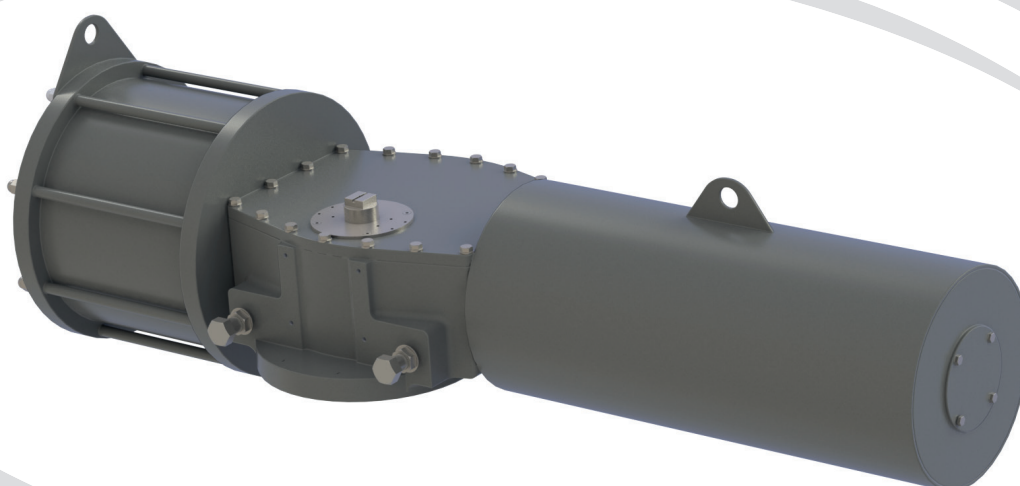




SCOTCH YOKE ACTUATORS

Attuatori pneumatici heavy duty
serie CHD e SHD

Heavy duty pneumatic actuators
CHD and SHD series



SIL3
Safety Integrity Level



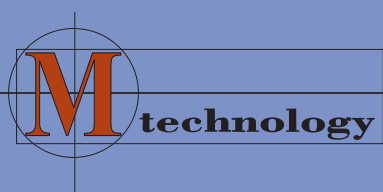
ATEX



GOST-R



Quality system:
ISO 9001



Emme technology S.r.l.

Le serie di attuatori a glifo SHD e CHD sono progettate e realizzate per automatizzare valvole (a sfera, farfalla, maschio e damper) o altro dispositivo quarto di giro anche per le applicazioni più gravose.

SHD and CHD heavy duty scotch yoke actuators are designed to perform in the most demanding applications. They are engineered to automate all types of quarter turn valves (ball, butterfly, plug and damper) with multiple torque profiles available in order to provide a "best fit" for every situation.

- **Design stagno** e protetto da ingressi di acqua rendendo le serie SHD e CHD idonee per applicazioni interne ed esterne.
- **Weather proof design** allows the SHD and CHD series to be suitable for installation both indoors and outside. They can be custom fitted for both high and low temperature applications by changing the seals and lubricants to suit the application.
- **Lubrificazione & Resistenza all'usura**
L'asta di guida e del pistone sono in acciaio cromato garantendo, in combinazione con pattini e boccole in materiale auto lubrificante, un'alta resistenza all'usura e lungo ciclo di vita.
- **Self-lubricating** and Wear resistance: Both the guide rod and piston rod are plated with hard chrome to provide a high level of wear resistance. All SHD and CHD series units are permanently lubricated with materials and lubricants appropriate for the service conditions. No maintenance is required in normal service.
- **Efficienza & Durata**
Il trattamento superficiale delle aste e il materiale auto lubrificante di pattini e boccole, garantiscono il massimo trasferimento di energia direttamente allo stelo della valvola; le molle precomprese minimizzano i carichi radiali sull'asta del pistone incrementando ulteriormente l'efficienza dell'attuatore e la sua durata.
- **Efficiency and High Cycle Bearings:** In addition to assembling these actuators with a long life grease, all bearings in high load areas have been constructed with dry lubricant materials which are impregnated into the load bearing surfaces. This enables the unit to transfer the maximum possible load through the unit to the valve stem resulting in an extremely efficient actuator. The pre-compressed spring pack minimizes transverse load on the piston rod thereby increasing the durability and service life of the actuator.
- **Resistenza alla Corrosione**
Ogni attuatore della serie SHD e CHD è verniciato nella versione standard con processo a 3 strati per una superiore resistenza alla corrosione.
- **Corrosion Resistance:** A three layer epoxy coating is applied to every SHD and CHD actuator in order to provide maximum protection against environmental corrosion.

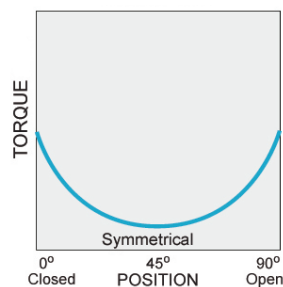
DESIGN DEL GLIFO E CURVA DELLE COPPIE • DESIGN OF THE YOKE AND TORQUE CURVE

La serie SHD è dotata di glifo con design SIMMETRICO che produce la coppia massima agli estremi della corsa (0° e 90°) e inferiore nel mezzo, rendendola la scelta ideale per valvole a sfera a tenuta metalliche, valvole a maschio e per applicazioni modulanti.

Tipo Simmetrico
Symmetric Type



Attuatore Doppio Effetto
Double Acting Actuator



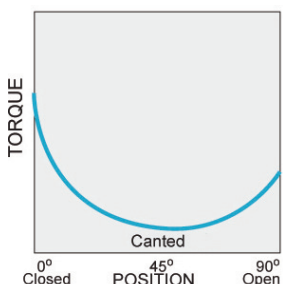
SHD series is equipped with SYMMETRICAL design yoke that produces maximum torques at both ends of the stroke (0° and 90°) and minimal in the middle, therefore this series is the optimal solution for metal seated ball valves, plug valves and for modulating service.

