

Bettis G-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)																				
G01x01.5	Start	Outboard	264	505	743	1,153	1,327	1,557	1,728	1,899	2,125	2,294	2,519	2,687	2,911	3,080	3,474	3,643	3,814	27.6	234	344.7	3,867
	Min		156	283	409	627	720	843	934	1,026	1,148	1,239	1,360	1,451	1,572	1,663	1,875	1,966	2,058		141		2,086
	End		263	504	742	1,152	1,326	1,555	1,726	1,897	2,123	2,292	2,516	2,684	2,908	3,077	3,470	3,640	3,810		234		3,863
	Start	Inboard	138	296	451	715	826	972	1,080	1,188	1,331	1,437	1,578	1,684	1,825	1,930	2,178	2,285	2,393		119		2,427
	Min		91	174	256	398	457	537	596	654	732	791	868	926	1,004	1,062	1,197	1,256	1,315		81		1,333
	End		138	296	450	714	825	971	1,079	1,187	1,329	1,436	1,577	1,682	1,823	1,929	2,176	2,283	2,390		119		2,424
G01x01.7	Start	Outboard	381	711	1,039	1,606	1,847	2,167	2,405	2,643	2,960	3,196	3,511	3,747	4,062	Exceeds MOP				27.6	341	271.6	4,245
	Min		220	394	566	866	994	1,163	1,290	1,417	1,586	1,712	1,880	2,006	2,174						199		2,271
	End		381	711	1,038	1,604	1,845	2,164	2,403	2,641	2,957	3,193	3,508	3,744	4,058						341		4,240
	Start	Inboard	217	438	657	1,033	1,192	1,402	1,559	1,715	1,923	2,077	2,283	2,437	2,643						191		2,762
	Min		135	251	366	566	651	764	848	932	1,043	1,127	1,238	1,321	1,432						121		1,496
	End		217	438	656	1,032	1,191	1,401	1,558	1,714	1,921	2,075	2,281	2,435	2,640						190		2,759
G01x02.0	Start	Outboard	522	953	1,380	2,119	2,433	2,850	3,160	3,470	3,882	4,190	Exceeds MOP							27.6	470	207.9	4,249
	Min		296	523	748	1,139	1,305	1,527	1,692	1,857	2,077	2,241									269		2,273
	End		522	952	1,379	2,117	2,431	2,847	3,157	3,467	3,878	4,185									470		4,245
	Start	Inboard	358	680	998	1,546	1,778	2,085	2,313	2,541	2,843	3,069									319		3,113
	Min		211	380	548	839	962	1,126	1,249	1,371	1,534	1,655									190		1,679
	End		358	679	997	1,544	1,776	2,082	2,311	2,538	2,840	3,066									319		3,110
G01x02.2	Start	Outboard	685	1,232	1,774	2,714	3,114	3,644	4,040	Exceeds MOP										27.6	620	164.3	4,285
	Min		384	670	956	1,452	1,664	1,945	2,155												349		2,286
	End		685	1,231	1,773	2,711	3,111	3,640	4,036												619		4,281
	Start	Inboard	522	959	1,392	2,141	2,459	2,880	3,194												469		3,388
	Min		298	528	756	1,152	1,321	1,545	1,713												270		1,817
	End		521	958	1,391	2,139	2,456	2,877	3,191												468		3,385
G01x02.5	Start	Outboard	869	1,545	2,216	3,380	3,876	Exceeds MOP											27.6	787	133.1	4,307	
	Min		481	836	1,189	1,803	2,065													439		2,293	
	End		868	1,543	2,214	3,377	3,872													787		4,303	
	Start	Inboard	705	1,271	1,833	2,806	3,220													637		3,580	
	Min		396	693	989	1,503	1,722													360		1,913	
	End		704	1,270	1,831	2,803	3,217													636		3,576	
G01x03.0	Start	Outboard	1,297	2,272	3,242	Exceeds MOP												27.6	1,180	92.4	4,322		
	Min		709	1,221	1,730														648		2,298		
	End		1,296	2,270	3,239														1,179		4,318		
	Start	Inboard	1,133	1,999	2,859																1,029	3,817	
	Min		624	1,078	1,530														569		2,034		
	End		1,132	1,997	2,856														1,028		3,813		
G01x03.5	Start	Outboard	1,807	3,136	Exceeds MOP													27.6	1,647	67.9	4,320		
	Min		980	1,676													896		2,298				
	End		1,805	3,133													1,646		4,316				
	Start	Inboard	1,643	2,863															1,497		3,949		
	Min		894	1,534													817		2,104				
	End		1,642	2,860													1,495		3,946				

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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)																				
G2x01.7	Outboard	Start	461	861	1,258	1,944	2,236	2,623	2,912	3,200	3,583	3,869	4,251	4,536	4,917	5,203	5,871	6,158	Exceeds MOP	27.6	332.3	413	6,298
		Min	267	477	685	1,048	1,203	1,408	1,562	1,715	1,919	2,072	2,276	2,428	2,631	2,784	3,140	3,293				241	3,368
		End	461	861	1,257	1,942	2,234	2,621	2,909	3,197	3,580	3,866	4,247	4,533	4,913	5,199	5,866	6,153				413	6,293
	Inboard	Start	263	531	795	1,250	1,443	1,698	1,888	2,077	2,327	2,515	2,764	2,950	3,199	3,386	3,823	4,011				231	4,103
		Min	163	304	444	685	788	925	1,026	1,128	1,263	1,364	1,498	1,599	1,733	1,834	2,069	2,170				146	2,220
		End	263	530	794	1,249	1,442	1,696	1,886	2,075	2,325	2,513	2,762	2,948	3,197	3,383	3,820	4,008				230	4,099
G2x02.0	Outboard	Start	632	1,154	1,671	2,566	2,946	3,450	3,826	4,201	4,699	5,072	5,568	5,939					Exceeds MOP	27.6	254.5	569	6,298
		Min	359	633	905	1,378	1,580	1,848	2,048	2,248	2,514	2,713	2,978	3,177								326	3,369
		End	631	1,153	1,670	2,564	2,943	3,447	3,823	4,197	4,695	5,068	5,563	5,934								569	6,293
	Inboard	Start	433	823	1,208	1,871	2,152	2,523	2,800	3,076	3,442	3,715	4,079	4,351								386	4,614
		Min	255	460	663	1,015	1,165	1,363	1,512	1,660	1,856	2,004	2,200	2,346								230	2,488
		End	433	822	1,207	1,870	2,150	2,521	2,798	3,073	3,439	3,712	4,076	4,348								386	4,611
G2x02.2	Outboard	Start	830	1,491	2,148	3,285	3,769	4,411	4,891	5,369	6,005								Exceeds MOP	27.6	201.1	750	6,357
		Min	464	812	1,157	1,758	2,014	2,354	2,609	2,863	3,201											422	3,389
		End	829	1,490	2,146	3,283	3,766	4,408	4,887	5,365	6,000											749	6,352
	Inboard	Start	632	1,161	1,685	2,592	2,976	3,486	3,866	4,246	4,749											568	5,028
		Min	361	639	915	1,395	1,599	1,871	2,073	2,276	2,545											327	2,694
		End	631	1,160	1,684	2,590	2,974	3,483	3,863	4,242	4,745											567	5,024
G2x02.5	Outboard	Start	1,052	1,870	2,682	4,092	4,692	5,488	6,084										Exceeds MOP	27.6	162.9	953	6,397
		Min	583	1,012	1,439	2,182	2,500	2,921	3,237													531	3,403
		End	1,051	1,868	2,680	4,088	4,688	5,484	6,079													952	6,391
	Inboard	Start	853	1,539	2,219	3,397	3,898	4,562	5,058													771	5,319
		Min	479	839	1,197	1,819	2,084	2,437	2,701													436	2,839
		End	853	1,538	2,217	3,394	3,895	4,558	5,054													770	5,315
G2x03.0	Outboard	Start	1,570	2,751	3,924	5,964													Exceeds MOP	27.6	113.1	1,428	6,434
		Min	858	1,477	2,094	3,168																784	3,416
		End	1,569	2,749	3,921	5,959																1,427	6,429
	Inboard	Start	1,372	2,420	3,461	5,269																1,246	5,686
		Min	755	1,304	1,852	2,805																689	3,024
		End	1,371	2,418	3,458	5,265																1,245	5,681
G2x03.5	Outboard	Start	2,188	3,796	5,397														Exceeds MOP	27.6	83.1	1,994	6,442
		Min	1,186	2,029	2,869																	1,085	3,419
		End	2,186	3,793	5,393																	1,993	6,437
	Inboard	Start	1,990	3,466	4,935																	1,812	5,893
		Min	1,082	1,856	2,628																	989	3,131
		End	1,988	3,463	4,931																	1,810	5,888
G2x04.0	Outboard	Start	2,904	5,008															Exceeds MOP	27.6	63.6	2,651	6,433
		Min	1,565	2,667																		1,433	3,415
		End	2,902	5,004																		2,649	6,428
	Inboard	Start	2,706	4,677																		2,469	6,012
		Min	1,462	2,495																		1,338	3,195
		End	2,704	4,673																		2,467	6,008

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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)																				
G3x02.0	Start	Outboard	752	1,387	2,015	3,100	3,561	4,172	4,628	5,082	5,686	6,137	6,738	7,188	7,788	8,238	9,290	9,743	10,197	27.6	676	344.7	10,339
	Min		430	764	1,095	1,669	1,914	2,239	2,482	2,724	3,047	3,288	3,610	3,851	4,172	4,413	4,976	5,218	5,460		390		5,536
	End		752	1,386	2,014	3,099	3,560	4,170	4,626	5,080	5,683	6,134	6,735	7,184	7,784	8,234	9,286	9,738	10,192		676		10,334
	Start	Inboard	375	758	1,135	1,780	2,053	2,412	2,679	2,945	3,297	3,560	3,909	4,170	4,519	4,780	5,393	5,657	5,922		329		6,006
	Min		233	435	635	979	1,125	1,319	1,463	1,607	1,798	1,941	2,131	2,273	2,463	2,605	2,938	3,082	3,225		209		3,270
	End		375	758	1,134	1,780	2,052	2,411	2,678	2,944	3,296	3,558	3,907	4,169	4,517	4,778	5,390	5,654	5,919		329		6,003
G3x02.2	Start	Outboard	993	1,797	2,595	3,976	4,563	5,342	5,923	6,503	7,274	7,850	8,618	9,193	9,960	10,535	Exceeds MOP	896	289.0	11,073			
	Min		559	981	1,401	2,131	2,442	2,855	3,164	3,473	3,883	4,191	4,600	4,907	5,316	5,623		508		5,910			
	End		993	1,796	2,593	3,974	4,561	5,339	5,920	6,500	7,270	7,847	8,614	9,189	9,956	10,531		896		11,068			
	Start	Inboard	616	1,169	1,715	2,657	3,055	3,583	3,976	4,368	4,887	5,275	5,792	6,179	6,694	7,081		549		7,442			
	Min		362	653	941	1,441	1,653	1,935	2,146	2,356	2,635	2,844	3,122	3,331	3,608	3,817		327		4,012			
	End		616	1,169	1,715	2,656	3,054	3,581	3,974	4,366	4,885	5,273	5,789	6,176	6,691	7,078		549		7,439			
G3x02.5	Start	Outboard	1,263	2,258	3,245	4,956	5,685	6,652	7,374	8,095	9,053	9,770	10,725	Exceeds MOP	1,143	234.1	11,159						
	Min		703	1,225	1,744	2,647	3,032	3,545	3,928	4,310	4,819	5,201	5,709		640		5,940						
	End		1,263	2,257	3,243	4,954	5,682	6,649	7,371	8,091	9,049	9,765	10,720		1,143		11,154						
	Start	Inboard	886	1,630	2,365	3,637	4,177	4,893	5,427	5,959	6,666	7,195	7,898		797		8,218						
	Min		506	896	1,284	1,958	2,244	2,625	2,910	3,194	3,572	3,854	4,231		459		4,402						
	End		886	1,629	2,364	3,636	4,175	4,891	5,424	5,956	6,663	7,191	7,895		796		8,214						
G3x03.0	Start	Outboard	1,894	3,329	4,755	7,234	8,290	9,693	10,742	Exceeds MOP	1,721	162.6	11,273										
	Min		1,038	1,791	2,540	3,846	4,403	5,144	5,699		948		5,980										
	End		1,893	3,327	4,753	7,230	8,286	9,689	10,737		1,720		11,268										
	Start	Inboard	1,517	2,700	3,875	5,914	6,781	7,933	8,794		1,374		9,229										
	Min		841	1,462	2,080	3,155	3,614	4,224	4,680		766		4,911										
	End		1,516	2,699	3,873	5,911	6,778	7,929	8,790		1,373		9,225										
G3x03.5	Start	Outboard	2,645	4,601	6,547	9,932	Exceeds MOP	2,409	119.4	11,319													
	Min		1,437	2,462	3,484	5,264		1,314		5,995													
	End		2,643	4,599	6,544	9,928		2,408		11,313													
	Start	Inboard	2,268	3,973	5,668	8,613		2,063		9,819													
	Min		1,240	2,133	3,024	4,575		1,132		5,211													
	End		2,267	3,971	5,665	8,609		2,062		9,814													
G3x04.0	Start	Outboard	3,516	6,074	8,620	Exceeds MOP	3,209	91.4	11,334														
	Min		1,898	3,238	4,574		1,737		6,000														
	End		3,515	6,071	8,616		3,207		11,329														
	Start	Inboard	3,139	5,446	7,741		2,862		10,186														
	Min		1,701	2,910	4,114		1,556		5,399														
	End		3,138	5,443	7,737		2,861		10,181														
G3x04.5	Start	Outboard	4,509	7,748	10,975	Exceeds MOP	4,119	72.3	11,345														
	Min		2,423	4,119	5,812		2,219		6,006														
	End		4,507	7,744	10,970		4,117		11,340														
	Start	Inboard	4,132	7,120	10,096		3,772		10,437														
	Min		2,226	3,791	5,352		2,038		5,531														
	End		4,130	7,116	10,091		3,771		10,432														

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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)																											
G3x202.0	Start	Outboard	1,128	2,145	3,149	4,881	5,614	6,584	7,307	8,027	8,983	9,697	10,647	Exceeds MOP													27.6	1,005	227.3	10,756
	Min		664	1,199	1,729	2,648	3,039	3,558	3,945	4,331	4,845	5,229	5,741		599	5,799														
	End		1,127	2,144	3,148	4,879	5,611	6,581	7,304	8,024	8,979	9,693	10,642		1,004	10,751														
	Start	Inboard	1,128	2,145	3,149	4,881	5,614	6,584	7,307	8,027	8,983	9,697	10,647		1,005	10,756														
	Min		664	1,199	1,729	2,648	3,039	3,558	3,945	4,331	4,845	5,229	5,741		599	5,799														
	End		1,127	2,144	3,148	4,879	5,611	6,581	7,304	8,024	8,979	9,693	10,642		1,004	10,751														
G3x202.5	Start	Outboard	2,149	3,887	5,610	8,594	9,862	Exceeds MOP																	27.6	1,940	133.8	11,024		
	Min		1,209	2,121	3,028	4,605	5,277		1,099	5,893																				
	End		2,148	3,885	5,607	8,590	9,857		1,939	11,019																				
	Start	Inboard	2,149	3,887	5,610	8,594	9,862		1,940	11,024																				
	Min		1,209	2,121	3,028	4,605	5,277		1,099	5,893																				
	End		2,148	3,885	5,607	8,590	9,857		1,939	11,019																				
G3x203.0	Start	Outboard	3,410	6,029	8,631	Exceeds MOP																		27.6	3,095	89.0	11,088			
	Min		1,880	3,253	4,621		1,714	5,915																						
	End		3,409	6,026	8,627		3,093	11,083																						
	Start	Inboard	3,410	6,029	8,631		3,095	11,088																						
	Min		1,880	3,253	4,621		1,714	5,915																						
	End		3,409	6,026	8,627		3,093	11,083																						
G3x203.5	Start	Outboard	4,912	8,573	Exceeds MOP																			27.6	4,472	63.8	11,088			
	Min		2,676	4,595		2,446	5,915																							
	End		4,910	8,569		4,470	11,082																							
	Start	Inboard	4,912	8,573		4,472	11,088																							
	Min		2,676	4,595		2,446	5,915																							
	End		4,910	8,569		4,470	11,082																							
G3x204.0	Start	Outboard	6,656	Exceeds MOP																				27.6	6,071	48.1	11,058			
	Min		3,599		3,293	5,906																								
	End		6,653		6,068	11,053																								
	Start	Inboard	6,656		6,071	11,058																								
	Min		3,599		3,293	5,906																								
	End		6,653		6,068	11,053																								
G3x204.5	Start	Outboard	8,640	Exceeds MOP																				27.6	7,891	37.6	11,010			
	Min		4,648		4,256	5,889																								
	End		8,636		7,888	11,005																								
	Start	Inboard	8,640		7,891	11,010																								
	Min		4,648		4,256	5,889																								
	End		8,636		7,888	11,005																								

