

VASTAS

GO

Gas Over Oil Actuators

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6D-0449
600-0043

0036

TÜVRheinland® CERT
ISO 9001
ISO 14001
BS OHSAS 18001



Gas Over Oil Actuators (GO)

Designed for usage in pipelines, actuating the valves by means of pressure of the flowing gas or external high-pressure nitrogen sources. Actuators operating at different pressures are available upon request.

Varieties are offered depending on geographical requirements, engineering works and site conditions. Standard type actuators are suitable for operation between -29°C to +80°C temperature range. Lowest limit of -60°C is available upon special requirement.

All pressurized equipments used on "GO" actuators are manufactured and NDT inspected as per ASME Section Viii. Modifications depending on scope of usage, pressure changes, climate & site conditions, structure and maintenance requirements are offered.

Quality & Design Standard Qualifications

Our Product and Corporate Management System are audited and certified regularly according to various standards by independent supervising authorities. Related standards and number of licenses are listed below:

Quality Management System	ISO 9001:2008	01 100 032841
Environmental Management System	ISO 14001:2004	01 104 031931
Occupational Health & Safety M.S.	OHSAS 18001:2007	01 113 030063
Pressure Equipment Directive	PED 97/23/EC	0036
Equipment of Protective Systems Intended for use in Potentially Explosive Atmospheres Directive	Atex 94/9/EC Atex 94/9/EC	FT2U 09 ATEX 0257 IEP 10 ATEX 012
Gost Russian Certification & Standardization	Gost R	C-TR.AB28.B.00
Specification for Quality Programs for the Petroleum, Petrochemical & Natural Gas Industry	API	API Q1:2010
Fire & Performance Tests	TÜVSÜD	TGK04-3711R(21-25)

Standard Accessories

Emergency Hand-Pump
Used for emergency cases and for manual operation without using pressurized gas.

Hydraulic Filter & Speed Control
Provides cleaning of system oil and adjustment of open/close period.

Torque Limits (TL)
Control the limits of torque created by actuator.

Local Control (LC)
Provides manual open/close operation of actuator (GO)

Gas Over Oil Tank
Tank of system oil necessary for actuator (see page 6)

Scotch Yoke Mechanism
Main power transition system of actuator (see page 8)

Hydraulic Cylinder
Main movement transition unit to scotch yoke mechanism, operated by hydraulic oil pressure.

Gas Filter
Provides clean gas for sound operation of control and functional units.





Optional Accessories

Differential Pressure Switch (DPS)
Control switch to prevent operation of actuator under high differential pressure.

Spare Gas Tank (RT)
Used for operation in case of lack of the pipeline gas which should have a volume of gas sufficient for at least one open and one close operation.

Line Break System (LB)
A safety system used for safe operation of the pipeline which operate depending on the speed of pressure decrease in the main line.

Emergency Shut-Down System (ESD)
Operates according to pressure level of the line which controls opening or closing the actuator when line pressures are out of adjusted lowest and highest levels.

Structure & Assembly

Assembly of actuator (GO) on the valve should be executed by an experienced & qualified team.

Following information is needed when selecting the actuator;

1. Torque values of the valve to be equipped (break to open "BTO", run to open "RTO", run to close "RTC". Actuator selected should create 40% of additional torque than the maximum torque necessary for the valve.
2. Flow direction and gas pressure (max, min, norm)
3. Stem diameter & dimension of connection key
4. Actuator connecting flange standard as per ISO5211, or short code (FXX) or dimensions.
5. Valve Data Sheets (VDS) & Actuator Data Sheets (ADS) should be reviewed & answered in details and additional requirements should be indicated. Specifications of selected & supplied actuator should be compared with the datasheets of actuator and valve in order to verify, during assembly at site.

In the mean time, suitability of end-flanges & stem diameter should be checked and actuator is mounted on the valve by lifting through its hooks. Actuator equipped valve shall be than assembled on pipeline between the proper space left, considering up and down-stream direction.

Operation & Functions

Local Control (LC)



Manual operation of valve locally by means of gas pressure activated with open/close buttons located on actuator. This is a standard feature for all GO actuators. When buttons or levers marked “open” or “close” on the actuators are pressed by the operator, line gas fills in gas over oil tubes and compressing the hydraulic oil in hydraulic cylinder moves the scotch-yoke mechanism which opens or closes the valve.

Remote Control (RC)



Remote operation of valve from the control panel. Two solenoids are located on the actuator; each being used for open and close the valve. Generally workd by 24VDC power, different working coltage is available upon request. Through electrical line between the valve and control panel, signals are sent to solenoid valves. Connection line is also used to receive information of valve position and pipeline condition. Additional control options and solutions are offered, considering the requirements of end-user.