La serie CHD è dotata di glifo con design tipo CANTED che produce la coppia massima allo spunto (valve unseating) e alla fine della corsa (valve reseating), in linea con le coppie prodotte dalle valvole a farfalla.

Tipo Canted
Canted Type



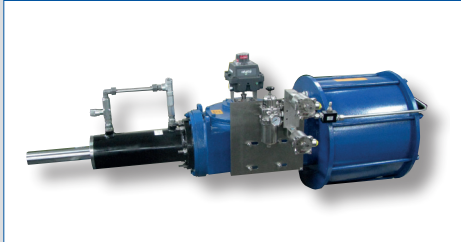
Attuatore Doppio Effetto
Double Acting Actuator



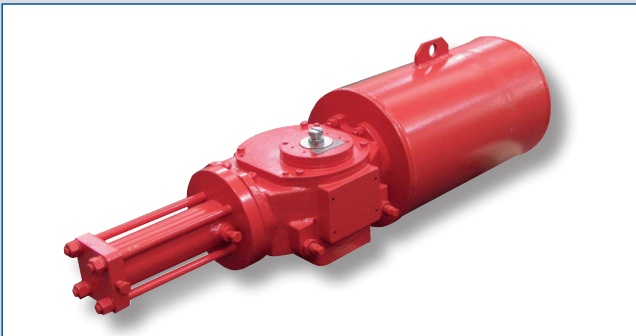
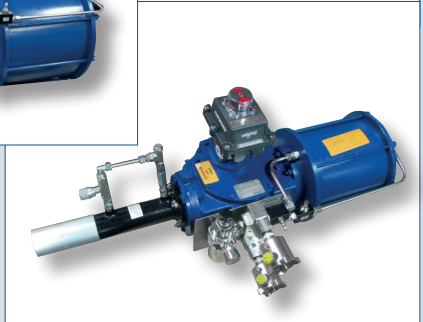
CHD series is equipped with CANTED design yoke that produces maximum torques at the beginning (valve unseating) and at the end of stroke (valve reseating), therefore this series is the optimal solution for butterfly valves.



Spring return SHD actuator equipped with a positioner for modulating service



Double acting CHD actuator with hydraulic damping system for damping of the valve closing stroke.



Hydraulic actuator

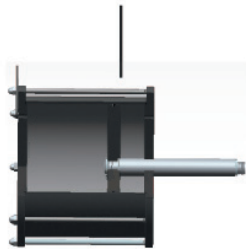


Manual Handwheel

Provides maximized operational flexibility in selection and combination of power cylinder ,body and spring pack depending on project requirement. Additional benefit would be less cost for maintenance and stocking of parts.



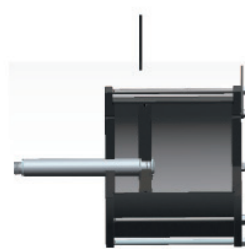
Manual Handwheel



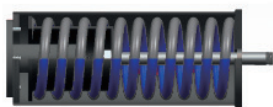
Hydraulic Cylinder



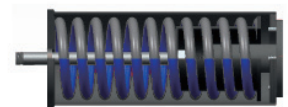
Center Body



Hydraulic Cylinder



Spring Cartridge



Spring Cartridge



Hydraulic Cylinder & Pump

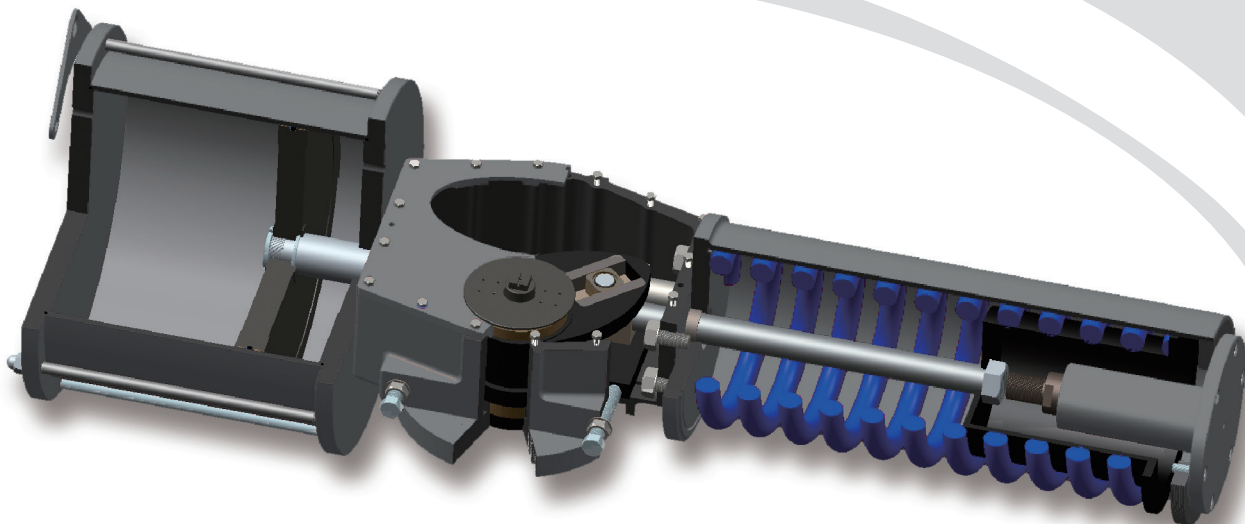


Symmetric Yoke

Canted Yoke



Hydraulic Cylinder & Pump



CILINDRO • CYLINDER

La superficie interna del cilindro ha una protezione in cromo che oltre a garantire un'eccellente resistenza alla corrosione è auto lubrificante per un migliore scorrimento e resistenza all'usura.



Cylinder: The internal wall of the cylinder is hard chrome plated in order to maximize wear and corrosion resistance.