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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)																				
G4x02.5	Outboard	Start	1,514	2,720	3,914	5,982	6,860	8,024	8,893	9,760	10,911	11,772	12,919	13,777	14,922	15,781	17,789	18,653	19,519	27.6	344.7	1,368	19,791
		Min	847	1,480	2,110	3,203	3,669	4,288	4,750	5,212	5,826	6,286	6,899	7,358	7,970	8,429	9,502	9,962	10,424			771	10,569
		End	1,513	2,718	3,912	5,977	6,855	8,018	8,887	9,753	10,903	11,764	12,909	13,767	14,911	15,770	17,776	18,639	19,505			1,367	19,776
	Inboard	Start	854	1,620	2,375	3,672	4,221	4,945	5,485	6,021	6,732	7,264	7,970	8,499	9,204	9,733	10,971	11,505	12,041			761	12,210
		Min	502	905	1,305	1,996	2,289	2,678	2,968	3,257	3,642	3,929	4,312	4,598	4,980	5,267	5,937	6,225	6,514			453	6,605
		End	853	1,619	2,373	3,670	4,217	4,942	5,481	6,017	6,728	7,259	7,964	8,493	9,197	9,726	10,963	11,497	12,032			761	12,201
G4x03.0	Outboard	Start	2,280	4,022	5,751	8,750	10,027	11,722	12,988	14,252	15,932	17,189	18,864	20,119	21,791					27.6	267.8	2,070	22,444
		Min	1,255	2,169	3,078	4,660	5,335	6,232	6,904	7,574	8,467	9,135	10,025	10,693	11,582							1,145	11,929
		End	2,279	4,019	5,747	8,744	10,020	11,713	12,979	14,241	15,920	17,177	18,850	20,104	21,776							2,069	22,428
	Inboard	Start	1,620	2,922	4,211	6,440	7,386	8,641	9,578	10,511	11,751	12,678	13,913	14,837	16,070							1,463	16,551
		Min	910	1,593	2,273	3,452	3,954	4,622	5,121	5,618	6,281	6,776	7,437	7,931	8,591							827	8,848
		End	1,619	2,919	4,207	6,435	7,381	8,635	9,571	10,503	11,742	12,669	13,903	14,827	16,059							1,462	16,539
G4x03.5	Outboard	Start	3,193	5,568	7,929	12,031	13,779	16,102	17,839	19,573	21,880									27.6	196.7	2,907	22,651
		Min	1,739	2,984	4,225	6,385	7,307	8,534	9,453	10,370	11,592											1,589	12,000
		End	3,191	5,564	7,923	12,023	13,769	16,091	17,827	19,559	21,864											2,905	22,635
	Inboard	Start	2,533	4,468	6,389	9,722	11,140	13,023	14,431	15,834	17,701											2,300	18,325
		Min	1,394	2,409	3,420	5,178	5,927	6,925	7,671	8,415	9,407											1,272	9,739
		End	2,532	4,465	6,385	9,715	11,132	13,014	14,420	15,823	17,688											2,299	18,312
G4x04.0	Outboard	Start	4,253	7,359	10,449	15,826	18,119	21,168												27.6	150.6	3,879	22,780
		Min	2,300	3,928	5,550	8,378	9,586	11,194														2,104	12,045
		End	4,250	7,354	10,442	15,814	18,106	21,153														3,876	22,764
	Inboard	Start	3,593	6,259	8,910	13,516	15,480	18,089														3,272	19,468
		Min	1,955	3,353	4,745	7,171	8,207	9,585														1,787	10,314
		End	3,591	6,255	8,904	13,507	15,469	18,076														3,270	19,454
G4x04.5	Outboard	Start	5,454	9,383	13,292	20,090														27.6	119.0	4,981	22,795
		Min	2,936	4,996	7,048	10,625																2,688	12,051
		End	5,450	9,377	13,283	20,075																4,977	22,779
	Inboard	Start	4,794	8,284	11,753	17,780																4,374	20,178
		Min	2,591	4,421	6,243	9,417																2,371	10,682
		End	4,791	8,278	11,744	17,768																4,371	20,163
G4x05.0	Outboard	Start	6,807	11,662	16,495															27.6	96.4	6,222	22,844
		Min	3,650	6,195	8,731																	3,344	12,068
		End	6,802	11,654	16,483																	6,218	22,828
	Inboard	Start	6,147	10,562	14,956																	5,615	20,724
		Min	3,305	5,620	7,926																	3,027	10,960
		End	6,142	10,555	14,945																	5,611	20,709
G4x06.0	Outboard	Start	9,951	16,952																27.6	66.9	9,109	22,847
		Min	5,308	8,975																		4,868	12,067
		End	9,944	16,940																		9,103	22,830
	Inboard	Start	9,291	15,852																		8,502	21,375
		Min	4,964	8,400																		4,550	11,297
		End	9,285	15,841																		8,496	21,360

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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)																					
G4x202.5	Start	Outboard	2,367	4,339	6,289	9,654	11,080	12,969	14,378	15,781	17,643	19,036	20,889	Exceeds MOP							27.6	2,129	235.1	21,823
	Min		1,349	2,386	3,415	5,199	5,958	6,966	7,719	8,469	9,468	10,215	11,210		1,224	11,712								
	End		2,366	4,336	6,285	9,647	11,072	12,960	14,368	15,769	17,631	19,022	20,874		2,129	21,808								
	Start	Inboard	2,367	4,339	6,289	9,654	11,080	12,969	14,378	15,781	17,643	19,036	20,889									2,129		21,823
	Min		1,349	2,386	3,415	5,199	5,958	6,966	7,719	8,469	9,468	10,215	11,210		1,224	11,712								
	End		2,366	4,336	6,285	9,647	11,072	12,960	14,368	15,769	17,631	19,022	20,874		2,129	21,808								
G4x203.0	Start	Outboard	3,900	6,943	9,961	15,190	17,413	20,363	Exceeds MOP											27.6	3,533	153.0	22,272	
	Min		2,164	3,762	5,350	8,112	9,289	10,854		1,972	11,869													
	End		3,897	6,938	9,954	15,179	17,400	20,348		3,531	22,257													
	Start	Inboard	3,900	6,943	9,961	15,190	17,413	20,363													3,533		22,272	
	Min		2,164	3,762	5,350	8,112	9,289	10,854		1,972	11,869													
	End		3,897	6,938	9,954	15,179	17,400	20,348		3,531	22,257													
G4x203.5	Start	Outboard	5,727	10,036	14,318	21,753	Exceeds MOP													27.6	5,207	108.3	22,451	
	Min		3,133	5,394	7,644	11,562		2,861	11,931															
	End		5,722	10,029	14,308	21,737		5,204	22,434															
	Start	Inboard	5,727	10,036	14,318	21,753															5,207		22,451	
	Min		3,133	5,394	7,644	11,562		2,861	11,931															
	End		5,722	10,029	14,308	21,737		5,204	22,434															
G4x204.0	Start	Outboard	7,846	13,618	19,359	Exceeds MOP													27.6	7,151	81.0	22,505		
	Min		4,255	7,281	10,296		3,891	11,950																
	End		7,840	13,608	19,346		7,146	22,489																
	Start	Inboard	7,846	13,618	19,359																	7,151	22,505	
	Min		4,255	7,281	10,296		3,891	11,950																
	End		7,840	13,608	19,346		7,146	22,489																
G4x204.5	Start	Outboard	10,248	17,667	Exceeds MOP														27.6	9,355	63.0	22,467		
	Min		5,527	9,416		5,059	11,937																	
	End		10,241	17,655		9,348	22,451																	
	Start	Inboard	10,248	17,667																		9,355	22,467	
	Min		5,527	9,416		5,059	11,937																	
	End		10,241	17,655		9,348	22,451																	
G4x205.0	Start	Outboard	12,953	22,224	Exceeds MOP														27.6	11,837	50.5	22,456		
	Min		6,955	11,814		6,371	11,935																	
	End		12,944	22,209		11,829	22,440																	
	Start	Inboard	12,953	22,224																		11,837	22,456	
	Min		6,955	11,814		6,371	11,935																	
	End		12,944	22,209		11,829	22,440																	
G4x206.0	Start	Outboard	19,242	Exceeds MOP															27.6	17,611	34.5	22,298		
	Min		10,272		9,418	11,872																		
	End		19,229		17,599	22,283																		
	Start	Inboard	19,242																			17,611	22,298	
	Min		10,272		9,418	11,872																		
	End		19,229		17,599	22,283																		

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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)																									
G5x03.5	Outboard	Start	4,067	7,125	10,157	15,406	17,637	20,597	22,807	25,010	27,938	30,130	33,046	35,231	38,144	40,330	45,439	47,635	49,838	27.6	3,698	344.7	50,529					
		Min	2,228	3,834	5,430	8,205	9,388	10,959	12,135	13,308	14,868	16,037	17,594	18,760	20,316	21,483	24,208	25,379	26,552					2,034	26,920			
		End	4,066	7,123	10,153	15,401	17,631	20,590	22,799	25,002	27,929	30,120	33,035	35,220	38,132	40,316	45,424	47,620	49,821							3,697	50,513	
	Inboard	Start	2,551	4,598	6,619	10,099	11,572	13,521	14,973	16,418	18,336	19,769	21,675	23,102	25,004	26,431	29,771	31,210	32,654					27.6	1,305			17,809
		Min	1,435	2,512	3,580	5,430	6,216	7,259	8,038	8,814	9,846	10,619	11,647	12,417	13,444	14,214	16,015	16,789	17,565									
		End	2,550	4,597	6,617	10,096	11,568	13,517	14,968	16,413	18,330	19,762	21,667	23,094	24,995	26,422	29,762	31,200	32,643							2,303	33,097	
G5x04.0	Outboard	Start	5,436	9,439	13,412	20,305	23,238	27,133	30,044	32,947	36,808	39,698	43,546	46,429	50,273	Exceeds MOP	27.6	266.0	51,427									
		Min	2,953	5,053	7,143	10,780	12,332	14,395	15,938	17,479	19,530	21,067	23,113	24,647	26,692					4,954	27,306							
		End	5,434	9,435	13,408	20,298	23,230	27,124	30,034	32,936	36,796	39,685	43,532	46,414	50,257							4,952	51,410					
	Inboard	Start	3,920	6,912	9,874	14,998	17,173	20,057	22,210	24,355	27,205	29,337	32,174	34,300	37,133					27.6	1,970			20,275				
		Min	2,160	3,732	5,293	8,005	9,160	10,694	11,841	12,986	14,508	15,648	17,166	18,304	19,820										3,559	37,983		
		End	3,919	6,909	9,871	14,993	17,168	20,051	22,203	24,347	27,196	29,327	32,164	34,288	37,121							3,558	37,970					
G5x04.5	Outboard	Start	6,995	12,068	17,110	25,867	29,598	34,555	38,261	41,959	46,879	50,562	Exceeds MOP	27.6	210.2	51,838												
		Min	3,777	6,438	9,088	13,703	15,673	18,293	20,255	22,213	24,821	26,774					6,384	27,451										
		End	6,993	12,064	17,104	25,859	29,588	34,543	38,248	41,945	46,863	50,546							6,382			51,822						
	Inboard	Start	5,479	9,541	13,572	20,560	23,533	27,479	30,427	33,367	37,276	40,202					27.6	4,989		41,215								
		Min	2,984	5,117	7,238	10,927	12,501	14,593	16,158	17,720	19,799	21,356									2,728		21,895					
		End	5,477	9,538	13,568	20,553	23,525	27,470	30,417	33,356	37,264	40,188							4,987			41,201						
G5x05.0	Outboard	Start	8,744	15,014	21,250	32,093	36,716	42,861	47,458	52,046	Exceeds MOP	27.6	170.2	52,107														
		Min	4,701	7,988	11,264	16,973	19,411	22,655	25,083	27,509					7,989	27,541												
		End	8,741	15,009	21,243	32,083	36,704	42,847	47,443	52,029									7,986		52,090							
	Inboard	Start	7,227	12,486	17,711	26,785	30,650	35,784	39,622	43,451					27.6	6,593	43,502											
		Min	3,908	6,666	9,414	14,196	16,238	18,953	20,985	23,014								3,576		23,041								
		End	7,224	12,482	17,706	26,776	30,640	35,772	39,609	43,437									6,591		43,488							
G5x06.0	Outboard	Start	12,809	21,852	30,857	46,535	Exceeds MOP	27.6	118.2	52,424																		
		Min	6,845	11,584	16,310	24,552					6,275	27,652																
		End	12,805	21,845	30,847	46,519							11,717	52,407														
	Inboard	Start	11,293	19,325	27,319	41,228					27.6	5,546			24,528													
		Min	6,052	10,263	14,460	21,777										10,322	46,435											
		End	11,289	19,319	27,310	41,214																						
G5x07.0	Outboard	Start	17,633	29,955	42,235	Exceeds MOP	27.6	86.9	52,580																			
		Min	9,386	15,842	22,282					8,611			27,713															
		End	17,627	29,946	42,221									16,146		52,563												
	Inboard	Start	16,116	27,428	38,696					27.6	7,881	25,416																
		Min	8,593	14,520	20,431								14,751		48,171													
		End	16,111	27,419	38,683																							
G5x08.0	Outboard	Start	23,189	39,271	Exceeds MOP	27.6	66.5	52,488																				
		Min	12,315	20,742					11,302				27,676															
		End	23,182	39,258										21,248	52,471													
	Inboard	Start	21,673	36,744					27.6	19,860	49,127																	
		Min	11,522	19,420								10,572	25,918															
		End	21,666	36,731																								

