,844	411,307		494,776	261,077	678,428				
G8x28-SR2	Start	596,514																Please consult factory	396,213	479,672	563,137	98	379,522	172	997,243
	Min	266,239														160,803	205,402		249,690	151,826	478,380				
	End	423,109														222,838	306,285		389,737	206,149	823,780				
G8x28-SR3	Start	505,419																Please consult factory	377,048	460,502	543,961	84	326,979	172	1,061,532
	Min	225,979														158,809	203,163		247,301	131,977	519,477				
	End	358,830														230,478	313,920		397,367	180,416	914,862				
G8x32-SR1	Start	740,917																Please consult factory	579,277	688,794	798,317	93	502,619	131	918,800
	Min	322,557														237,662	296,077		354,126	196,384	417,780				
	End	498,629														337,014	446,514		556,021	260,367	676,486				
G8x32-SR2	Start	595,544																Please consult factory	436,764	546,268	655,779	75	382,014	131	995,301
	Min	265,983														182,677	240,893		298,775	153,324	477,464				
	End	422,140														263,383	372,871		482,365	208,641	821,838				
G8x32-SR3	Start	504,449																Please consult factory	391,555	501,053	610,557	64	325,859	131	1,059,590
	Min	225,723														166,693	224,764		282,551	131,542	518,561				
	End	357,860														244,983	354,464		463,953	179,297	912,920				
G8x36-SR1	Start	739,947																Please consult factory	595,555	734,595	873,643	73	498,231	103	915,358
	Min	322,300														246,518	320,510		394,074	194,164	416,094				
	End	497,660														353,289	492,309		631,336	255,979	673,045				
G8x36-SR2	Start	594,574																Please consult factory	393,997	533,023	672,056	59	380,094	103	991,860
	Min	265,727														159,938	234,028		307,505	152,466	475,784				
	End	421,170														220,622	359,627		498,640	206,721	818,397				
G8x36-SR3	Start	503,479																Please consult factory	319,266	458,285	597,312	50	319,266	103	1,056,148
	Min	225,467														128,180	202,309		275,728	128,180	516,881				
	End	356,890														172,705	311,704		450,709	172,705	909,479				

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)	Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)	
		40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200
		Pressure Torque Output: Start/Min./End (lbf-in)																				
G8x40-SR1	Start	738,977	Please consult factory	514,598	686,639	858,687	Exceeds MOP												59	497,394	84	927,509
	Min	322,043		203,194	295,237	386,321														193,889		422,646
	End	496,690		272,343	444,359	616,383														255,142		685,194
G8x40-SR2	Start	593,604	Please consult factory	419,066	591,099	763,140	Exceeds MOP												48	384,660	84	1,004,010
	Min	265,471		173,571	264,935	355,676		446,150										155,112		482,310		
	End	420,200		245,687	417,695	589,711		761,734										211,286		830,546		
G8x40-SR3	Start	502,509	Please consult factory	483,354	655,388	827,429	Exceeds MOP												41	328,531	84	1,068,299
	Min	225,211		215,762	306,503	396,965		487,280										133,364		523,407		
	End	355,920		336,769	508,777	680,793		852,816										181,969		921,628		
G8xT32-SR1	Start	732,119	Please consult factory	570,265	789,225	Exceeds MOP													47	504,579	65	898,709
	Min	320,227		235,256	351,727													199,877		409,602		
	End	489,833		328,002	546,930													262,327		656,398		
G8xT32-SR2	Start	586,746	427,819	646,766	865,726	Exceeds MOP													38	384,031	65	975,210
	Min	263,661	180,289	296,404	411,729												156,812	469,317				
	End	413,343	254,439	473,354	692,281												210,658	801,750				
G8xT32-SR3	Start	495,651	492,108	711,055	930,014	Exceeds MOP													32	316,960	65	1,039,499
	Min	223,401	222,403	337,831	452,918												129,155	510,415				
	End	349,064	345,521	564,436	783,363												170,399	892,832				
G8xT36-SR1	Start	730,179	585,628	863,642	Exceeds MOP														37	502,227	52	919,246