ISO E NAMUR STANDARD • ISO AND NAMUR STANDARD

Le serie sono dotate di attacchi inferiori per collegamento alla valvola secondo ISO 5211, mentre l'uscita dello stelo e la foratura di fissaggio superiori secondo NAMUR, consentendo un semplice montaggio di accessori quali box fine corsa e posizionatori.



ISO and Namur Standard: Both series have a bottom interface in accordance with the ISO 5211 standard. This helps provide for easy valve to actuator connection. The top-works dimensions, both for shaft height and mounting pattern are according to NAMUR standards allowing for easy and standard accessory attachment.

BOCCOLA DI SCORRIMENTO • SLIDE BLOCK

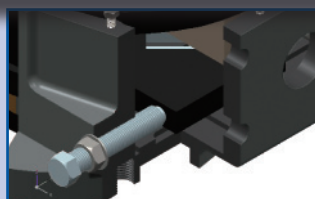
Grazie al suo design, garantisce una ampia superficie di contatto per una migliore distribuzione della forza, ed è dotata di pastiglie in teflon per un miglior scorrimento.



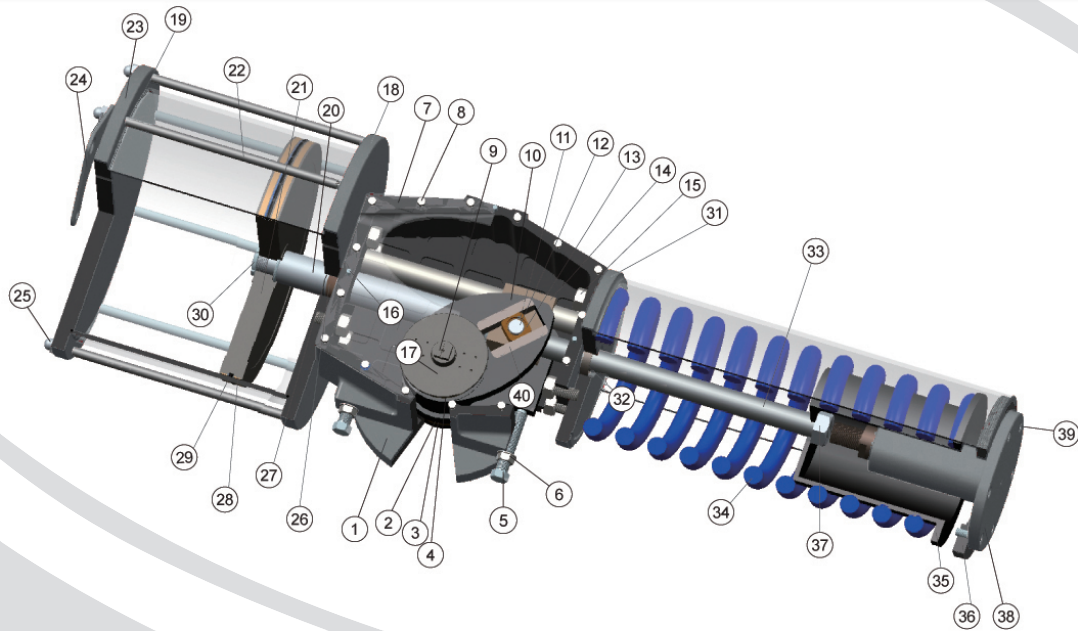
Slide block Technology: The slide block has a wide surface contact area, impregnated with PTFE, that assures lower contact forces and smoother operation and is designed to withstand higher forces through load distribution, thereby protecting process critical equipment.

DOPPIO REGISTRO • DOUBLE TRAVEL STOP

Tutti gli attuatori della serie SHD e CHD hanno di serie il doppio registro che consente regolazione sia in apertura che in chiusura di $\pm 6^\circ$.



Double travel stop: The SHD and SHD actuators are all provided with bi-directional travel stops to allow for open and closed position location adjustments of ± 6 degrees.

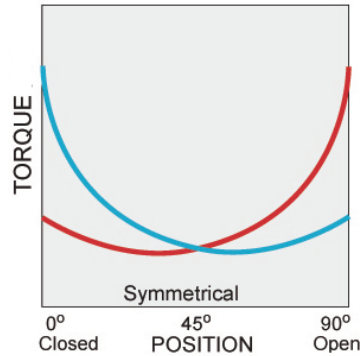
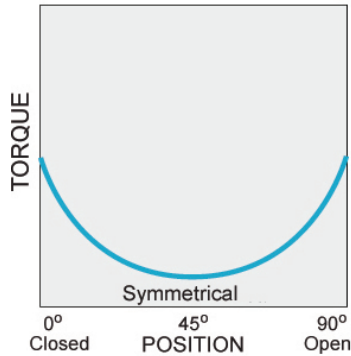


	DESCRIPTION	MATERIALS
1	Body	Ductile Iron
2	Lower Bushing	Low Carbon Steel
3	Bushing O-Ring	Nbr
4	Upper Bushing	Low Carbon Steel
5	Stopper Bolt	Alloy Steel
6	Stopper Unt	Alloy Steel
7	Body Cover	Alloy Steel
8	Body Cover Bolt	Alloy Steel
9	Position Indicator	Alloy Steel
10	Yoke	Alloy Steel
11	Snap Ring	Alloy Steel
12	Slide Pin	Alloy Steel
13	Sliding Block	High strength copper alloy, PTFE impregnated
14	Slide Block	Alloy Steel
15	Front Cover Bolt	Alloy Steel
16	Cover Fixed Pin	Alloy Steel
17	The Mounting Plate	Alloy Steel
18	Cylinder Front Cover	Alloy Steel
19	Cover O-Ring-O	Seals for High and Low temp available
20	Piston Rod	Alloy Steel
21	Piston	Alloy Steel
22	Tie Bolt	Alloy Steel
23	Cylinder End Cover	Alloy Steel
24	Lift Plate	Alloy Steel
25	Tie Bolt Nut	Alloy Steel
26	Front Cover Bushing	Alloy Steel
27	O-Ring	Seals for High and Low temp available
28	Back-Up Ring	Seals for High and Low temp available
29	Piston O-Ring	Seals for High and Low temp available
30	Piston Lock Bolt	Alloy Steel
31	Spring Case Front Cover	Alloy Steel
32	Spring Rod Guide Bushing	Alloy Steel
33	Spring Rod	Alloy Steel
34	Spring	Alloy Steel
35	Spring Retainer	Alloy Steel
36	Spring Case End Cover	Alloy Steel
37	Spring Rod Lock Nut	Alloy Steel
38	Hydraulic Cylinder	Alloy Steel
39	Cover Bolt	Alloy Steel
40	Orbital Module	Ductile Cast Iron

