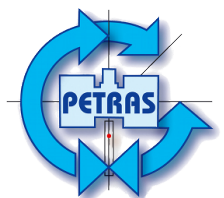
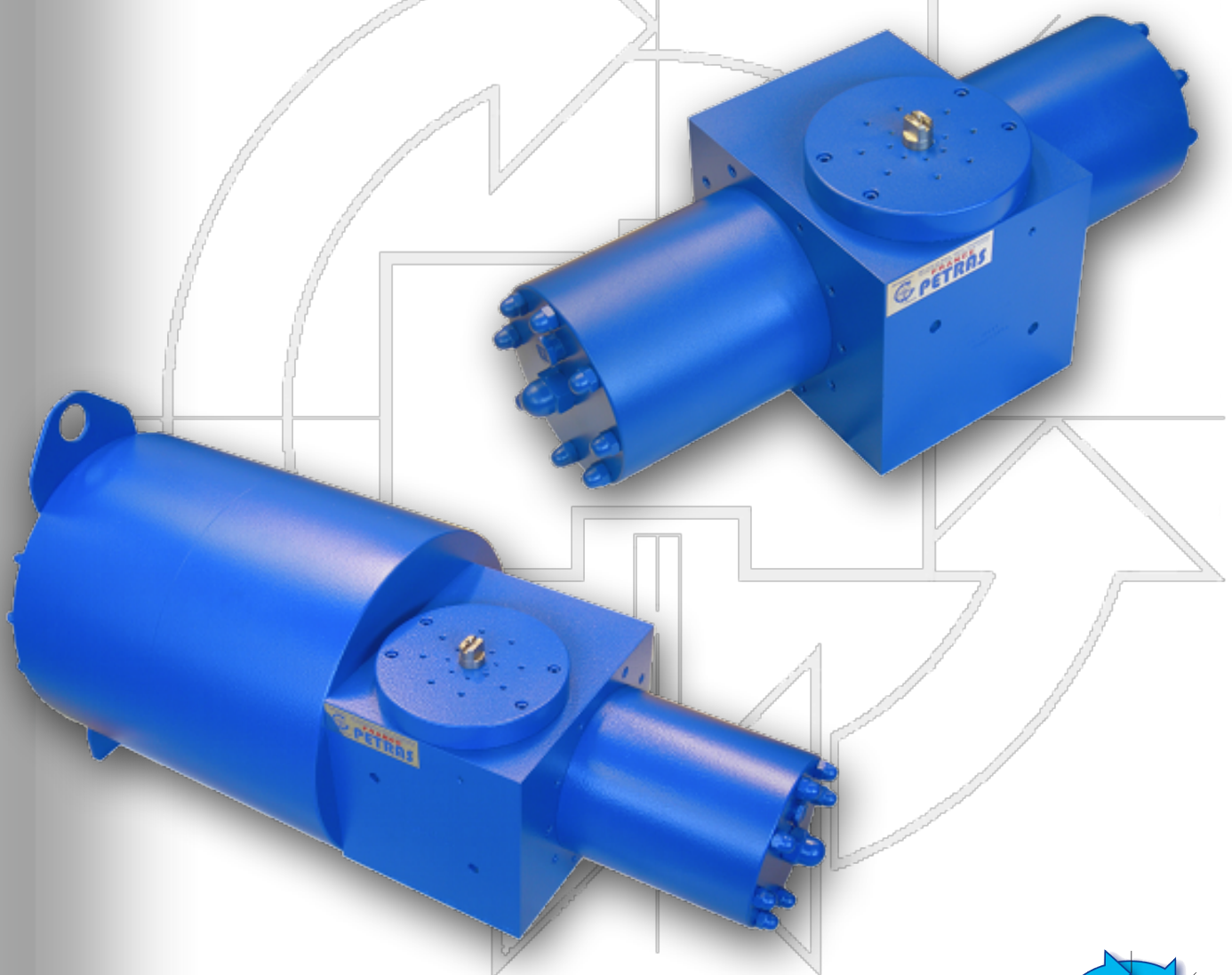


PETRAS

Hydraulic actuators



Hydraulic actuators

PETRAS makes a wide range of high performance rotating actuators since 1966. Petras actuators strength and reliability are recognized by the most demanding users worldwide.