	Min	319,714	243,868	391,435													199,013	420,786				
	End	487,893	343,363	621,336													259,975	676,932				
G8xT36-SR2	Start	584,806	662,129	940,143	Exceeds MOP														30	384,131	52	995,747
	Min	263,149	304,893	451,238													157,291	480,458				
	End	411,403	488,715	766,688													210,757	822,284				
G8xT36-SR3	Start	493,711	726,418	1,004,431	Exceeds MOP														25	309,425	52	1,060,036
	Min	222,889	346,301	492,359													125,526	521,555				
	End	347,124	579,797	857,769													162,865	913,366				

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Actuator Model	Spring Torque Start/Min./End (lbf-in)	Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)												
		40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200											
		Pressure Torque Output: Start/Min./End (lbf-in)																															
G10x28-SR2	Start	1,383,986																Please consult factory	1,091,757	1,200,447	1,309,144	175	1,037,414	200	1,309,144								
	Min	574,494															419,568		478,406	536,770	389,921					536,770							
	End	843,139																	550,973	659,639	768,313					496,643	768,313						
G10x28-SR3	Start	1,262,044													Please consult factory	1,010,820	1,119,495	1,228,177	1,336,867	1,445,565	159	999,953	200	1,445,565									
	Min	504,734												370,244		429,763	488,621	547,003	605,118	364,251					605,118								
	End	706,748														455,578	564,230	672,889	781,555	890,229					444,714	890,229							
G10x28-SR4	Start	1,011,321													Please consult factory	798,032	906,685	1,015,345	1,124,013	1,232,688	1,341,370	1,450,060	1,558,758	128	776,302	200	1,558,758						
	Min	413,553												300,011		359,055	417,457	475,480	533,271	590,924	648,391	705,844	288,092					705,844					
	End	593,579														380,337	488,966	597,603	706,247	814,898	923,557	1,032,223	1,140,897					358,612	1,140,897				
G10x32-SR1	Start	1,716,433													Please consult factory	1,401,974	1,544,894	1,687,823	1,830,761		165	1,330,516	200	1,830,761									
	Min	699,161												531,876		609,381	686,292	762,748		492,736					762,748								
	End	1,003,552														689,161	832,050	974,948	1,117,854						617,719	1,117,854							
G10x32-SR2	Start	1,382,712													Please consult factory	1,134,985	1,277,880	1,420,784	1,563,696	1,706,617	1,849,546	1,992,483	133	1,034,963	200	1,992,483							
	Min	574,154												443,160		520,142	596,534	672,584	748,384	823,990	899,545	388,708					899,545						
	End	841,865														594,192	737,056	879,928	1,022,809	1,165,699	1,308,597	1,451,503					494,192	1,451,503					
G10x32-SR3	Start	1,260,770													Please consult factory	1,128,518	1,271,405	1,414,301	1,557,205	1,700,117	1,843,037	1,985,966	2,128,904	121	999,927	200	2,128,904						
	Min	504,392												434,801		511,980	588,532	664,672	740,528	816,225	891,778	967,231	364,379					967,231					
	End	705,474														573,251	716,107	858,971	1,001,844	1,144,725	1,287,614	1,430,512	1,573,418					444,688	1,573,418				
G10x32-SR4	Start	1,010,046													Please consult factory	813,101	955,963	1,098,833	1,241,711	1,384,598	1,527,494	1,670,398	1,813,310	1,956,230	2,099,159	2,242,097	97	770,244	200	2,242,097			
	Min	413,212												308,426		385,744	462,207	538,186	613,900	689,443	764,810	840,149	915,369	990,544	1,065,721	284,920					1,065,721		
	End	592,305														395,403	538,234	681,073	823,920	966,776	1,109,640	1,252,513	1,395,394	1,538,283	1,681,181	1,824,087					352,556	1,824,087	
G10x36-SR1	Start	1,715,159													Please consult factory	1,333,483	1,515,175	1,696,877									129	1,315,314	158	1,842,245			
	Min	698,820												494,512		593,452	691,279																
	End	1,002,278														620,684	802,337	983,999															
G10x36-SR2	Start	1,381,437													Please consult factory	1,131,848	1,313,522	1,495,205	1,676,897	1,858,599							104	1,022,849	158	2,003,968			
