

# Bettis GC-Series

## Hydraulic Double-Acting & Spring-Return Actuator Torque Chart Metric

**BETTIS™**



# Torque - Hydraulic Double-Acting Actuator

Actuator Model	Stroke Direction Start/Min./End		Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)		
			30	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340	
Pressure Torque Output: Start/Min./End (Nm)																								
GC01x01.5	Start	Outboard	224	429	631	980	1,127	1,322	1,468	1,612	1,804	1,948	2,139	2,282	2,472	2,615	2,950	3,094	3,239	27.6	199	344.7	3,284	
	Min		154	279	403	618	709	830	921	1,011	1,131	1,220	1,340	1,429	1,549	1,638	1,847	1,937	2,027		139		2,056	
	End		323	618	910	1,412	1,625	1,906	2,116	2,325	2,602	2,809	3,084	3,290	3,565	3,771	4,253	4,461	4,669		287		4,735	
	Start	Inboard	169	362	552	875	1,011	1,190	1,323	1,455	1,629	1,759	1,932	2,062	2,234	2,363	2,667	2,798	2,929		146		2,971	
	Min		90	172	253	393	452	530	589	647	724	781	858	915	992	1,049	1,183	1,241	1,299		80		1,318	
	End		117	251	382	606	700	824	916	1,007	1,128	1,218	1,338	1,427	1,547	1,636	1,846	1,937	2,028		101		2,057	
GC01x01.7	Start	Outboard	324	604	882	1,364	1,568	1,840	2,043	2,245	2,513	2,714	2,982	3,182	3,450	Exceeds MOP					27.6	290	271.6	3,605
	Min		217	388	558	853	979	1,146	1,271	1,396	1,562	1,687	1,852	1,976	2,142		196	2,238						
	End		467	871	1,272	1,966	2,261	2,653	2,945	3,236	3,624	3,914	4,299	4,588	4,974		418	5,197						
	Start	Inboard	266	537	804	1,264	1,459	1,717	1,909	2,100	2,354	2,543	2,795	2,984	3,235		233	3,381						
	Min		133	248	362	560	644	755	838	921	1,031	1,114	1,223	1,305	1,415		119	1,479						
	End		184	372	557	875	1,010	1,189	1,322	1,454	1,630	1,761	1,935	2,066	2,240		162	2,341						
GC01x02.0	Start	Outboard	443	810	1,172	1,800	2,067	2,420	2,684	2,947	3,296	3,558	Exceeds MOP								27.6	399	207.9	3,608
	Min		292	515	737	1,122	1,286	1,504	1,667	1,830	2,046	2,208		265	2,240									
	End		639	1,167	1,690	2,595	2,979	3,489	3,870	4,249	4,753	5,130		575	5,202									
	Start	Inboard	438	832	1,222	1,892	2,176	2,552	2,832	3,111	3,481	3,757		391	3,811									
	Min		208	375	541	829	951	1,113	1,234	1,355	1,516	1,636		188	1,659									
	End		304	576	846	1,310	1,507	1,767	1,961	2,154	2,410	2,602		271	2,639									
GC01x02.2	Start	Outboard	582	1,046	1,507	2,305	2,644	3,095	3,431	Exceeds MOP											27.6	526	164.3	3,639
	Min		378	661	942	1,431	1,639	1,916	2,124		344	2,252												
	End		839	1,509	2,172	3,323	3,812	4,462	4,947		759	5,247												
	Start	Inboard	639	1,174	1,704	2,621	3,010	3,526	3,910		574	4,148												
	Min		294	522	747	1,139	1,306	1,527	1,693		267	1,795												
	End		442	813	1,180	1,815	2,084	2,441	2,708		397	2,872												
GC01x02.5	Start	Outboard	738	1,312	1,882	2,870	3,291	Exceeds MOP												27.6	669	133.1	3,658	
	Min		474	824	1,171	1,777	2,035		432	2,260														
	End		1,064	1,891	2,713	4,139	4,745		964	5,273														
	Start	Inboard	863	1,557	2,244	3,435	3,942		779	4,382														
	Min		391	685	977	1,485	1,702		356	1,891														
	End		598	1,078	1,554	2,379	2,729		540	3,034														
GC01x03.0	Start	Outboard	1,102	1,930	2,753	Exceeds MOP														27.6	1,002	92.4	3,670	
	Min		699	1,203	1,704		638	2,264																
	End		1,588	2,782	3,969		1,445	5,292																
	Start	Inboard	1,387	2,447	3,500		1,260	4,673																
	Min		616	1,065	1,512		562	2,010																
	End		961	1,695	2,424		872	3,235																
GC01x03.5	Start	Outboard	1,535	2,663	Exceeds MOP														27.6	1,399	67.9	3,669		
	Min		965	1,652		883	2,264																	
	End		2,213	3,840		2,017	5,290																	
	Start	Inboard	2,012	3,505		1,832	4,835																	
	Min		884	1,516		808	2,079																	
	End		1,393	2,427		1,269	3,348																	

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# Torque - Hydraulic Double-Acting Actuator

Actuator Model	Stroke Direction Start/Min./End		Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)	
			30	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340
			Pressure Torque Output: Start/Min./End (Nm)																				
GC2x01.7	Outboard	Start	392	731	1,068	1,651	1,899	2,228	2,473	2,718	3,043	3,286	3,610	3,853	4,176	4,419	4,986	5,230	Exceeds MOP	27.6	351	332.3	5,349
		Min	263	470	675	1,033	1,185	1,388	1,539	1,690	1,891	2,042	2,242	2,392	2,593	2,743	3,094	3,245			238		3,318
		End	565	1,054	1,540	2,380	2,737	3,211	3,565	3,918	4,387	4,737	5,204	5,554	6,020	6,370	7,188	7,540			506		7,711
	Inboard	Start	322	650	973	1,530	1,766	2,078	2,310	2,542	2,849	3,078	3,383	3,611	3,916	4,144	4,679	4,909			282		5,022
		Min	161	300	438	677	779	914	1,014	1,115	1,248	1,348	1,480	1,580	1,713	1,812	2,045	2,145			144		2,194
		End	223	450	674	1,060	1,223	1,440	1,601	1,761	1,973	2,132	2,344	2,502	2,713	2,871	3,241	3,401			196		3,479
GC2x02.0	Outboard	Start	537	980	1,419	2,179	2,502	2,930	3,249	3,568	3,991	4,307	4,729	5,044	Exceeds MOP	27.6	483	254.5	5,349				
		Min	353	623	892	1,358	1,557	1,821	2,018	2,215	2,477	2,673	2,934	3,130			321		3,319				
		End	774	1,413	2,046	3,141	3,607	4,224	4,684	5,143	5,753	6,209	6,817	7,272			697		7,711				
	Inboard	Start	531	1,008	1,478	2,290	2,634	3,089	3,428	3,765	4,213	4,547	4,993	5,326			473		5,648				
		Min	252	454	655	1,003	1,151	1,347	1,494	1,640	1,834	1,980	2,173	2,319			227		2,459				
		End	368	698	1,024	1,587	1,825	2,140	2,374	2,608	2,918	3,150	3,459	3,690			328		3,913				
GC2x02.2	Outboard	Start	705	1,267	1,824	2,790	3,201	3,746	4,154	4,560	5,100	Exceeds MOP	27.6	637	201.1	5,399							
		Min	457	800	1,140	1,732	1,984	2,320	2,571	2,821	3,154			416		3,339							
		End	1,016	1,826	2,630	4,023	4,615	5,401	5,988	6,573	7,352			918		7,783							
	Inboard	Start	773	1,421	2,063	3,172	3,643	4,267	4,733	5,197	5,813			695		6,154							
		Min	356	631	904	1,378	1,580	1,848	2,049	2,249	2,515			323		2,662							
		End	535	985	1,429	2,197	2,524	2,956	3,278	3,600	4,027			481		4,263							
GC2x02.5	Outboard	Start	893	1,588	2,278	3,475	3,985	4,661	5,167	Exceeds MOP	27.6	810	162.9	5,433									
		Min	574	997	1,418	2,150	2,463	2,878	3,189			523		3,353									
		End	1,288	2,290	3,284	5,010	5,744	6,720	7,449			1,167		7,832									
	Inboard	Start	1,045	1,884	2,716	4,158	4,771	5,584	6,191			943		6,510									
		Min	473	829	1,183	1,798	2,060	2,408	2,669			430		2,806									
		End	724	1,305	1,882	2,880	3,305	3,868	4,289			653		4,510									
GC2x03.0	Outboard	Start	1,334	2,336	3,333	5,065	Exceeds MOP	27.6	1,213	113.1	5,464												
		Min	846	1,456	2,063	3,121			773		3,365												
		End	1,923	3,368	4,805	7,302			1,749		7,877												
	Inboard	Start	1,679	2,962	4,237	6,450			1,525		6,959												
		Min	746	1,289	1,830	2,771			680		2,989												
		End	1,163	2,052	2,935	4,468			1,056		4,821												
GC2x03.5	Outboard	Start	1,858	3,224	4,584	Exceeds MOP	27.6	1,694	83.1	5,472													
		Min	1,169	1,999	2,827			1,069		3,368													
		End	2,679	4,648	6,608			2,442		7,888													
	Inboard	Start	2,435	4,242	6,040			2,218		7,213													
		Min	1,070	1,834	2,597			978		3,094													
		End	1,687	2,939	4,184			1,536		4,997													
GC2x04.0	Outboard	Start	2,467	4,253	Exceeds MOP	27.6	2,252	63.6	5,463														
		Min	1,542	2,628			1,412		3,365														
		End	3,556	6,131			3,246		7,876														
	Inboard	Start	3,312	5,725			3,022		7,359														
		Min	1,445	2,465			1,322		3,157														
		End	2,295	3,966			2,094		5,098														

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			30	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340	
			Pressure Torque Output: Start/Min./End (Nm)																					
GC3x02.0	Outboard	Start	636	1,173	1,704	2,622	3,012	3,529	3,914	4,298	4,809	5,190	5,698	6,079	6,586	6,967	7,857	8,240	8,624	27.6	344.7	572	8,744	
		Min	425	753	1,080	1,647	1,888	2,209	2,448	2,687	3,005	3,244	3,561	3,798	4,115	4,353	4,908	5,147	5,386			385	5,461	
		End	929	1,713	2,488	3,829	4,398	5,152	5,715	6,276	7,022	7,579	8,321	8,877	9,617	10,173	11,473	12,032	12,592			835	12,768	
	Inboard	Start	463	936	1,400	2,197	2,533	2,977	3,307	3,635	4,069	4,393	4,824	5,147	5,577	5,899	6,655	6,981	7,309			406	7,412	
		Min	231	430	628	968	1,113	1,304	1,447	1,589	1,778	1,920	2,107	2,248	2,436	2,577	2,906	3,048	3,190			207	3,234	
		End	317	640	958	1,504	1,734	2,037	2,263	2,487	2,785	3,007	3,302	3,522	3,817	4,037	4,555	4,778	5,002			278	5,072	
GC3x02.2	Outboard	Start	840	1,520	2,194	3,362	3,859	4,517	5,009	5,500	6,152	6,639	7,289	7,775	8,423	8,910	Exceeds MOP				27.6	289.0	758	9,364
		Min	551	968	1,382	2,102	2,408	2,816	3,121	3,425	3,830	4,134	4,537	4,840	5,244	5,546							501	5,829
		End	1,226	2,220	3,204	4,910	5,635	6,597	7,315	8,031	8,983	9,695	10,643	11,353	12,300	13,011							1,107	13,674
	Inboard	Start	760	1,443	2,117	3,279	3,771	4,422	4,907	5,390	6,031	6,510	7,148	7,625	8,261	8,739							678	9,185
		Min	358	646	931	1,425	1,635	1,914	2,123	2,330	2,606	2,813	3,088	3,294	3,569	3,775							323	3,967
		End	520	988	1,449	2,244	2,581	3,026	3,358	3,689	4,128	4,456	4,892	5,218	5,654	5,981							464	6,286
GC3x02.5	Outboard	Start	1,068	1,909	2,744	4,192	4,808	5,625	6,236	6,846	7,656	8,263	9,070	Exceeds MOP						27.6	234.1	967	9,437	
		Min	693	1,208	1,720	2,611	2,991	3,496	3,874	4,252	4,754	5,130	5,631									632	5,859	
		End	1,560	2,788	4,007	6,121	7,020	8,214	9,107	9,996	11,180	12,065	13,245									1,412	13,781	
	Inboard	Start	1,094	2,011	2,919	4,489	5,155	6,038	6,698	7,354	8,227	8,879	9,748									983	10,142	
		Min	500	887	1,270	1,936	2,220	2,596	2,878	3,159	3,532	3,812	4,185									454	4,354	
		End	749	1,376	1,998	3,072	3,528	4,133	4,584	5,033	5,630	6,077	6,671									673	6,941	
GC3x03.0	Outboard	Start	1,602	2,815	4,022	6,118	7,011	8,198	9,085	Exceeds MOP										27.6	162.6	1,455	9,534	
		Min	1,024	1,767	2,506	3,793	4,343	5,074	5,622													935	5,899	
		End	2,339	4,111	5,873	8,933	10,237	11,970	13,266													2,125	13,922	
	Inboard	Start	1,872	3,332	4,783	7,298	8,369	9,790	10,852													1,696	11,390	
		Min	832	1,446	2,057	3,121	3,574	4,178	4,629													758	4,857	
		End	1,281	2,281	3,273	4,995	5,727	6,700	7,427													1,160	7,795	
GC3x03.5	Outboard	Start	2,237	3,891	5,537	8,400	Exceeds MOP													27.6	119.4	2,038	9,572	
		Min	1,417	2,428	3,436	5,193																1,296	5,913	
		End	3,266	5,682	8,085	12,266																2,975	13,978	
	Inboard	Start	2,799	4,903	6,994	10,630																2,545	12,118	
		Min	1,226	2,110	2,991	4,524																1,120	5,153	
		End	1,915	3,355	4,787	7,275																1,742	8,293	
GC3x04.0	Outboard	Start	2,974	5,137	7,290	Exceeds MOP														27.6	91.4	2,714	9,585	
		Min	1,872	3,194	4,512																	1,714	5,918	
		End	4,342	7,501	10,645																	3,963	13,997	
	Inboard	Start	3,874	6,720	9,553																	3,532	12,571	
		Min	1,682	2,878	4,069																	1,539	5,340	
		End	2,652	4,599	6,538																	2,417	8,603	
GC3x04.5	Outboard	Start	3,813	6,553	9,282	Exceeds MOP														27.6	72.3	3,484	9,595	
		Min	2,390	4,063	5,733																	2,189	5,924	
		End	5,568	9,568	13,554																	5,087	14,011	
	Inboard	Start	5,099	8,787	12,459																	4,656	12,881	
		Min	2,201	3,749	5,293																	2,015	5,470	
		End	3,490	6,013	8,527																	3,186	8,815	