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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)																				
G7x04.0	Start	Outboard	6,646	11,560	16,437	24,895	28,493	33,270	36,839	40,399	45,132	48,675	53,392	56,927	61,638	65,173	73,435	76,985	80,544	27.6	6,053	344.7	81,660
	Min		3,618	6,199	8,766	13,233	15,138	17,671	19,566	21,457	23,975	25,860	28,372	30,255	32,765	34,648	39,046	40,935	42,826		3,307		43,419
	End		6,644	11,557	16,433	24,888	28,486	33,262	36,830	40,389	45,121	48,663	53,379	56,912	61,623	65,157	73,416	76,966	80,523		6,052		81,640
	Start	Inboard	4,288	7,631	10,936	16,643	19,062	22,268	24,658	27,039	30,201	32,565	35,710	38,065	41,205	43,561	49,072	51,444	53,824		3,884		54,571
	Min		2,384	4,143	5,888	8,915	10,203	11,914	13,192	14,467	16,162	17,431	19,120	20,386	22,073	23,340	26,299	27,570	28,844		2,172		29,244
	End		4,287	7,629	10,933	16,639	19,058	22,262	24,652	27,032	30,193	32,556	35,701	38,056	41,195	43,550	49,060	51,431	53,810		3,883		54,557
G7x04.5	Start	Outboard	8,560	14,790	20,980	31,728	36,305	42,387	46,933	51,469	57,503	62,021	68,038	72,546	78,557	83,066	93,603	98,129	Exceeds MOP	7,810	331.8	100,183	
	Min		4,631	7,901	11,157	16,825	19,244	22,462	24,870	27,275	30,477	32,875	36,070	38,466	41,659	44,055	49,649	52,050		4,238		53,140	
	End		8,558	14,786	20,975	31,720	36,296	42,376	46,921	51,456	57,489	62,006	68,020	72,528	78,537	83,046	93,579	98,104		7,808		100,158	
	Start	Inboard	6,203	10,861	15,479	23,476	26,875	31,384	34,752	38,109	42,572	45,911	50,355	53,685	58,124	61,455	69,241	72,588		5,641		74,108	
	Min		3,397	5,845	8,278	12,507	14,310	16,705	18,497	20,285	22,664	24,445	26,818	28,597	30,967	32,746	36,901	38,686		3,103		39,496	
	End		6,201	10,858	15,475	23,470	26,868	31,377	34,743	38,100	42,561	45,899	50,343	53,672	58,110	61,439	69,223	72,569		5,640		74,089	
G7x05.0	Start	Outboard	10,708	18,409	26,066	39,376	45,050	52,591	58,231	63,860	71,350	76,960	84,431	90,031	97,496	Exceeds MOP	9,781	268.8	100,781				
	Min		5,766	9,806	13,831	20,843	23,838	27,822	30,805	33,784	37,751	40,723	44,683	47,652	51,610		5,280		53,352				
	End		10,706	18,404	26,060	39,366	45,039	52,578	58,216	63,844	71,332	76,940	84,410	90,008	97,471		9,779		100,756				
	Start	Inboard	8,351	14,479	20,565	31,124	35,619	41,589	46,050	50,500	56,419	60,849	66,749	71,170	77,063		7,612		79,657				
	Min		4,533	7,750	10,953	16,526	18,903	22,065	24,431	26,794	29,938	32,293	35,431	37,783	40,918		4,145		42,298				
	End		8,349	14,476	20,560	31,117	35,610	41,578	46,038	50,487	56,404	60,834	66,732	71,152	77,043		7,610		79,636				
G7x06.0	Start	Outboard	15,702	26,809	37,867	57,116	65,331	76,256	84,433	92,596	Exceeds MOP									14,366	186.6	101,618	
	Min		8,402	14,226	20,033	30,159	34,487	40,247	44,562	48,872		7,702	53,637										
	End		15,698	26,802	37,858	57,101	65,314	76,237	84,412	92,573		14,362	101,592										
	Start	Inboard	13,344	22,880	32,366	48,864	55,900	65,254	72,252	79,236		12,197	86,953										
	Min		7,168	12,170	17,154	25,841	29,552	34,490	38,188	41,881		6,567	45,963										
	End		13,341	22,874	32,358	48,852	55,886	65,238	72,233	79,216		12,194	86,932										

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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)																									
G7x07.0	Start	Outboard	21,628	36,763	51,843	78,118	89,340	Exceeds MOP											27.6	19,808	137.1	102,109			
	Min		11,525	19,458	27,372	41,181	47,086															10,572	53,809		
	End		21,623	36,754	51,830	78,098	89,317															19,803	102,083		
	Start	Inboard	19,270	32,833	46,341	69,864	79,907																17,638	91,331	
	Min		10,291	17,401	24,493	36,863	42,150																9,436	48,170	
	End		19,265	32,824	46,329	69,847	79,887																17,634	91,308	
G7x08.0	Start	Outboard	28,453	48,206	67,875	102,124	Exceeds MOP												27.6	26,077	105.6	102,709			
	Min		15,124	25,480	35,807	53,820																13,879	54,128		
	End		28,446	48,193	67,858	102,098																	26,071	102,683	
	Start	Inboard	26,096	44,276	62,374	93,872																	23,908	94,410	
	Min		13,891	23,424	32,929	49,502																	12,744	49,785	
	End		26,089	44,265	62,358	93,848																	23,902	94,386	
G7x09.0	Start	Outboard	36,238	61,255	86,182	Exceeds MOP													27.6	33,229	82.9	102,215			
	Min		19,221	32,334	45,416																		17,645	53,838	
	End		36,229	61,240	86,160																			33,221	102,189
	Start	Inboard	33,880	57,326	80,680																		31,060	95,700	
	Min		17,987	30,278	42,537																			16,510	50,429
	End		33,871	57,311	80,660																			31,052	95,676
G7x10.0	Start	Outboard	44,953	75,858	Exceeds MOP														27.6	41,238	67.2	102,355			
	Min		23,804	40,000																				21,858	53,900
	End		44,942	75,839																				41,227	102,329
	Start	Inboard	42,596	71,928																				39,069	97,074
	Min		22,571	37,944																				20,723	51,137
	End		42,585	71,910																				39,059	97,049

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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)																							
G7x204.0	Start	Outboard	10,934	19,191	27,373	41,538	47,556	55,538	61,498	67,438	75,333	81,240	89,102	94,992	Exceeds MOP					27.6	9,937	249.5	98,721
	Min		6,002	10,341	14,654	22,148	25,341	29,585	32,758	35,924	40,137	43,291	47,492	50,641		5,480	52,635						
	End		10,931	19,186	27,367	41,527	47,544	55,524	61,482	67,421	75,314	81,219	89,079	94,968		9,935	98,696						
	Start	Inboard	10,934	19,191	27,373	41,538	47,556	55,538	61,498	67,438	75,333	81,240	89,102	94,992		9,937	98,721						
	Min		6,002	10,341	14,654	22,148	25,341	29,585	32,758	35,924	40,137	43,291	47,492	50,641		5,480	52,635						
	End		10,931	19,186	27,367	41,527	47,544	55,524	61,482	67,421	75,314	81,219	89,079	94,968		9,935	98,696						
G7x204.5	Start	Outboard	14,763	25,651	36,458	55,203	63,180	73,771	81,685	89,578	Exceeds MOP								27.6	13,451	189.6	99,865	
	Min		8,028	13,745	19,435	29,332	33,554	39,167	43,367	47,560		7,340	53,029										
	End		14,760	25,644	36,449	55,190	63,164	73,753	81,665	89,556		13,448	99,840										
	Start	Inboard	14,763	25,651	36,458	55,203	63,180	73,771	81,685	89,578		13,451	99,865										
	Min		8,028	13,745	19,435	29,332	33,554	39,167	43,367	47,560		7,340	53,029										
	End		14,760	25,644	36,449	55,190	63,164	73,753	81,665	89,556		13,448	99,840										
G7x205.0	Start	Outboard	19,059	32,888	46,631	70,500	80,669	94,180	Exceeds MOP										27.6	17,393	149.5	100,580	
	Min		10,299	17,556	24,784	37,369	42,741	49,888		9,426	53,276												
	End		19,054	32,880	46,619	70,483	80,649	94,156		17,389	100,555												
	Start	Inboard	19,059	32,888	46,631	70,500	80,669	94,180		17,393	100,580												
	Min		10,299	17,556	24,784	37,369	42,741	49,888		9,426	53,276												
	End		19,054	32,880	46,619	70,483	80,649	94,156		17,389	100,555												
G7x206.0	Start	Outboard	29,047	49,689	70,233	Exceeds MOP												27.6	26,562	100.4	101,295		
	Min		15,570	26,395	37,187		14,268	53,532															
	End		29,039	49,676	70,215		26,556	101,270															
	Start	Inboard	29,047	49,689	70,233		26,562	101,295															
	Min		15,570	26,395	37,187		14,268	53,532															
	End		29,039	49,676	70,215		26,556	101,270															

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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				
Pressure Torque Output: Start/Min./End (Nm)																						
G7x207.0	Start	Outboard	40,898	69,596	98,184	Exceeds MOP													27.6	37,446	72.3	101,465
	Min		21,816	36,860	51,865															20,008		53,588
	End		40,887	69,578	98,159																	37,437
	Start	Inboard	40,898	69,596	98,184															37,446		101,465
	Min		21,816	36,860	51,865															20,008		53,588
	End		40,887	69,578	98,159																	37,437
G7x208.0	Start	Outboard	54,549	92,482	Exceeds MOP													27.6	49,985	54.7	101,371	
	Min		29,015	48,904															26,624		53,570	
	End		54,536	92,459																	49,973	101,346
	Start	Inboard	54,549	92,482																	49,985	101,371
	Min		29,015	48,904																	26,624	53,570
	End		54,536	92,459																		49,973
G7x209.0	Start	Outboard	70,118	Exceeds MOP														27.6	64,289	42.8	101,156	
	Min		37,207																34,154		53,474	
	End		70,100																		64,273	101,131
	Start	Inboard	70,118																		64,289	101,156
	Min		37,207																		34,154	53,474
	End		70,100																		64,273	101,131
G7x210.0	Start	Outboard	87,549	Exceeds MOP														27.6	80,306	34.5	101,121	
	Min		46,375																42,582		53,485	
	End		87,527																		80,286	101,096
	Start	Inboard	87,549																		80,306	101,121
	Min		46,375																		42,582	53,485
	End		87,527																		80,286	101,096

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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)																				
G8x05.0	Start	Outboard	12,609	21,725	30,788	46,532	53,242	62,157	68,823	75,475	84,326	90,954	99,780	106,395	115,214	121,830	137,288	143,926	Exceeds MOP	27.6	328.5	11,511	145,477
	Min		6,803	11,586	16,351	24,649	28,191	32,904	36,432	39,955	44,646	48,160	52,842	56,352	61,032	64,542	72,739	76,257				6,228	77,079
	End		12,607	21,722	30,783	46,526	53,234	62,147	68,813	75,464	84,314	90,940	99,765	106,380	115,197	121,812	137,267	143,905				11,509	145,455
	Start	Inboard	8,436	14,771	21,052	31,929	36,552	42,685	47,266	51,831	57,901	62,442	68,487	73,016	79,053	83,583	94,172	98,725				7,672	99,789
	Min		4,620	7,948	11,257	17,008	19,459	22,717	25,154	27,585	30,820	33,243	36,470	38,888	42,113	44,531	50,182	52,609				4,219	53,176
	End		8,435	14,769	21,049	31,924	36,546	42,679	47,259	51,824	57,892	62,433	68,477	73,005	79,042	83,571	94,159	98,710				7,671	99,774
G8x06.0	Start	Outboard	18,524	31,676	44,767	67,547	77,266	90,190	99,861	109,516	122,368	131,995	144,820	154,433	Exceeds MOP	27.6	254.0	16,942	163,404				
	Min		9,925	16,821	23,696	35,682	40,804	47,621	52,726	57,825	64,617	69,706	76,488	81,573				9,096	86,319				
	End		18,522	31,672	44,761	67,537	77,255	90,177	99,847	109,500	122,350	131,976	144,798	154,410				16,939	163,380				
	Start	Inboard	14,353	24,724	35,033	52,946	60,579	70,722	78,307	85,876	95,947	103,488	113,532	121,059				13,104	128,083				
	Min		7,742	13,183	18,603	28,043	32,074	37,435	41,449	45,457	50,794	54,792	60,119	64,113				7,088	67,839				
	End		14,350	24,720	35,028	52,938	60,570	70,712	78,296	85,864	95,933	103,473	113,515	121,041				13,102	128,065				
G8x07.0	Start	Outboard	25,544	43,468	61,323	92,426	105,707	123,377	136,605	149,814	Exceeds MOP	27.6	186.6	23,388	164,415								
	Min		13,624	23,019	32,389	48,738	55,727	65,033	72,004	78,969				12,495	86,670								
	End		25,540	43,461	61,314	92,412	105,692	123,359	136,585	149,792				23,385	164,391								
	Start	Inboard	21,372	36,514	51,587	77,822	89,018	103,906	115,047	126,171				19,550	138,463								
	Min		11,441	19,380	27,296	41,097	46,996	54,846	60,726	66,599				10,487	73,092								
	End		21,368	36,508	51,580	77,811	89,004	103,891	115,030	126,152				19,547	138,442								
G8x08.0	Start	Outboard	33,629	57,023	80,315	120,863	138,169	161,187	Exceeds MOP	27.6	142.9	30,815	164,520										
	Min		17,887	30,151	42,380	63,707	72,822	84,955				16,413	86,713										
	End		33,624	57,014	80,303	120,845	138,149	161,163				30,810	164,496										
	Start	Inboard	29,458	50,070	70,581	106,262	121,482	141,719				26,977	144,648										
	Min		15,705	26,514	37,288	56,068	64,092	74,770				14,405	76,317										
	End		29,453	50,062	70,570	106,246	121,464	141,698				26,973	144,627										
G8x09.0	Start	Outboard	42,851	72,481	102,000	153,423	Exceeds MOP	27.6	112.9	39,287	164,994												
	Min		22,739	38,269	53,761	80,788				20,873	86,876												
	End		42,844	72,471	101,985	153,401				39,281	164,970												
	Start	Inboard	38,679	65,528	92,266	138,822				35,449	149,294												
	Min		20,556	34,632	48,668	73,149				18,865	78,663												
	End		38,673	65,519	92,253	138,802				35,444	149,273												
G8x10.0	Start	Outboard	53,175	89,779	126,261	Exceeds MOP	27.6	91.4	48,774	165,175													
	Min		28,168	47,349	66,488				25,863	86,924													
	End		53,167	89,766	126,242				48,767	165,150													
	Start	Inboard	49,003	82,825	116,525				44,935	152,463													
	Min		25,985	43,711	61,394				23,855	80,273													
	End		48,996	82,813	116,508				44,929	152,440													
G8x12.0	Start	Outboard	77,079	129,779	Exceeds MOP	27.6	63.5	70,741	165,248														
	Min		40,739	68,356				37,420	86,962														
	End		77,067	129,760				70,731	165,224														
	Start	Inboard	72,907	122,826				66,904	156,418														
	Min		38,556	64,719				35,412	82,342														
	End		72,896	122,808				66,894	156,395														

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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)																								
G8x205.0	Start	Outboard	21,045	36,497	51,840	78,461	89,793	104,842	116,089	127,306	142,227	153,395	Exceeds MOP									27.6	19,183	215.5	161,205		
	Min		11,423	19,535	27,608	41,657	47,651	55,622	61,586	67,540	75,466	81,403														10,447	85,556
	End		21,042	36,491	51,832	78,450	89,780	104,826	116,072	127,288	142,206	153,373															19,180
	Start	Inboard	21,045	36,497	51,840	78,461	89,793	104,842	116,089	127,306	142,227	153,395														19,183	161,205
	Min		11,423	19,535	27,608	41,657	47,651	55,622	61,586	67,540	75,466	81,403														10,447	85,556
	End		21,042	36,491	51,832	78,450	89,780	104,826	116,072	127,288	142,206	153,373															19,180
G8x206.0	Start	Outboard	32,877	56,400	79,800	120,493	137,845	160,913	Exceeds MOP													27.6	30,045	141.9	163,101		
	Min		17,667	30,004	42,299	63,725	72,877	85,056																		16,183	86,212
	End		32,872	56,392	79,789	120,475	137,825	160,889																			30,041
	Start	Inboard	32,877	56,400	79,800	120,493	137,845	160,913																		30,045	163,101
	Min		17,667	30,004	42,299	63,725	72,877	85,056																		16,183	86,212
	End		32,872	56,392	79,789	120,475	137,825	160,889																			30,041
G8x207.0	Start	Outboard	46,916	79,982	112,911	Exceeds MOP																27.6	42,938	101.1	163,876		
	Min		25,065	42,399	59,685																					22,981	86,481
	End		46,909	79,970	112,894																						42,931
	Start	Inboard	46,916	79,982	112,911																					42,938	163,876
	Min		25,065	42,399	59,685																					22,981	86,481
	End		46,909	79,970	112,894																						42,931
G8x208.0	Start	Outboard	63,087	107,092	150,895	Exceeds MOP																27.6	57,792	75.9	163,782		
	Min		33,592	56,665	79,668																					30,818	86,442
	End		63,078	107,077	150,873																						57,783
	Start	Inboard	63,087	107,092	150,895																					57,792	163,782
	Min		33,592	56,665	79,668																					30,818	86,442
	End		63,078	107,077	150,873																						57,783
G8x209.0	Start	Outboard	81,529	138,010	Exceeds MOP																	27.6	74,736	59.2	163,914		
	Min		43,295	72,901																						39,737	86,493
	End		81,517	137,989																							74,725
	Start	Inboard	81,529	138,010																						74,736	163,914
	Min		43,295	72,901																						39,737	86,493
	End		81,517	137,989																							74,725
G8x210.0	Start	Outboard	102,178	Exceeds MOP																		27.6	93,709	47.5	163,815		
	Min		54,153																							49,718	86,452
	End		102,163																								93,696
	Start	Inboard	102,178																							93,709	163,815
	Min		54,153																							49,718	86,452
	End		102,163																								93,696
G8x212.0	Start	Outboard	149,986	Exceeds MOP																		27.6	137,645	32.6	163,348		
	Min		79,295																							72,832	86,294
	End		149,964																								137,625
	Start	Inboard	149,986																							137,645	163,348
	Min		79,295																							72,832	86,294
	End		149,964																								137,625