GLIFO SIMMETRICO
SYMMETRIC DESIGN

Attuatore Doppio Effetto
Double Acting Actuator

Attuatore Semplice Effetto
Spring Return Actuator



Torque Curve — Air Torque (blue line)
— Spring Torque (red line)

DOPPIO EFFETTO • DOUBLE ACTING

Valori in Nm / Values in Nm

MODEL	4 Bar			5 Bar			6 Bar			8 Bar		
	0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°
SHD16-020000	1460	908	1403	1827	1135	1755	2193	1362	2106	2924	1816	2807
SHD16-025000	2284	1419	2226	2855	1773	2783	3426	2128	3339	4568	2837	4452
SHD16-030000	3289	2043	3231	4111	2554	4039	4934	3064	4847	6578	4086	6462
SHD16-035000	4477	2781	4419	5596	3476	5524	6715	4171	6628	8954	5561	8838
SHD25-035000	5419	3366	5262	6774	4208	6577	8129	5049	7893	10839	6732	10524
SHD25-038000	6388	3968	6231	7985	4960	7788	9582	5952	9346	12777	7936	12461
SHD25-043000	8180	5081	8022	10225	6351	10028	12270	7621	12034	16360	10162	16045
SHD30-043000	10492	6517	10217	13115	8146	12772	15738	9775	15326	20984	13033	20435
SHD30-048000	13074	8120	12799	16342	10150	15999	19610	12180	19199	26147	16241	25599
SHD30-053000	15939	9900	15665	19924	12375	19581	23909	14850	23497	31878	19800	31330
SHD35-053000	19586	12165	19143	24483	15207	23928	29379	18248	28714	39173	24331	38285
SHD35-058000	23456	14569	23013	29320	18211	28766	35184	21854	34519	46912	29138	46025
SHD35-063000	27675	17189	27231	34593	21486	34039	41512	25784	40847	55349	34378	54462
SHD40-063000	34546	21457	33682	43182	26821	42102	51818	32185	50523	69091	42914	67364
SHD40-068000	40247	24998	39383	50308	31247	49228	60370	37497	59074	80493	49996	78766
SHD40-073000	46383	28809	45519	57978	36011	56899	69574	43214	68278	92765	57618	91038
SHD48-068000	54816	34048	53720	68518	42258	67148	82224	51072	80580	109632	68096	107440
SHD48-073000	75140	46672	73636	93925	58339	92046	112710	70008	110454	150280	93344	139272
SHD48-080000	90168	56004	88364	112708	70005	110453	135252	84006	132546	180336	112008	176728
SHD60-080000	117216	72804	114872	146520	91006	143589	175824	109206	172308	234432	145608	229744
SHD60-090000	148396	92172	145428	185495	115214	181785	222594	138258	218142	296792	184344	290856
SHD60-100000	183200	113788	179536	229000	142236	224420	274800	170682	269304	366400	227576	359072

COPPIE PER GLIFO SIMMETRICO • SYMMETRIC TORQUE VALUES

SEMPLICE EFFETTO • SPRING RETURN

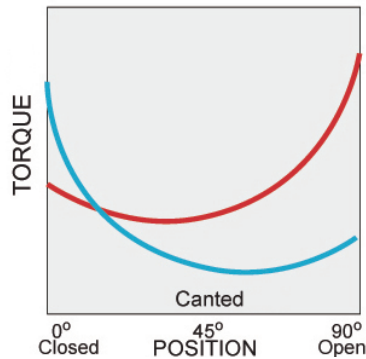
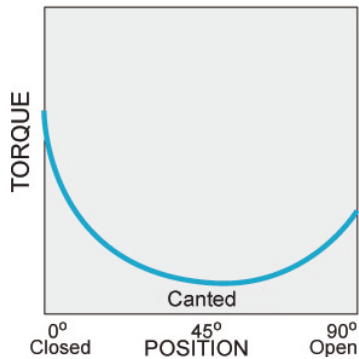
Valori in Nm / Values in Nm