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			30	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340
			Pressure Torque Output: Start/Min./End (Nm)																				
GC4x02.5	Outboard	Start	1,285	2,309	3,324	5,080	5,825	6,814	7,552	8,288	9,266	9,997	10,970	11,700	12,672	13,401	15,106	15,840	16,575	27.6	344.7	1,162	16,806
		Min	835	1,459	2,079	3,156	3,615	4,225	4,681	5,135	5,741	6,194	6,797	7,250	7,853	8,305	9,362	9,816	10,271			759	10,413
		End	1,854	3,331	4,794	7,327	8,402	9,828	10,893	11,954	13,364	14,419	15,823	16,875	18,277	19,329	21,789	22,847	23,907			1,676	24,240
	Inboard	Start	1,045	1,983	2,908	4,496	5,167	6,055	6,715	7,372	8,243	8,893	9,758	10,406	11,269	11,916	13,433	14,086	14,742			932	14,949
		Min	496	895	1,289	1,972	2,262	2,646	2,933	3,219	3,599	3,883	4,261	4,544	4,921	5,205	5,867	6,152	6,438			448	6,527
		End	724	1,373	2,013	3,114	3,578	4,193	4,650	5,105	5,708	6,159	6,757	7,206	7,804	8,252	9,302	9,754	10,209			645	10,352
GC4x03.0	Outboard	Start	1,936	3,415	4,884	7,431	8,515	9,954	11,030	12,102	13,529	14,597	16,019	17,085	18,505	Exceeds MOP				1,758	19,059		
		Min	1,236	2,137	3,033	4,591	5,257	6,141	6,802	7,463	8,342	9,001	9,878	10,535	11,412					1,128	11,754		
		End	2,793	4,926	7,044	10,718	12,281	14,357	15,909	17,456	19,514	21,054	23,105	24,642	26,691					2,536	27,490		
	Inboard	Start	1,984	3,577	5,155	7,884	9,043	10,579	11,726	12,869	14,387	15,523	17,034	18,166	19,675					1,791	20,264		
		Min	899	1,575	2,246	3,411	3,908	4,567	5,060	5,552	6,207	6,697	7,349	7,838	8,490					818	8,744		
		End	1,374	2,477	3,570	5,460	6,262	7,326	8,120	8,911	9,963	10,749	11,796	12,580	13,625					1,240	14,033		
GC4x03.5	Outboard	Start	2,712	4,728	6,733	10,217	11,701	13,674	15,149	16,621	18,580	Exceeds MOP				2,469	19,235						
		Min	1,714	2,940	4,162	6,291	7,200	8,409	9,314	10,218	11,421					1,566	11,824						
		End	3,911	6,820	9,712	14,736	16,878	19,723	21,851	23,974	26,799					3,561	27,744						
	Inboard	Start	3,102	5,471	7,823	11,903	13,639	15,945	17,668	19,386	21,672					2,816	22,436						
		Min	1,378	2,381	3,379	5,116	5,858	6,843	7,580	8,316	9,296					1,257	9,624						
		End	2,148	3,789	5,417	8,243	9,445	11,042	12,235	13,425	15,008					1,950	15,537						
GC4x04.0	Outboard	Start	3,612	6,249	8,874	13,439	15,386	17,976	Exceeds MOP					3,294	19,345								
		Min	2,266	3,870	5,469	8,255	9,445	11,030						2,073	11,868								
		End	5,209	9,013	12,799	19,384	22,193	25,927						4,751	27,902								
	Inboard	Start	4,399	7,663	10,909	16,549	18,952	22,147						4,006	23,836								
		Min	1,932	3,313	4,689	7,086	8,110	9,472						1,766	10,192								
		End	3,046	5,307	7,554	11,460	13,124	15,336						2,774	16,506								
GC4x04.5	Outboard	Start	4,631	7,968	11,288	17,060	Exceeds MOP					4,230	19,357										
		Min	2,893	4,922	6,944	10,468						2,649	11,874										
		End	6,680	11,493	16,281	24,607						6,101	27,920										
	Inboard	Start	5,870	10,142	14,389	21,769						5,355	24,705										
		Min	2,560	4,369	6,170	9,306						2,343	10,557										
		End	4,065	7,023	9,965	15,075						3,708	17,108										
GC4x05.0	Outboard	Start	5,780	9,903	14,008	Exceeds MOP						5,284	19,399										
		Min	3,597	6,103	8,603							3,295	11,891										
		End	8,337	14,284	20,204							7,621	27,981										
	Inboard	Start	7,526	12,932	18,311							6,875	25,373										
		Min	3,266	5,553	7,833							2,991	10,831										
		End	5,211	8,955	12,680							4,761	17,571										
GC4x06.0	Outboard	Start	8,450	14,395	Exceeds MOP							7,735	19,401										
		Min	5,230	8,843								4,796	11,889										
		End	12,189	20,763								11,157	27,984										
	Inboard	Start	11,376	19,408								10,409	26,171										
		Min	4,905	8,301								4,497	11,164										
		End	7,878	13,440								7,208	18,123										

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

# Torque - Hydraulic Double-Acting Actuator

Actuator Model	Stroke Direction Start/Min./End		Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)			
			30	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340		
			Pressure Torque Output: Start/Min./End (Nm)																						
GC5x03.5	Outboard	Start	3,454	6,052	8,626	13,085	14,980	17,494	19,371	21,242	23,729	25,590	28,067	17,338	18,487	20,020	21,170	23,856	25,010	26,165	27.6	3,141	344.7	42,916	
		Min	2,195	3,778	5,351	8,086	9,251	10,800	11,958	13,114	14,652	15,804	17,338	18,487	20,020	21,170	23,856	25,010	26,165	2,005					26,528
		End	4,982	8,728	12,442	18,872	21,605	25,230	27,938	30,636	34,224	36,908	40,480	43,157	46,725	49,402	55,661	58,352	61,049	4,530					61,896
	Inboard	Start	3,122	5,628	8,101	12,361	14,164	16,549	18,327	20,095	22,442	24,196	26,529	28,276	30,604	32,351	36,439	38,200	39,967	2,819					40,523
		Min	1,417	2,482	3,537	5,365	6,141	7,172	7,942	8,709	9,729	10,492	11,507	12,268	13,283	14,044	15,823	16,588	17,355	1,289					17,595
		End	2,164	3,901	5,615	8,567	9,817	11,470	12,702	13,928	15,555	16,770	18,387	19,597	21,211	22,422	25,256	26,476	27,701	1,954					28,086
GC5x04.0	Outboard	Start	4,617	8,017	11,391	17,245	19,737	23,045	25,517	27,983	31,262	33,717	36,985	39,434	42,699	Exceeds MOP	27.6	4,207	266.0	43,679					
		Min	2,910	4,980	7,040	10,623	12,152	14,185	15,706	17,225	19,246	20,760	22,777	24,289	26,304						2,661	26,909			
		End	6,659	11,562	16,429	24,872	28,466	33,237	36,803	40,359	45,088	48,628	53,342	56,874	61,583						6,068	62,996			
	Inboard	Start	4,798	8,459	12,086	18,357	21,019	24,549	27,184	29,810	33,298	35,907	39,380	41,981	45,449						4,356	46,490			
		Min	2,134	3,687	5,230	7,909	9,050	10,566	11,700	12,830	14,335	15,461	16,961	18,085	19,583						1,947	20,033			
		End	3,325	5,863	8,376	12,723	14,568	17,015	18,841	20,661	23,079	24,887	27,294	29,097	31,500						3,019	32,221			
GC5x04.5	Outboard	Start	5,941	10,250	14,532	21,970	25,139	29,349	32,496	35,637	39,816	42,945	Exceeds MOP	27.6	5,422	210.2	44,028								
		Min	3,722	6,344	8,956	13,503	15,445	18,027	19,960	21,890	24,459	26,384						3,407	27,051						
		End	8,569	14,783	20,959	31,686	36,256	42,328	46,868	51,398	57,425	61,937						7,820	63,500						
	Inboard	Start	6,706	11,678	16,612	25,165	28,803	33,633	37,242	40,840	45,624	49,205						6,106	50,445						
		Min	2,948	5,055	7,151	10,797	12,351	14,418	15,964	17,507	19,562	21,100						2,695	21,633						
		End	4,648	8,094	11,513	17,442	19,963	23,311	25,812	28,306	31,622	34,104						4,232	34,963						
GC5x05.0	Outboard	Start	7,426	12,752	18,049	27,258	31,185	36,404	40,308	44,204	Exceeds MOP	27.6	6,785	170.2	44,256										
		Min	4,632	7,872	11,100	16,725	19,128	22,325	24,718	27,109						4,243	27,140								
		End	10,711	18,391	26,031	39,313	44,976	52,504	58,134	63,754						9,786	63,829								
	Inboard	Start	8,845	15,282	21,678	32,784	37,514	43,798	48,496	53,182						8,070	53,245								
		Min	3,861	6,587	9,301	14,026	16,043	18,726	20,734	22,739						3,533	22,765								
		End	6,131	10,592	15,025	22,722	26,001	30,356	33,612	36,860						5,593	36,903								
GC5x06.0	Outboard	Start	10,879	18,560	26,208	39,524	Exceeds MOP	27.6	9,955	118.2	44,526														
		Min	6,745	11,416	16,073	24,195						6,184	27,250												
		End	15,690	26,768	37,799	57,003						14,358	64,217												
	Inboard	Start	13,822	23,653	33,438	50,461						12,638	56,853												
		Min	5,980	10,140	14,287	21,516						5,480	24,234												
		End	9,580	16,394	23,175	34,974						8,760	39,404												
GC5x07.0	Outboard	Start	14,976	25,442	35,872	Exceeds MOP	27.6	13,718	86.9	44,658															
		Min	9,250	15,611	21,958						8,485	27,310													
		End	21,600	36,694	51,736						19,784	64,409													
	Inboard	Start	19,726	33,570	47,362						18,060	58,979													
		Min	8,490	14,346	20,187						7,786	25,111													
		End	13,672	23,267	32,826						12,517	40,877													
GC5x08.0	Outboard	Start	19,696	33,354	Exceeds MOP	27.6	18,052	66.5	44,580																
		Min	12,136	20,440						11,137	27,273														
		End	28,406	48,105						26,036	64,295														
	Inboard	Start	26,527	44,973						24,308	60,129														
		Min	11,384	19,187						10,446	25,608														
		End	18,386	31,170						16,847	41,675														

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# Torque - Hydraulic Double-Acting Actuator