Line-Break System (LB)



A safety for sound operation of pipeline which is activated by speed down rate of the line pressure. When the rate is hgher than the adjusted level, actuator closes the valve automatically (0,5 - 1 - 1,5 - 2 - 2,5 - 3 - 3,5 - 4 bar/min). This operation does not need any electrical energy and the valve can not be opened even if the line pressure increases to its regular level. Authorized operator should inspect the line and remove the cause of failure than reset the actuator in order to re-operate the valve.

Emergency Shut-Down (ESD)



Operates depending on the line pressure. When the pressure decreases below an adjusted min level (LP ESD) or increases over an adjusted max level (HP ESD) or under both conditions (LP & HP ESD) the system activated automatically and close the valve. RC, DPS, LB or RT functions can be additionally provided upon request.

1. Control of closure at low pressure (LP)
2. Control of closure at high pressure (HP)
3. Control of closure at both low & high pressure (LP & HP)

Spare Gas Tank (Reservoir)



Gas storage adequate to operate the actuator for limited open/close cycles of the valve, in emergency cases.

Torque Limits (TL)



The torque created by actuator is proportional with the gas pressure, and the limits prevent creation of over torques than that of adequate torque necessary for operation of the valve. When pre-set value is exceeded, gas pressure is relieved and risk of over-torque is prevented.

Differential Pressure Switch (DPS)



This feature prevents the operation of actuator (GO) under high differential pressure, which otherwise may damage the valve and the pipeline. When differential pressure increases over an adjusted level valve can not operate nor locally neither remote control, otherwise trim of the valve or pipeline itself would be damaged. Standard set rate is 1-7 bar, or other rates upon request.

Gas Filters



All power and instrument gases used in GO actuators are filtered & cleaned at 5 micron level. Filters should be cleaned by intervals depending on usage frequency. More precise filtering system is available upon request.

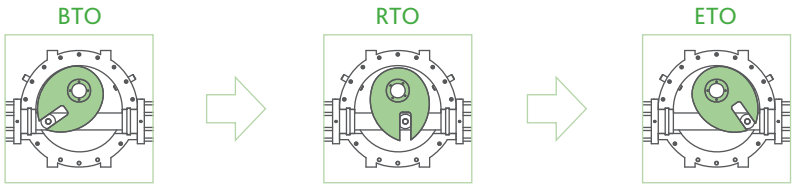
Emergency Hand Pump

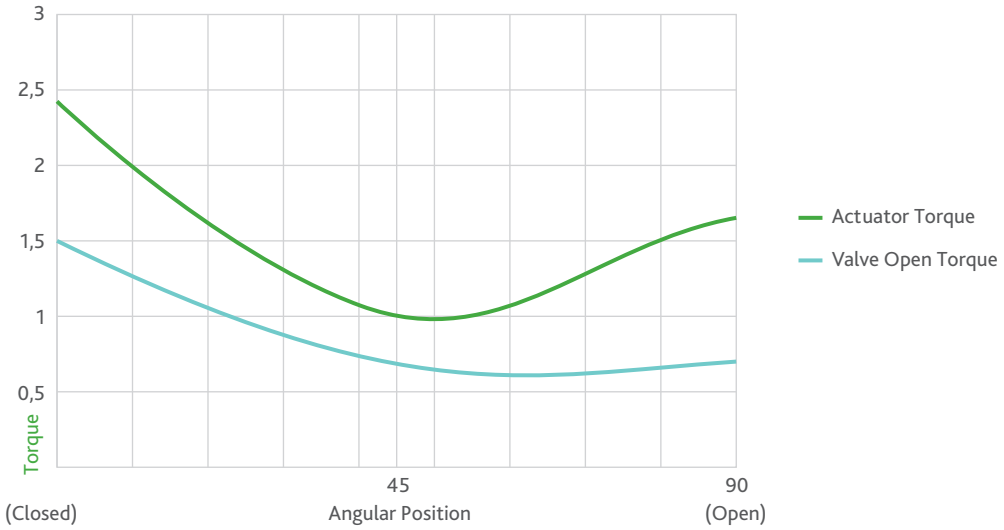


Used for open/close the valve during emergency cases or without using the gas pressure. The pump is equipped with a 4-ways control valve for open, close, automatic and by-pass positions. There is also a locking-device to prevent unauthorized operations. Whenever the gas pressure is required for operation, the valve lever should be positioned at "AUTO", otherwise the lever is kept at relevant position and actuator is operated through hand pumping. By-pass position is used to balance the oil level of oil tanks after bringing the actuator in the middle situation.