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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)																				
G10x06.0	Start	Outboard	24,234	41,505	58,691	88,586	101,338	118,293	130,978	143,640	160,494	173,118	189,934	202,539	219,343	231,948	261,393	274,034	286,694	27.6	344.7	22,156	290,665
	Min		13,005	22,063	31,092	46,830	53,554	62,502	69,203	75,895	84,808	91,488	100,387	107,060	115,956	122,628	138,209	144,894	151,586			11,915	153,684
	End		24,229	41,496	58,678	88,567	101,316	118,267	130,949	143,609	160,459	173,080	189,892	202,494	219,295	231,898	261,336	273,974	286,631			22,151	290,602
	Start	Inboard	16,580	28,748	40,831	61,796	70,721	82,573	91,431	100,266	112,017	120,814	132,527	141,305	153,006	161,784	182,299	191,113	199,946			15,114	202,718
	Min		8,999	15,388	21,747	32,812	37,533	43,811	48,509	53,199	59,442	64,119	70,348	75,018	81,244	85,914	96,822	101,505	106,194			8,231	107,664
	End		16,576	28,742	40,822	61,783	70,706	82,555	91,411	100,244	111,993	120,788	132,498	141,274	152,972	161,749	182,259	191,072	199,902			15,110	202,674
G10x07.0	Start	Outboard	33,456	56,995	80,440	121,269	138,700	161,889	179,246	196,578	219,656	236,945	259,980	277,248	300,270	317,539	Exceeds MOP	27.6	284.4	30,624	328,365		
	Min		17,865	30,206	42,514	63,983	73,161	85,380	94,532	103,675	115,855	124,983	137,149	146,270	158,430	167,551				16,382	173,269		
	End		33,449	56,983	80,422	121,243	138,670	161,854	179,207	196,535	219,608	236,893	259,923	277,188	300,204	317,470				30,618	328,293		
	Start	Inboard	25,801	44,236	62,578	94,476	108,080	126,165	139,694	153,199	171,173	184,635	202,566	216,007	233,925	247,367				23,582	255,794		
	Min		13,859	23,530	33,167	49,964	57,139	66,687	73,836	80,976	90,486	97,611	107,106	114,224	123,714	130,832				12,696	135,295		
	End		25,795	44,227	62,564	94,455	108,056	126,137	139,664	153,165	171,136	184,594	202,522	215,960	233,874	247,313				23,576	255,738		
G10x08.0	Start	Outboard	44,077	74,802	105,388	158,625	181,344	211,558	234,169	256,743	286,795	309,307	Exceeds MOP	27.6	217.7	40,381	328,354						
	Min		23,466	39,578	55,641	83,651	95,621	111,555	123,487	135,407	151,284	163,182				21,529	173,252						
	End		44,068	74,785	105,365	158,591	181,304	211,512	234,118	256,687	286,733	309,240				40,372	328,282						
	Start	Inboard	36,423	62,045	87,528	131,836	150,727	175,838	194,622	213,369	238,318	257,003				33,339	272,809						
	Min		19,461	32,902	46,296	69,633	79,600	92,864	102,794	112,711	125,918	135,813				17,845	144,187						
	End		36,415	62,031	87,509	131,807	150,694	175,800	194,579	213,322	238,266	256,947				33,331	272,750						
G10x09.0	Start	Outboard	56,191	95,109	133,876	201,399	230,230	268,587	297,300	325,973	Exceeds MOP	27.6	172.0	51,510	329,793								
	Min		29,841	50,243	70,593	106,094	121,271	141,478	156,613	171,735				27,389	173,751								
	End		56,179	95,088	133,847	201,355	230,180	268,529	297,235	325,901				51,499	329,721								
	Start	Inboard	48,536	82,350	116,014	174,606	199,610	232,863	257,748	282,593				44,467	285,903								
	Min		25,835	43,567	61,246	92,074	105,248	122,784	135,917	149,036				23,704	150,785								
	End		48,525	82,332	115,988	174,568	199,566	232,812	257,692	282,532				44,457	285,841								
G10x10.0	Start	Outboard	69,754	117,832	165,746	249,247	284,916	Exceeds MOP	27.6	139.3	63,973	330,722											
	Min		36,974	62,173	87,315	131,192	149,955				33,946	174,067											
	End		69,739	117,807	165,710	249,192	284,853				63,959	330,650											
	Start	Inboard	62,099	105,074	147,884	222,454	254,295				56,930	295,177											
	Min		32,969	55,497	77,968	117,172	133,932				30,261	155,467											
	End		62,085	105,051	147,851	222,405	254,239				56,917	295,112											
G10x12.0	Start	Outboard	101,155	170,379	239,360	Exceeds MOP	27.6	96.7	92,831	331,111													
	Min		53,490	89,774	125,973				49,130	174,180													
	End		101,133	170,342	239,307				92,810	331,039													
	Start	Inboard	93,501	157,622	221,500				85,789	306,439													
	Min		49,485	83,099	116,627				45,445	161,270													
	End		93,480	157,588	221,451				85,770	306,372													
G10x14.0	Start	Outboard	138,414	232,710	326,724	Exceeds MOP	27.6	71.1	127,078	331,888													
	Min		73,061	122,473	171,787				67,125	174,497													
	End		138,384	232,659	326,653				127,051	331,815													
	Start	Inboard	130,759	219,951	308,862				120,036	313,745													
	Min		69,055	115,797	162,441				63,439	165,003													
	End		130,730	219,903	308,795				120,009	313,676													

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)																																													
G10x206.0	Start	Outboard	40,814	70,253	99,522	150,383	172,059	200,866	222,408	243,906	272,512	293,932	322,461	Exceeds MOP											27.6	37,269	226.8	325,027																				
	Min		22,004	37,451	52,839	79,642	91,087	106,313	117,712	129,094	144,251	155,606	170,736															20,146	172,097																			
	End		40,805	70,238	99,500	150,350	172,021	200,822	222,360	243,853	272,452	293,868	322,390																	37,261	324,956																	
	Start	Inboard	40,814	70,253	99,522	150,383	172,059	200,866	222,408	243,906	272,512	293,932	322,461																	37,269	325,027																	
	Min		22,004	37,451	52,839	79,642	91,087	106,313	117,712	129,094	144,251	155,606	170,736																		20,146	172,097																
	End		40,805	70,238	99,500	150,350	172,021	200,822	222,360	243,853	272,452	293,868	322,390																			37,261	324,956															
G10x207.0	Start	Outboard	59,257	101,232	143,017	215,745	246,780	288,054	318,941	Exceeds MOP																			54,206	327,785																		
	Min		31,724	53,736	75,681	113,947	130,300	152,067	168,368																							29,078	173,038															
	End		59,244	101,209	142,986	215,698	246,726	287,991	318,871																								54,194	327,714														
	Start	Inboard	59,257	101,232	143,017	215,745	246,780	288,054	318,941																								54,206	327,785														
	Min		31,724	53,736	75,681	113,947	130,300	152,067	168,368																									29,078	173,038													
	End		59,244	101,209	142,986	215,698	246,726	287,991	318,871																									54,194	327,714													
G10x208.0	Start	Outboard	80,501	136,846	192,917	290,461	Exceeds MOP																										73,719	328,469														
	Min		42,927	72,480	101,937	153,284																													39,374	173,322												
	End		80,483	136,816	192,874	290,398																														73,703	328,397											
	Start	Inboard	80,501	136,846	192,917	290,461																														73,719	328,469											
	Min		42,927	72,480	101,937	153,284																															39,374	173,322										
	End		80,483	136,816	192,874	290,398																															73,703	328,397										
G10x209.0	Start	Outboard	104,727	177,459	249,889	Exceeds MOP																														95,977	329,249											
	Min		55,676	93,811	131,839																																	51,092	173,562									
	End		104,704	177,421	249,835																																		95,956	329,177								
	Start	Inboard	104,727	177,459	249,889																																		95,977	329,249								
	Min		55,676	93,811	131,839																																			51,092	173,562							
	End		104,704	177,421	249,835																																			95,956	329,177							
G10x210.0	Start	Outboard	131,853	222,906	313,630	Exceeds MOP																																	120,903	329,927								
	Min		69,943	117,671	165,283																																			64,207	173,842							
	End		131,824	222,858	313,561																																				120,876	329,855						
	Start	Inboard	131,853	222,906	313,630																																				120,903	329,927						
	Min		69,943	117,671	165,283																																					64,207	173,842					
	End		131,824	222,858	313,561																																					120,876	329,855					
G10x212.0	Start	Outboard	194,656	328,001	Exceeds MOP																																				178,619	329,332						
	Min		102,975	172,873																																						94,575	173,571					
	End		194,613	327,930																																							178,580	329,260				
	Start	Inboard	194,656	328,001																																							178,619	329,332				
	Min		102,975	172,873																																							94,575	173,571				
	End		194,613	327,930																																							178,580	329,260				
G10x214.0	Start	Outboard	269,173	Exceeds MOP																																								247,114	328,871			
	Min		142,117																																									130,564	173,389			
	End		269,114																																										247,060	328,799		
	Start	Inboard	269,173																																												247,114	328,871
	Min		142,117																																											130,564	173,389	
	End		269,114																																											247,060	328,799	

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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)																							
G13x08.0	Start	Outboard	56,486	95,970	135,240	203,515	232,624	271,317	300,259	329,145	367,587	396,376	434,722	463,463	501,779	530,523	597,671	626,504	Exceeds MOP	27.6	338.7	51,733	652,878
	Min		30,106	50,814	71,448	107,400	122,755	143,187	158,484	173,761	194,105	209,349	229,660	244,887	265,188	280,415	315,974	331,233				27,616	345,184
	End		56,450	95,908	135,153	203,383	232,473	271,141	300,065	328,932	367,348	396,119	434,440	463,163	501,454	530,180	597,284	626,098				51,699	652,455
	Start	Inboard	41,565	71,102	100,425	151,292	172,941	201,687	223,168	244,593	273,088	294,416	322,815	344,097	372,465	393,749	443,489	464,861				38,006	484,422
	Min		22,301	37,805	53,235	80,081	91,534	106,762	118,156	129,531	144,672	156,013	171,120	182,445	197,542	208,867	235,320	246,676				20,435	257,062
	End		41,538	71,056	100,360	151,194	172,829	201,556	223,024	244,435	272,911	294,226	322,606	343,874	372,224	393,494	443,202	464,560				37,981	484,108
G13x09.0	Start	Outboard	72,074	122,102	171,898	258,556	295,531	344,702	381,496	418,229	467,128	503,757	552,552	589,129	637,892	Exceeds MOP	27.6	267.6	66,054	656,424			
	Min		38,307	64,535	90,682	136,270	155,751	181,680	201,098	220,494	246,328	265,688	291,486	310,828	336,615				35,154	346,414			
	End		72,027	122,022	171,787	258,389	295,340	344,479	381,249	417,959	466,826	503,430	552,194	588,747	637,479				66,011	655,999			
	Start	Inboard	57,153	97,233	137,083	206,333	235,848	275,072	304,405	333,678	372,630	401,798	440,646	469,762	508,578				52,327	523,330			
	Min		30,502	51,526	72,470	108,952	124,530	145,256	160,771	176,264	196,895	212,352	232,946	248,386	268,969				27,973	276,791			
	End		57,116	97,171	136,994	206,200	235,695	274,894	304,208	333,462	372,388	401,537	440,360	469,458	508,248				52,293	522,991			
G13x10.0	Start	Outboard	89,527	151,342	212,908	320,126	365,900	426,793	472,372	517,885	578,484	623,885	Exceeds MOP	27.6	216.8	82,091	659,578						
	Min		47,483	79,882	112,194	168,557	192,651	224,728	248,754	272,757	304,731	328,695				43,589	347,539						
	End		89,469	151,244	212,771	319,919	365,663	426,516	472,066	517,549	578,110	623,481				82,038	659,150						
	Start	Inboard	74,605	126,472	178,090	267,899	306,212	357,157	395,275	433,327	483,978	521,918				68,363	551,741						
	Min		39,677	66,872	93,980	141,236	161,427	188,300	208,423	228,523	255,294	275,355				36,408	291,128						
	End		74,556	126,390	177,975	267,726	306,014	356,925	395,019	433,046	483,665	521,580				68,319	551,384						
G13x12.0	Start	Outboard	129,934	218,959	307,635	462,080	528,023	615,751	Exceeds MOP	27.6	150.5	119,225	661,729										
	Min		68,730	115,388	161,923	243,104	277,810	324,015				63,122	348,245										
	End		129,849	218,817	307,435	461,781	527,681	615,352				119,148	661,301										
	Start	Inboard	115,013	194,091	272,819	409,857	468,340	546,120				105,498	586,877										
	Min		60,924	102,379	143,711	215,786	246,588	287,590				55,941	309,089										
	End		114,938	193,965	272,643	409,592	468,036	545,767				105,430	586,496										
G13x14.0	Start	Outboard	177,878	299,166	420,056	630,777	Exceeds MOP	27.6	110.6	163,295	664,405												
	Min		93,906	157,452	220,860	331,532				86,271	349,209												
	End		177,763	298,972	419,784	630,368				163,190	663,975												
	Start	Inboard	162,958	274,298	385,240	578,554				149,568	609,397												
	Min		86,101	144,444	202,648	304,214				79,090	320,434												
	End		162,852	274,120	384,991	578,179				149,471	609,002												
G13x16.0	Start	Outboard	233,284	391,806	549,884	Exceeds MOP	27.6	84.7	214,229	665,814													
	Min		122,985	206,022	288,903				113,010	349,731													
	End		233,132	391,552	549,528				214,090	665,383													
	Start	Inboard	218,363	366,938	515,069				200,502	623,687													
	Min		115,180	193,013	270,691				105,829	327,694													
	End		218,221	366,701	514,735				200,372	623,283													
G13x18.0	Start	Outboard	296,149	496,881	Exceeds MOP	27.6	66.9	272,026	666,114														
	Min		155,967	261,095				143,339	349,794														
	End		295,957	496,559				271,850	665,682														
	Start	Inboard	281,228	472,013				258,299	632,840														
	Min		148,162	248,086				136,158	332,388														
	End		281,046	471,707				258,131	632,430														