Actuator Model	Stroke Direction Start/Min./End		Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)						
			30	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340					
			Pressure Torque Output: Start/Min./End (Nm)																									
GC7x04.0	Start	Outboard	5,645	9,819	13,962	21,146	24,202	28,260	31,291	34,315	38,335	41,345	45,351	48,353	52,355	55,358	62,375	65,391	68,414	27.6	5,142	344.7	69,362					
	Min		3,565	6,108	8,638	13,039	14,917	17,413	19,280	21,144	23,624	25,483	27,958	29,813	32,286	34,142	38,476	40,336	42,200					3,259	42,784			
	End		8,141	14,162	20,137	30,498	34,906	40,758	45,131	49,492	55,291	59,631	65,409	69,739	75,511	79,842	89,963	94,313	98,672							4,754	66,789	
	Start	Inboard	5,248	9,339	13,385	20,369	23,330	27,253	30,179	33,093	36,962	39,855	43,704	46,588	50,430	53,314	60,059	62,961	65,874					27.6	2,146			28,896
	Min		2,356	4,093	5,818	8,809	10,082	11,772	13,035	14,294	15,969	17,223	18,892	20,143	21,811	23,062	25,985	27,242	28,501									
	End		3,638	6,474	9,278	14,120	16,172	18,892	20,920	22,940	25,622	27,627	30,296	32,294	34,958	36,957	41,633	43,645	45,663							Exceeds MOP	6,634	
Start	Outboard	7,271	12,563	17,820	26,949	30,838	36,003	39,865	43,718	48,843	52,681	57,791	61,621	66,726	70,557	79,506	83,351	27.6	4,176	331.8	52,363							
Min		4,563	7,785	10,993	16,579	18,963	22,134	24,507	26,877	30,031	32,395	35,543	37,904	41,050	43,411	48,923	51,290					9,568	122,732					
End		10,487	18,119	25,702	38,869	44,477	51,927	57,497	63,054	70,446	75,981	83,351	88,875	96,238	101,763	114,671	120,215									6,904	90,699	
Start	Inboard	7,592	13,292	18,944	28,732	32,892	38,411	42,533	46,641	52,103	56,189	61,629	65,705	71,137	75,213	84,742	88,839					27.6	3,066	39,026				
Min		3,357	5,775	8,179	12,358	14,139	16,506	18,276	20,043	22,394	24,154	26,499	28,256	30,599	32,356	36,462	38,225								4,786			62,872
End		5,262	9,214	13,132	19,917	22,800	26,626	29,483	32,331	36,117	38,950	42,721	45,546	49,312	52,138	58,743	61,583									Exceeds MOP	8,308	
Start	Outboard	9,096	15,636	22,141	33,446	38,265	44,671	49,462	54,243	60,605	65,370	71,716	76,472	82,813	27.6	5,203	268.8	123,464										
Min		5,682	9,663	13,629	20,539	23,490	27,416	30,355	33,290	37,199	40,128	44,030	46,955	50,856					Exceeds MOP	9,316	97,490							
End		13,119	22,552	31,933	48,239	55,190	64,428	71,338	78,233	87,410	94,281	103,434	110,294	119,440											4,096	41,795		
Start	Inboard	10,220	17,721	25,169	38,093	43,594	50,900	56,360	61,806	69,050	74,472	81,692	87,103	94,316					27.6	6,458	67,580							
Min		4,479	7,658	10,822	16,329	18,678	21,803	24,141	26,475	29,581	31,909	35,009	37,333	40,431								Exceeds MOP	12,202	86,314				
End		7,085	12,284	17,447	26,406	30,219	35,283	39,068	42,844	47,865	51,624	56,629	60,379	65,379											7,589	52,853		
Start	Outboard	13,337	22,772	32,164	48,514	55,492	64,772	71,717	78,651	27.6	17,599	124,490																
Min		8,279	14,018	19,740	29,718	33,983	39,659	43,910	48,157				Exceeds MOP	14,927	106,421													
End		19,236	32,843	46,390	69,971	80,035	93,420	103,437	113,438							6,488	45,416											
Start	Inboard	16,332	28,002	39,612	59,804	68,415	79,863	88,428	96,976				27.6	10,348	73,770													
Min		7,083	12,025	16,950	25,533	29,200	34,080	37,733	41,382									Exceeds MOP	Exceeds MOP									
End		11,321	19,411	27,459	41,456	47,425	55,361	61,298	67,223							Exceeds MOP	Exceeds MOP											

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## Torque - Hydraulic Double-Acting Actuator

Actuator Model	Stroke Direction Start/Min./End		Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)	
			30	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340
Pressure Torque Output: Start/Min./End (Nm)																							
GC7x07.0	Start	Outboard	18,371	31,226	44,036	66,354	75,885	Exceeds MOP											27.6	16,825	137.1	86,731	
	Min		11,356	19,174	26,972	40,580	46,398															10,417	53,023
	End		26,496	45,037	63,512	95,701	109,448															24,266	125,091
	Start	Inboard	23,584	40,183	56,715	85,506	97,797															21,587	111,779
	Min		10,168	17,194	24,201	36,424	41,649															9,324	47,597
	End		16,348	27,855	39,315	59,272	67,792															14,964	77,485
GC7x08.0	Start	Outboard	24,168	40,946	57,653	86,744	Exceeds MOP												27.6	22,150	105.6	87,241	
	Min		14,903	25,108	35,284	53,033																13,677	53,337
	End		34,858	59,056	83,152	125,109																31,947	125,826
	Start	Inboard	31,938	54,189	76,339	114,888																29,261	115,547
	Min		13,725	23,145	32,537	48,913																12,593	49,193
	End		22,139	37,563	52,918	79,640																20,283	80,097
GC7x09.0	Start	Outboard	30,780	52,030	73,203	Exceeds MOP													27.6	28,225	82.9	86,821	
	Min		18,940	31,861	44,752																	17,387	53,051
	End		44,394	75,042	105,579																	40,708	125,221
	Start	Inboard	41,465	70,160	98,743																	38,014	117,126
	Min		17,773	29,918	42,031																	16,313	49,829
	End		28,743	48,635	68,448																	26,351	81,191
GC7x10.0	Start	Outboard	38,183	64,433	Exceeds MOP														27.6	35,027	67.2	86,940	
	Min		23,456	39,416																		21,539	53,113
	End		55,071	92,931																		50,519	125,392
	Start	Inboard	52,132	88,032																		47,816	118,807
	Min		22,302	37,492																		20,477	50,528
	End		36,138	61,023																		33,145	82,356

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# Torque - Hydraulic Double-Acting Actuator

Actuator Model	Stroke Direction Start/Min./End		Operating Pressure, (barg)														MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)			
			30	50	70	105	120	140	155	170	190	205	225	240	260	275					310	325	340
			Pressure Torque Output: Start/Min./End (Nm)																				
GC8x05.0	Outboard	Start	10,709	18,452	26,149	39,522	45,220	52,792	58,454	64,104	71,622	77,250	84,747	90,366	97,856	103,475	116,604	122,242	Exceeds MOP	27.6	328.5	9,777	123,559
		Min	6,704	11,418	16,114	24,291	27,782	32,427	35,904	39,375	43,998	47,461	52,075	55,534	60,146	63,605	71,684	75,151				6,137	75,961
		End	15,449	26,620	37,724	57,015	65,236	76,159	84,328	92,478	103,323	111,444	122,259	130,364	141,170	149,276	168,216	176,350				14,104	178,250
	Inboard	Start	10,326	18,080	25,768	39,081	44,740	52,247	57,854	63,442	70,871	76,430	83,829	89,372	96,762	102,307	115,268	120,840				9,391	122,143
		Min	4,565	7,853	11,122	16,804	19,226	22,445	24,852	27,254	30,451	32,845	36,033	38,423	41,608	43,998	49,581	51,978				4,169	52,538
		End	7,158	12,533	17,862	27,090	31,012	36,216	40,102	43,976	49,126	52,979	58,108	61,950	67,073	70,916	79,900	83,763				6,509	84,666
GC8x06.0	Outboard	Start	15,733	26,904	38,023	57,370	65,625	76,602	84,816	93,016	103,932	112,109	123,001	131,166					Exceeds MOP	27.6	254.0	14,389	138,786
		Min	9,781	16,577	23,352	35,164	40,212	46,930	51,961	56,986	63,679	68,695	75,379	80,390								8,964	85,066
		End	22,697	38,813	54,852	82,764	94,672	110,509	122,358	134,188	149,935	161,731	177,445	189,224								20,758	200,216
	Inboard	Start	17,568	30,262	42,881	64,806	74,149	86,565	95,849	105,114	117,441	126,671	138,964	148,178								16,039	156,776
		Min	7,649	13,025	18,380	27,707	31,689	36,987	40,953	44,913	50,185	54,136	59,399	63,345								7,003	67,027
		End	12,177	20,977	29,724	44,922	51,398	60,004	66,440	72,862	81,406	87,805	96,326	102,712								11,118	108,672
GC8x07.0	Outboard	Start	21,696	36,919	52,084	78,501	89,781	104,789	116,024	127,243									Exceeds MOP	27.6	186.6	19,865	139,644
		Min	13,426	22,685	31,919	48,031	54,919	64,090	70,960	77,823												12,314	85,413
		End	31,299	53,260	75,138	113,248	129,521	151,172	167,379	183,564												28,657	201,455
	Inboard	Start	26,159	44,693	63,144	95,256	108,958	127,182	140,819	154,434												23,929	169,480
		Min	11,304	19,148	26,969	40,605	46,433	54,189	59,998	65,801												10,361	72,217
		End	18,133	30,980	43,769	66,028	75,527	88,159	97,612	107,049												16,587	117,478
GC8x08.0	Outboard	Start	28,563	48,432	68,214	102,654	117,352	136,903											Exceeds MOP	27.6	142.9	26,172	139,733
		Min	17,628	29,714	41,766	62,783	71,765	83,723														16,175	85,455
		End	41,205	69,869	98,408	148,091	169,296	197,499														37,757	201,583
	Inboard	Start	36,057	61,286	86,392	130,066	148,695	173,465														33,020	177,051
		Min	15,516	26,196	36,841	55,396	63,324	73,874														14,232	75,402
		End	24,993	42,482	59,884	90,158	103,071	120,241														22,889	122,727
GC8x09.0	Outboard	Start	36,395	61,561	86,633	130,309													Exceeds MOP	27.6	112.9	33,368	140,136
		Min	22,409	37,714	52,981	79,616																20,570	85,616
		End	52,504	88,810	124,979	187,987																48,137	202,164
	Inboard	Start	47,343	80,208	112,935	169,920																43,390	182,738
		Min	20,310	34,217	48,085	72,273																18,639	77,720
		End	32,817	55,597	78,283	117,784																30,077	126,669
GC8x10.0	Outboard	Start	45,164	76,253	107,238														Exceeds MOP	27.6	91.4	41,426	140,289
		Min	27,759	46,662	65,523																	25,488	85,663
		End	65,155	110,005	154,705																	59,762	202,385
	Inboard	Start	59,980	101,379	142,628																	55,001	186,616
		Min	25,674	43,187	60,659																	23,569	79,311
		End	41,576	70,273	98,865																	38,125	129,357
GC8x12.0	Outboard	Start	65,466	110,227															Exceeds MOP	27.6	63.5	60,084	140,352
		Min	40,148	67,365																		36,877	85,700
		End	94,443	159,016																		86,678	202,475
	Inboard	Start	89,239	150,341																		81,891	191,457
		Min	38,094	63,943																		34,988	81,356
		End	61,858	104,212																		56,764	132,713

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

# Torque - Hydraulic Double-Acting Actuator

Actuator Model	Stroke Direction Start/Min./End		Operating Pressure, (barg)														MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)								
			30	50	70	105	120	140	155	170	190	205	225	240	260	275					310	325	340					
			Pressure Torque Output: Start/Min./End (Nm)																									
GC10x06.0	Outboard	Start	20,583	35,252	49,848	75,239	86,070	100,470	111,244	121,998	136,313	147,035	161,317	172,023	186,295	197,001	222,010	232,746	243,499	27.6	18,817	344.7	246,871					
		Min	12,816	21,744	30,642	46,152	52,778	61,597	68,201	74,796	83,580	90,163	98,934	105,510	114,276	120,853	136,208	142,796	149,391					11,743				
		End	29,691	50,851	71,906	108,533	124,156	144,929	160,470	175,983	196,633	212,099	232,701	248,144	268,732	284,176	320,251	335,738	351,249					27,144				
	Inboard	Start	20,295	35,189	49,979	75,641	86,565	101,072	111,915	122,729	137,114	147,881	162,218	172,963	187,285	198,031	223,141	233,930	244,742					27.6	8,132	12,823	106,375	
		Min	8,892	15,204	21,486	32,419	37,084	43,287	47,928	52,562	58,730	63,351	69,506	74,120	80,271	84,885	95,663	100,289	104,922									8,132
		End	14,067	24,390	34,641	52,428	60,000	70,055	77,570	85,066	95,036	102,499	112,437	119,884	129,811	137,259	154,664	162,142	169,635									12,823
GC10x07.0	Outboard	Start	28,415	48,408	68,320	102,998	117,803	137,498	152,240	166,960	186,561	201,245	220,809	235,476	255,029	269,697	Exceeds MOP	27.6	284.4	26,010	278,891							
		Min	17,606	29,769	41,898	63,057	72,102	84,144	93,163	102,174	114,177	123,174	135,162	144,151	156,136	165,125						16,145						
		End	40,989	69,829	98,552	148,575	169,931	198,341	219,607	240,842	269,115	290,298	318,519	339,676	367,882	389,039						37,520						
	Inboard	Start	31,581	54,147	76,598	115,642	132,294	154,431	170,992	187,522	209,522	226,000	247,949	264,401	286,334	302,787						Exceeds MOP	27.6	28,865	313,102			
		Min	13,693	23,248	32,770	49,365	56,454	65,888	72,952	80,007	89,402	96,443	105,824	112,857	122,233	129,266										22,544		
		End	21,889	37,531	53,091	80,154	91,695	107,039	118,518	129,975	145,224	156,645	171,858	183,262	198,464	209,868										20,007		
GC10x08.0	Outboard	Start	37,436	63,531	89,510	134,726	154,021	179,683	198,887	218,060	243,584	262,705	Exceeds MOP	27.6	217.7	34,297	278,881											
		Min	23,126	39,005	54,835	82,440	94,237	109,939	121,699	133,446	149,093	160,819						21,218										
		End	54,002	91,645	129,118	194,343	222,177	259,195	286,896	314,553	351,373	378,954						49,473										
	Inboard	Start	44,583	75,945	107,138	161,372	184,496	215,233	238,225	261,172	291,711	314,582						Exceeds MOP	27.6	40,808	333,929							
		Min	19,228	32,508	45,741	68,799	78,647	91,752	101,563	111,362	124,410	134,188										17,631						
		End	30,902	52,639	74,260	111,850	127,878	149,182	165,118	181,023	202,191	218,043										28,285						
GC10x09.0	Outboard	Start	47,725	80,779	113,705	171,055	195,542	228,120	252,507	276,859	Exceeds MOP	27.6	172.0	43,749	280,104													
		Min	29,409	49,516	69,571	104,557	119,515	139,429	154,346	169,248						26,992												
		End	68,843	116,525	164,020	246,748	282,071	329,065	364,243	399,372						63,108												
	Inboard	Start	59,410	100,800	142,005	213,725	244,330	285,034	315,494	345,905						Exceeds MOP	27.6	54,429	349,957									
		Min	25,526	43,046	60,513	90,972	103,988	121,315	134,290	147,252										23,420								
		End	41,178	69,867	98,427	148,137	169,350	197,563	218,675	239,754										37,726								
GC10x10.0	Outboard	Start	59,244	100,079	140,773	211,693	241,988	Exceeds MOP	27.6	139.3	54,334	280,893																
		Min	36,439	61,273	86,051	129,292	147,783						33,455															
		End	85,460	144,365	203,067	305,369	349,070						78,377															
	Inboard	Start	76,011	128,615	181,016	272,292	311,267						Exceeds MOP	27.6	69,684	153,606												
		Min	32,574	54,833	77,035	115,769	132,329										29,899											
		End	52,685	89,145	125,466	188,731	215,745										48,300											
GC10x12.0	Outboard	Start	85,914	144,709	203,296	Exceeds MOP	27.6	96.7	78,844	281,223																		
		Min	52,716	88,474	124,148						48,419																	
		End	123,932	208,743	293,256						113,733																	
	Inboard	Start	114,449	192,936	271,124						Exceeds MOP	27.6	105,009	375,093														
		Min	48,893	82,104	115,231										44,901													
		End	79,327	133,728	187,922										72,784													
GC10x14.0	Outboard	Start	117,559	197,648	277,498	Exceeds MOP	27.6	71.1	107,932	281,883																		
		Min	72,003	120,700	169,299										66,153													
		End	169,581	285,109	400,293										155,692													
	Inboard	Start	160,054	269,229	378,060						Exceeds MOP	27.6	146,928	384,036														
		Min	68,229	114,411	160,496										62,680													
		End	110,937	186,608	262,041										101,839													