The Petras hydraulic actuators are available in double acting and single acting - spring return - version not only for quarter turn valves but also for any kind of application up to 240° rotation.

The exclusive rack and pinion system combined with the selection of high quality material ensure outstanding performances and lifetime even in the most severe environments.

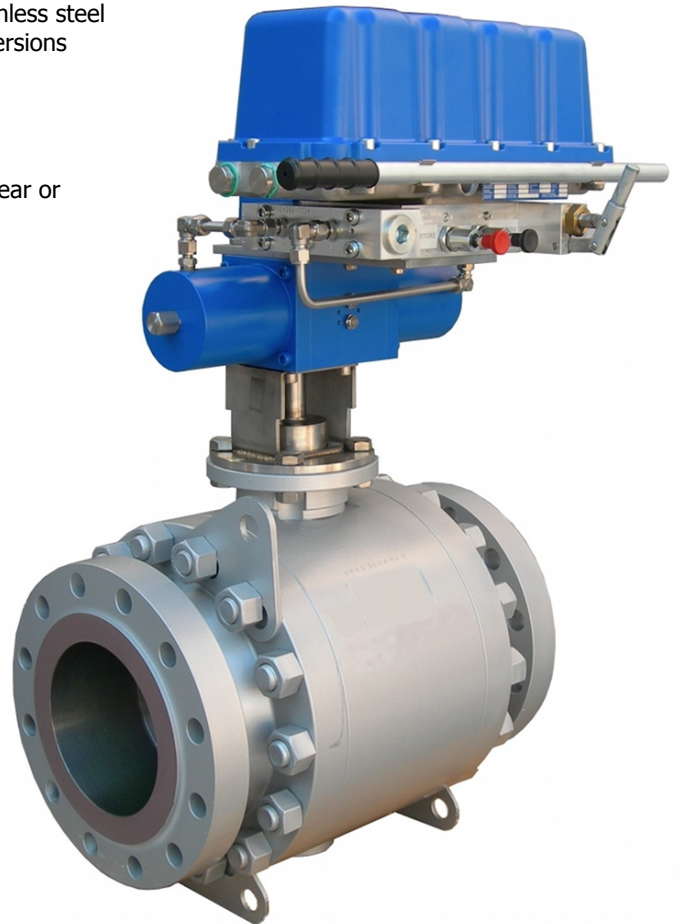
Hydraulic actuators main features :

- ♦ The pinion roller bearings assure perfect alignment of the shaft and smooth torque transmission.
- ♦ Heavy bronze bushings assure strong rack shaft support, eliminate friction between piston and cylinder and provide consistent torque output
- ♦ Travel stops are in-line with the rack shaft and provide safe and accurate stroke adjustment.
- ♦ High quality construction material.
- ♦ Power fluid: mineral oil or water, seawater with suitable material selection.
- ♦ Supply pressure up to 280 bar.

Petras hydraulic actuators are available in aluminum, steel or stainless steel materials. They are available in double acting and single acting versions