	Min	573,813												441,622		539,369	636,294	732,750	828,896														
	End	840,591														591,056	772,690	954,333	1,135,986	1,317,648													
G10x36-SR3	Start	1,259,495													Please consult factory	1,086,605	1,268,269	1,449,943	1,631,626	1,813,318	1,995,020						95	995,776	158	2,140,388			
	Min	504,050												412,160		510,451	607,706	704,337	800,642	896,684													
	End	704,200														531,347	712,971	894,605	1,076,249	1,257,902	1,439,564												
G10x36-SR4	Start	1,008,772													Please consult factory	836,497	1,018,143	1,199,798	1,381,462	1,563,136	1,744,819	1,926,511	2,108,213					77	782,006	158	2,253,581		
	Min	412,872												321,371		419,276	516,118	612,395	708,406	804,177	899,864	995,425											
	End	591,031														418,794	600,400	782,015	963,640	1,145,274	1,326,917	1,508,570	1,690,232										

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)		Operating Pressure, (psig)															MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)		
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180					190	200
Pressure Torque Output: Start/Min./End (lbf-in)																							
G10x40-SR1	Start	1,713,885								Please consult factory	1,445,912	1,670,961	Exceeds MOP							105	1,333,392	128	1,851,007
	Min	698,480									556,069	677,505		773,821									
	End	1,001,004									733,090	958,089		1,138,096									
G10x40-SR2	Start	1,380,163								Please consult factory	1,157,568	1,382,596	Exceeds MOP							84	1,022,557	128	2,012,730
	Min	573,473									455,706	576,478		696,177	815,347								
	End	839,317									616,771	841,749		1,066,739	1,291,738								
G10x40-SR3	Start	1,258,221								Please consult factory	1,068,972	1,293,989	Exceeds MOP							77	1,001,468	128	2,149,151
	Min	503,708									402,711	524,457		644,652	764,122	883,135							
	End	702,925									513,717	738,686		963,665	1,188,654	1,413,654							
G10x40-SR4	Start	1,007,498								Please consult factory	732,161	957,157	Exceeds MOP							60	732,161	128	2,262,344
	Min	412,532									264,290	386,783		506,945	626,173	744,987	863,594	981,944					
	End	589,757									314,480	539,428		764,386	989,355	1,214,333	1,439,323	1,664,322					
G10xT32-SR1	Start	1,705,124								Please consult factory	1,532,903	1,818,610	Exceeds MOP							82	1,304,350	100	1,818,610
	Min	696,141									606,146	759,504		820,062	1,105,706								
	End	992,245																			591,558		1,105,706
G10xT32-SR2	Start	1,371,402								Please consult factory	1,123,263	1,408,936	Exceeds MOP							66	1,008,998	100	1,980,332
	Min	571,134									439,997	593,384		745,209	896,338								
	End	830,558									582,473	868,083		1,153,711	1,439,355								
G10xT32-SR3	Start	1,249,460								Please consult factory	974,028	1,259,684	Exceeds MOP							60	974,028	100	2,116,753
	Min	501,357									353,226	508,835		661,522	813,060	964,033							
	End	694,167									418,794	704,388		989,999	1,275,626	1,561,270							
G10xT32-SR4	Start	998,737								Please consult factory	801,581	1,087,221	Exceeds MOP							49	773,018	100	2,229,946
	Min	410,193									305,278	459,121		610,806	761,691	912,220	1,062,530						
	End	580,998									383,886	669,463		955,057	1,240,667	1,526,295	1,811,939						

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)		Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)		
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200	
			Pressure Torque Output: Start/Min./End (lbf-in)																					
G10xT36-SR1	Start	1,702,575			Please consult factory	1,502,131	1,865,403	Exceeds MOP												65	1,320,502	80	1,865,403	
	Min	695,461				589,932	784,856																490,939	784,856
	End	989,697				789,296	1,152,489																	607,706
G10xT36-SR2	Start	1,368,853			Please consult factory	1,300,600	1,663,853	Exceeds MOP												52	1,010,011	80	2,027,125	