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

## Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)																	
		35	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340																
		Pressure Torque Output: Start/Min./End (Nm)																																				
GC01x01.5-SR4	Start	1,041																230.8	520	344.7	1,478																	
	Min	606															Please consult factory					240	315	371	502	558	614	205	632									
	End	1,276																				258	374	460	664	752	840			205	868							
GC01x01.5-SR5	Start	973																217.2	776	344.7	1,848																	
	Min	508															Please consult factory					842	967	1,134	1,259	1,553	1,680	1,808	194	721								
	End	907																				239	326	441	528	732	820	908			194	936						
GC01x01.5-SR6	Start	698																160.8	571	344.7	2,118																	
	Min	366															Please consult factory					649	818	944	1,112	1,237	1,404	1,530	1,823	1,950	2,078	139	867					
	End	636																				193	287	344	419	475	550	606	737	793	849			139	1,211			
GC01x01.5-SR7	Start	502																120.7	424	344.7	2,318																	
	Min	264															Please consult factory					592	721	848	1,018	1,144	1,311	1,437	1,604	1,729	2,023	2,150	2,278	95	971			
	End	437																				211	300	389	506	593	709	796	911	998	1,202	1,290	1,378			95	1,406	
GC01x01.5-SR8	Start	355																90.4	304	344.7	2,465																	
	Min	188															Please consult factory					433	565	739	867	995	1,164	1,291	1,458	1,583	1,750	1,876	2,170	2,297	2,424	57	1,049	
	End	290																				147	208	285	342	398	473	529	604	659	733	789	919	975	1,032			57
GC01x01.5-SR9	Start	242																67.4	205	344.7	2,573																	
	Min	130															Please consult factory					229	542	674	847	976	1,104	1,273	1,399	1,567	1,692	1,859	1,985	2,278	2,405	2,533	26	1,108
	End	181																				42	210	268	344	401	457	532	588	662	718	792	848	978	1,034	1,090		

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# Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)						
		35	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340					
		Pressure Torque Output: Start/Min./End (Nm)																									
GC01x01.7-SR1	Start	1,693																	Please consult factory	1,254	1,682	1,866	Exceeds MOP	264.2	1,122	332.3	1,956
	Min	946																450		638	719	391			758		
	End	1,922																		509	805	933			418		995
GC01x01.7-SR2	Start	1,408																	Please consult factory	886	1,069	1,313	Exceeds MOP	222.1	851	332.3	2,198
	Min	806																329		410	517	313			903		
	End	1,680																		371	498	667			347		1,280
GC01x01.7-SR3	Start	1,220																	Please consult factory	864	1,108	1,291	Exceeds MOP	194.5	736	332.3	2,420
	Min	702																329		436	516	272			1,009		
	End	1,457																		389	558	685			300		1,467
GC01x01.7-SR4	Start	1,028																	Please consult factory	634	880	1,064	Exceeds MOP	166.2	588	332.3	2,620
	Min	600																246		353	434	225			1,112		
	End	1,258																		284	454	581			251		1,659
GC01x01.7-SR5	Start	960																	Please consult factory	1,004	1,250	1,434	Exceeds MOP	156.3	835	332.3	2,990
	Min	503																331		440	521	234			1,202		
	End	888																		352	522	649			234		1,726
GC01x01.7-SR6	Start	685																	Please consult factory	653	903	1,089	Exceeds MOP	115.7	599	332.3	3,260
	Min	361																196		318	400	159			1,347		
	End	618																		196	369	498			159		2,001
GC01x01.7-SR7	Start	489																	Please consult factory	664	853	1,103	Exceeds MOP	86.9	434	332.3	3,460
	Min	259																233		316	425	102			1,451		
	End	418																		261	392	565			102		2,196
GC01x01.7-SR8	Start	342																	Please consult factory	365	811	1,000	Exceeds MOP	65.1	302	332.3	3,606
	Min	182																99		313	395	56			1,529		
	End	272																		99	408	539			56		2,344
GC01x01.7-SR9	Start	230																	Please consult factory	215	474	920	Exceeds MOP	48.5	195	332.3	3,715
	Min	125																32		180	373	19			1,588		
	End	163																		32	211	520			19		2,456

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# Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)		Operating Pressure, (barg)														MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)									
			35	50	70	105	120	140	155	170	190	205	225	240	260	275					310	325	340						
			Pressure Torque Output: Start/Min./End (Nm)																										
GC01x02.0-SR0	Start	2,254												1,789	2,145			Exceeds MOP	239.7	1,784	273.1	2,378							
	Min	1,205												Please consult factory	573	732							570	836					
	End	2,318													594	840							590	1,002					
GC01x02.0-SR1	Start	1,683								Please consult factory	1,308	1,576	1,933	2,200	2,555			Exceeds MOP	181.7	1,160	273.1	2,789							
	Min	941									468	586	742	859	1,015								402	1,116					
	End	1,907										547	732	979	1,164	1,410								444	1,572				
GC01x02.0-SR2	Start	1,397							Please consult factory	922	1,192	1,550	1,818	2,175	2,442	2,797			Exceeds MOP	152.7	880	273.1	3,031						
	Min	802									340	458	615	732	887	1,003	1,158							322	1,260				
	End	1,665										396	583	832	1,017	1,264	1,449	1,695							367	1,856			
GC01x02.0-SR3	Start	1,210							Please consult factory	873	1,144	1,414	1,773	2,041	2,397	2,664	3,020			Exceeds MOP	133.7	758	273.1	3,253					
	Min	698									329	447	565	721	838	993	1,109	1,264							279	1,365			
	End	1,442										395	583	770	1,018	1,204	1,451	1,636	1,882							316	2,043		
GC01x02.0-SR4	Start	1,018							Please consult factory	708	1,072	1,344	1,614	1,972	2,240	2,597	2,864	3,220			Exceeds MOP	114.2	602	273.1	3,453				
	Min	596									275	433	551	668	824	941	1,096	1,212	1,367							229	1,468		
	End	1,243										335	587	775	962	1,210	1,396	1,643	1,827	2,074							261	2,235	
GC01x02.0-SR5	Start	950							Please consult factory	1,078	1,442	1,714	1,984	2,342	2,610	2,967	3,234			Exceeds MOP	107.5	849	254.5	3,492					
	Min	499									361	521	640	757	914	1,031	1,186	1,302							244	1,415			
	End	873										403	655	843	1,030	1,278	1,464	1,710	1,895							244	2,074		
GC01x02.0-SR6	Start	675							Please consult factory	1,073	1,348	1,712	1,984	2,254	2,612	2,880	3,237	3,504			Exceeds MOP	79.6	603	254.5	3,762				
	Min	357									391	510	668	786	903	1,059	1,176	1,331	1,447							161	1,560		
	End	603										487	677	929	1,117	1,304	1,553	1,738	1,985	2,170							161	2,348	
GC01x02.0-SR7	Start	479							Please consult factory	623	1,273	1,548	1,912	2,183	2,453	2,812	3,080	3,436	3,703			Exceeds MOP	59.7	429	254.5	3,961			
	Min	255									215	497	616	773	891	1,008	1,164	1,280	1,435	1,552							98	1,664	
	End	403										232	682	873	1,125	1,313	1,500	1,748	1,934	2,180	2,365							98	2,544
GC01x02.0-SR8	Start	331							Please consult factory	392	769	1,419	1,694	2,059	2,330	2,600	2,959	3,227	3,583	3,850			Exceeds MOP	44.7	292	254.5	4,108		
	Min	178									118	296	575	694	851	969	1,086	1,242	1,358	1,513	1,629							49	1,741
	End	256										118	380	830	1,020	1,272	1,460	1,647	1,895	2,081	2,328	2,513							49
GC01x02.0-SR9	Start	219	215	501	878	1,528	1,803	2,167	2,439	2,709	3,067	3,335	3,692	3,959							Exceeds MOP	33.4	184	254.5	4,217				
	Min	120	32	193	355	634	753	910	1,027	1,144	1,300	1,417	1,572	1,688												11	1,800		
	End	148	32	230	492	942	1,132	1,384	1,572	1,759	2,007	2,193	2,440	2,625												11	2,803		

**Note:** All Published Torques are Guaranteed Minimum Values. Units are Metric

## Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)		
		35	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340	
		Pressure Torque Output: Start/Min./End (Nm)																					
GC01x02.2-SR0	Start	2,245																	177.0	1,858	201.1	2,452	
	Min.	1,201								Please consult factory	2,179									592		855	
	End	2,305									735									642		1,053	
GC01x02.2-SR1	Start	1,674																134.1	1,205	201.1	2,863		
	Min	938								Please consult factory	1,352	1,725	2,096	2,590					415		1,135		
	End	1,894									479	642	803	1,017					475		1,623		
GC01x02.2-SR2	Start	1,389																112.8	913	201.1	3,105		
	Min	798								Please consult factory	1,094	1,594	1,967	2,338	2,832				332		1,279		
	End	1,652									410	626	787	948	1,161				390		1,908		
GC01x02.2-SR3	Start	1,201																98.7	781	201.1	3,327		
	Min	694								Please consult factory	940	1,317	1,816	2,189	2,561	3,054			285		1,384		
	End	1,430									354	517	732	893	1,053	1,266			331		2,095		
GC01x02.2-SR4	Start	1,009																84.4	618	201.1	3,527		
	Min	593								Please consult factory	1,139	1,516	2,016	2,389	2,760	3,254			234		1,487		
	End	1,230									458	620	835	996	1,156	1,369			272		2,287		
GC01x02.2-SR5	Start	941																79.4	861	201.1	3,897		
	Min	495								Please consult factory	1,509	1,886	2,386	2,758	3,130	3,623			252		1,578		
	End	860									546	709	925	1,086	1,246	1,460			252		2,354		
GC01x02.2-SR6	Start	666																58.8	604	201.1	4,167		
	Min	353								Please consult factory	891	1,779	2,156	2,656	3,029	3,400	3,894				162	1,723	
	End	590									310	693	855	1,071	1,231	1,391	1,605				162	2,629	
GC01x02.2-SR7	Start	470																44.1	424	201.1	4,366		
	Min	251								Please consult factory	577	1,091	1,979	2,356	2,855	3,228	3,600		4,093			95	1,827
	End	391									196	417	798	960	1,175	1,335	1,496		1,709			95	2,824
GC01x02.2-SR8	Start	323																33.0	283	201.1	4,513		
	Min	174																	43		1,904		
	End	244									79	276	496	876	1,038	1,253	1,413		1,573		1,786		43
GC01x02.2-SR9	Start	210																24.6	172	201.1	4,622		
	Min	117																	3		1,963		
	End	135									443	832	1,346	2,234	2,611	3,111	3,484		3,855		4,349		3
GC01x02.2-SR9	Start	210																24.6	172	201.1	4,622		
	Min	117																	3		1,963		
	End	135									191	460	816	1,431	1,692	2,038	2,296		2,553		2,895		3