MODEL		Spring Torque			Air Torque Air Supply Pressure											
					4 Bar			5 Bar			6 Bar			8 Bar		
		0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°
SHD16-020*01	A	602	495	975	858	413	428	1,225	640	780	1,591	867	1,131			
	B	790	650	1,280				1,037	485	475	1,403	712	826	2,134	1,166	1,527
SHD16-025*01	A	913	751	1,479	1,371	668	747	1,942	1,022	1,304	2,513	1,377	1,860			
	B	1,239	1,019	2,007				1,616	754	776	2,187	1,409	1,332	3,329	1,818	2,445
SHD16-030*01	A	1,301	1,080	2,141	1,988	963	1,090	2,810	1,474	1,898	3,633	1,984	2,706			
	B	1,787	1,469	2,894				2,324	1,085	1,145	3,147	1,595	1,953	4,791	2,617	3,568
SHD16-035*01	A	1,628	1,352	2,679	2,849	1,429	1,740	3,968	2,124	2,845	5,087	2,819	3,949			
	B	2,140	1,759	3,466				3,456	1,717	2,058	4,575	2,412	3,162	6,814	3,802	5,372
SHD25-035*01	A	1,803	1,539	3,098	3,616	1,827	2,164	4,971	2,669	3,479	6,326	3,510	4,795			
	B	2,566	2,120	4,189				4,208	2,088	2,388	5,563	2,929	3,704	8,273	4,612	6,335
SHD25-038*01	A	2,480	2,049	4,048	3,908	1,919	2,183	5,505	2,911	3,740	7,102	3,903	5,298			
	B	3,303	2,729	5,391				4,682	2,231	2,397	6,279	3,223	3,955	9,474	5,207	7,070
SHD25-043*01	A	3,049	2,519	4,977	5,131	2,562	3,045	7,176	3,832	5,051	9,221	5,102	7,057			
	B	4,097	3,554	7,223				6,128	2,797	2,805	8,173	4,067	4,811	12,263	6,608	8,822
SHD30-043*01	A	4,167	3,569	7,202	6,325	2,948	3,015	8,948	4,577	5,570	11,571	6,206	8,124			
	B	5,436	4,656	9,395				7,679	3,490	3,377	10,302	5,119	5,931	15,548	8,377	11,040
SHD30-048*01	A	5,125	4,390	8,857	7,949	3,730	3,942	11,217	5,760	7,142	14,485	7,790	10,342			
	B	6,406	5,582	11,372				9,936	4,568	4,627	13,204	6,598	7,827	19,741	10,659	14,227
SHD30-053*01	A	6,214	5,323	10,745	9,725	4,577	4,920	13,710	7,052	8,836	17,695	9,527	12,752			
	B	8,236	7,054	14,234				11,688	5,321	5,347	15,673	7,796	9,263	23,642	12,746	17,096
SHD35-053*01	A	7,651	6,505	13,070	11,935	5,660	6,073	16,832	8,702	10,858	21,728	11,743	15,644			
	B	10,204	8,675	17,431				14,279	6,532	6,497	19,175	9,573	11,283	28,969	15,656	20,854
SHD35-058*01	A	9,296	7,733	15,538	14,160	6,836	7,475	20,024	10,478	13,228	25,888	14,121	18,981			
	B	12,124	10,308	20,710				17,196	7,903	8,056	23,060	11,546	13,809	34,788	18,830	25,315
SHD35-063*01	A	10,971	9,328	18,742	16,704	7,861	8,489	23,622	12,158	15,297	30,541	16,456	22,105			
	B	14,127	12,010	24,132				20,466	9,476	9,907	27,385	13,774	16,715	41,222	22,368	30,330
SHD40-063*01	A	13,456	11,608	23,515	21,090	9,849	10,167	29,726	15,213	18,587	38,362	20,577	27,008			
	B	17,092	14,744	29,869				26,090	12,077	12,233	34,726	17,411	20,654	51,999	28,170	37,495
SHD40-068*01	A	15,243	13,149	26,637	25,004	11,849	12,746	35,065	18,098	22,591	45,127	24,348	32,437			
	B	20,474	17,662	35,779				29,834	13,585	13,449	39,896	19,835	23,295	60,019	32,334	42,987
SHD40-073*01	A	17,816	15,368	31,134	28,567	13,441	14,385	40,162	20,643	25,765	51,758	27,846	37,144			
	B	23,159	19,978	40,471				34,819	16,033	16,428	46,415	23,236	27,807	69,606	37,640	50,567
SHD48-068*01	A	22137	19083	36894	32679	14965	16826	46381	23175	30254	60087	31989	43686			
	B	28778	24808	47962				39740	17450	19186	53446	26264	32618	80854	43288	59478
SHD48-073*01	A	30345	26158	50575	44795	20514	23061	63580	32181	41471	82365	43850	59879			
	B	39448	34006	65748				55477	24333	26298	74262	36002	44706	111832	59338	73524
SHD48-080*01	A	36413	31390	60688	53755	24614	27676	76295	38615	49765	98839	52616	71858			
	B	47337	40807	78895				65371	29198	31558	87915	43199	53651	132999	71201	97833
SHD60-080*01	A	47337	40808	78895	69879	31996	35977	99183	50198	64694	128487	68398	93413			
	B	61538	53050	102563				84982	37956	41026	114286	56156	69745	172894	92558	127181
SHD60-090*01	A	59929	51663	99882	88467	40509	45546	125566	63551	81903	162665	86595	118260			
	B	77908	67162	129847				107587	48052	51938	144686	71096	88295	218884	117182	161009
SHD60-100*01	A	73985	63779	123308	109215	50009	56228	155015	78457	101112	200815	106903	145996			
	B	96180	82913	160300				132820	59323	64120	178620	87769	109004	270220	144663	198772