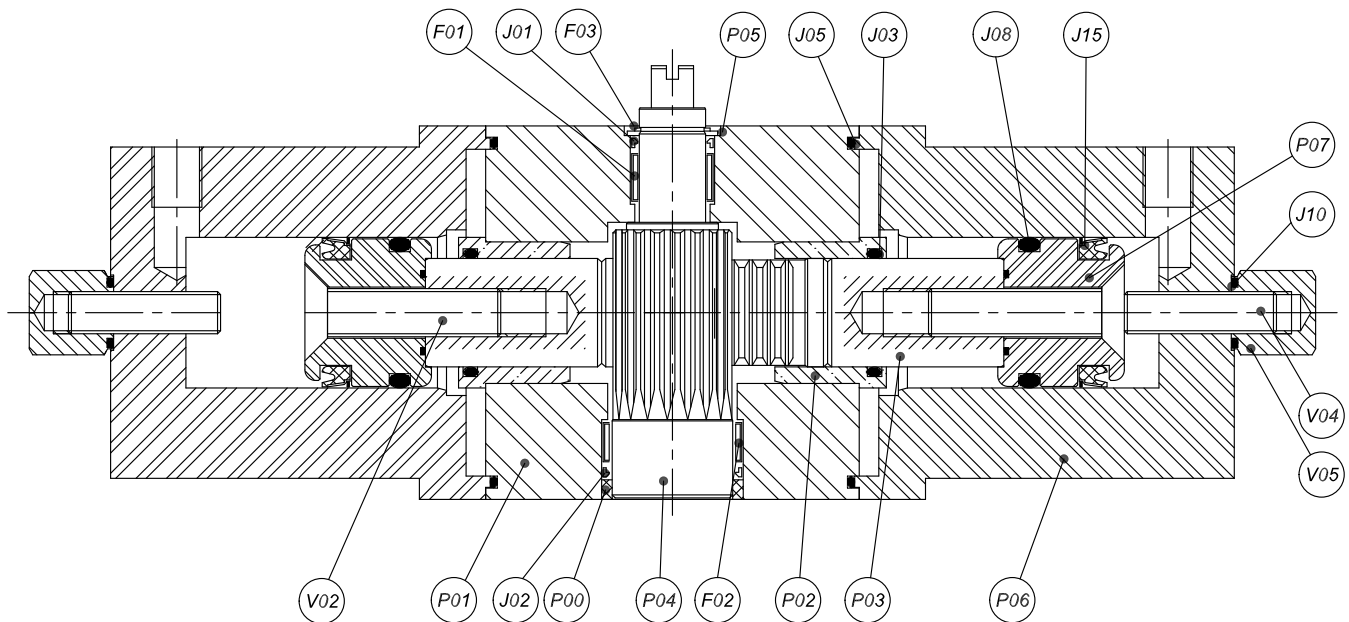
The following accessories are available :

- ♦ Limit switch box
- ♦ Manual override : jack screw with hand wheel, declutchable gear or hydraulic hand pump
- ♦ Electro hydraulic power unit



Hydraulic actuators

Double acting hydraulic actuators



Technical specifications:

Technical data	
Supply pressure	Up to 280 barg
Torque output (*)	Up to 10.000 Nm
Operating media	Mineral oil Water Seawater
Stroke angle	110° standard - 90° +/- 10° adjustable Up to 240° on request
Rotating direction	Closing clockwise
Ambient temperature	-20°C à +70°C standard -60°C à +150°C on request

Material	
Housing	Aluminum 6082 T6 (standard) Carbon steel Stainless steel
Cylinder - flanges	Aluminum 6082 T6 (standard) Carbon steel Stainless steel
Piston	Aluminum 6082 T6 (standard) Carbon steel Stainless steel
Standard painting	Polyurethane
Rack and pinion shaft	Stainless steel DIN 1.4057 QT900
Screws	Stainless steel

(*) please contact our technical dpmt for detailed informations

Part list	
F03	Circlips
F01 - F02	Roller bearing
J15	Seal
J10	Gasket
J08	O-ring
J05	O-ring
J03	Rack bar O-ring
J01 - J02	Seal
V05	Blind nut
V04	Travel stop
V02	Piston screw
P07	Piston
P06	Cylinder
P05 - P00	Friction washer
P04	Pinion
P03	Rack bar
P02	Bearing
P01	Housing

Construction	
Type	Double acting hydraulic actuator
Conception	Unpressurized housing
Gear mechanism	Rack and pinion
Bearing system	Roller bearings and friction bearings
Lubrication	Permanent lubrication
Travel stops	2 adjustable travel stops at +/- 10°