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

## Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)	
		35	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340
		Pressure Torque Output: Start/Min./End (Nm)																				
GC01x02.5-SR0	Start	2,236					Please consult factory	1,996	2,482	Exceeds MOP									137.0	1,898	162.9	2,737
	Min	1,197						647	860		604	972										
	End	2,292						737	1,074		669	1,250										
GC01x02.5-SR1	Start	1,665		Please consult factory	1,264	1,755	2,406	2,892	Exceeds MOP									103.8	1,225	162.9	3,148	
	Min	934				438	651	931		1,141	421	1,250										
	End	1,881				516	856	1,307		1,644	489	1,820										
GC01x02.5-SR2	Start	1,379		Please consult factory	1,506	1,997	2,648	3,134	Exceeds MOP									87.3	924	162.9	3,390	
	Min	795				585	796	1,075		1,284	335	1,394										
	End	1,639				801	1,141	1,592		1,928	398	2,105										
GC01x02.5-SR3	Start	1,192		Please consult factory	1,729	2,220	2,871	3,357	Exceeds MOP									76.4	787	162.9	3,612	
	Min	690				691	902	1,181		1,390	287	1,499										
	End	1,417				988	1,328	1,779		2,115	336	2,292										
GC01x02.5-SR4	Start	1,000		Please consult factory	774	1,929	2,419	3,070	Exceeds MOP									65.3	618	162.9	3,812	
	Min	589				301	795	1,005		1,284	1,492	234	1,602									
	End	1,217				381	1,180	1,520		1,970	2,307	272	2,484									
GC01x03.0-SR0	Start	2,217		Please consult factory	2,689				Exceeds MOP									89.9	1,926	113.1	3,097	
	Min	1,190				944					612	1,120										
	End	2,265				1,217					689	1,499										
GC01x03.0-SR1	Start	1,646		Please consult factory	1,327	3,100			Exceeds MOP									68.1	1,231	113.1	3,507	
	Min	927				464	1,223				422	1,397										
	End	1,855				560	1,787				493	2,069										
GC01x03.0-SR2	Start	1,361		Please consult factory	1,569	3,342			Exceeds MOP									57.3	922	113.1	3,749	
	Min	787				611	1,367				334	1,541										
	End	1,613				845	2,072				396	2,354										
GC01x03.0-SR3	Start	1,174		Please consult factory	1,792	3,564			Exceeds MOP									50.1	777	113.1	3,972	
	Min	683				717	1,472				284	1,646										
	End	1,390				1,032	2,259				328	2,541										
GC01x03.0-SR4	Start	982		Please consult factory	971	1,992	3,764		Exceeds MOP									42.8	602	113.1	4,172	
	Min	581				386	820	1,575			229	1,749										
	End	1,191				517	1,223	2,450			261	2,733										

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

## Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)		Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)					
			35	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340				
Pressure Torque Output: Start/Min./End (Nm)																											
GC01x03.5-SR0	Start	2,199			2,361	Exceeds MOP														63.9	1,923	83.1	3,300				
	Min.	1,182		Please consult factory	801																			611	1,205		
	End	2,239			990																				686	1,640	
GC01x03.5-SR1	Start	1,628	Please consult factory	1,332	2,772	Exceeds MOP														48.4	1,217	83.1	3,711				
	Min.	919		468	1,083																				418	1,482	
	End	1,828		563	1,560																					483	2,210
GC01x03.5-SR2	Start	1,343	Please consult factory	1,574	3,014	Exceeds MOP														40.7	902	83.1	3,953				
	Min.	780		615	1,226																				328	1,625	
	End	1,586		848	1,845																					383	2,495
GC01x03.5-SR3	Start	1,156	Please consult factory	1,797	3,236	Exceeds MOP														35.7	763	83.1	4,175				
	Min.	675		721	1,332																					281	1,731
	End	1,364		1,035	2,032																						319
GC01x03.5-SR4	Start	963	912	1,996	3,436	Exceeds MOP														30.5	585	83.1	4,375				
	Min.	574	364	824	1,435																					225	1,833
	End	1,164	476	1,227	2,223																						250

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# Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)						
		35	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340					
		Pressure Torque Output: Start/Min./End (Nm)																									
GC2x01.7-SR2	Start	2,534																Please consult factory	1,735	1,959	323.2	1,708	344.7	2,030			
	Min.	1,404															600		700	588		731					
	End	2,850															646		801	628		850					
GC2x01.7-SR3	Start	2,265																Please consult factory	1,825	2,048	2,272	290.4	1,535	344.7	2,343		
	Min.	1,255														657	755		853	528	884						
	End	2,537														760	915		1,070	559	1,119						
GC2x01.7-SR4	Start	2,014												Please consult factory	1,432	1,653	2,172	2,395	2,619	260.0	1,432	344.7	2,689				
	Min.	1,106											481		580	809	907	1,004	481		1,035						
	End	2,190											498		651	1,010	1,165	1,320	498		1,369						
GC2x02.0-SR1	Start	2,929												Please consult factory	2,193	2,516	3,272	3,598	Exceeds MOP	256.4	2,115	339.3	3,909				
	Min.	1,604											743		887	1,220	1,362	763		709	1,498						
	End	3,209											817		1,041	1,565	1,790	660		2,006							
GC2x02.0-SR2	Start	2,521												Please consult factory	1,816	2,139	2,570	2,893	3,649	3,974	Exceeds MOP	222.2	1,756	339.3	4,286		
	Min.	1,399											629		772	962	1,103	1,434	1,575	602		1,711					
	End	2,832											702		926	1,224	1,448	1,972	2,197	660		2,413					
GC2x02.0-SR3	Start	2,252												Please consult factory	1,698	2,129	2,452	2,883	3,206	3,962	4,288	Exceeds MOP	199.7	1,584	339.3	4,599	
	Min.	1,250											593		783	925	1,114	1,255	1,585	1,726	542		1,862				
	End	2,518											672		971	1,195	1,493	1,717	2,241	2,466	593		2,682				
GC2x02.0-SR4	Start	2,002												Please consult factory	1,720	2,044	2,476	2,799	3,229	3,552	4,308	4,634	Exceeds MOP	178.8	1,477	339.3	4,945
	Min.	1,101											602		745	935	1,076	1,264	1,405	1,735	1,876	494		2,012			
	End	2,172											697		922	1,221	1,445	1,743	1,967	2,490	2,716	529		2,932			
GC2x02.2-SR1	Start	2,918												Please consult factory	2,234	2,681	3,275	3,721	Exceeds MOP	189.3	2,213	250.6	4,035				
	Min.	1,600											746		943	1,203	1,398	831			737		1,534				
	End	3,193											846		1,155	1,567	1,875	660			2,093						
GC2x02.2-SR2	Start	2,511												Please consult factory	2,014	2,611	3,058	3,652	4,098	Exceeds MOP	164.1	1,837	250.6	4,412			
	Min.	1,394											703		964	1,159	1,417	1,610	626			1,747					
	End	2,817											839		1,253	1,562	1,974	2,283	717			2,501					
GC2x02.2-SR3	Start	2,241												Please consult factory	1,877	2,327	2,924	3,371	3,966	4,411	Exceeds MOP	147.4	1,649	250.6	4,725		
	Min.	1,246											661		857	1,117	1,311	1,568	1,761	560			1,898				
	End	2,503											796		1,108	1,522	1,831	2,243	2,551	638			2,769				
GC2x02.2-SR4	Start	1,991												Please consult factory	1,772	2,224	2,673	3,270	3,717	4,312	4,757	Exceeds MOP	132.0	1,531	250.6	5,072	
	Min.	1,096											616		813	1,008	1,267	1,461	1,718	1,911	510			2,048			
	End	2,157											734		1,046	1,358	1,771	2,081	2,493	2,801	566			3,019			

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## Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)		
		35	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340	
		Pressure Torque Output: Start/Min./End (Nm)																					
GC2x02.5-SR1	Start	2,907						Please consult factory	2,601	3,187	3,967	Exceeds MOP								146.5	2,267	193.9	4,119
	Min.	1,595					899		1,154	1,492	753		1,558										
	End	3,177					1,100		1,506	2,046	869		2,151										
GC2x02.5-SR2	Start	2,499					Please consult factory	2,389	2,978	3,564	4,344	Exceeds MOP								127.0	1,877	193.9	4,496
	Min.	1,390						860	1,115	1,368	1,705		637	1,770									
	End	2,801						1,099	1,507	1,913	2,454		745	2,559									
GC2x02.5-SR3	Start	2,230				Please consult factory	1,914	2,702	3,291	3,877	4,657	Exceeds MOP								114.1	1,681	193.9	4,809
	Min.	1,241					672	1,013	1,267	1,520	1,856		570	1,921									
	End	2,487					822	1,368	1,775	2,182	2,722		660	2,827									
GC2x02.5-SR4	Start	1,980			Please consult factory	1,667	2,261	3,048	3,637	4,224	5,004	Exceeds MOP								102.1	1,552	193.9	5,155
	Min.	1,092				566	823	1,163	1,417	1,670	2,006		515	2,071									
	End	2,141				660	1,072	1,618	2,025	2,432	2,972		581	3,077									
GC2x03.0-SR1	Start	2,885			Please consult factory	2,851	3,765	Exceeds MOP											96.2	2,314	127.2	4,202	
	Min.	1,586				1,000	1,393		767	1,581													
	End	3,145				1,273	1,906		901	2,209													
GC2x03.0-SR2	Start	2,477			Please consult factory	3,228	4,142	Exceeds MOP											83.3	1,901	127.2	4,579	
	Min.	1,381				1,215	1,606		644	1,793													
	End	2,769				1,680	2,313		761	2,616													
GC2x03.0-SR3	Start	2,208			Please consult factory	3,541	4,455	Exceeds MOP											74.9	1,698	127.2	4,892	
	Min.	1,232				1,367	1,757		575	1,944													
	End	2,455				1,949	2,582		672	2,885													
GC2x03.0-SR4	Start	1,958			Please consult factory	1,743	3,888	4,801	Exceeds MOP										67.0	1,558	127.2	5,239	
	Min.	1,083				597	1,517	1,907		517	2,094												
	End	2,109				713	2,199	2,832		585	3,135												

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# Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)		Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)					
			35	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340				
			Pressure Torque Output: Start/Min./End (Nm)																								
GC2x03.5-SR1	Start	2,863			2,455	Exceeds MOP																68.4	2,316	90.5	4,232		
	Min.	1,577	Please consult factory	827																					767	1,590	
	End	3,113		998																					902	2,230	
GC2x03.5-SR2	Start	2,455			2,831	Exceeds MOP																	59.3	1,900	90.5	4,609	
	Min.	1,372	Please consult factory	1,044																				644		1,802	
	End	2,737		1,406																				761		2,637	
GC2x03.5-SR3	Start	2,186			3,145	Exceeds MOP																	53.2	1,682	90.5	4,922	
	Min.	1,223	Please consult factory	1,196																				570		1,953	
	End	2,423		1,674																				661		2,905	
GC2x03.5-SR4	Start	1,936	Please consult factory	1,749	3,491	Exceeds MOP																	47.7	1,548	90.5	5,268	
	Min.	1,074		602	1,347																					515	2,103
	End	2,077		717	1,924																					578	3,155
GC2x04.0-SR1	Start	2,841	Please consult factory	Exceeds MOP		Exceeds MOP																	51.3	2,300	67.8	4,221	
	Min.	1,568																								763	1,586
	End	3,082																								892	2,222
GC2x04.0-SR2	Start	2,433	Please consult factory	2,526	Exceeds MOP																		44.4	1,872	67.8	4,598	
	Min.	1,363		916																						635	1,798
	End	2,705		1,194																						741	2,629
GC2x04.0-SR3	Start	2,164	Please consult factory	2,839	Exceeds MOP																		39.9	1,660	67.8	4,911	
	Min.	1,214		1,068																						646	1,949
	End	2,391		1,462																							646
GC2x04.0-SR4	Start	1,914	Please consult factory	3,185	Exceeds MOP																		35.7	1,515	67.8	5,257	
	Min.	1,065		1,219																						504	2,099
	End	2,045		1,712																						555	3,148