	Min	570,454				535,919	729,296		921,418														378,735	921,418
	End	828,010				759,771	1,122,945		1,486,138															469,245
G10xT36-SR3	Start	1,246,911			Please consult factory	1,073,786	1,437,021	Exceeds MOP												48	1,001,141	80	2,163,546	
	Min	500,673	823,763	1,186,979		1,550,214	1,913,467		2,276,739														368,760	989,085
	End	691,618	317,914	512,724		705,005	896,438		1,087,527															445,902
G10xT36-SR4	Start	996,188	823,763	1,186,979	1,550,214	1,913,467	2,276,739	Exceeds MOP												38	751,122	80	2,276,739	
	Min	409,512	317,914	512,724	705,005	896,438	1,087,527														278,093		1,087,527	
	End	578,450	406,063	769,200	1,132,355	1,495,529	1,858,722																333,438	1,858,722
G10xT40-SR1	Start	1,700,027			Please consult factory	1,656,729		Exceeds MOP												52	1,296,749	64	1,836,724	
	Min	694,780				673,686																	478,337	770,022
	End	987,149				943,860																		583,959
G10xT40-SR2	Start	1,366,305			Please consult factory	1,368,479	1,818,451	Exceeds MOP												42	1,008,515	64	1,998,446	
	Min	569,773				572,708	811,591																378,443	906,733
	End	825,461				827,635	1,277,509																	467,750
G10xT40-SR3	Start	1,244,363	1,054,947	1,504,899	1,954,872			Exceeds MOP												38	964,959	64	2,134,867	
	Min	499,990	398,878	640,899	879,378																349,245		974,400	
	End	689,070	499,696	949,550	1,399,425																		409,728	1,579,380
G10xT40-SR4	Start	993,639	1,168,140	1,618,092	2,068,065			Exceeds MOP												31	763,201	64	2,248,060	
	Min	408,832	503,217	741,271	978,207																285,325		1,072,875	
	End	575,902	750,365	1,200,219	1,650,093																		345,514	1,830,049

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)		Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)					
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200				
			Pressure Torque Output: Start/Min./End (lbf-in)																								
G13x40-SR1	Start	3,818,510																	Please consult factory	3,391,223	3,678,995	182	3,161,015	200	3,678,995		
	Min	1,491,002																		1,262,944	1,419,755					1,136,038	1,419,755
	End	2,036,193																			1,609,183					1,896,769	1,379,124
G13x40-SR2	Start	3,295,711																	Please consult factory	2,789,388	3,077,120	157	2,703,072	200	3,940,395		
	Min	1,293,194																		1,021,202	1,178,583					973,481	1,642,566
	End	1,774,963																			1,268,968					1,556,513	1,182,708
G13x40-SR3	Start	2,746,696																	Please consult factory	2,526,509	2,814,213	131	2,267,586	200	4,252,938		
	Min	1,073,215																		956,982	1,112,870					814,571	1,878,954
	End	1,462,623																			1,242,578					1,530,096	983,824
G13x40-SR4	Start	2,223,896																	Please consult factory	1,924,877	2,212,541	106	1,809,815	200	4,514,338		
	Min	875,407																		715,571	871,934					652,062	2,092,061
	End	1,201,392																			902,567					1,190,044	787,580
G13x44-SR1	Start	3,816,775																	Please consult factory	3,163,819	3,513,233	150	3,163,819	165	3,687,946		
	Min	1,490,534																		1,137,814	1,329,889					1,137,814	1,424,824
	End	2,034,459																			1,381,926					1,731,114	1,381,926
G13x44-SR2	Start	3,293,975																	Please consult factory	2,726,435	3,075,819	129	2,691,497	165	3,949,346		
	Min	1,292,726																		986,691	1,178,098					967,290	1,647,534
	End	1,773,228																			1,206,056					1,555,214	1,171,140
G13x44-SR3	Start	2,744,961																	Please consult factory	2,340,253	2,689,607	108	2,270,383	165	4,261,889		
	Min	1,072,747																		855,063	1,045,811					816,386	1,883,882
	End	1,460,889																			1,056,443					1,405,571	986,619
G13x44-SR4	Start	2,222,161																	Please consult factory	1,902,988	2,252,313	87	1,798,193	165	4,523,288		