GLIFO CANTED CANTED DESIGN

Attuatore Doppio Effetto
Double Acting Actuator

Attuatore Semplice Effetto
Spring Return Actuator



Torque Curve — Air Torque — Spring Torque

DOPPIO EFFETTO • DOUBLE ACTING

Valori in Nm / Values in Nm

MODEL	4 Bar			5 Bar			6 Bar			8 Bar		
	0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°
CHD16-020000	1836	908	1279	2295	1135	1599	2754	1362	1919	3672	1816	2559
CHD16-025000	2869	1419	1999	3586	1773	2499	4303	2128	2998	5737	2837	3998
CHD16-030000	4131	2043	2879	5164	2554	3598	6196	3064	4318	8262	4086	5757
CHD16-035000	5623	2781	3918	7028	3476	4898	8434	4171	5877	11245	5561	7836
CHD25-035000	6806	3366	4743	8508	4208	5929	10209	5049	7114	13616	6732	9486
CHD25-038000	8023	3968	5591	10029	4960	6988	12035	5952	8386	16046	7936	11182
CHD25-043000	10273	5081	7159	12842	6351	8949	15410	7621	10738	20547	10162	14318
CHD30-043000	13177	6517	9182	16471	8146	11477	19765	9775	13773	26353	13033	18364
CHD30-048000	16419	8120	11441	20524	10150	14302	24629	12180	17162	32838	16241	22883
CHD30-053000	20018	9900	13959	25023	12375	17437	30027	14850	20924	40036	19800	27899
CHD35-053000	24598	12165	17141	30748	15207	21426	36898	18248	25712	49197	24331	34282
CHD35-058000	29459	14569	20528	36823	18211	25660	44188	21854	30792	58917	29138	41055
CHD35-063000	34757	17189	24220	43446	21486	30274	52135	25784	36329	69513	34378	54462
CHD40-063000	43386	21457	30233	54232	26821	37791	65079	32185	45349	86771	42914	60465
CHD40-068000	50546	24998	35222	63182	31247	44027	75818	37497	52833	101091	49996	70444
CHD40-073000	58252	28809	40592	72815	36011	50740	87378	43214	60888	116504	57618	81184
CHD48-068000	65779	34048	46713	82222	42258	58390	98669	51072	70070	131558	68096	93426
CHD48-073000	90168	46672	64031	112710	58339	80040	135252	70008	96047	180336	93344	121106
CHD48-080000	108202	56004	76838	135250	70005	96046	162302	84006	115257	216403	112008	153677
CHD60-080000	140659	72804	99888	175824	91006	124860	210989	109206	149833	281318	145608	199777
CHD60-090000	178075	92172	126459	222594	115214	158074	267113	138258	189689	356150	184344	252918
CHD60-100000	219840	113788	156118	274800	142236	195148	329760	170682	234177	439680	227576	312237
CHD60-090000	178075	92172	126459	222594	115214	158074	267113	138258	189689	356150	184344	252918
CHD60-100000	219840	113788	156118	274800	142236	195148	329760	170682	234177	439680	227576	312237

R = RUN -> coppia minima durante la corsa da 0° a 90° - the minimum run torque between 0 and 90 degrees.