Subject to modifications
SerieH-EN-V01-6

Hydraulic actuators

Double acting hydraulic actuators

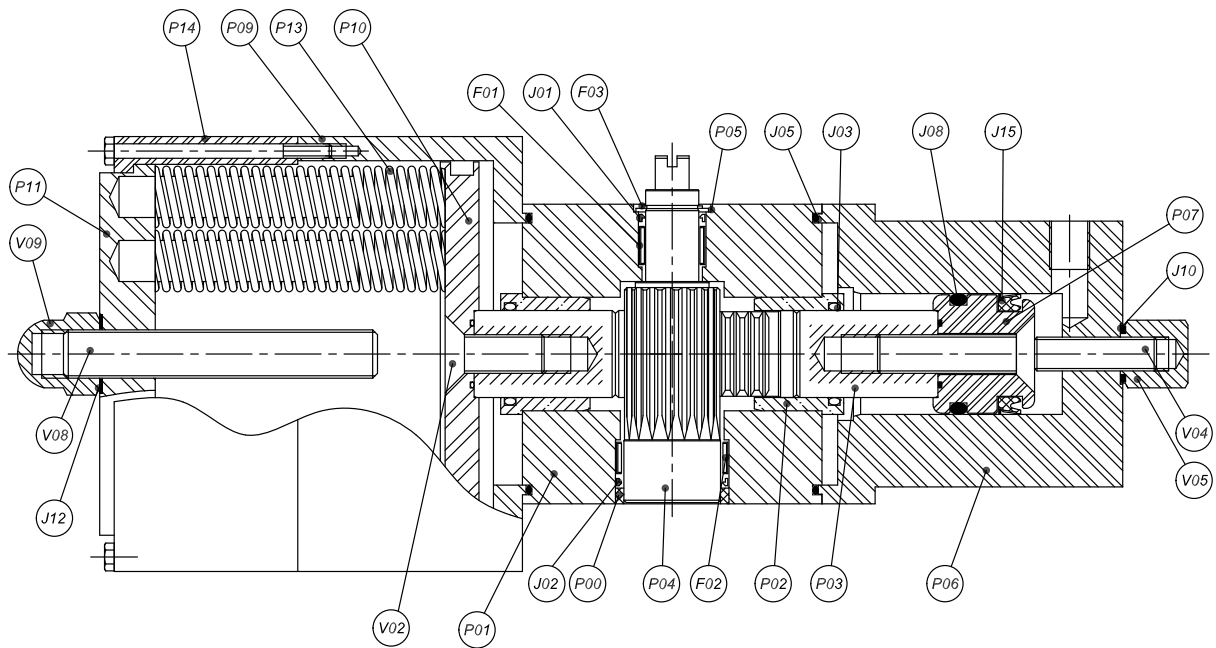
Output torques in Nm												
Supply pressure - bar	40	50	60	70	80	90	100	110	120	130	140	150
Model												
DH-001-20	11	14	17	20	23	26	28	31	34	37	40	43
DH-005-30	33	41	50	58	66	75	83	91	100	108	116	124
DH-005-45	75	93	112	131								
DH-005-50	92	115	138									
DH-015-36	66	83	99	116	132	149	165	182	198	215	232	248
DH-015-45	103	129	155	181	207	233	258	284	310	336	362	388
DH-015-50	128	159	191	223	255	287	319	351	383	415		
DH-015-55	154	193	232	270	309	347	386					
DH-015-60	184	230	276	322	367	413						
DH-015-70	250	313	375	438								
DH-015-80	327	408										
DH-060-36	103	129	154	180	206	232	257	283	309	334	360	386
DH-060-45	161	201	241	281	322	362	402	442	482	522	563	603
DH-060-50	198	248	298	347	397	447	496	546	595	645	695	744
DH-060-55	240	300	360	420	480	540	600	660	720	781	841	901
DH-060-60	286	357	429	500	572	643	715	786	857	929	1.000	1.072
DH-060-70	389	486	584	681	778	875	973	1.070				
DH-060-80	508	635	762	889	1.016							
DH-060-90	643	804	965									
DH-150-52	368	460	552	644	736	828	920	1.012	1.104	1.196	1.288	1.380
DH-150-60	490	612	735	857	980	1.102	1.225	1.347	1.470	1.592	1.715	1.837
DH-150-65	575	719	863	1.006	1.150	1.294	1.438	1.581	1.725	1.869	2.013	2.156
DH-150-70	667	834	1.000	1.167	1.334	1.500	1.667	1.834	2.001	2.167	2.334	2.501
DH-150-80	871	1.089	1.307	1.524	1.742	1.960	2.178	2.395	2.613	2.831	3.049	
DH-150-90	1.102	1.378	1.654	1.929	2.205	2.480	2.756	3.032				
DH-150-110	1.647	2.058	2.470	2.882								
DH-150-120	1.960	2.450	2.940									
DH-400-52	590	738	886	1.033	1.181	1.328	1.476	1.623	1.771	1.919	2.066	2.214
DH-400-70	1.070	1.337	1.605	1.872	2.140	2.407	2.674	2.942	3.209	3.477	3.744	4.012
DH-400-80	1.397	1.747	2.096	2.445	2.795	3.144	3.493	3.842	4.192	4.541	4.890	5.240
DH-400-90	1.768	2.211	2.653	3.095	3.537	3.979	4.421	4.863	5.305	5.747	6.189	6.632
DH-400-110	2.642	3.302	3.963	4.623	5.283	5.944	6.604	7.265	7.925	8.586	9.246	9.906
DH-400-120	3.144	3.930	4.716	5.502	6.288	7.074	7.860	8.646	9.432			
DH-400-150	4.912	6.140	7.368	8.596	9.825							
DH-400-175	6.686	8.358	10.029									