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# Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)															MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)						
		35	50	70	105	120	140	155	170	190	205	225	240	260	275	310					325	340				
		Pressure Torque Output: Start/Min./End (Nm)																								
GC3x02.0-SR4	Start	3,404																	Please consult factory	2,453	2,769	3,086	304.7	2,342	344.7	3,186
	Min.	1,872																833		974	1,114	765		1,158		
	End	3,745																		841	1,057	1,274		765		1,343
GC3x02.2-SR1	Start	5,138																	Please consult factory	4,068	4,536		315.7	3,779	344.7	4,683
	Min.	2,816																1,378		1,583		1,250		1,647		
	End	5,680																		1,538	1,858			1,340		1,959
GC3x02.2-SR2	Start	4,466																	Please consult factory	4,353	4,819	5,287	275.9	3,298	344.7	5,434
	Min.	2,451																1,555		1,759	1,962	1,091		2,026		
	End	4,929																		1,890	2,209	2,529		1,168		2,630
GC3x02.2-SR3	Start	3,888																	Please consult factory	3,454	3,917	4,999	241.6	2,887	344.7	6,080
	Min.	2,137																1,206		1,409	1,880	955		2,348		
	End	4,282																		1,410	1,726	2,467		1,022		3,207
GC3x02.2-SR4	Start	3,391																	Please consult factory	2,930	3,393	4,009	212.1	2,532	344.7	6,635
	Min.	1,867																1,014		1,217	1,486	838		2,623		
	End	3,727																		1,168	1,484	1,906		895		3,703
GC3x02.5-SR1	Start	5,125																	Please consult factory	4,128	4,968	5,599	235.7	3,947	312.1	7,162
	Min.	2,810																1,378		1,745	2,019	1,298		2,695		
	End	5,660																		1,578	2,154	2,585		1,455		3,655
GC3x02.5-SR2	Start	4,452																	Please consult factory	4,248	4,878	5,719	206.0	3,449	312.1	7,912
	Min.	2,445																1,485		1,759	2,122	1,134		3,068		
	End	4,909																		1,818	2,250	2,825		1,271		4,326
GC3x02.5-SR3	Start	3,874																	Please consult factory	3,420	4,053	4,894	180.4	3,015	312.1	8,558
	Min.	2,131																1,170		1,445	1,810	992		3,388		
	End	4,263																		1,387	1,820	2,395		1,109		4,903
GC3x02.5-SR4	Start	3,377																	Please consult factory	3,130	3,976	4,608	158.4	2,638	312.1	9,114
	Min.	1,861																1,084		1,450	1,724	868		3,662		
	End	3,707																		1,305	1,883	2,316		968		5,400
GC3x03.0-SR1	Start	5,098																	Please consult factory	4,568	5,595	6,960	148.6	4,129	196.7	7,417
	Min.	2,799																1,541		1,984	2,570	1,350		2,766		
	End	5,621																		1,880	2,583	3,517		1,580		3,830
GC3x03.0-SR2	Start	4,426																	Please consult factory	4,289	5,319	6,345	129.8	3,588	196.7	8,168
	Min.	2,434																1,478		1,920	2,360	1,174		3,139		
	End	4,870																		1,847	2,551	3,254		1,366		4,501
GC3x03.0-SR3	Start	3,848																	Please consult factory	3,558	4,936	5,965	113.7	3,123	196.7	8,814
	Min.	2,120																1,211		1,803	2,243	1,023		3,459		
	End	4,223																		1,481	2,424	3,128		1,183		5,078
GC3x03.0-SR4	Start	3,350																	Please consult factory	3,076	4,113	5,491	99.8	2,715	196.7	9,369
	Min.	1,850																1,046		1,491	2,080	890		3,733		
	End	3,668																		1,267	1,977	2,920		1,021		5,574

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# Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)		Operating Pressure, (barg)														MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)			
			35	50	70	105	120	140	155	170	190	205	225	240	260	275					310	325	340
			Pressure Torque Output: Start/Min./End (Nm)																				
GC3x03.5-SR1	Start	5,071			Please consult factory	4,353	5,854	Exceeds MOP											103.4	4,192	136.9	7,541	
	Min.	2,788				1,438	2,082		1,368	2,801													
	End	5,582				1,732	2,760		1,622	3,914													
GC3x03.5-SR2	Start	4,399			Please consult factory	5,103	6,605	Exceeds MOP											90.3	3,627	136.9	8,292	
	Min.	2,423				1,818	2,457		1,185	3,174													
	End	4,831				2,403	3,431		1,393	4,586													
GC3x03.5-SR3	Start	3,821			Please consult factory	5,749	7,251	Exceeds MOP											79.1	3,145	136.9	8,938	
	Min.	2,109				2,141	2,778		1,029	3,494													
	End	4,184				2,981	4,008		1,198	5,163													
GC3x03.5-SR4	Start	3,324		Please consult factory	2,782	6,305	7,806	Exceeds MOP											69.5	2,731	136.9	9,493	
	Min.	1,839				917	2,417		3,053	895	3,768												
	End	3,629				1,066	3,477		4,505	1,031	5,659												
GC3x04.0-SR1	Start	5,044			Please consult factory	Exceeds MOP													76.5	4,199	101.4	7,596	
	Min.	2,777							1,369	2,818													
	End	5,543							1,627	3,952													
GC3x04.0-SR2	Start	4,372		Please consult factory	4,060			Exceeds MOP											66.9	3,635	101.4	8,346	
	Min.	2,412				1,371				1,188	3,191												
	End	4,792				1,689				1,399	4,623												
GC3x04.0-SR3	Start	3,794		Please consult factory	4,706			Exceeds MOP											58.6	3,143	101.4	8,992	
	Min.	2,098				1,697				1,029	3,510												
	End	4,145				2,266				1,197	5,200												
GC3x04.0-SR4	Start	3,297		Please consult factory	5,261			Exceeds MOP											51.4	2,709	101.4	9,548	
	Min.	1,828				1,974				888	3,785												
	End	3,589				2,763				1,016	5,697												
GC3x04.5-SR1	Start	5,017		Please consult factory	6,125			Exceeds MOP											59.1	4,187	78.3	7,598	
	Min.	2,766				2,193				1,366	2,817												
	End	5,503				2,946				1,619	3,954												
GC3x04.5-SR2	Start	4,345		Please consult factory	6,876			Exceeds MOP											51.7	3,620	78.3	8,349	
	Min.	2,401				2,568				1,184	3,190												
	End	4,752				3,617				1,388	4,625												
GC3x04.5-SR3	Start	3,767		Please consult factory	3,963	7,522		Exceeds MOP											45.3	3,125	78.3	8,995	
	Min.	2,087				1,383	2,889		1,024	3,510													
	End	4,106				1,758	4,194		1,184	5,202													
GC3x04.5-SR4	Start	3,270		Please consult factory	4,518	8,077		Exceeds MOP											39.7	2,680	78.3	9,550	
	Min.	1,817				1,662	3,164		879	3,784													
	End	3,550				2,255	4,690		996	5,699													

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

## Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)		Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)				
			35	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340			
Pressure Torque Output: Start/Min./End (Nm)																										
GC4x02.5-SR4	Start	6,409																	Please consult factory	6,101	6,734	7,370	283.5	4,987	344.7	7,570
	Min.	3,404																2,087		2,369	2,650	1,583		2,738		
	End	6,541																		2,354	2,792	3,233		1,583		3,371
GC4x03.0-SR1	Start	10,606																	Please consult factory	8,705	11,271	12,374	274.5	8,668	344.7	13,829
	Min.	5,650																2,780		3,914	4,396	2,764		5,029		
	End	11,038																		3,080	4,857	5,621		3,055		6,628
GC4x03.0-SR2	Start	9,246																	Please consult factory	9,376	10,474	13,040	240.3	7,936	344.7	15,598
	Min.	4,859																3,114		3,598	4,720	2,472		5,830		
	End	9,269																		3,677	4,437	6,214		2,680		7,985
GC4x03.0-SR3	Start	7,759																	Please consult factory	6,840	8,305	9,402	202.9	6,686	344.7	17,086
	Min.	4,088																2,156		2,806	3,288	2,087		6,626		
	End	7,780																		2,375	3,389	4,149		2,269		9,470
GC4x03.0-SR4	Start	6,376																	Please consult factory	5,554	7,026	8,126	168.0	5,407	344.7	18,371
	Min.	3,391																1,773		2,423	2,904	1,707		7,345		
	End	6,494																		1,975	2,994	3,756		1,873		10,851
GC4x03.5-SR1	Start	10,573																	Please consult factory	9,542	11,200	13,407	185.3	9,022	241.0	15,172
	Min.	5,637																3,097		3,823	4,784	2,867		5,548		
	End	10,991																		3,660	4,808	6,337		3,300		7,558
GC4x03.5-SR2	Start	9,214																	Please consult factory	9,096	11,311	12,969	162.2	8,231	241.0	16,941
	Min.	4,846																2,942		3,910	4,630	2,559		6,348		
	End	9,221																		3,483	5,017	6,165		2,884		8,915
GC4x03.5-SR3	Start	7,727																	Please consult factory	7,249	8,919	10,584	136.9	6,904	241.0	18,429
	Min.	4,074																2,303		3,034	3,758	2,150		7,142		
	End	7,733																		2,659	3,815	4,968		2,419		10,400
GC4x03.5-SR4	Start	6,343																	Please consult factory	6,301	8,535	10,205	113.4	5,561	241.0	19,715
	Min.	3,377																2,077		3,048	3,768	1,753		7,860		
	End	6,446																		2,492	4,040	5,196		1,980		11,781
GC4x04.0-SR1	Start	10,540																	Please consult factory	10,002	12,318	14,628	134.8	9,199	175.3	15,443
	Min.	5,623																3,271		4,277	5,274	2,919		5,625		
	End	10,944																		3,979	5,582	7,182		3,422		7,746
GC4x04.0-SR2	Start	9,181																	Please consult factory	8,676	11,771	14,086	118.0	8,366	175.3	17,212
	Min.	4,832																2,736		4,083	5,081	2,599		6,425		
	End	9,174																		3,192	5,336	6,939		2,977		9,103
GC4x04.0-SR3	Start	7,694																	Please consult factory	7,834	10,164	13,259	99.6	6,994	175.3	18,700
	Min.	4,061																2,546		3,555	4,887	2,177		7,219		
	End	7,686																		3,064	4,677	6,820		2,482		10,588
GC4x04.0-SR4	Start	6,311																	Please consult factory	9,120	11,450	14,545	82.5	5,612	175.3	19,986
	Min.	3,364																3,286		4,285	5,609	1,768		7,937		
	End	6,399																		4,445	6,058	8,201		2,015		11,969

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

# Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)		Operating Pressure, (barg)														MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)				
			35	50	70	105	120	140	155	170	190	205	225	240	260	275					310	325	340	
			Pressure Torque Output: Start/Min./End (Nm)																					
GC4x04.5-SR1	Start	10,503			Please consult factory	9,636	12,684	Exceeds MOP											102.9	9,209	133.9	15,500		
	Min.	5,608				3,107	4,429															2,920		5,641
	End	10,890				3,725	5,836																3,429	
GC4x04.5-SR2	Start	9,144			Please consult factory	11,405	14,453	Exceeds MOP											90.1	8,368	133.9	17,269		
	Min.	4,817				3,920	5,233															2,599		6,441
	End	9,121				5,082	7,193															2,979		9,143
GC4x04.5-SR3	Start	7,657			Please consult factory	12,893	15,941	Exceeds MOP											76.1	6,993	133.9	18,757		
	Min.	4,046				4,726	6,030															2,177		7,235
	End	7,632				6,567	8,677															2,481		10,628
GC4x04.5-SR4	Start	6,274		Please consult factory	7,028	14,179	17,227	Exceeds MOP											63.0	5,590	133.9	20,043		
	Min.	3,349				2,386	5,449		6,750													1,761		7,953
	End	6,346				2,996	7,948		10,058													2,000		12,009
GC4x05.0-SR1	Start	10,470			Please consult factory	15,351		Exceeds MOP											81.4	9,245	105.9	15,583		
	Min.	5,595				5,564																2,930		5,663
	End	10,842				7,682																3,454		7,843
GC4x05.0-SR2	Start	9,111			Please consult factory	17,120		Exceeds MOP											71.3	8,392	105.9	17,352		
	Min.	4,804				6,363																2,606		6,463
	End	9,073				9,039																2,995		9,200
GC4x05.0-SR3	Start	7,623		Please consult factory	9,542	18,608		Exceeds MOP											60.2	6,991	105.9	18,840		
	Min.	4,032				3,283	7,158															2,176		7,257
	End	7,584				4,246	10,524															2,480		10,685
GC4x05.0-SR4	Start	6,240		Please consult factory	5,615	10,828	19,894	Exceeds MOP											49.8	5,563	105.9	20,126		
	Min.	3,335				1,774	4,014		7,876													1,751		7,975
	End	6,298				2,018	5,627		11,905													1,981		12,066
GC4x06.0-SR1	Start	10,403			Please consult factory	15,102		Exceeds MOP											54.9	9,251	71.4	15,644		
	Min.	5,568				5,450																2,933		5,681
	End	10,746				7,510																3,458		7,885
GC4x06.0-SR2	Start	9,044		Please consult factory	9,118	16,871		Exceeds MOP											48.1	8,380	71.4	17,412		
	Min.	4,776				2,927	6,250															2,605		6,481
	End	8,977				3,498	8,867															2,987		9,242
GC4x06.0-SR3	Start	7,557		Please consult factory	10,606	18,359		Exceeds MOP											40.6	6,951	71.4	18,900		
	Min.	4,005				3,743	7,045															2,166		7,275
	End	7,488				4,983	10,352															2,452		10,727
GC4x06.0-SR4	Start	6,174	6,056		11,892	19,645		Exceeds MOP											33.6	5,511	71.4	20,186		
	Min.	3,308	1,976		4,471	7,763														1,738			7,993	
	End	6,201	2,323		6,364	11,733														1,945			12,108	