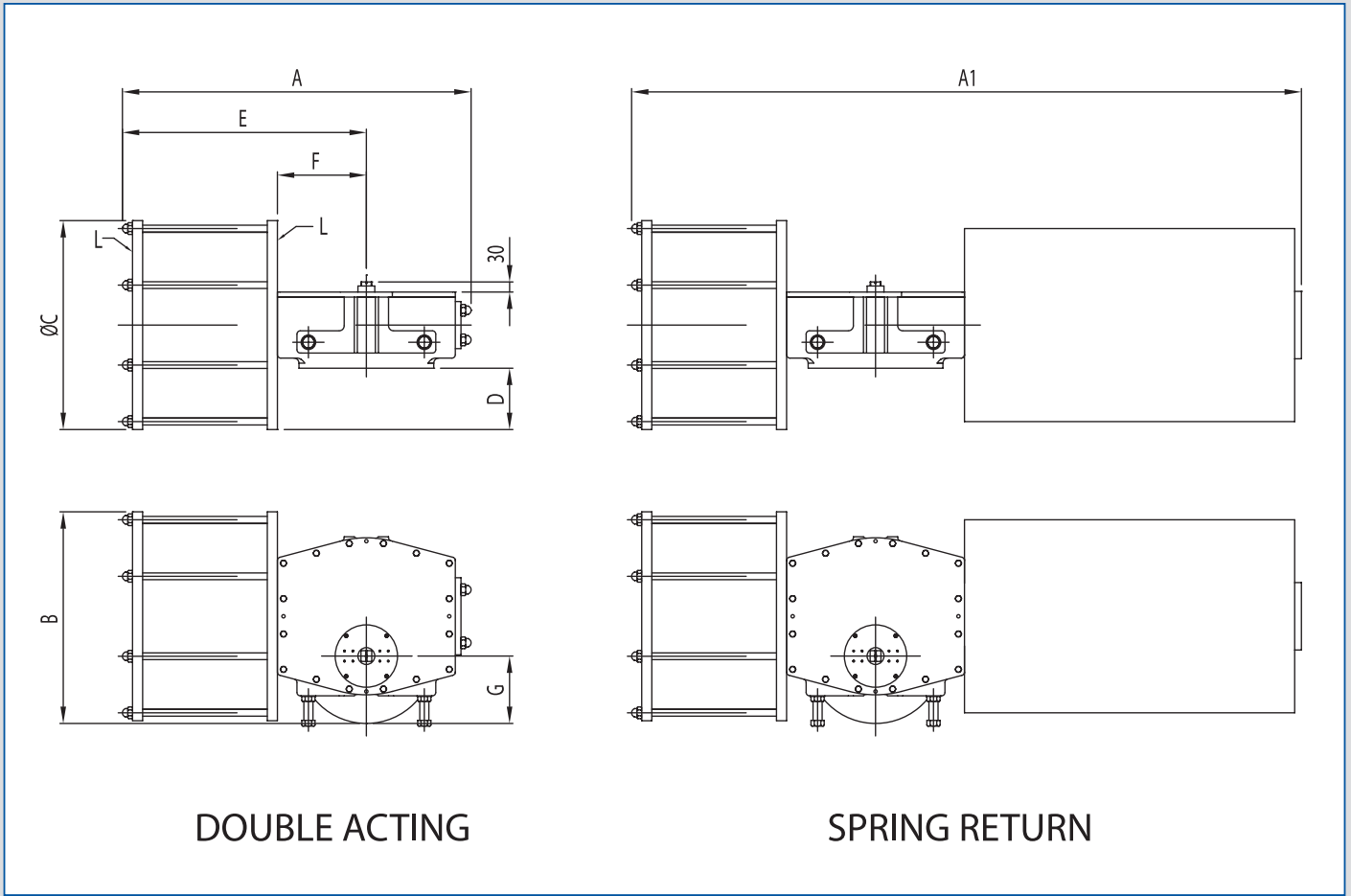
COPPIE PER GLIFO CANTED • CANTED TORQUE VALUES

SEMPLICE EFFETTO • SPRING RETURN

Valori in Nm / Values in Nm

MODEL		Spring Torque			Air Torque Air Supply Pressure											
					4 Bar			5 Bar			6 Bar			8 Bar		
		0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°	0°	R	90°
CHD16-020*01	A	670	452	808	1,166	456	471	1,625	683	791	2,084	910	1,111			
	B	876	591	1,056				1,419	544	543	1,878	771	863	2,796	1,225	1,503
CHD16-025*01	A	1,063	717	1,282	1,806	702	717	2,523	1,056	1,217	3,24	1,411	1,716			
	B	1,396	942	1,683				2,190	831	816	2,907	1,186	1,315	4,341	1,895	2,315
CHD16-030*01	A	1,496	1,02	1,834	2,635	1,023	1,045	3,668	1,534	1,764	4,700	2,044	2,484			
	B	2,059	1,404	2,524				3,105	1,15	1,074	4,137	1,660	1,794	6,203	2,682	3,233
CHD16-035*01	A	1,807	1,262	2,299	3,816	1,519	1,619	5,221	2,214	2,599	6,627	2,909	3,578			
	B	2,543	1,735	3,118				4,485	1,741	1,78	5,891	2,436	2,759	8,702	3,826	4,718
CHD25-035*01	A	2,047	1,464	2,700	4,759	1,902	2,043	6,461	2,744	3,229	8,162	3,585	4,414			
	B	3,093	2,098	3,759				5,415	2,110	2,170	7,116	2,951	3,355	10,520	4,634	5,727
CHD25-038*01	A	2,759	1,973	3,641	5,264	1,995	1,950	7,270	2,987	3,347	9,276	3,979	4,745			
	B	3,913	2,654	4,757				6,116	2,306	2,231	8,122	3,298	3,629	12,133	5,282	6,425
CHD25-043*01	A	3,637	2,467	4,421	6,636	2,614	2,738	9,205	3,884	4,528	11,773	5,154	6,317			
	B	5,017	3,403	6,099				7,825	2,948	2,850	10,393	4,218	4,639	15,53	6,759	8,219
CHD30-043*01	A	4,735	3,34	6,118	8,442	3,177	3,064	11,736	4,806	5,359	15,030	6,435	7,655			
	B	6,098	4,301	7,878				10,373	3,845	3,599	13,667	5,474	5,895	20,255	8,732	10,486
CHD30-048*01	A	5,887	4,152	7,605	10,532	3,968	3,836	14,637	5,998	6,697	18,742	8,028	9,557			
	B	7,754	5,469	10,017				12,770	4,681	4,285	16,875	6,711	7,145	25,084	10,772	12,866
CHD30-053*01	A	7,035	4,962	9,088	12,983	4,938	4,861	17,988	7,413	8,349	22,992	9,888	11,836			
	B	9,217	6,502	11,908				15,806	5,873	5,529	20,810	8,348	9,016	30,819	13,298	15,991
CHD35-053*01	A	8,854	6,189	11,286	15,744	5,976	5,855	21,894	9,018	10,140	28,044	12,059	14,426			
	B	11,770	8,235	15,018				18,978	6,972	6,408	25,128	10,013	10,694	37,427	16,096	19,264
CHD35-058*01	A	10,195	7,133	13,008	19,264	7,436	7,520	26,628	11,078	12,652	33,993	14,721	17,784			
	B	14,355	10,044	18,316				22,468	8,167	7,344	29,833	11,810	12,476	44,562	19,094	22,739
CHD35-063*01	A	12,292	8,601	15,684	22,465	8,588	8,536	31,154	12,885	14,590	39,843	17,183	20,645			
	B	16,158	11,306	20,617				27,288	10,180	9,657	35,977	14,478	15,712	53,355	23,072	27,822
CHD40-063*01	A	14,480	10,292	18,928	28,906	11,165	11,305	39,752	16,529	18,863	50,599	21,893	26,421			
	B	18,967	14,028	26,335				35,265	12,793	11,456	46,112	18,157	19,014	67,804	28,886	34,130
CHD40-068*01	A	17,715	12,591	23,156	32,831	12,407	12,066	45,467	18,656	20,871	58,103	24,906	29,677			
	B	22,115	16,357	30,708				41,067	14,890	13,319	53,703	21,140	22,125	78,976	33,639	39,736
CHD40-073*01	A	19,992	14,209	26,132	38,260	14,600	14,460	52,823	21,802	24,608	67,386	29,005	34,756			
	B	25,029	18,512	34,753				47,786	17,499	15,987	62,349	24,702	26,135	91,475	39,106	46,431
CHD48-068*01	A	26318	18088	38165	39461	15960	8548	55904	24170	20225	72351	32984	31905			
	B	34214	23515	49616				48008	18743	8774	64455	27557	20454	97344	44581	43810
CHD48-073*01	A	36076	24795	52317	54092	21877	11714	76634	33544	27723	99176	45213	43730			
	B	46899	32233	68011				65811	26106	12029	88353	37775	28036	133437	61111	53095
CHD48-080*01	A	43290	29753	62778	64912	26251	14060	91960	40252	33268	119012	54253	52479			
	B	56277	38679	81612				78973	31326	14434	106025	45327	33645	160126	73329	72065
CHD60-080*01	A	56279	38680	81614	84380	34124	18275	119545	52326	43246	154710	70526	68219			
	B	73164	50285	106101				102660	40721	18759	137825	58921	43732	208154	95323	93676
CHD60-090*01	A	71249	48969	103324	106826	43203	23135	151345	66245	54750	195864	89289	86365			
	B	92625	63660	134322				129969	51554	23752	174488	74598	55367	263525	120684	118596
CHD60-100*01	A	87962	60455	127560	131878	53333	28558	186838	81781	67588	241798	110227	106617			
	B	114348	78590	165824				160452	63646	29324	215412	92092	68353	325332	148986	146413

* = tipo di molla A o B; spring type A or B in the model number indicates the selection of either the "A" or "B" spring from the tables below.