Output torques Nm												
Supply pressure - bar	160	170	180	190	200	210	220	230	240	250	260	280
Model												
DH-015-36	265	281	298	314	331	347	364	380	397	413		
DH-060-36	412	437	463	489	514	540	566	592	617	643	669	720
DH-060-45	643	683	723	764	804	844	884	924	965	1.005	1.045	1.125
DH-060-50	794	844	893	943	992	1.042	1.092					
DH-060-55	961	1.021										
DH-150-52	1.472	1.564	1.656	1.748	1.840	1.932	2.024	2.116	2.208	2.300	2.392	2.576
DH-150-60	1.960	2.082	2.205	2.327	2.450	2.572	2.695	2.817	2.940	3.062		
DH-150-65	2.300	2.444	2.588	2.731	2.875	3.019						
DH-150-70	2.668	2.834	3.001									
DH-400-52	2.361	2.509	2.657	2.804	2.952	3.099	3.247	3.394	3.542	3.690	3.837	4.132
DH-400-70	4.279	4.547	4.814	5.081	5.349	5.616	5.884	6.151	6.419	6.686	6.954	7.488
DH-400-80	5.589	5.938	6.288	6.637	6.986	7.336	7.685	8.034	8.384	8.733	9.082	9.781
DH-400-90	7.074	7.516	7.958	8.400	8.842	9.284	9.726	10.168				
DH-400-100	8.733	9.279	9.825									



Hydraulic actuators

Single acting hydraulic actuators



Technical specifications:

Technical data	
Supply pressure	Up to 280 barg
Spring torque output (*)	Up to 8.600 Nm starting torque Up to 5.400 Nm ending torque
Operating media	Mineral oil Water Seawater
Stroke angle	110° standard - 90° +/- 10° adjustable Up to 240° on request
Rotating direction	Closing clockwise
Ambient temperature	-20°C à +70°C standard -60°C à +150°C on request
Materials	
Housing	Aluminum 6082 T6 (standard) Carbon steel Stainless steel
Cylinder - flanges	Aluminum 6082 T6 (standard) Carbon steel Stainless steel
Piston	Aluminum 6082 T6 (standard) Carbon steel Stainless steel
Standard painting	Polyurethane
Rack and pinion shaft	Stainless steel DIN 1.4057 QT900
Screws	Stainless steel

(*) please contact our technical dpmt for detailed informations

Part list	
F03	Circlips
F01 - F02	Roller bearing
J15	Seal
J10 - J12	Gasket
J08	O-ring
J05	O-ring
J03	Rack bar O-ring
J01 - J02	Seal
V05 - V09	Blind nut
V04 - V08	Travel stop
V02	Piston screw
P14 - P09	Piston
P13	Springs
P11	Springs flange
P10 - P07	Cylinder
P06	Pinion
P05 - P00	Friction washer
P04	Rack bar
P03	Bearing
P02	Housing
P01	Corps

Construction	
Type	Hydraulic - single acting - spring return
Conception	Unpressurized housing
Gear mechanism	Rack and pinion
Bearing system	Roller bearings and friction bearings
Lubrication	Permanent lubrication
Travel stops	2 adjustable travel stops at +/- 10°