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)																																				
G01x01.5-SR4	Start	1,227																	Please consult factory	486	623	725	965	1,069	1,173	230.8	423	344.7	1,206									
	Min.	610																247		323	380	512	568	625	213		643											
	End	1,043																		303	439	541	781	885	989		240		1,022									
G01x01.5-SR5	Start	1,149																	Please consult factory	684	786	923	1,025	1,265	1,369	1,473	217.2	631	344.7	1,506								
	Min.	505																279		339	416	473	606	663	721	226		738										
	End	743																		279	381	518	620	860	963	1,067		226		1,100								
G01x01.5-SR6	Start	824																	Please consult factory	527	666	769	906	1,008	1,144	1,247	1,487	1,590	1,695	160.8	463	344.7	1,728					
	Min.	364																220		298	355	431	488	563	620	752	809	866	162		884							
	End	522																		226	364	467	603	706	842	944	1,184	1,288	1,392		162		1,425					
G01x01.5-SR7	Start	593																	Please consult factory	481	587	691	829	932	1,069	1,171	1,308	1,410	1,650	1,754	1,858	120.7	345	344.7	1,891			
	Min.	262																212		271	328	405	461	537	593	668	725	857	913	970	110		988					
	End	358																		247	352	456	594	697	834	936	1,073	1,175	1,415	1,518	1,623		110		1,655			
G01x01.5-SR8	Start	419																	Please consult factory	352	460	602	707	811	950	1,053	1,189	1,292	1,428	1,531	1,771	1,874	1,979	90.4	247	344.7	2,012	
	Min.	186																156		215	292	350	407	483	540	615	671	746	803	934	991	1,048	66		1,066			
	End	238																		172	279	421	526	630	768	871	1,008	1,110	1,247	1,349	1,589	1,692	1,797		66		1,829	
G01x01.5-SR9	Start	286																	Please consult factory	186	442	549	691	796	901	1,039	1,142	1,279	1,381	1,517	1,620	1,860	1,964	2,068	67.4	166	344.7	2,101
	Min.	128																49		216	275	352	409	466	542	598	673	730	805	861	993	1,049	1,106	29		1,124		
	End	149																		49	304	412	553	658	763	901	1,004	1,140	1,243	1,379	1,481	1,721	1,825	1,929		29		1,962

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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)																																						
G01x01.7-SR1	Start	1,996																	Please consult factory	1,020	1,370	1,520	Exceeds MOP	264.2	913	332.3	1,594											
	Min.	949																465		656	737	406			777													
	End	1,572																		597	946	1,097			489		1,170											
G01x01.7-SR2	Start	1,659																	Please consult factory	721	871	1,070	Exceeds MOP	222.1	692	332.3	1,793											
	Min.	811																340		421	529	610			800		881	324	920									
	End	1,373																		436	585	784			933		1,283	1,433	407	1,507								
G01x01.7-SR3	Start	1,439																	Please consult factory	704	903	1,053	Exceeds MOP	194.5	599	332.3	1,975											
	Min.	706																339		447	528	636			717		906	987	281	1,026								
	End	1,191																		457	656	806			1,005		1,154	1,503	1,654	352	1,727							
G01x01.7-SR4	Start	1,212																	Please consult factory	517	717	867	Exceeds MOP	166.2	478	332.3	2,138											
	Min.	605																253		362	443	551			632		739	820	1,009	1,090	232	1,129						
	End	1,028																		333	534	684			883		1,032	1,231	1,380	1,730	1,880	295	1,953					
G01x01.7-SR5	Start	1,133																	Please consult factory	817	1,017	1,167	Exceeds MOP	156.3	679	332.3	2,439											
	Min.	500																344		455	537	645			727		835	916	1,105	1,186	267	1,226						
	End	728																		412	612	762			961		1,111	1,309	1,459	1,808	1,959	274	2,032					
G01x01.7-SR6	Start	809																	Please consult factory	531	735	887	Exceeds MOP	115.7	487	332.3	2,660											
	Min.	359																217		329	411	493			602		683	791	872	980	1,061	1,249	1,331	185	1,370			
	End	507																		229	433	585			736		937	1,086	1,286	1,435	1,634	1,783	2,133	2,283	185	2,356		
G01x01.7-SR7	Start	578																	Please consult factory	540	695	899	Exceeds MOP	86.9	353	332.3	2,824											
	Min.	256																242		325	435	517			599		707	788	896	976	1,084	1,165	1,353	1,434	119	1,474		
	End	343																		306	460	664			816		967	1,167	1,317	1,516	1,666	1,865	2,014	2,363	2,514	119	2,587	
G01x01.7-SR8	Start	404																	Please consult factory	296	661	815	Exceeds MOP	65.1	245	332.3	2,944											
	Min.	180																116		321	404	514			595		677	785	866	973	1,054	1,162	1,242	1,431	1,512	64	1,551	
	End	223																		116	480	634			838		990	1,141	1,341	1,491	1,691	1,840	2,039	2,188	2,537	2,688	64	2,761
G01x01.7-SR9	Start	271																	Please consult factory	174	386	750	Exceeds MOP	48.5	158	332.3	3,033											
	Min.	123																37		186	380	463			572		654	735	843	924	1,032	1,112	1,220	1,301	1,489	1,570	21	1,610
	End	134																		37	248	612			766		970	1,122	1,273	1,474	1,624	1,823	1,972	2,171	2,320	2,670	2,820	21

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)																																								
G01x02.0-SR0	Start	2,659																	Please consult factory	1,455	Exceeds MOP	239.7	1,450	254.5	1,666															
	Min.	1,203																		598										715										
	End	1,898																								695						905								
G01x02.0-SR1	Start	1,984																	Please consult factory	1,065	1,284	1,575	1,793	Exceeds MOP	181.7	944	254.5	2,004												
	Min.	945																		483	603	761	879										993							
	End	1,560																		642	860	1,151	1,369											1,579						
G01x02.0-SR2	Start	1,647																	Please consult factory	750	971	1,264	1,483	1,774	1,992	Exceeds MOP	152.7	716	254.5	2,203										
	Min.	807																		351	470	629	747	904	1,022										1,136					
	End	1,361																		465	686	978	1,197	1,488	1,705											1,916				
G01x02.0-SR3	Start	1,426																	Please consult factory	711	932	1,153	1,446	1,665	1,956	2,174	Exceeds MOP	133.7	617	254.5	2,385									
	Min.	702																		338	458	577	735	853	1,010	1,128										1,241				
	End	1,179																		464	686	906	1,199	1,417	1,708	1,926											2,136			
G01x02.0-SR4	Start	1,200																	Please consult factory	577	874	1,096	1,317	1,610	1,828	2,120	2,338	Exceeds MOP	114.2	490	254.5	2,548								
	Min.	600																		283	443	562	680	838	956	1,113	1,230										1,344			
	End	1,016																		393	691	912	1,132	1,425	1,644	1,935	2,152											2,363		
G01x02.0-SR5	Start	1,121																	Please consult factory	877	1,174	1,396	1,617	1,910	2,129	2,420	2,638	Exceeds MOP	107.5	690	254.5	2,848								
	Min.	495																		375	537	656	776	934	1,052	1,209	1,327										1,441			
	End	716																		472	769	990	1,211	1,504	1,722	2,013	2,231											2,441		
G01x02.0-SR6	Start	796																	Please consult factory	874	1,099	1,396	1,618	1,838	2,131	2,350	2,641	2,859	Exceeds MOP	79.6	490	254.5	3,070							
	Min.	354																		402	523	683	802	921	1,079	1,197	1,354	1,471										1,585		
	End	494																		572	796	1,093	1,315	1,535	1,828	2,047	2,337	2,555											2,766	
G01x02.0-SR7	Start	566																	Please consult factory	507	1,037	1,262	1,560	1,781	2,002	2,295	2,514	2,805	3,023	Exceeds MOP	59.7	348	254.5	3,234						
	Min.	252																		223	508	628	788	907	1,025	1,183	1,301	1,458	1,575										1,689	
	End	331																		272	802	1,027	1,324	1,546	1,766	2,059	2,277	2,568	2,786											2,996
G01x02.0-SR8	Start	391																	Please consult factory	319	627	1,158	1,382	1,680	1,902	2,122	2,415	2,634	2,925	3,143	Exceeds MOP	44.7	237	254.5	3,354					
	Min.	176																		138	303	586	706	865	984	1,103	1,260	1,378	1,535	1,653										1,766
	End	211																		138	446	976	1,201	1,498	1,720	1,940	2,233	2,451	2,742	2,960										
G01x02.0-SR9	Start	259	174	408	716	1,247	1,472	1,769	1,991	2,211	2,504	2,723	3,014	3,232																										
	Min.	119	37	199	362	645	765	924	1,043	1,161	1,319	1,436	1,593	1,711																										
	End	122	37	271	578	1,109	1,333	1,630	1,852	2,072	2,365	2,584	2,875	3,092																										

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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)																								
G01x02.2-SR0	Start	2,648																	177.0	1,511	201.1	1,996				
	Min.	1,199								Please consult factory	1,773									618		883				
	End	1,887									761									752		1,236				
G01x02.2-SR1	Start	1,974																	134.1	980	201.1	2,335				
	Min.	941								Please consult factory	1,100	1,405	1,708	2,112						430		1,158				
	End	1,549									495	659	822	1,039						557		1,910				
G01x02.2-SR2	Start	1,637																	112.8	744	201.1	2,534				
	Min.	803								Please consult factory	891	1,299	1,604	1,907	2,310							342	1,301			
	End	1,351									421	640	803	965	1,181							458	2,247			
G01x02.2-SR3	Start	1,416																	98.7	636	201.1	2,716				
	Min.	698								Please consult factory	765	1,073	1,481	1,786	2,089	2,493							294	1,406		
	End	1,169									364	528	746	909	1,071	1,287							389	2,467		
G01x02.2-SR4	Start	1,189																	84.4	503	201.1	2,879				
	Min.	597								Please consult factory	929	1,237	1,645	1,950	2,253	2,656							241	1,509		
	End	1,005									468	632	849	1,012	1,174	1,390							320	2,694		
G01x02.2-SR5	Start	1,111																	79.4	699	201.1	3,179				
	Min.	492								Please consult factory	1,229	1,537	1,945	2,250	2,553	2,956							275	1,606		
	End	706									562	727	945	1,108	1,270	1,486							295	2,772		
G01x02.2-SR6	Start	786																	58.8	491	201.1	3,401				
	Min.	351								Please consult factory	725	1,451	1,759	2,167	2,471	2,775	3,178							189	1,750	
	End	484									321	708	872	1,090	1,253	1,415	1,630							189	3,096	
G01x02.2-SR7	Start	555																	44.1	344	201.1	3,565				
	Min.	248								Please consult factory	469	889	1,614	1,922	2,330	2,635	2,938	3,341							110	1,854
	End	321									203	428	813	977	1,194	1,357	1,519	1,734							110	3,327
G01x02.2-SR8	Start	381	272	589	1,009	1,735	2,042	2,451	2,755	3,059	3,462								33.0	229	201.1	3,685				
	Min.	172	91	284	506	891	1,054	1,272	1,434	1,596	1,812									49		1,931				
	End	201	91	409	828	1,553	1,860	2,268	2,572	2,875	3,278									49		3,501				
G01x02.2-SR9	Start	249	361	679	1,098	1,824	2,132	2,540	2,844	3,148	3,551								24.6	139	201.1	3,774				
	Min.	111	175	343	565	949	1,113	1,330	1,492	1,654	1,870									2		1,989				
	End	111	224	541	960	1,685	1,993	2,400	2,705	3,008	3,410									2		3,633				

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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)																							
G01x03.5-SR0	Start	2,594	Please consult factory	1,922	Exceeds MOP														63.9	1,564	83.1	2,689	
	Min.	1,180		829																		636	1,237
	End	1,833		1,162																			804
G01x03.5-SR1	Start	1,920	Please consult factory	1,084	Exceeds MOP														48.4	990	83.1	3,027	
	Min.	922		483		1,105																433	1,509
	End	1,496		661		1,836																	567
G01x03.5-SR2	Start	1,583	Please consult factory	1,283	Exceeds MOP														40.7	734	83.1	3,226	
	Min.	784		629		1,247																339	1,651
	End	1,297		997		2,172																	449
G01x03.5-SR3	Start	1,362	Please consult factory	1,465	Exceeds MOP														35.7	621	83.1	3,408	
	Min.	679		735		1,353																290	1,757
	End	1,115		1,218		2,393																	374
G01x03.5-SR4	Start	1,136	743	1,629	2,805	Exceeds MOP													30.5	477	83.1	3,572	
	Min.	578	372	838	1,456															232		1,859	
	End	952	559	1,444	2,619																	293	3,386

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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)																														
G2x01.7-SR2	Start	2,987																	Please consult factory	1,412	1,595	323.2	1,390	344.7	1,653							
	Min.	1,408																623		723	611		755									
	End	2,331																757		940	735		998									
G2x01.7-SR3	Start	2,670																	Please consult factory	1,486	1,668	1,851	290.4	1,249	344.7	1,909						
	Min.	1,259																679		778	877	548		908								
	End	2,075																892		1,074	1,257	655		1,315								
G2x01.7-SR4	Start	2,376																	Please consult factory	1,165	1,346	1,769	1,951	2,134	260.0	1,165	344.7	2,192				
	Min.	1,107																501		601	832	931	1,030	501		1,061						
	End	1,793																583		764	1,187	1,369	1,552	583		1,609						
G2x02.0-SR1	Start	3,454																	Please consult factory	1,784	2,048	2,666	2,932	Exceeds MOP	256.4	1,721	339.3	3,187				
	Min.	1,607																772		917	1,254	1,398	737			1,535						
	End	2,626																958		1,221	1,838	2,104	894			2,359						
G2x02.0-SR2	Start	2,973																	Please consult factory	1,478	1,742	2,094	2,358	2,975	3,241	Exceeds MOP	222.2	1,429	339.3	3,496		
	Min.	1,403																652		797	988	1,132	1,466	1,609	625			1,746				
	End	2,317																823		1,087	1,439	1,702	2,320	2,585	774			2,840				
G2x02.0-SR3	Start	2,655																	Please consult factory	1,382	1,735	1,999	2,350	2,614	3,232	3,498	Exceeds MOP	199.7	1,289	339.3	3,752	
	Min.	1,253																614		806	950	1,141	1,284	1,617	1,761	562			1,898			
	End	2,060																788		1,140	1,404	1,756	2,019	2,636	2,902	695			3,157			
G2x02.0-SR4	Start	2,361																	Please consult factory	1,400	1,665	2,017	2,281	2,633	2,897	3,515	3,781	Exceeds MOP	178.8	1,202	339.3	4,035
	Min.	1,102																623		768	959	1,102	1,293	1,436	1,769	1,912	514			2,049		
	End	1,778																818		1,083	1,435	1,699	2,050	2,314	2,931	3,197	620			3,451		
G2x02.2-SR1	Start	3,442																	Please consult factory	1,818	2,183	2,669	3,033	Exceeds MOP	189.3	1,801	250.6	3,290				
	Min.	1,602																775		974	1,237	1,433	766			1,572						
	End	2,613																991		1,356	1,841	2,205						974	2,462			
G2x02.2-SR2	Start	2,960																	Please consult factory	1,640	2,128	2,493	2,978	3,342	Exceeds MOP	164.1	1,495	250.6	3,599			
	Min.	1,399																727		991	1,188	1,449	1,645	649			1,783					
	End	2,304																985		1,472	1,837	2,322	2,686	840			2,943					
G2x02.2-SR3	Start	2,643																	Please consult factory	1,529	1,896	2,384	2,749	3,235	3,599	Exceeds MOP	147.4	1,342	250.6	3,856		
	Min.	1,249																683		881	1,144	1,340	1,601	1,796	581			1,934				
	End	2,048																935		1,302	1,789	2,154	2,639	3,003	748			3,260				
G2x02.2-SR4	Start	2,348																	Please consult factory	1,443	1,812	2,179	2,667	3,032	3,518	3,881	Exceeds MOP	132.0	1,246	250.6	4,138	
	Min.	1,098																637		836	1,034	1,296	1,492	1,752	1,948	530			2,085			
	End	1,765																861		1,229	1,596	2,084	2,448	2,934	3,297	664			3,554			