	Min	874,939																		703,817	893,681					645,898	2,096,976
	End	1,199,658																			880,692					1,229,790	775,965
G13x48-SR1	Start	3,815,127																	Please consult factory	3,341,840	3,758,806	125	3,133,362	140	3,758,806		
	Min	1,490,090																		1,236,296	1,463,351					1,121,099	1,463,351
	End	2,032,812																			1,559,831					1,976,528	1,351,489
G13x48-SR2	Start	3,292,327																	Please consult factory	2,769,354	3,186,289	108	2,685,969	140	4,020,206		
	Min	1,292,282																		1,010,611	1,238,255					964,440	1,685,408
	End	1,771,581																			1,248,947					1,665,612	1,165,616
G13x48-SR3	Start	2,743,312																	Please consult factory	2,248,076	2,664,978	90	2,248,076	140	4,332,749		
	Min	1,072,302																		804,246	1,032,711					804,246	1,921,486
	End	1,459,241																			964,326					1,380,958	964,326
G13x48-SR4	Start	2,220,512																	Please consult factory	2,092,590	2,509,476	73	1,800,780	140	4,594,149		
	Min	874,494																		807,566	1,031,878					647,614	2,134,417
	End	1,198,010																			1,070,171					1,486,787	778,550

Note: All Published Torques are Guaranteed Minimum Values. Units are Imperial

Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)	Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)			
		40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200		
		Pressure Torque Output: Start/Min./End (lbf-in)																						
G13x52-SR1	Start	3,813,478							Please consult factory	3,314,305	3,804,702	Exceeds MOP									107	3,167,189	120	3,804,702
	Min	1,489,645						1,221,346		1,488,335	1,140,107		1,488,335											
	End	2,031,164						1,532,314		2,022,394	1,385,294		2,022,394											
G13x52-SR2	Start	3,290,678						Please consult factory	3,085,326	3,575,705	4,066,102	Exceeds MOP									92	2,693,035	120	4,066,102
	Min	1,291,837							1,183,696	1,448,149	1,710,024		968,612	1,710,024										
	End	1,769,933							1,564,714	2,054,776	2,544,855		1,172,677	2,544,855										
G13x52-SR3	Start	2,741,663				Please consult factory	2,417,162	2,907,506	3,397,868	3,888,247	4,378,644	Exceeds MOP									77	2,270,062	120	4,378,644
	Min	1,071,858					897,921	1,163,765	1,426,027	1,686,471	1,945,927		816,730	1,945,927										
	End	1,457,594					1,133,303	1,623,329	2,113,373	2,603,435	3,093,514		986,298	3,093,514										
G13x52-SR4	Start	2,218,864		Please consult factory	1,697,926	2,188,236	2,678,562	3,168,906	3,659,268	4,149,647	4,640,044	Exceeds MOP									60	1,697,926	120	4,640,044
	Min	874,050			590,354	859,608	1,122,423	1,382,794	1,642,023	1,900,533	2,158,736		590,354	2,158,736										
	End	1,196,363			675,763	1,165,755	1,655,764	2,145,790	2,635,834	3,125,896	3,615,975		675,763	3,615,975										
G13xT40-SR1	Start	3,800,331						Please consult factory	3,659,461	Exceeds MOP											91	3,141,714	100	3,659,461
	Min	1,486,099							1,414,454		1,130,685	1,414,454												
	End	2,018,026							1,877,247		1,359,836	1,877,247												
G13xT40-SR2	Start	3,277,531				Please consult factory	2,770,342	3,345,588	3,920,861	Exceeds MOP											78	2,655,296	100	3,920,861
	Min	1,288,291					1,015,961	1,329,081	1,637,352		952,232	1,637,352												
	End	1,756,795					1,249,935	1,824,808	2,399,709		1,134,963	2,399,709												
G13xT40-SR3	Start	2,728,517		Please consult factory	2,507,666	3,082,885	3,658,131	4,233,404	Exceeds MOP												65	2,220,066	100	4,233,404
	Min	1,068,312			951,835	1,262,305	1,569,005	1,873,800		793,389	1,873,800													
	End	1,444,455			1,223,747	1,798,594	2,373,467	2,948,368		936,334	2,948,368													
G13xT40-SR4	Start	2,205,717		Please consult factory	2,193,874	2,769,066	3,344,284	3,919,531	4,494,804	Exceeds MOP											53	1,791,256	100	4,494,804