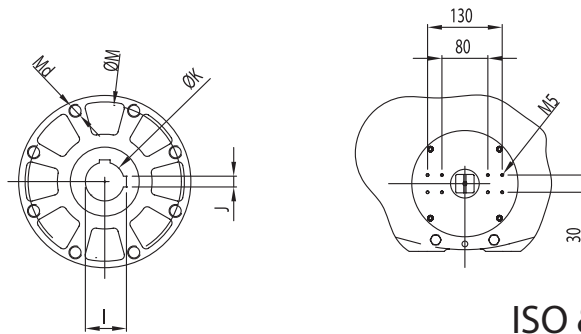
DOUBLE ACTING

SPRING RETURN

SHD & CHD SERIES

MODEL	A	A1	B	C	D	E	F	G	L
aHD16-020***	800	1325	370	272	48	516	196	145	1/2" NPT
aHD16-025***	800	1325	395	322	73	516	196	145	1/2" NPT
aHD16-030***	800	1325	420	373	98	516	196	145	1/2" NPT
aHD16-035***	800	1325	445	410	117	516	196	145	1/2" NPT
aHD25-035***	985	1510	490	410	92	653	236	175	1/2" NPT
aHD25-038***	985	1510	505	461	118	653	236	175	1/2" NPT
aHD25-043***	985	1510	530	512	143	653	236	175	1/2" NPT
aHD30-043***	1215	1935	640	514	128	763	287	190	3/4" NPT
aHD30-048***	1215	1935	657	564	153	763	287	190	3/4" NPT
aHD30-053***	1215	1935	682	625	184	763	287	190	3/4" NPT
aHD35-053***	1435	2320	710	625	157	904	343	230	3/4" NPT
aHD35-058***	1435	2320	732	675	183	904	343	230	3/4" NPT
aHD35-063***	1435	2320	760	730	210	904	343	230	3/4" NPT
aHD40-063***	1710	2750	830	745	192	1124	415	260	3/4" NPT
aHD40-068***	1710	2750	850	795	217	1124	415	260	3/4" NPT
aHD40-073***	1710	2750	875	847	243	1124	415	260	3/4" NPT

Replace "a" with "C" (for CHD series) or "S" (for SHD series)

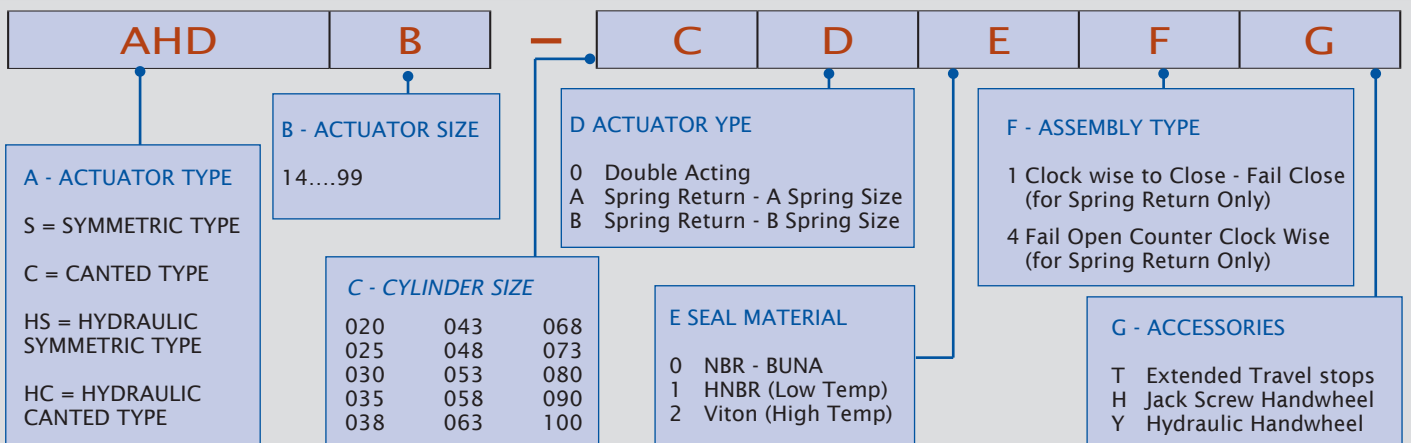


ISO & NAMUR connections

MODEL	Threads			I	J	Main Bore	
	ØM	Md	Depth			ØK	Depth
aHD16-020***	165	M20	25	54	14	50	156
aHD16-025***	165	M20	25	54	14	50	156
aHD16-030***	165	M20	25	54	14	50	156
aHD16-035***	165	M20	25	54	14	50	156
aHD25-035***	254	M16	17	85	20	80	204
aHD25-038***	254	M16	17	85	20	80	204
aHD25-043***	254	M16	17	85	20	80	204
aHD30-043***	298	M20	34	116.4	28	110	234
aHD30-048***	298	M20	34	116.4	28	110	234
aHD30-053***	298	M20	34	116.4	28	110	234
aHD35-053***	356	M30	43	137.4	32	130	279
aHD35-058***	356	M30	43	137.4	32	130	279
aHD35-063***	356	M30	43	137.4	32	130	279
aHD40-063***	406	M36	35	157.4	32	150	326
aHD40-068***	406	M36	35	157.4	32	150	326
aHD40-073***	406	M36	35	157.4	32	150	326

Replace "a" with "C" (for CHD series) or "S" (for SHD series)

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