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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)																						
G2x02.5-SR1	Start	3,429						Please consult factory	2,118	2,597	3,234	Exceeds MOP								146.5	1,845	193.9	3,358	
	Min.	1,598					929		1,187	1,529	781		1,595											
	End	2,600					1,290		1,769	2,406	1,018		2,530											
G2x02.5-SR2	Start	2,947					Please consult factory	1,946	2,427	2,906	3,543	Exceeds MOP								127.0	1,528	193.9	3,667	
	Min.	1,394						886	1,143	1,400	1,740		660	1,806										
	End	2,291						1,291	1,771	2,250	2,887		873	3,011										
G2x02.5-SR3	Start	2,630					Please consult factory	1,559	2,203	2,683	3,163	3,800	Exceeds MOP							114.1	1,368	193.9	3,924	
	Min.	1,245						694	1,039	1,295	1,551	1,891		591	1,958									
	End	2,035						965	1,608	2,088	2,567	3,204		774	3,328									
G2x02.5-SR4	Start	2,335					Please consult factory	1,357	1,842	2,486	2,966	3,446	4,083	Exceeds MOP							102.1	1,263	193.9	4,207
	Min.	1,093						586	847	1,191	1,447	1,703	2,043		535	2,109								
	End	1,752						774	1,259	1,903	2,383	2,862	3,498		680	3,622								
G2x03.0-SR1	Start	3,402					Please consult factory	2,322	3,069										96.2	1,883	127.2	3,426		
	Min.	1,589						1,031	1,429											795		1,619		
	End	2,574						1,495	2,241											1,056		2,598		
G2x03.0-SR2	Start	2,921					Please consult factory	2,632	3,378										83.3	1,547	127.2	3,735		
	Min.	1,385						1,245	1,640											667		1,830		
	End	2,265						1,976	2,722											893		3,079		
G2x03.0-SR3	Start	2,604					Please consult factory	2,888	3,635										74.9	1,382	127.2	3,992		
	Min.	1,235						1,397	1,792											596		1,981		
	End	2,009						2,293	3,039											788		3,396		
G2x03.0-SR4	Start	2,309					Please consult factory	1,419	3,171	3,917	Exceeds MOP								67.0	1,268	127.2	4,275		
	Min.	1,084						618	1,548	1,943												537	2,132	
	End	1,726						837	2,588	3,333												686	3,690	

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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)																							
G2x03.5-SR1	Start	3,363		Please consult factory	1,984	Exceeds MOP													68.4	1,871	90.5	3,435	
	Min.	1,575			852																	791	1,623
	End	2,535			1,157																		1,044
G2x03.5-SR2	Start	2,882		Please consult factory	2,294	Exceeds MOP													59.3	1,533	90.5	3,745	
	Min.	1,371			1,067																	663	1,834
	End	2,226			1,638																		879
G2x03.5-SR3	Start	2,565		Please consult factory	2,550	Exceeds MOP													53.2	1,355	90.5	4,001	
	Min.	1,222			1,219																	586	1,985
	End	1,970			1,955																		762
G2x03.5-SR4	Start	2,270	Please consult factory	1,410	2,833	Exceeds MOP													47.7	1,246	90.5	4,284	
	Min.	1,070		618	1,371																	530	2,136
	End	1,687		828	2,250																		664
G2x04.0-SR1	Start	3,350		Please consult factory	Exceeds MOP														51.3	1,872	67.8	3,441	
	Min.	1,570																				791	1,624
	End	2,522																					1,045
G2x04.0-SR2	Start	2,869	Please consult factory	2,058	Exceeds MOP														44.4	1,524	67.8	3,751	
	Min.	1,366		942																		658	1,834
	End	2,213		1,403																			869
G2x04.0-SR3	Start	2,551	Please consult factory	2,314	Exceeds MOP														39.9	1,351	67.8	4,007	
	Min.	1,217		1,095																		584	1,986
	End	1,957		1,720																			757
G2x04.0-SR4	Start	2,257	Please consult factory	2,597	Exceeds MOP														35.7	1,232	67.8	4,290	
	Min.	1,066		1,247																		524	2,137
	End	1,674		2,014																			650

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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)																										
G3x02.0-SR4	Start	4,033																	Please consult factory	1,977	2,233	2,490	304.7	1,887	344.7	2,571		
	Min.	1,873																865		1,007	1,149	815					1,193	
	End	3,042																		987	1,243	1,500					897	1,581
G3x02.2-SR1	Start	6,087																	Please consult factory	3,281	3,660		315.7	3,046	344.7	3,779		
	Min.	2,818																1,427		1,634		1,298					1,699	
	End	4,613																		1,808	2,187						1,574	2,306
G3x02.2-SR2	Start	5,291																	Please consult factory	3,513	3,891	4,270	275.9	2,658	344.7	4,389		
	Min.	2,452																1,602		1,807	2,012	1,133					2,077	
	End	4,003																		2,226	2,604	2,982					1,372	3,102
G3x02.2-SR3	Start	4,606																	Please consult factory	2,786	3,161	4,038	241.6	2,327	344.7	4,914		
	Min.	2,138																1,245		1,450	1,926	992					2,399	
	End	3,478																		1,659	2,034	2,910					1,200	3,786
G3x02.2-SR4	Start	4,018																	Please consult factory	2,363	2,738	3,238	212.1	2,041	344.7	5,366		
	Min.	1,868																1,048		1,253	1,525	870					2,674	
	End	3,027																		1,374	1,748	2,248					1,051	4,375
G3x02.5-SR1	Start	6,072																	Please consult factory	3,329	4,010	4,520	235.7	3,182	312.1	5,787		
	Min.	2,812																1,427		1,798	2,075	Exceeds MOP					1,347	2,757
	End	4,597																		1,856	2,536	3,047					1,709	4,313
G3x02.5-SR2	Start	5,275																	Please consult factory	3,428	3,939	4,620	206.0	2,780	312.1	6,397		
	Min.	2,447																1,530		1,807	2,175	Exceeds MOP					1,177	3,130
	End	3,988																		2,141	2,652	3,332					1,494	5,109
G3x02.5-SR3	Start	4,591																	Please consult factory	2,759	3,272	3,953	180.4	2,431	312.1	6,922		
	Min.	2,132																1,208		1,486	1,855	Exceeds MOP					1,029	3,450
	End	3,462																		1,632	2,144	2,826					1,303	5,793
G3x02.5-SR4	Start	4,002																	Please consult factory	2,526	3,211	3,723	158.4	2,127	312.1	7,374		
	Min.	1,862																1,118		1,489	1,765	Exceeds MOP					901	3,725
	End	3,011																		1,536	2,221	2,733					1,137	6,382
G3x03.0-SR1	Start	6,040																	Please consult factory	3,686	4,517	5,624	148.6	3,330	196.7	5,994		
	Min.	2,801																1,592		2,039	2,632	Exceeds MOP					1,399	2,829
	End	4,566																		2,212	3,044	4,150					1,857	4,520
G3x03.0-SR2	Start	5,244																	Please consult factory	3,462	4,296	5,128	129.8	2,893	196.7	6,604		
	Min.	2,436																1,523		1,970	2,415	Exceeds MOP					1,216	3,202
	End	3,956																		2,175	3,008	3,840					1,606	5,316
G3x03.0-SR3	Start	4,559																	Please consult factory	2,871	3,987	4,821	113.7	2,518	196.7	7,129		
	Min.	2,121																1,250		1,848	2,293	Exceeds MOP					1,060	3,522
	End	3,431																		1,743	2,859	3,693					1,391	6,000
G3x03.0-SR4	Start	3,970																	Please consult factory	2,482	3,322	4,438	99.8	2,189	196.7	7,581		
	Min.	1,851																1,080		1,530	2,125	Exceeds MOP					923	3,797
	End	2,979																		1,492	2,332	3,448					1,200	6,589

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)																										
G3x03.5-SR1	Start	6,008			Please consult factory	3,511	4,728	Exceeds MOP												103.4	3,381	136.9	6,094			
	Min.	2,790				1,488	2,138																1,418	2,865		
	End	4,534				2,038	3,254																	1,908	4,620	
G3x03.5-SR2	Start	5,212			Please consult factory	4,121	5,338	Exceeds MOP												90.3	2,925	136.9	6,704			
	Min.	2,424				1,867	2,513																1,228	3,238		
	End	3,924				2,834	4,050																	1,638	5,416	
G3x03.5-SR3	Start	4,527			Please consult factory	4,646	5,863	Exceeds MOP												79.1	2,536	136.9	7,230			
	Min.	2,110				2,190	2,834																1,066	3,558		
	End	3,399				3,518	4,734																	1,409	6,100	
G3x03.5-SR4	Start	3,938		Please consult factory	2,243	5,098	6,315	Exceeds MOP												69.5	2,202	136.9	7,681			
	Min.	1,840			950	2,466	3,109																	928	3,832	
	End	2,948			1,253	4,107	5,323																		1,212	6,689
G3x04.0-SR1	Start	5,976		Please consult factory	Exceeds MOP			Exceeds MOP												76.5	3,386	101.4	6,139			
	Min.	2,779																						1,419	2,882	
	End	4,502																							1,913	4,664
G3x04.0-SR2	Start	5,180		Please consult factory	3,275	Exceeds MOP		Exceeds MOP												66.9	2,931	101.4	6,749			
	Min.	2,413			1,415																				1,231	3,254
	End	3,892			1,988																					1,645
G3x04.0-SR3	Start	4,495		Please consult factory	3,801	Exceeds MOP		Exceeds MOP												58.6	2,534	101.4	7,274			
	Min.	2,099			1,741																				1,066	3,574
	End	3,367			2,673																					1,407
G3x04.0-SR4	Start	3,906		Please consult factory	4,252	Exceeds MOP		Exceeds MOP												51.4	2,184	101.4	7,725			
	Min.	1,829			2,018																				921	3,849
	End	2,916			3,262																					1,194
G3x04.5-SR1	Start	5,944		Please consult factory	4,947	Exceeds MOP		Exceeds MOP												59.1	3,377	78.3	6,141			
	Min.	2,768			2,251																				1,415	2,881
	End	4,470			3,474																					1,904
G3x04.5-SR2	Start	5,148		Please consult factory	5,557	Exceeds MOP		Exceeds MOP												51.7	2,919	78.3	6,751			
	Min.	2,402			2,625																				1,227	3,254
	End	3,861			4,269																					1,632
G3x04.5-SR3	Start	4,464		Please consult factory	3,199	Exceeds MOP		Exceeds MOP												45.3	2,520	78.3	7,276			
	Min.	2,088			1,424		2,946																		1,062	3,574
	End	3,335			2,071		4,954																			1,392
G3x04.5-SR4	Start	3,875		Please consult factory	3,650	Exceeds MOP		Exceeds MOP												39.7	2,161	78.3	7,728			
	Min.	1,818			1,703		3,221																		912	3,848
	End	2,884			2,660		5,543																			1,171

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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)																															
G4x02.5-SR4	Start	7,561																	Please consult factory	4,964	5,481	6,000	283.5	4,054	344.7	6,164							
	Min.	3,398																		2,164	2,449	2,733		1,658		2,822							
	End	5,356																			2,760	3,276		3,796		1,851	3,959						
G4x03.0-SR1	Start	12,512																	Please consult factory	7,080	9,175	10,077	10,981	274.5	7,050	344.7	11,265						
	Min.	5,644																		2,897	4,041	4,529	5,017		2,880		5,169						
	End	9,036																			3,608	5,702	6,603		7,506		3,578	7,790					
G4x03.0-SR2	Start	10,910																	Please consult factory	7,630	8,526	10,622	11,523	12,427	240.3	6,453	344.7	12,711					
	Min.	4,845																		3,230	3,718	4,853	5,338	5,824		2,582		5,976					
	End	7,591																			4,312	5,208	7,302	8,203		9,106		3,137	9,390				
G4x03.0-SR3	Start	9,155																	Please consult factory	5,563	6,759	7,655	8,849	9,746	11,842	12,743	13,647	202.9	5,437	344.7	13,931		
	Min.	4,076																		2,249	2,905	3,392	4,039	4,522	5,649	6,133	6,617		2,179		6,769		
	End	6,371																			2,781	3,977	4,872	6,066	6,962	9,056	9,957		10,860		2,656	11,144	
G4x03.0-SR4	Start	7,523																	Please consult factory	4,517	5,719	6,618	7,814	8,710	9,905	10,801	12,897	13,798	14,702	168.0	4,397	344.7	14,986
	Min.	3,384																		1,847	2,503	2,990	3,635	4,118	4,761	5,242	6,366	6,848	7,331		1,781		7,482
	End	5,317																			2,314	3,514	4,413	5,608	6,504	7,697	8,593	10,687	11,588		12,491		2,193
G4x03.5-SR1	Start	12,473																	Please consult factory	7,764	9,118	10,921	12,272	Exceeds MOP	7,339	241.0	12,362						
	Min.	5,631																		3,216	3,950	4,921	5,645		2,984		5,694						
	End	8,997																			4,291	5,644	7,446		8,796		3,867	8,886					
G4x03.5-SR2	Start	10,871																	Please consult factory	7,401	9,210	10,564	12,367	13,718	Exceeds MOP	6,694	241.0	13,808					
	Min.	4,832																		3,055	4,034	4,762	5,728	6,451		2,670		6,499					
	End	7,552																			4,084	5,892	7,245	9,046		10,397		3,378	10,486				
G4x03.5-SR3	Start	9,117																	Please consult factory	5,897	7,261	8,621	10,430	11,784	13,587	14,938	Exceeds MOP	5,615	241.0	15,028			
	Min.	4,063																		2,397	3,136	3,867	4,836	5,559	6,522	7,243		2,243		7,291			
	End	6,333																			3,115	4,478	5,837	7,645	8,998	10,800		12,150		2,833	12,240		
G4x03.5-SR4	Start	7,484																	Please consult factory	5,127	6,952	8,316	9,676	11,485	12,839	14,642	15,993	Exceeds MOP	4,523	241.0	16,083		
	Min.	3,371																		2,154	3,135	3,864	4,589	5,554	6,276	7,236	7,956		1,827		8,004		
	End	5,278																			2,923	4,747	6,110	7,469	9,276	10,630	12,431		13,781		2,319	13,871	
G4x04.0-SR1	Start	12,434																	Please consult factory	8,140	10,030	11,917	Exceeds MOP	7,483	175.3	12,583							
	Min.	5,617																		3,392	4,409	5,417		3,037		5,772							
	End	8,959																			4,667	6,556		8,442		4,011	9,107						
G4x04.0-SR2	Start	10,833																	Please consult factory	7,057	9,586	11,477	13,364	Exceeds MOP	6,804	175.3	14,029						
	Min.	4,818																		2,848	4,208	5,218	6,223		2,710		6,577						
	End	7,513																			3,741	6,267	8,157		10,042		3,488	10,708					
G4x04.0-SR3	Start	9,078																	Please consult factory	6,375	8,277	10,806	12,697	14,584	Exceeds MOP	5,688	175.3	15,249					
	Min.	4,049																		2,642	3,662	5,009	6,014	7,015		2,270		7,369					
	End	6,294																			3,593	5,494	8,021	9,910		11,796		2,907	12,461				
G4x04.0-SR4	Start	7,446																	Please consult factory	7,430	9,333	11,861	13,752	15,639	Exceeds MOP	4,565	175.3	16,305					
	Min.	3,357																		3,376	4,386	5,726	6,729	7,728		1,842		8,081					
	End	5,240																			5,224	7,125	9,652	11,542		13,427		2,361	14,093				