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

# Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)															MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)							
		35	50	70	105	120	140	155	170	190	205	225	240	260	275	310					325	340					
		Pressure Torque Output: Start/Min./End (Nm)																									
GC5x03.5-SR3	Start	17,342																	284.1	16,404	344.7	23,295					
	Min.	8,654																Please consult factory					6,110	6,876	7,638		
	End	15,304																					6,680	7,863	9,050		
GC5x03.5-SR4	Start	14,418												13,846	16,102	17,795	21,757	23,463	25,176	237.4	13,552	344.7	25,714				
	Min.	7,246												4,106	5,134	5,893	7,651	8,402	9,154					Please consult factory	3,914	3,914	
	End	12,883												4,118	5,681	6,855	9,601	10,783	11,971						4,118	4,118	
GC5x04.0-SR1	Start	24,114																	270.0	23,391	344.7	36,005					
	Min.	12,076																Please consult factory					7,229	9,865	10,983	12,099	
	End	21,606																					7,672	11,758	13,516	15,278	
GC5x04.0-SR2	Start	21,583																	242.3	22,164	344.7	39,432					
	Min.	10,564																Please consult factory					7,669	8,798	11,404	12,515	13,625
	End	18,176																					8,453	10,200	14,286	16,044	17,807
GC5x04.0-SR3	Start	17,299																	195.3	17,188	344.7	42,364					
	Min.	8,636																Please consult factory					5,745	7,246	8,360	9,835	10,938
	End	15,242																					6,323	8,656	10,403	12,732	14,479
GC5x04.0-SR4	Start	14,375																	163.2	14,180	344.7	44,783					
	Min.	7,228																Please consult factory					4,679	6,182	7,295	8,768	9,867
	End	12,821																					5,148	7,491	9,244	11,576	13,323
GC5x04.5-SR1	Start	24,071																	199.4	24,055	261.9	38,485					
	Min.	12,058																Please consult factory					7,628	9,682	11,204	13,222	
	End	21,544																					8,447	11,649	14,049	17,247	
GC5x04.5-SR2	Start	21,540																	178.9	22,736	261.9	41,913					
	Min.	10,546																Please consult factory					7,647	9,190	11,222	12,735	14,743
	End	18,114																					8,570	10,975	14,177	16,577	19,775
GC5x04.5-SR3	Start	17,256																	144.2	17,599	261.9	44,844					
	Min.	8,618																Please consult factory					6,252	7,789	9,814	11,322	13,324
	End	15,180																					7,219	9,636	12,850	15,255	18,457
GC5x04.5-SR4	Start	14,332																	120.5	14,475	261.9	47,263					
	Min.	7,211																Please consult factory					6,265	7,790	9,303	11,309	12,809
	End	12,759																					7,716	10,140	12,557	15,770	
GC5x05.0-SR1	Start	24,028																	154.3	24,450	201.3	38,655					
	Min.	12,040																Please consult factory					7,256	9,273	11,917	15,307	
	End	21,482																					7,971	11,119	15,307		
GC5x05.0-SR2	Start	21,497																	138.5	23,081	201.3	42,083					
	Min.	10,528																Please consult factory					6,797	8,825	10,816	13,444	
	End	18,051																					7,343	10,499	13,647	17,835	
GC5x05.0-SR3	Start	17,212																	111.6	17,814	201.3	45,014					
	Min.	8,601																Please consult factory					6,331	8,992	10,964	12,924	
	End	15,118																					7,402	11,623	14,778	17,926	
GC5x05.0-SR4	Start	14,288																	93.3	14,628	201.3	47,433					
	Min.	7,193																Please consult factory					5,876	7,868	10,494	12,452	
	End	12,697																					7,146	10,323	14,543	17,699	

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



# Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)		
		35	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340	
Pressure Torque Output: Start/Min./End (Nm)																							
GC5x06.0-SR1	Start	23,942			Please consult factory	26,568	33,605	Exceeds MOP											101.3	24,829	133.0	39,691	
	Min.	12,005				8,049	11,125													7,276			13,756
	End	21,357				9,291	14,169													8,086			18,387
GC5x06.0-SR2	Start	21,411			Please consult factory	29,995	37,033	Exceeds MOP											90.9	23,363	133.0	43,118	
	Min.	10,492				9,604	12,656													6,676			15,276
	End	17,927				11,819	16,697													7,222			20,915
GC5x06.0-SR3	Start	17,126			Please consult factory	32,926	39,964	Exceeds MOP											73.2	17,943	133.0	46,050	
	Min.	8,565				11,729	14,743													5,226			17,346
	End	14,993				16,099	20,976													5,713			25,194
GC5x06.0-SR4	Start	14,202		Please consult factory	18,848	35,345	42,383	Exceeds MOP											61.2	14,682	133.0	48,469	
	Min.	7,158			6,135	13,214	16,218													4,307			18,815
	End	12,572			7,585	19,019	23,897													4,697			28,115
GC5x07.0-SR1	Start	23,856			Please consult factory	Exceeds MOP													72.0	24,898	94.6	39,940	
	Min.	11,969																		7,293			13,829
	End	21,233																		8,134			18,560
GC5x07.0-SR2	Start	21,325		Please consult factory	26,991	Exceeds MOP													64.6	23,388	94.6	43,368	
	Min.	10,457			8,276															6,679			15,349
	End	17,803			9,737															7,240			21,088
GC5x07.0-SR3	Start	17,040		Please consult factory	29,923	Exceeds MOP													52.1	17,964	94.6	46,299	
	Min.	8,530			10,427															5,237			17,418
	End	14,869			14,017															5,728			25,367
GC5x07.0-SR4	Start	14,116		Please consult factory	18,977	32,342	Exceeds MOP												43.5	14,622	94.6	48,718	
	Min.	7,122			6,193	11,918														4,287			18,887
	End	12,448			7,674	16,937														4,656			28,287
GC5x08.0-SR1	Start	23,750		Please consult factory	39,046	Exceeds MOP													54.0	24,814	70.9	39,845	
	Min.	11,926			13,453															7,268			13,796
	End	21,080			17,939															8,076			18,493
GC5x08.0-SR2	Start	21,219		Please consult factory	24,676	42,473	Exceeds MOP												48.5	23,338	70.9	43,272	
	Min.	10,413			7,268	14,974														6,671			15,315
	End	17,650			8,133	20,467														7,205			21,021
GC5x08.0-SR3	Start	16,934		Please consult factory	27,607	45,404	Exceeds MOP												39.1	17,876	70.9	46,204	
	Min.	8,486			9,446	17,045														5,214			17,385
	End	14,716			12,412	24,747														5,667			25,301
GC5x08.0-SR4	Start	14,010	16,628	30,026	47,823	Exceeds MOP													32.6	14,480	70.9	48,623	
	Min.	7,079	5,189	10,944	18,514															4,241			18,854
	End	12,295	6,046	15,332	27,667															4,557			28,221

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# Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)																	MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)				
		35	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325	340								
		Pressure Torque Output: Start/Min./End (Nm)																								
GC7x04.0-SR4	Start	29,138																	Please consult factory	31,818	34,631	37,453	291.8	28,416	344.7	38,340
	Min.	14,460																9,774		11,038	12,294	8,221		12,686		
	End	25,455																		10,581	12,530	14,487		8,222		15,101
GC7x04.5-SR1	Start	47,872																	Please consult factory				342.6	48,888	344.7	49,447
	Min.	23,475																				13,986		14,241		
	End	40,885																				14,387		14,774		
GC7x04.5-SR2	Start	42,230																	Please consult factory	44,898	48,868	52,848	302.8	42,995	344.7	54,097
	Min.	20,761																13,199		14,988	16,761	12,331		17,314		
	End	36,229																14,033		16,785	19,544	12,714		20,410		
GC7x04.5-SR3	Start	34,728																	Please consult factory	37,903	41,853	51,087	249.9	35,244	344.7	60,287
	Min.	17,152																11,364		13,136	17,216	10,155		21,234		
	End	30,034																12,387		15,125	21,526	10,544		27,903		
GC7x04.5-SR4	Start	29,085																	Please consult factory				210.1	29,413	344.7	64,938
	Min.	14,438																10,292		12,050	14,371	8,518		24,114		
	End	25,378																11,635		14,373	18,023	8,914		33,539		
GC7x05.0-SR1	Start	47,820																	Please consult factory	54,768	67,023	72,288	261.0	49,874	337.0	76,508
	Min.	23,453																16,496		21,924	24,230	14,283		26,070		
	End	40,809																18,463		26,958	30,608	15,070		33,533		
GC7x05.0-SR2	Start	42,177																	Please consult factory	47,186	54,175	59,419	230.7	43,935	337.0	81,159
	Min.	20,740																14,086		17,200	19,511	12,615		28,978		
	End	36,153																15,619		20,464	24,099	13,366		39,169		
GC7x05.0-SR3	Start	34,675																	Please consult factory	41,135	48,132	53,375	190.4	36,020	337.0	87,349
	Min.	17,130																12,687		15,779	18,076	10,389		32,791		
	End	29,957																14,627		19,477	23,112	11,082		46,662		
GC7x05.0-SR4	Start	29,032																	Please consult factory	33,511	40,531	45,786	160.1	30,029	337.0	92,000
	Min.	14,417																10,268		13,366	15,662	8,705		35,631		
	End	25,302																11,754		16,620	20,263	9,341		52,298		

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# Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)									
		35	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340								
		Pressure Torque Output: Start/Min./End (Nm)																												
GC7x06.0-SR1	Start	47,714																	168.2	51,109	217.2	78,097								
	Min.	23,410								Please consult factory	52,102	63,128	71,386	15,100	19,994	23,607	Exceeds MOP	14,652					26,526							
	End	40,656																					15,926	34,634						
GC7x06.0-SR2	Start	42,071																	148.7	44,985	217.2	82,748								
	Min.	20,696								Please consult factory	48,469	56,753	67,779	14,491	18,148	22,954	16,509	22,251					29,894	26,532	35,618	Exceeds MOP	12,930	29,430		
	End	36,000																					14,094	40,270						
GC7x06.0-SR3	Start	34,569																	122.7	36,765	217.2	88,937								
	Min.	17,087								Please consult factory	46,359	54,659	62,943	14,856	18,470	22,055	18,248	24,002					29,744	37,387	43,111	Exceeds MOP	10,611	33,242		
	End	29,805																					11,598	47,763						
GC7x06.0-SR4	Start	28,927																	103.1	30,513	217.2	93,588								
	Min.	14,373								Please consult factory	31,571	39,916	51,010	9,316	12,988	17,795	10,409	16,194					23,884	29,637	35,380	43,023	48,747	Exceeds MOP	8,842	36,081
	End	25,149																					9,676	53,399						
GC7x07.0-SR1	Start	47,608																	118.4	51,628	152.9	78,943								
	Min.	23,366								Please consult factory	52,898	68,743	15,372	22,342	Exceeds MOP	16,287	35,221													
	End	40,503																17,166					28,150							
GC7x07.0-SR2	Start	41,965																	104.7	45,399	152.9	83,594								
	Min.	20,653								Please consult factory	45,638	57,549	73,394	13,160	18,412	25,278	14,546	22,802					33,786	Exceeds MOP	13,053	29,667				
	End	35,848																					14,380	40,857						
GC7x07.0-SR3	Start	34,463																	86.4	37,021	152.9	89,784								
	Min.	17,043								Please consult factory	51,827	63,738	79,583	17,178	22,316	29,110	22,039	30,295					41,279	Exceeds MOP	10,687	33,477				
	End	29,652																					11,775	48,350						
GC7x07.0-SR4	Start	28,821																	72.6	30,657	152.9	94,435								
	Min.	14,330								Please consult factory	56,478	68,389	84,234	20,090	25,189	31,959	27,675	35,931					46,915	Exceeds MOP	8,886	36,316				
	End	24,997																					9,775	53,986						

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

## Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)		
		35	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340	
Pressure Torque Output: Start/Min./End (Nm)																							
GC7x08.0-SR1	Start	47,478			Please consult factory	69,461	Exceeds MOP												88.3	51,666	114.0	79,030	
	Min.	23,313				22,647														14,819			26,791
	End	40,315				28,648														16,313			35,281
GC7x08.0-SR2	Start	41,835			Please consult factory	74,111	Exceeds MOP												78.0	45,315	114.0	83,681	
	Min.	20,599				25,580														13,019			29,693
	End	35,660				34,284														14,322			40,917
GC7x08.0-SR3	Start	34,333		Please consult factory	42,944	80,301	Exceeds MOP												64.4	36,943	114.0	89,870	
	Min.	16,990			13,318	29,411														10,662			33,504
	End	29,464			15,881	41,777														11,721			48,410
GC7x08.0-SR4	Start	28,690		Please consult factory	47,595	84,952	Exceeds MOP												54.1	30,538	114.0	94,521	
	Min.	14,276			16,281	32,259														8,847			36,342
	End	24,809			21,517	47,413														9,693			54,046
GC7x09.0-SR1	Start	47,368		Please consult factory	53,815	Exceeds MOP													68.5	51,741	88.5	79,350	
	Min.	23,268			15,761															14,835			26,887
	End	40,158			17,802															16,365			35,503
GC7x09.0-SR2	Start	41,726		Please consult factory	58,466	Exceeds MOP													60.6	45,460	88.5	84,001	
	Min.	20,554			18,792															13,076			29,789
	End	35,502			23,438															14,423			41,139
GC7x09.0-SR3	Start	34,224	Please consult factory	36,956	64,656	Exceeds MOP													50.0	36,956	88.5	90,190	
	Min.	16,945		10,670	22,690															10,670			33,599
	End	29,307		11,730	30,931															11,730			48,632
GC7x09.0-SR4	Start	28,581	Please consult factory	41,607	69,306	Exceeds MOP													42.0	30,498	88.5	94,841	
	Min.	14,231		13,698	25,561															8,837			36,437
	End	24,651		17,366	36,567															9,665			54,268
GC7x10.0-SR1	Start	47,259		Please consult factory	78,105	Exceeds MOP													54.8	51,766	70.8	79,489	
	Min.	23,223			26,334															14,844			26,930
	End	40,001			34,640															16,382			35,600
GC7x10.0-SR2	Start	41,617	Please consult factory	48,086	82,756	Exceeds MOP													48.4	45,307	70.8	84,140	
	Min.	20,509		14,248	29,239															13,011			29,831
	End	35,345		16,243	40,276															14,317			41,236
GC7x10.0-SR3	Start	34,115	Please consult factory	54,275	88,945	Exceeds MOP													40.0	36,896	70.8	90,330	
	Min.	16,900		18,232	33,052															10,654			33,641
	End	29,149		23,736	47,769															11,689			48,729
GC7x10.0-SR4	Start	28,472	32,846	58,926	93,596	Exceeds MOP													33.6	30,408	70.8	94,981	
	Min.	14,186	9,893	21,134	35,891															8,812			36,479
	End	24,494	11,293	29,372	53,405															9,603			54,365