Subject to modifications
SerieH-EN-V01-6

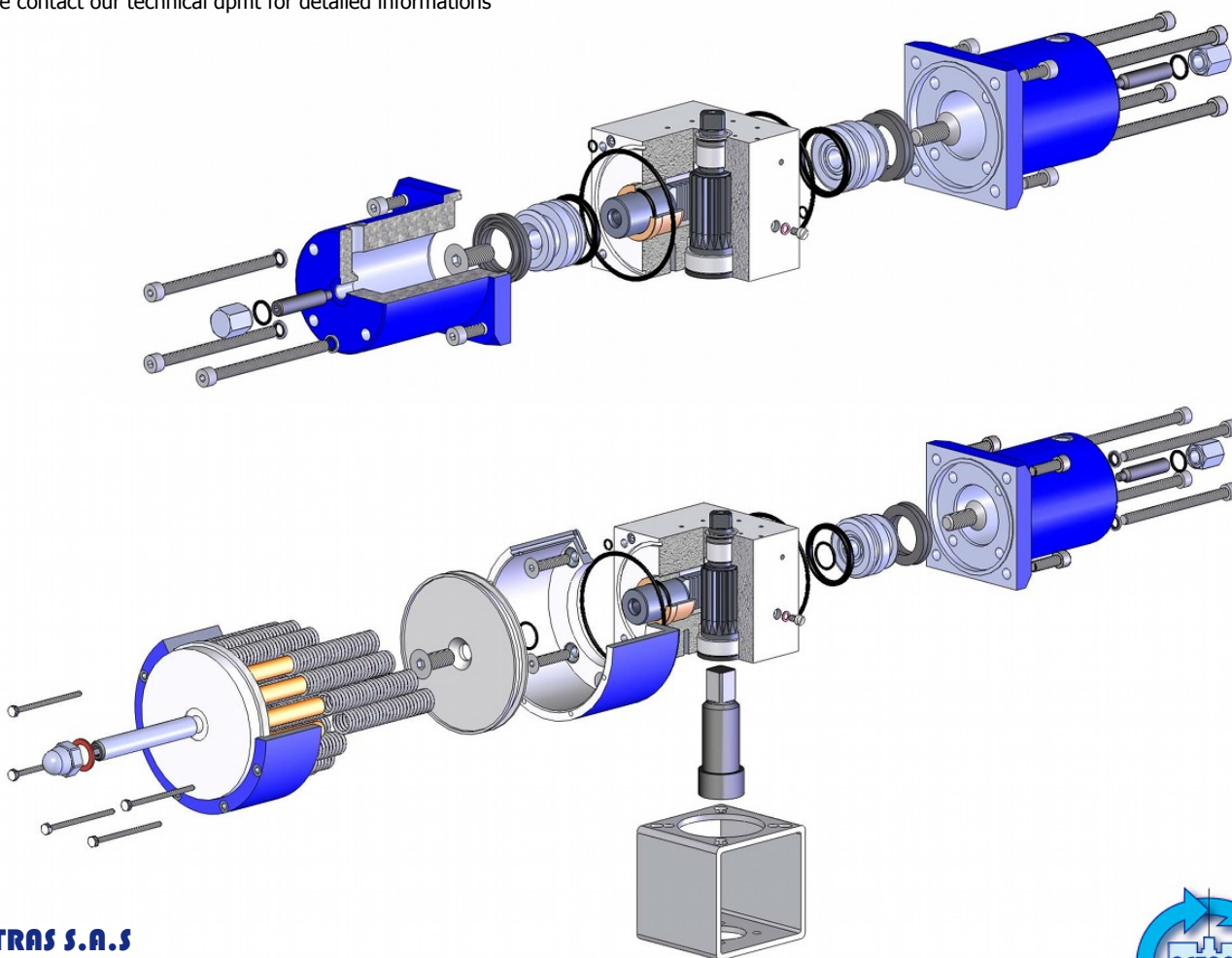


Hydraulic actuators

Single acting hydraulic actuators

Output torques in Nm		
Spring torque	Spring starting	Spring ending
Modèle		
SH-005-xx-R6	28	23
SH-005-xx-R10	47	39
SH-015-xx-R14	95	70
SH-015-xx-R27	183	135
SH-060-xx-R27	290	185
SH-060-xx-R46	490	290
SH-055-xx-R73	760	450
SH-150-xx-R11	1.016	654
SH-150-xx-R15	1.385	892
SH-150-xx-R21	1.940	1.250
SH-400-xx-R37	4.000	1.700
SH-400-xx-RT1	2.969	1.943
SH-400-xx-R37-2	6.000	2.500
SH-400-xx-RT2	4.591	2.970
SH-400-xx-RT3	5.689	3.451
SH-400-xx-RT12	7.560	4.913
SH-400-xx-RT13	8.658	5.393

Note: Pressure related output torques are calculated according to the power fluid available pressure.
Please contact our technical dpmt for detailed informations



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