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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)																								
G4x04.5-SR1	Start	12,391			Please consult factory	7,841	10,330	Exceeds MOP													102.9	7,492	133.9	12,630		
	Min.	5,602				3,227	4,562																	3,038	5,788	
	End	8,915				4,368	6,855																		4,019	9,154
G4x04.5-SR2	Start	10,789			Please consult factory	9,287	11,776	Exceeds MOP													90.1	6,806	133.9	14,076		
	Min.	4,803				4,044	5,371																	2,710	6,593	
	End	7,470				5,969	8,456																		3,490	10,754
G4x04.5-SR3	Start	9,034			Please consult factory	10,507	12,996	Exceeds MOP													76.1	5,687	133.9	15,296		
	Min.	4,034				4,846	6,166																	2,270	7,385	
	End	6,251				7,722	10,209																		2,906	12,508
G4x04.5-SR4	Start	7,402		Please consult factory	5,721	11,562	14,051	Exceeds MOP													63.0	4,547	133.9	16,351		
	Min.	3,342			2,466	5,564	6,881																		1,835	8,097
	End	5,196			3,516	9,353	11,841																			2,343
G4x05.0-SR1	Start	12,352			Please consult factory	12,508	Exceeds MOP														81.4	7,521	105.9	12,698		
	Min.	5,588				5,710																			3,048	5,810
	End	8,876				9,032																				4,049
G4x05.0-SR2	Start	10,750			Please consult factory	13,954	Exceeds MOP														71.3	6,826	105.9	14,144		
	Min.	4,789				6,515																			2,717	6,616
	End	7,431				10,633																				3,509
G4x05.0-SR3	Start	8,995		Please consult factory	7,769	15,174	Exceeds MOP														60.2	5,686	105.9	15,364		
	Min.	4,020			3,387	7,307																			2,269	7,407
	End	6,211			4,987	12,386																				2,905
G4x05.0-SR4	Start	7,363		Please consult factory	4,567	8,825	16,229	Exceeds MOP													49.8	4,525	105.9	16,419		
	Min.	3,328			1,848	4,113	8,019																		1,825	8,120
	End	5,157			2,364	6,618	14,017																			2,321
G4x06.0-SR1	Start	12,273			Please consult factory	12,305	Exceeds MOP														54.9	7,526	71.4	12,747		
	Min.	5,560				5,594																			3,051	5,828
	End	8,797				8,829																				4,053
G4x06.0-SR2	Start	10,671		Please consult factory	7,418	13,751	Exceeds MOP														48.1	6,815	71.4	14,193		
	Min.	4,761			3,040	6,400																			2,716	6,634
	End	7,352			4,101	10,429																				3,499
G4x06.0-SR3	Start	8,917		Please consult factory	8,638	14,971	Exceeds MOP														40.6	5,653	71.4	15,413		
	Min.	3,992			3,852	7,192																			2,259	7,425
	End	6,133			5,855	12,183																				2,872
G4x06.0-SR4	Start	7,284	4,928	9,694	16,026	Exceeds MOP															33.6	4,482	71.4	16,468		
	Min.	3,300	2,051	4,575	7,905																			1,812	8,138	
	End	5,079	2,724	7,486	13,814																				2,278	14,256

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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)																							
G5x03.5-SR3	Start	20,469																	Please consult factory	15,731	17,125	18,525	284.1	13,334	344.7	18,965
	Min.	8,571																		6,376	7,148	7,917		5,027		8,158
	End	12,557																			7,821	9,215		10,614		5,425
G5x03.5-SR4	Start	17,017																	Please consult factory	11,257	13,100	14,483	237.4	11,017	344.7	20,953
	Min.	7,182																		4,317	5,351	6,118		4,181		9,652
	End	10,569																			4,811	6,654		8,036		4,571
G5x04.0-SR1	Start	28,461																	Please consult factory	19,705	24,522	26,594	270.0	19,019	344.7	29,324
	Min.	11,969																		7,581	10,240	11,369		7,196		12,850
	End	17,725																			8,972	13,787		15,858		8,285
G5x04.0-SR2	Start	25,480																	Please consult factory	20,447	22,507	27,324	242.3	18,017	344.7	32,126
	Min.	10,436																		8,019	9,158	11,789		6,657		14,387
	End	14,924																			9,893	11,952		16,768		7,464
G5x04.0-SR3	Start	20,418																	Please consult factory	15,310	18,060	20,119	195.3	13,975	344.7	34,544
	Min.	8,553																		6,008	7,522	8,647		5,262		16,427
	End	12,507																			7,401	10,149		12,208		6,066
G5x04.0-SR4	Start	16,966																	Please consult factory	12,471	15,233	17,299	163.2	11,530	344.7	36,533
	Min.	7,164																		4,892	6,410	7,534		4,368		17,883
	End	10,518																			6,025	8,786		10,852		5,084
G5x04.5-SR1	Start	28,410																	Please consult factory	20,619	24,394	27,222	199.4	19,561	261.9	31,351
	Min.	11,951																		7,983	10,055	11,593		7,396		13,824
	End	17,674																			9,886	13,659		16,486		8,828
G5x04.5-SR2	Start	25,429																	Please consult factory	20,586	23,421	27,196	178.9	18,485	261.9	34,153
	Min.	10,418																		7,997	9,553	11,606		6,828		15,359
	End	14,873																			10,032	12,866		16,639		7,931
G5x04.5-SR3	Start	20,367																	Please consult factory	16,367	19,216	23,004	144.2	14,311	261.9	36,570
	Min.	8,535																		6,518	8,070	10,117		5,384		17,393
	End	12,456																			8,457	11,305		15,092		6,401
G5x04.5-SR4	Start	16,915																	Please consult factory	15,499	18,356	21,204	120.5	11,770	261.9	38,559
	Min.	7,146																		6,493	8,035	9,565		4,456		18,847
	End	10,468																			9,052	11,908		14,756		5,325
G5x05.0-SR1	Start	28,359																	Please consult factory	20,057	23,768	28,705	154.3	19,884	201.3	31,490
	Min.	11,933																		7,609	9,642	12,313		7,513		13,811
	End	17,623																			9,324	13,033		17,969		9,151
G5x05.0-SR2	Start	25,378																	Please consult factory	19,140	22,859	26,570	138.5	18,767	201.3	34,291
	Min.	10,400																		7,142	9,185	11,196		6,935		15,346
	End	14,822																			8,586	12,304		16,014		8,213
G5x05.0-SR3	Start	20,317																	Please consult factory	16,582	21,558	25,277	111.6	14,487	201.3	36,709
	Min.	8,517																		6,598	9,286	11,280		5,449		17,380
	End	12,405																			8,672	13,646		17,364		6,577
G5x05.0-SR4	Start	16,864																	Please consult factory	14,826	18,571	23,546	93.3	11,896	201.3	38,698
	Min.	7,128																		6,100	8,113	10,770		4,504		18,834
	End	10,417																			8,379	12,123		17,097		5,450

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)																							
G5x06.0-SR1	Start	28,258			Please consult factory	21,614	27,364	Exceeds MOP											101.3	20,193	133.0	32,336	
	Min.	11,897				8,406	11,512															7,629	14,172
	End	17,522				10,880	16,628																9,460
G5x06.0-SR2	Start	25,277			Please consult factory	24,416	30,166	Exceeds MOP											90.9	18,997	133.0	35,138	
	Min.	10,364				9,971	13,055															7,020	15,705
	End	14,721				13,860	19,608																8,443
G5x06.0-SR3	Start	20,215			Please consult factory	26,833	32,583	Exceeds MOP											73.2	14,591	133.0	37,556	
	Min.	8,481				12,053	15,103															5,485	17,738
	End	12,304				18,920	24,668																6,682
G5x06.0-SR4	Start	16,763		Please consult factory	15,344	28,822	34,572	Exceeds MOP											61.2	11,940	133.0	39,544	
	Min.	7,092			6,362	13,522	16,562															4,518	19,191
	End	10,316			8,897	22,371	28,119																5,494
G5x07.0-SR1	Start	28,156			Please consult factory	Exceeds MOP			Exceeds MOP										72.0	20,250	94.6	32,540	
	Min.	11,861																				7,645	14,245
	End	17,420																					9,516
G5x07.0-SR2	Start	25,175		Please consult factory	21,962	Exceeds MOP			Exceeds MOP										64.6	19,017	94.6	35,341	
	Min.	10,328			8,632																	7,023	15,779
	End	14,619			11,407																		8,464
G5x07.0-SR3	Start	20,114		Please consult factory	24,380	Exceeds MOP			Exceeds MOP										52.1	14,608	94.6	37,759	
	Min.	8,445			10,737																	5,496	17,811
	End	12,202			16,467																		6,699
G5x07.0-SR4	Start	16,662		Please consult factory	15,449	26,369	Exceeds MOP			Exceeds MOP									43.5	11,891	94.6	39,748	
	Min.	7,056			6,421	12,211																4,498	19,264
	End	10,214			9,002	19,918																	5,445
G5x08.0-SR1	Start	28,032		Please consult factory	31,809	Exceeds MOP			Exceeds MOP										54.0	20,181	70.9	32,462	
	Min.	11,817			13,865																	7,620	14,211
	End	17,296			21,071																		9,448
G5x08.0-SR2	Start	25,050		Please consult factory	20,070	34,610	Exceeds MOP			Exceeds MOP									48.5	18,977	70.9	35,263	
	Min.	10,283			7,615	15,399																7,015	15,745
	End	14,495			9,516	24,052																	8,423
G5x08.0-SR3	Start	19,989		Please consult factory	22,488	37,028	Exceeds MOP			Exceeds MOP									39.1	14,537	70.9	37,681	
	Min.	8,401			9,745	17,433																5,473	17,777
	End	12,078			14,576	29,111																	6,627
G5x08.0-SR4	Start	16,537	13,530	24,477	39,017	Exceeds MOP			Exceeds MOP										32.6	11,775	70.9	39,670	
	Min.	7,012	5,406	11,226	18,887																	4,452	19,231
	End	10,089	7,083	18,027	32,562																	5,329	33,215

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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)																									
G7x04.0-SR4	Start	34,391																	Please consult factory	25,882	28,180	30,486	291.8	23,101	344.7	31,210	
	Min.	14,314																10,222		11,495	12,762	8,660					13,160
	End	20,889																		12,381	14,679	16,984					9,602
G7x04.5-SR1	Start	56,508																	Please consult factory				342.6	39,747	344.7	40,204	
	Min.	23,206																14,732		14,989	17,262	16,806					
	End	33,563																16,806		17,262	17,262	16,806					
G7x04.5-SR2	Start	49,847																	Please consult factory	36,512	39,755	43,007	302.8	34,957	344.7	44,028	
	Min.	20,529																13,857		15,657	17,445	12,986					18,004
	End	29,739																16,407		19,650	22,901	14,853					23,922
G7x04.5-SR3	Start	40,990																	Please consult factory	30,829	34,056	41,601	249.9	28,656	344.7	49,118	
	Min.	16,968																11,902		13,687	17,808	10,687					21,868
	End	24,650																14,491		17,718	25,261	12,320					32,776
G7x04.5-SR4	Start	34,329																	Please consult factory	27,125	30,352	34,653	210.1	23,917	344.7	52,943	
	Min.	14,292																10,743		12,516	14,862	8,958					24,714
	End	20,827																13,624		16,851	21,151	10,417					39,436
G7x05.0-SR1	Start	56,446																	Please consult factory	44,552	54,565	58,867	261.0	40,553	337.0	62,315	
	Min.	23,184																17,255		22,732	25,062	15,030					26,920
	End	33,500																21,610		31,620	35,921	17,612					39,368
G7x05.0-SR2	Start	49,784																	Please consult factory	38,381	44,092	48,377	230.7	35,725	337.0	66,140	
	Min.	20,507																14,749		17,889	20,221	13,270					29,791
	End	29,677																18,276		23,986	28,269	15,621					46,028
G7x05.0-SR3	Start	40,928																	Please consult factory	33,469	39,186	43,471	190.4	29,291	337.0	71,229	
	Min.	16,946																13,235		16,355	18,675	10,922					33,560
	End	24,588																17,131		22,847	27,130	12,954					54,882
G7x05.0-SR4	Start	34,267																	Please consult factory	27,265	33,001	37,294	160.1	24,420	337.0	75,054	
	Min.	14,269																10,719		13,845	16,166	9,146					36,368
	End	20,764																13,764		19,499	23,791	10,920					61,542
G7x06.0-SR1	Start	56,321																	Please consult factory	42,374	51,383	58,130	168.2	41,562	217.2	63,613	
	Min.	23,139																15,851		20,782	24,431	15,400					27,381
	End	33,376																19,432		28,438	35,184	18,620					40,666
G7x06.0-SR2	Start	49,660																	Please consult factory	39,430	46,198	55,207	148.7	36,583	217.2	67,438	
	Min.	20,462																15,157		18,844	23,700	13,587					30,249
	End	29,552																19,324		26,091	35,098	16,479					47,326
G7x06.0-SR3	Start	40,803																	Please consult factory	37,738	44,519	51,288	122.7	29,899	217.2	72,527	
	Min.	16,902																15,423		19,074	22,698	11,145					34,016
	End	24,464																21,399		28,178	34,945	13,562					56,180
G7x06.0-SR4	Start	34,142																	Please consult factory	25,680	32,498	41,563	103.1	24,815	217.2	76,352	
	Min.	14,225																9,760		13,464	18,322	9,284					36,824
	End	20,640																12,180		18,996	28,059	11,315					62,839

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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)																								
G7x07.0-SR1	Start	56,196			Please consult factory	43,024	55,970	Exceeds MOP											118.4	41,986	152.9	64,305		
	Min.	23,095				16,124	23,152															15,551	27,622	
	End	33,251				20,082	33,025																19,045	41,357
G7x07.0-SR2	Start	49,535		Please consult factory	37,116	46,848	59,795	Exceeds MOP											104.7	36,921	152.9	68,129		
	Min.	20,418				13,818	19,112		26,048													13,710	30,488	
	End	29,427				17,012	26,741		39,684														16,817	48,017
G7x07.0-SR3	Start	40,679		Please consult factory	42,206	51,938	64,884	Exceeds MOP											86.4	30,108	152.9	73,219		
	Min.	16,858				17,769	22,962		29,837													11,222	34,255	
	End	24,339				25,866	35,595		48,538														13,771	56,871
G7x07.0-SR4	Start	34,017		Please consult factory	46,030	55,763	68,709	Exceeds MOP											72.6	24,932	152.9	77,044		
	Min.	14,181				20,643	25,802		32,653													9,328	37,062	
	End	20,515				32,525	42,255		55,198														11,432	63,531
G7x08.0-SR1	Start	56,043		Please consult factory	56,557	Exceeds MOP													88.3	42,017	114.0	64,375		
	Min.	23,040					23,461																15,568	27,649
	End	33,098					33,611																	19,075
G7x08.0-SR2	Start	49,382		Please consult factory	60,381	Exceeds MOP													78.0	36,852	114.0	68,200		
	Min.	20,364					26,354																13,676	30,515
	End	29,274					40,271																	16,748
G7x08.0-SR3	Start	40,525		Please consult factory	34,947	65,471	Exceeds MOP												64.4	30,044	114.0	73,290		
	Min.	16,803				13,870		30,141															11,197	34,282
	End	24,186				18,609		49,125															13,707	56,942
G7x08.0-SR4	Start	33,864		Please consult factory	38,772	69,296	Exceeds MOP												54.1	24,835	114.0	77,114		
	Min.	14,126				16,791		32,956															9,289	37,089
	End	20,362				25,269		55,785															11,335	63,601

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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)																							
G7x09.0-SR1	Start	55,915																	68.5	42,079	88.5	64,637	
	Min.	22,995	Please consult factory	43,773	Exceeds MOP															15,584		27,746	
	End	32,969		16,515		20,831																	19,137
G7x09.0-SR2	Start	49,253																		60.6	36,971	88.5	68,461
	Min.	20,318	Please consult factory	47,598	Exceeds MOP																13,733		30,611
	End	29,146		19,496		27,491																	16,867
G7x09.0-SR3	Start	40,397																		50.0	30,055	88.5	73,551
	Min.	16,757	Please consult factory	30,055	Exceeds MOP																11,204		34,378
	End	24,057		11,204		23,341																	13,718
G7x09.0-SR4	Start	33,736																		42.0	24,803	88.5	77,376
	Min.	14,081	Please consult factory	33,880	Exceeds MOP																9,279		37,184
	End	20,234		14,181		26,179																	11,303
G7x10.0-SR1	Start	55,786																		54.8	42,099	70.8	64,751
	Min.	22,949	Please consult factory	63,620	Exceeds MOP																15,594		27,789
	End	32,841		27,187		40,672																	19,157
G7x10.0-SR2	Start	49,125																		48.4	36,846	70.8	68,575
	Min.	20,272	Please consult factory	39,116	Exceeds MOP																13,668		30,655
	End	29,017		14,912		30,056																	16,741
G7x10.0-SR3	Start	40,268																		40.0	30,006	70.8	73,665
	Min.	16,712	Please consult factory	44,206	Exceeds MOP																11,188		34,421
	End	23,929		18,834		33,824																	13,669
G7x10.0-SR4	Start	33,607	26,721	48,031		76,359														33.6	24,729	70.8	77,490
	Min.	14,035	10,341	21,699	36,632	Exceeds MOP															9,254		37,227
	End	20,105	13,221	34,525	62,846																		11,230