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# Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)				
		35	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340			
		Pressure Torque Output: Start/Min./End (Nm)																							
GC8x05.0-SR2	Start	56,879																Please consult factory	52,357	57,757	Exceeds MOP	299.8	48,692	328.5	59,019
	Min.	29,948															16,897		19,280	15,268			19,834		
	End	58,005																	19,639	23,382			17,099		24,257
GC8x05.0-SR3	Start	48,154													Please consult factory	43,283	48,656	61,216	66,616	Exceeds MOP	254.5	41,313	328.5	67,878	
	Min.	25,391												13,841		16,218	21,716	24,064	12,963			24,612			
	End	49,138														15,924	19,649	28,355	32,098			14,559		32,973	
GC8x06.0-SR1	Start	70,661												Please consult factory	73,752	85,655	94,584	115,446	Exceeds MOP	228.0	66,609	321.6	122,374		
	Min.	36,396											23,376		28,596	32,485	41,516	20,211			44,506				
	End	68,333													27,853	36,103	42,293	56,754			22,902		61,556		
GC8x06.0-SR2	Start	56,754												Please consult factory	54,463	63,408	75,321	84,249	Exceeds MOP	183.8	50,762	321.6	132,871		
	Min.	29,897											17,500		21,412	26,584	30,443	15,869			51,359				
	End	57,825													21,099	27,299	35,557	41,746			18,534		75,449		
GC8x06.0-SR3	Start	48,029												Please consult factory	51,376	63,322	72,266	84,179	Exceeds MOP	156.1	43,057	321.6	141,730		
	Min.	25,340											17,122		22,309	26,173	31,307	13,476			56,021				
	End	48,957													21,534	29,815	36,015	44,273			15,768		84,165		
GC8x07.0-SR1	Start	70,536												Please consult factory	79,815	97,379	110,536		Exceeds MOP	156.5	67,941	220.7	124,297		
	Min.	36,345											25,821		33,449	39,127		20,605			45,049				
	End	68,152													32,055	44,230	53,351				23,825		62,889		
GC8x07.0-SR2	Start	56,628												Please consult factory	63,903	77,118	90,312	107,877	Exceeds MOP	126.1	51,634	220.7	134,794		
	Min.	29,846											21,465		27,171	32,842	40,374	16,118			51,901				
	End	57,644													27,642	36,803	45,948	58,124			19,138		76,782		
GC8x07.0-SR3	Start	47,903												Please consult factory	55,102	72,762	85,977	99,171	Exceeds MOP	107.1	43,684	220.7	143,653		
	Min.	25,289											18,622		26,226	31,891	37,539	13,654			56,563				
	End	48,776													24,117	36,358	45,519	54,664			16,202		85,498		
GC8x08.0-SR1	Start	70,382												Please consult factory	74,253	98,257	116,217		Exceeds MOP	114.9	68,120	162.0	124,587		
	Min.	36,282											23,356		33,788	41,524		20,657			45,124				
	End	67,930													28,200	44,839	57,288				23,949		63,090		
GC8x08.0-SR2	Start	56,474												Please consult factory	66,697	84,751	108,755	126,714	Exceeds MOP	92.6	51,736	162.0	135,084		
	Min.	29,783											22,653		30,423	40,709	48,395	16,150			51,975				
	End	57,421													29,579	42,093	58,732	71,181			19,209		76,983		
GC8x08.0-SR3	Start	47,749												Please consult factory	75,556	93,610	117,614	135,573	Exceeds MOP	78.6	43,660	162.0	143,943		
	Min.	25,226											27,404		35,129	45,387	53,060	13,641			56,637				
	End	48,553													38,295	50,809	67,448	79,897			16,186		85,699		

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

## Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)																MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)	
		35	50	70	105	120	140	155	170	190	205	225	240	260	275	310	325					340
		Pressure Torque Output: Start/Min./End (Nm)																				
GC8x09.0-SR1	Start	70,252			Please consult factory	94,822	118,395	Exceeds MOP											88.3	68,514	124.5	125,457
	Min.	36,229		32,212		42,344	20,771		45,371													
	End	67,743		42,458		58,798	24,222		63,693													
GC8x09.0-SR2	Start	56,345			Please consult factory	105,319	128,892	Exceeds MOP										71.2	51,995	124.5	135,954	
	Min.	29,730		39,152		49,210	16,233		52,221													
	End	57,235		56,351		72,691	19,388		77,586													
GC8x09.0-SR3	Start	47,620		Please consult factory	58,955	114,178	Exceeds MOP											60.4	43,748	124.5	144,813	
	Min.	25,173			20,249	43,833		53,873	13,666	56,883												
	End	48,367			26,788	65,067		81,407	16,247	86,302												
GC8x10.0-SR1	Start	70,123		Please consult factory	Exceeds MOP			Exceeds MOP										70.2	68,773	98.9	125,909	
	Min.	36,176					20,861		45,496													
	End	67,556					24,401		64,006													
GC8x10.0-SR2	Start	56,215		Please consult factory	78,871	Exceeds MOP												56.5	51,904	98.9	136,406	
	Min.	29,677			27,817		16,188	52,346														
	End	57,048			38,018		19,325	77,899														
GC8x10.0-SR3	Start	47,490		Please consult factory	47,756	87,730	Exceeds MOP											48.0	43,751	98.9	145,265	
	Min.	25,120			15,414	32,536		13,671	57,007													
	End	48,180			19,025	46,734		16,249	86,615													
GC8x12.0-SR1	Start	69,821		Please consult factory	75,848	Exceeds MOP												47.5	68,459	67.0	126,008	
	Min.	36,052			23,974		20,743	45,522														
	End	67,121			29,306		24,184	64,075														
GC8x12.0-SR2	Start	55,913		Please consult factory	86,346	Exceeds MOP												38.3	51,734	67.0	136,505	
	Min.	29,554			31,029		16,147	52,371														
	End	56,612			43,199		19,207	77,968														
GC8x12.0-SR3	Start	47,188		Please consult factory	50,817	Exceeds MOP												32.5	43,406	67.0	145,364	
	Min.	24,997			16,776		35,732	13,562	57,033													
	End	47,744			21,147		51,915	16,010	86,684													

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# Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)															MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)			
		35	50	70	105	120	140	155	170	190	205	225	240	260	275	310					325	340	
		Pressure Torque Output: Start/Min./End (Nm)																					
GC10x06.0-SR4	Start	96,229																264.5	101,618	344.7	157,462		
	Min.	46,929																				28,915	53,634
	End	80,877																				30,315	69,022
GC10x07.0-SR2	Start	131,750																238.9	39,801	344.7	89,021		
	Min.	65,122																				137,682	250,325
	End	115,046																				43,491	121,566
GC10x07.0-SR3	Start	120,039																218.0	37,566	344.7	96,549		
	Min.	57,429																				134,349	269,209
	End	96,144																				39,790	133,264
GC10x07.0-SR4	Start	96,065																175.0	29,639	344.7	107,955		
	Min.	46,861																				104,057	284,699
	End	80,640																				32,006	157,212
GC10x08.0-SR1	Start	163,466																213.0	50,346	260.8	81,570		
	Min.	79,472																				177,131	247,647
	End	136,934																				54,310	103,186
GC10x08.0-SR2	Start	131,548																171.9	40,069	260.8	97,352		
	Min.	65,038																				138,536	269,807
	End	114,753																				44,082	135,069
GC10x08.0-SR3	Start	119,837																156.8	37,771	260.8	104,873		
	Min.	57,346																				135,039	288,691
	End	95,852																				40,268	146,767
GC10x08.0-SR4	Start	95,862																125.9	29,803	260.8	116,245		
	Min.	46,777																				104,589	304,181
	End	80,347																				32,374	170,716
GC10x09.0-SR1	Start	163,296																161.6	50,958	195.8	80,579		
	Min.	79,402																				179,176	246,274
	End	136,689																				55,728	102,235
GC10x09.0-SR2	Start	131,378																130.4	40,479	195.8	96,371		
	Min.	64,969																				139,926	268,435
	End	114,508																				45,046	134,118
GC10x09.0-SR3	Start	119,667																119.0	38,165	195.8	103,895		
	Min.	57,275																				136,310	287,319
	End	95,607																				41,149	145,816
GC10x09.0-SR4	Start	95,692																95.5	30,008	195.8	302,809		
	Min.	46,707																				105,295	115,270
	End	80,102																				32,864	169,765

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## Torque - Hydraulic Spring-Return Actuator

Actuator Model	Spring Torque Start/Min./End (Nm)	Operating Pressure, (barg)														MinOP (barg)	Torque @ MinOP (Nm)	MOP (barg)	Torque @ MOP (Nm)					
		35	50	70	105	120	140	155	170	190	205	225	240	260	275					310	325	340		
		Pressure Torque Output: Start/Min./End (Nm)																						
GC10x10.0-SR1	Start	163,126					Please consult factory	212,357	249,973	Exceeds MOP									127.3	180,462	155.8	251,978		
	Min.	79,332					65,517	81,934															51,353	82,804
	End	136,444					78,726	104,798															56,619	106,188
GC10x10.0-SR2	Start	131,208			Please consult factory	146,498	184,268	234,518	272,134	Exceeds MOP									102.7	140,700	155.8	274,138		
	Min.	64,899				43,293	59,849	81,556	97,712														40,709	98,573
	End	114,263				49,601	75,780	110,609	136,682														45,582	138,071
GC10x10.0-SR3	Start	119,497			Please consult factory	165,382	203,152	253,402	291,018	Exceeds MOP									93.7	136,877	155.8	293,022		
	Min.	57,205				50,997	67,439	89,094	105,233														38,328	106,091
	End	95,362				61,299	87,478	122,307	148,380														41,542	149,769
GC10x10.0-SR4	Start	95,522			Please consult factory	180,872	218,642	268,892	306,508	Exceeds MOP									75.2	105,592	155.8	308,513		
	Min.	46,636				62,864	79,055	100,537	116,604														30,092	117,460
	End	79,857				85,248	111,427	146,256	172,328														33,070	173,718
GC10x12.0-SR1	Start	162,729			Please consult factory	Exceeds MOP				Exceeds MOP									85.3	180,993	104.5	253,315		
	Min.	79,168																					51,498	83,229
	End	135,872																					56,987	107,115
GC10x12.0-SR2	Start	130,811			Please consult factory	145,367				Exceeds MOP									68.8	140,828	104.5	275,476		
	Min.	64,736				42,747																	40,727	98,993
	End	113,691				48,817																	45,671	138,998
GC10x12.0-SR3	Start	119,100			Please consult factory	164,251				Exceeds MOP									62.8	137,005	104.5	294,360		
	Min.	57,041				50,457																	38,365	106,510
	End	94,789				60,515																	41,630	150,696
GC10x12.0-SR4	Start	95,125			Please consult factory	179,741				Exceeds MOP									50.4	105,489	104.5	309,850		
	Min.	46,472				62,336																	30,060	117,879
	End	79,285				84,464																	32,998	174,645
GC10x14.0-SR2	Start	130,461			Please consult factory	143,529	248,995			Exceeds MOP									49.5	140,889	75.2	276,365		
	Min.	64,592				41,912	87,548																40,739	99,248
	End	113,186				47,544	120,644																45,713	139,615
GC10x14.0-SR3	Start	118,750			Please consult factory	162,413	267,879			Exceeds MOP									45.2	137,053	75.2	295,249		
	Min.	56,897				49,633	95,077																38,387	106,765
	End	94,284				59,242	132,342																41,664	151,313
GC10x14.0-SR4	Start	94,775			Please consult factory	177,904	283,369			Exceeds MOP									36.3	105,470	75.2	310,740		
	Min.	46,328				61,531	106,490																30,080	118,132
	End	78,780				83,190	156,290																32,985	175,261

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