	Min	870,504			866,899	1,174,869	1,480,013	1,783,786	2,086,922		646,914	2,086,922												
	End	1,183,225			1,171,389	1,746,209	2,321,055	2,895,928	3,470,829		769,032	3,470,829												
G13xT44-SR1	Start	3,796,861					Please consult factory	3,492,363	Exceeds MOP												75	3,143,065	83	3,701,946
	Min	1,485,163				1,324,188		1,710,258		1,132,058	1,438,125													
	End	2,014,558				1,710,258				1,361,185	1,919,705													
G13xT44-SR2	Start	3,274,061				Please consult factory	3,055,173	3,753,763	Exceeds MOP												65	2,705,889	83	3,963,346
	Min	1,287,355					1,172,496	1,548,616		980,993	1,660,560													
	End	1,753,327					1,534,581	2,232,719		1,185,524	2,442,166													
G13xT44-SR3	Start	2,725,046		Please consult factory	2,669,155	3,367,716	4,066,306	Exceeds MOP													54	2,250,034	83	4,275,889
	Min	1,067,376			1,040,295	1,415,059	1,785,987		810,742	1,896,815														
	End	1,440,987			1,385,132	2,083,240	2,781,378		966,282	2,990,825														
G13xT44-SR4	Start	2,202,246		Please consult factory	2,232,025	2,930,555	3,629,116	4,327,706	Exceeds MOP												44	1,812,921	83	4,537,288
	Min	869,568			888,209	1,261,429	1,631,133	1,999,446		659,695	2,109,869													
	End	1,179,756			1,209,516	1,907,594	2,605,701	3,303,839		790,683	3,513,286													

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Torque - Pneumatic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (lbf-in)		Operating Pressure, (psig)																MinOP (psig)	Torque @ MinOP (lbf-in)	MOP (psig)	Torque @ MOP (lbf-in)			
			40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190					200		
Pressure Torque Output: Start/Min./End (lbf-in)																									
G13xT48-SR1	Start	3,793,563		Please consult factory	2,902,742	3,736,449	Exceeds MOP														60	2,902,742	70	3,736,449	
	Min	1,484,274			997,811	1,457,320																		997,811	1,457,320
	End	2,011,262			1,121,018	1,954,185																			1,121,018
G13xT48-SR2	Start	3,270,764		Please consult factory	3,164,142	3,997,849	Exceeds MOP														54	2,663,934	70	3,997,849	
	Min	1,286,466			1,232,282	1,679,467																		958,328	1,679,467
	End	1,750,032			1,643,479	2,476,646																			1,143,595
G13xT48-SR3	Start	2,721,749		Please consult factory	2,643,010	3,476,684	Exceeds MOP														45	2,226,185	70	4,310,391	
	Min	1,066,486			1,026,749	1,473,633																		798,174	1,915,587
	End	1,437,692			1,359,004	2,192,138		3,025,305																	942,449
G13xT48-SR4	Start	2,198,949	2,070,768	2,904,410	3,738,084	4,571,791	Exceeds MOP														37	1,820,682	70	4,571,791	
	Min	868,679	801,644	1,248,182	1,689,290	2,128,548																664,721		2,128,548	
	End	1,176,461	1,048,363	1,881,465	2,714,600	3,547,767																		798,439	3,547,767
G13xT52-SR1	Start	3,790,266		Please consult factory	3,780,860	Exceeds MOP															53	3,094,448	60	3,780,860	
	Min	1,483,384			1,481,905																			1,106,305	1,481,905
	End	2,007,967			1,998,568																				1,312,600
G13xT52-SR2	Start	3,267,466		Please consult factory	3,061,677	4,042,260	Exceeds MOP														46	2,669,453	60	4,042,260	
	Min	1,285,576			1,177,279	1,703,689																		962,072	1,703,689
	End	1,746,737			1,541,081	2,521,029																			1,149,111
G13xT52-SR3	Start	2,718,452	2,393,671	3,374,219	4,354,803	Exceeds MOP															38	2,197,565	60	4,354,803	
	Min	1,065,597	891,482	1,419,743	1,939,637																	782,901		1,939,637	
	End	1,434,397	1,109,826	2,089,740	3,069,688																			913,848	3,069,688
G13xT52-SR4	Start	2,195,652	2,655,071	3,635,619	4,616,203	Exceeds MOP															31	1,772,607	60	4,616,203	
	Min	867,789	1,116,180	1,635,783	2,152,477																	638,772		2,152,477	
	End	1,173,166	1,632,287	2,612,201	3,592,149																			750,395	3,592,149

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