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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)																											
G8x05.0-SR2	Start	67,095																	Please consult factory	42,606	47,018	Exceeds MOP	299.8	39,612	328.5	48,049			
	Min.	29,880																17,570		19,976	15,926						20,536		
	End	47,503																		23,018	27,429						20,024	28,459	
G8x05.0-SR3	Start	56,802												Please consult factory	35,218	39,608	49,870	54,281	Exceeds MOP	254.5	33,609	328.5	55,312						
	Min.	25,334													14,406	16,805	22,363	24,739						13,520	25,292				
	End	40,240													18,659	23,048	33,309	37,720						17,050	38,750				
G8x06.0-SR1	Start	83,372											Please consult factory	60,018	69,742	77,038	94,082	Exceeds MOP	228.0	54,182	321.6	99,741							
	Min.	36,212												24,315	29,588	33,518	42,651						21,121	45,674					
	End	55,997												32,647	42,370	49,664	66,705						26,812	72,364					
G8x06.0-SR2	Start	66,947										Please consult factory	44,326	51,634	61,367	68,661	78,386	85,681	102,725	Exceeds MOP	183.8	41,303	321.6	108,385					
	Min.	29,828											18,178	22,130	27,359	31,263	36,458	40,349	49,420						16,532	52,429			
	End	47,355											24,737	32,044	41,776	49,069	58,792	66,086	83,128						21,715	88,787			
G8x06.0-SR3	Start	56,655										Please consult factory	41,830	51,590	58,898	68,630	75,925	85,649	92,945	109,989	Exceeds MOP	156.1	35,034	321.6	115,649				
	Min.	25,282											17,720	22,963	26,872	32,067	35,957	41,133	45,016	54,073						14,037	57,077		
	End	40,093											25,270	35,028	42,335	52,066	59,360	69,083	76,377	93,419						18,475	99,078		
G8x07.0-SR1	Start	83,225										Please consult factory	64,971	79,321	90,070						Exceeds MOP	156.5	55,271	220.7	101,312				
	Min.	36,160											26,784	34,491	40,234											21,518	46,225		
	End	55,850											37,599	51,947	62,694											27,900	73,935		
G8x07.0-SR2	Start	66,800										Please consult factory	52,039	62,835	73,615	87,964	98,714					Exceeds MOP	126.1	42,015	220.7	109,956			
	Min.	29,776											22,183	27,953	33,692	41,314	47,016										16,783	52,978	
	End	47,208											32,449	43,244	54,022	68,369	79,117										22,427	90,357	
G8x07.0-SR3	Start	56,507										Please consult factory	44,874	59,302	70,099	80,878	95,228	105,977					Exceeds MOP	107.1	35,546	220.7	117,219		
	Min.	25,231											19,235	26,925	32,658	38,374	45,979	51,672										14,217	57,625
	End	39,945											28,314	42,740	53,535	64,312	78,660	89,408										18,987	100,648
G8x08.0-SR1	Start	83,043										Please consult factory	60,428	80,039	94,711							Exceeds MOP	114.9	55,417	162.0	101,549			
	Min.	36,096											24,294	34,833	42,659												21,570	46,301	
	End	55,668											33,056	52,664	67,335												28,046	74,172	
G8x08.0-SR2	Start	66,618										Please consult factory	54,322	69,071	88,682	103,355						Exceeds MOP	92.6	42,099	162.0	110,193			
	Min.	29,712											23,385	31,243	41,654	49,429											16,815	53,053	
	End	47,026											34,731	49,479	69,087	83,757											22,510	90,594	
G8x08.0-SR3	Start	56,326										Please consult factory	61,585	76,335	95,946	110,618						Exceeds MOP	78.6	35,527	162.0	117,456			
	Min.	25,167											28,118	35,936	46,318	54,081											14,204	57,700	
	End	39,763											45,022	59,770	79,378	94,048											18,968	100,885	

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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)																																						
G10x06.0-SR4	Start	113,604																	Please consult factory	88,567	108,447	116,989	125,548	264.5	82,611	344.7	185,708											
	Min.	46,348																		33,776	44,685	49,318	53,941		30,454		55,388											
	End	66,406																			41,374	61,250	69,790		78,347		35,420	81,033										
G10x07.0-SR1	Start	193,221																	Please consult factory	155,456	168,520	181,604	296.1	143,364	344.7	185,708												
	Min.	78,558																		59,429	66,587	73,700		52,729		75,923												
	End	112,676																		74,919	87,980	101,062		62,830		105,165												
G10x07.0-SR2	Start	155,516																	Please consult factory	112,910	130,274	143,300	173,728	186,792	199,876	238.9	111,955	344.7	203,980									
	Min.	64,447																		42,333	51,870	58,950	75,339	82,332	89,326		41,802		91,513									
	End	94,408																		51,812	69,172	82,195	112,616	125,678	138,759		50,857		142,863									
G10x07.0-SR3	Start	141,738																	Please consult factory	115,298	128,323	145,687	158,713	189,141	202,205	215,290	218.0	109,218	344.7	219,394								
	Min.	56,568																		42,998	50,176	59,630	66,671	83,013	90,003	96,980		39,606		99,167								
	End	78,998																		52,564	65,586	82,947	95,970	126,391	139,452	152,534		46,485		156,637								
G10x07.0-SR4	Start	113,410																	Please consult factory	97,665	110,710	128,087	141,112	158,476	171,503	201,930	214,994	228,079	175.0	84,604	344.7	232,183						
	Min.	46,279																		38,376	45,468	54,838	61,829	71,121	78,075	94,280	101,229	108,171		110,348								
	End	66,212																		50,470	63,513	80,886	93,908	111,268	124,292	154,713	167,774	180,855		184,959								
G10x08.0-SR1	Start	192,983																	Please consult factory	158,484	176,561	200,660	Exceeds MOP								213.0	144,016	260.8	201,624				
	Min.	78,473																		60,983	70,877	83,937		52,972	84,457													
	End	112,438																		77,947	96,020	120,114		63,482	121,078													
G10x08.0-SR2	Start	155,277																	Please consult factory	134,531	152,638	176,756	194,833	218,933	Exceeds MOP							171.9	112,652	260.8	219,897			
	Min.	64,362																		54,070	63,875	76,856	86,543	99,424		42,071	99,939											
	End	94,170																		73,428	91,531	115,644	133,717	157,811		51,554	158,775											
G10x08.0-SR3	Start	141,499																	Please consult factory	125,767	149,945	168,051	192,169	210,247	234,346	Exceeds MOP							156.8	109,781	260.8	235,310		
	Min.	56,483																		48,656	61,815	71,579	84,526	94,203	107,077		39,813	107,592										
	End	78,760																		63,030	87,203	105,306	129,419	147,492	171,586		47,048	172,550										
G10x08.0-SR4	Start	113,171																	Please consult factory	102,186	120,389	138,556	162,734	180,841	204,959	223,036	247,135	Exceeds MOP							125.9	85,038	260.8	248,099
	Min.	46,194																		40,750	50,592	60,347	73,274	82,938	95,784	105,408	118,220		118,733									
	End	65,973																		54,990	73,189	91,352	115,525	133,628	157,740	175,814	199,908		200,872									
G10x09.0-SR1	Start	192,783																	Please consult factory	159,165	191,217	Exceeds MOP								161.6	145,686	195.8	200,503					
	Min.	78,401																		61,021	78,450		83,455															
	End	112,238																		78,627	110,673		119,957															
G10x09.0-SR2	Start	155,077																	Please consult factory	129,245	153,360	177,437	209,489	Exceeds MOP							130.4	113,788	195.8	218,776				
	Min.	64,291																		50,942	63,977	76,892	94,000		42,481	98,947												
	End	93,970																		68,143	92,253	116,325	148,370		52,689	157,654												
G10x09.0-SR3	Start	141,299																	Please consult factory	112,433	144,658	168,774	192,850	224,903	Exceeds MOP							119.0	110,820	195.8	234,189			
	Min.	56,411																		41,106	58,707	71,682	84,563	101,654		40,209	106,601											
	End	78,560																		49,700	81,918	106,028	130,099	162,145		48,086	171,429											
G10x09.0-SR4	Start	112,971																	Please consult factory	100,992	125,222	157,447	181,563	205,639	237,692	Exceeds MOP							95.5	85,616	195.8	246,978		
	Min.	46,123																		39,961	53,011	70,213	83,039	95,821	112,823		31,549	117,746										
	End	65,773																		53,796	78,021	110,240	134,350	158,421	190,466		38,423	199,751										

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)																									
G13x08.0-SR3	Start	309,301																	Please consult factory	262,357	283,069	303,825	294.9	241,544	344.7	310,339	
	Min.	120,584																97,850		109,341	120,741	86,139		124,303			
	End	164,221																		117,308	138,006	158,749		96,508		165,259	
G13x08.0-SR4	Start	250,232													Please consult factory	195,573	223,065	243,690	291,892	312,603	333,359	239.1	194,336	344.7	339,874		
	Min.	98,256												70,340		85,710	97,063	123,302	134,487	145,667	69,636		149,163				
	End	134,706												80,082		107,556	128,168	176,338	197,036	217,779	78,846		224,289				
G13x09.0-SR1	Start	430,142													Please consult factory	354,731	383,042				Exceeds MOP	302.2	340,024	333.5	399,107		
	Min.	167,649												129,597		145,319				121,331	154,164						
	End	228,768												153,405		181,699				138,709	197,753						
G13x09.0-SR2	Start	371,074													Please consult factory	318,339	384,265	412,577			Exceeds MOP	261.0	292,002	333.5	428,641		
	Min.	145,322												119,255		155,405	170,753			104,527	179,424						
	End	199,253												146,553		212,436	240,729			120,232	256,783						
G13x09.0-SR3	Start	309,044													Please consult factory	259,602	287,818	325,433	353,652	419,577	447,889	217.8	246,054	333.5	463,954		
	Min.	120,491												95,432		111,058	131,624	146,928	182,442	197,607	87,830		206,207				
	End	163,964												114,554		142,752	180,343	208,543	274,426	302,719	101,014		318,773				
G13x09.0-SR4	Start	249,975													Please consult factory	223,224	251,490	289,136	317,353	354,967	383,186	449,112	477,423	Exceeds MOP	197,942	333.5	493,488
	Min.	98,164												85,055		100,542	120,957	136,169	156,370	171,488	206,694	221,770	70,987		230,320		
	End	134,448												107,715		135,962	173,584	201,782	239,373	267,573	333,456	361,749	82,449		377,803		
G13x10.0-SR1	Start	429,885													Please consult factory	359,203					Exceeds MOP	233.8	344,030	258.1	403,496		
	Min.	167,557												131,296							122,800		155,765				
	End	228,511												157,875							142,712		202,140				
G13x10.0-SR2	Start	370,816													Please consult factory	303,048	352,025	388,737			Exceeds MOP	202.0	295,697	258.1	433,031		
	Min.	145,229												110,027		137,068	157,056				105,909		180,999				
	End	198,996												131,271		180,217	216,905				123,926		261,170				
G13x10.0-SR3	Start	308,786													Please consult factory	252,509	301,595	338,361	387,337	424,050		168.5	248,824	258.1	468,343		
	Min.	120,399												90,904		117,991	137,964	164,369	184,072		88,841		207,770				
	End	163,706												107,466		156,519	193,262	242,207	278,895		103,784		323,160				
G13x10.0-SR4	Start	249,718													Please consult factory	208,230	245,169	282,044	331,129	367,895	416,872	453,584	Exceeds MOP	199,847	258.1	497,877	
	Min.	98,071												76,339		96,620	116,587	142,964	162,628	188,757	208,314	71,665		231,873			
	End	134,191												92,730		129,645	166,496	215,550	252,292	301,237	337,926	84,353		382,190			
G13x12.0-SR1	Start	429,284													Please consult factory	353,376					Exceeds MOP	153.5	347,739	169.3	407,068		
	Min.	167,341												127,371							124,220		157,002				
	End	227,910												152,052							146,419		205,709				
G13x12.0-SR2	Start	370,215													Please consult factory	326,502	382,910				Exceeds MOP	132.5	298,260	169.3	436,602		
	Min.	145,013												122,472		153,252				106,812	182,216						
	End	198,395												154,711		211,082				126,487	264,739						
G13x12.0-SR3	Start	308,185													Please consult factory	286,440	361,815	418,223			Exceeds MOP	110.6	250,940	169.3	471,914		
	Min.	120,183												109,253		150,071	180,316			89,638	208,977						
	End	163,105												141,374		216,701	273,072			105,897	326,729						
G13x12.0-SR4	Start	249,116													Please consult factory	259,300	315,974	391,349	447,757		Exceeds MOP	89.7	201,351	169.3	501,449		
	Min.	97,855												103,959		134,401	174,596	204,582		72,261	233,073						
	End	133,590												143,768		200,405	275,731	332,102		85,856	385,759						

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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)																					
G13x14.0-SR1	Start	428,753				Please consult factory	408,412	Exceeds MOP											109.1	350,284	120.5	411,077	
	Min.	167,150					157,105															125,105	158,558
	End	227,380					207,052															148,962	209,715
G13x14.0-SR2	Start	369,685		Please consult factory	357,933	437,946	Exceeds MOP											94.3	300,762	120.5	440,611		
	Min.	144,823				139,201		182,317													107,814	183,747	
	End	197,865				186,121		266,082													128,987	268,745	
G13x14.0-SR3	Start	307,655		Please consult factory	393,245	473,259	Exceeds MOP											78.6	252,032	120.5	475,923		
	Min.	119,992				166,461		209,077													89,993	210,494	
	End	162,576				248,111		328,072													106,989	330,735	
G13x14.0-SR4	Start	248,586		Please consult factory	235,445	422,780	Exceeds MOP											63.8	202,155	120.5	505,458		
	Min.	97,665				90,840		190,835	233,173												72,572	234,583	
	End	133,060				119,927		307,141	387,103												86,659	389,765	
G13x16.0-SR1	Start	428,223		Please consult factory	Exceeds MOP													81.8	351,386	90.3	412,183		
	Min.	166,960																	125,479		158,860		
	End	226,850																	150,064		210,821		
G13x16.0-SR2	Start	369,155		Please consult factory	Exceeds MOP													70.7	301,428	90.3	441,718		
	Min.	144,632																	108,027		184,044		
	End	197,335																	129,653		269,851		
G13x16.0-SR3	Start	307,124		Please consult factory	331,724	Exceeds MOP												59.0	252,822	90.3	477,030		
	Min.	119,802					133,333												90,352		210,788		
	End	162,046					186,629												107,779		331,841		
G13x16.0-SR4	Start	248,056		Please consult factory	217,709	361,258	Exceeds MOP											47.8	201,893	90.3	506,564		
	Min.	97,474				81,130		158,057											72,408		234,876		
	End	132,530				102,203		245,659											86,397		390,872		
G13x18.0-SR1	Start	427,693		Please consult factory	409,559	Exceeds MOP												63.8	352,441	70.4	413,243		
	Min.	166,769					157,302												125,971		159,304		
	End	226,320					208,199												151,118		211,880		
G13x18.0-SR2	Start	368,624		Please consult factory	439,094	Exceeds MOP												55.1	301,754	70.4	442,777		
	Min.	144,442					182,511												108,163		184,481		
	End	196,805					267,229												129,978		270,910		
G13x18.0-SR3	Start	306,594		Please consult factory	289,999	474,406	Exceeds MOP											46.0	253,062	70.4	478,090		
	Min.	119,611				110,758		209,270											90,485		211,220		
	End	161,516				144,932		329,219											108,018		332,900		
G13x18.0-SR4	Start	247,526		Please consult factory	319,533	503,940	Exceeds MOP											37.3	202,190	70.4	507,624		
	Min.	97,284				135,874		233,364											72,609		235,306		
	End	132,001				203,962		388,249											86,695		391,931		

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