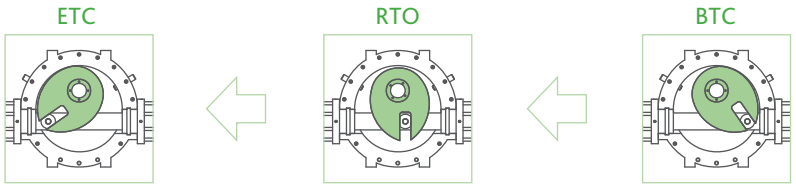


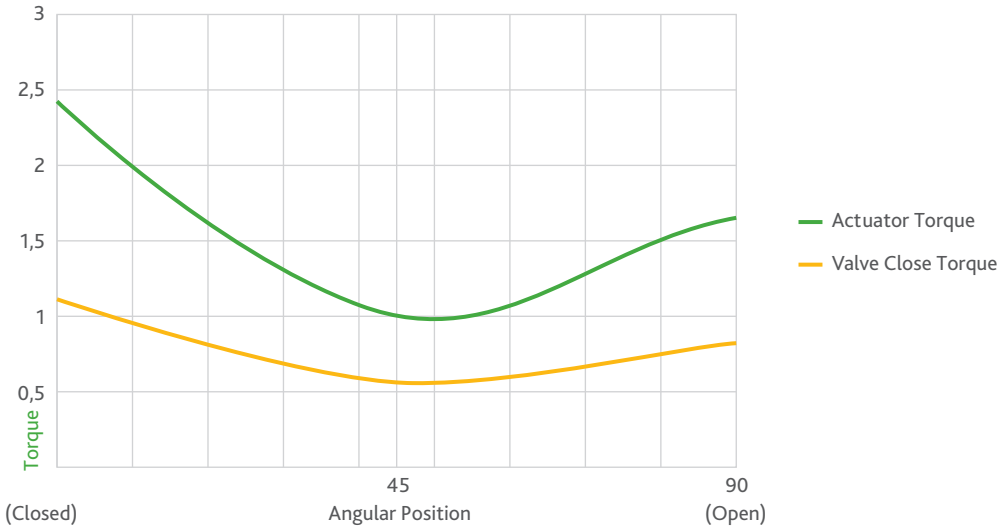
Scotch Yoke Open Torque Diagram

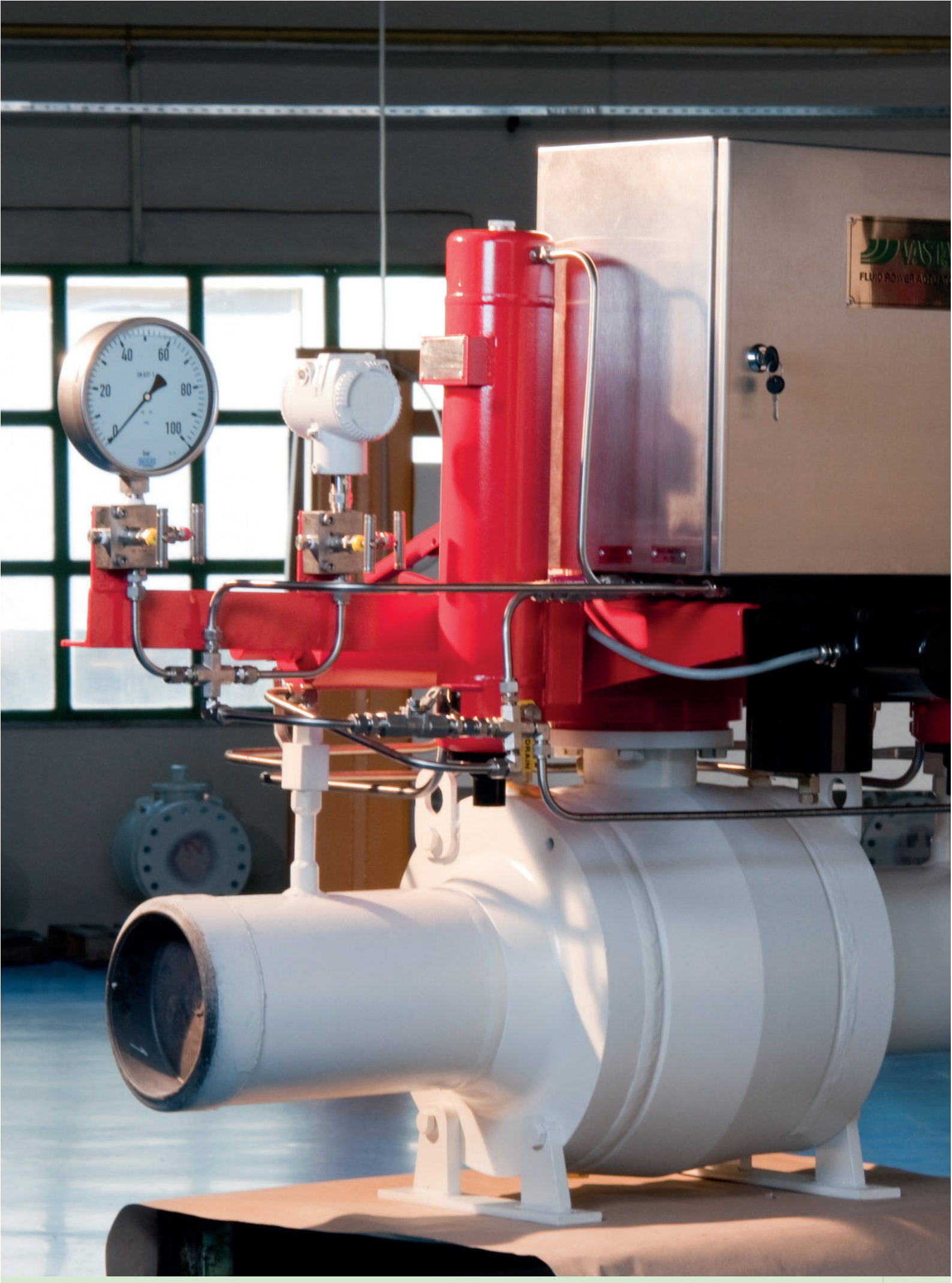




Scotch Yoke Close Torque Diagram






40
60
20
80
0
100
DRAIN

Service

Whenever service is required, preference would be given to Vastas authorized service team which is always ready to work.

Assembly in Line

Vastas supervisor would witness the assembly and make the necessary adjustments.

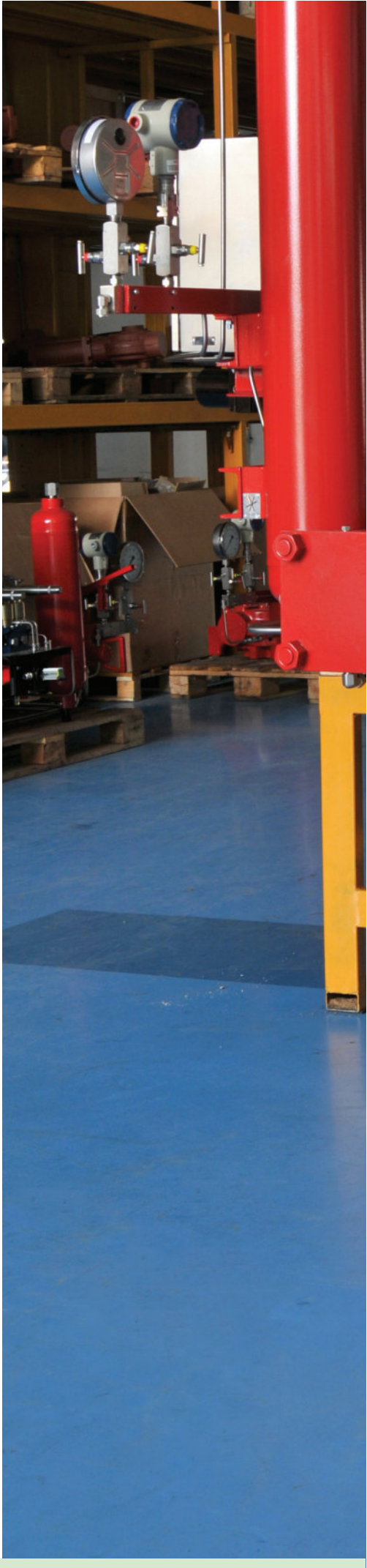
Maintenance

All GO actuators should be given a periodic maintenance annually or latest 14 months. We strongly recommend Vastas service team to make the maintenance which would cover control of gas filters, oil levels, hydraulic hand pump, etc. and to review any defected item. Calibration of LB, ESD, torque limit pressure adjustments should be also considered.

References

Vastas Gas Over Oil Actuators are used in LBV (Line Break Valves), ESD (Emergency Shut Down), RC (Remote Control), LC (Linear Control), at Crude Oil Pipelines, Natural Gas Pipelines, RMS-A stations, mostly in Turkey - BOTAS & in Iran - NIGC.

For detailed references please ask for...
16'' - 46'' Ball Valve & Actuator References List or the upcoming References Catalogue - 2011




VASTAS
FLUID POWER ACTUATOR



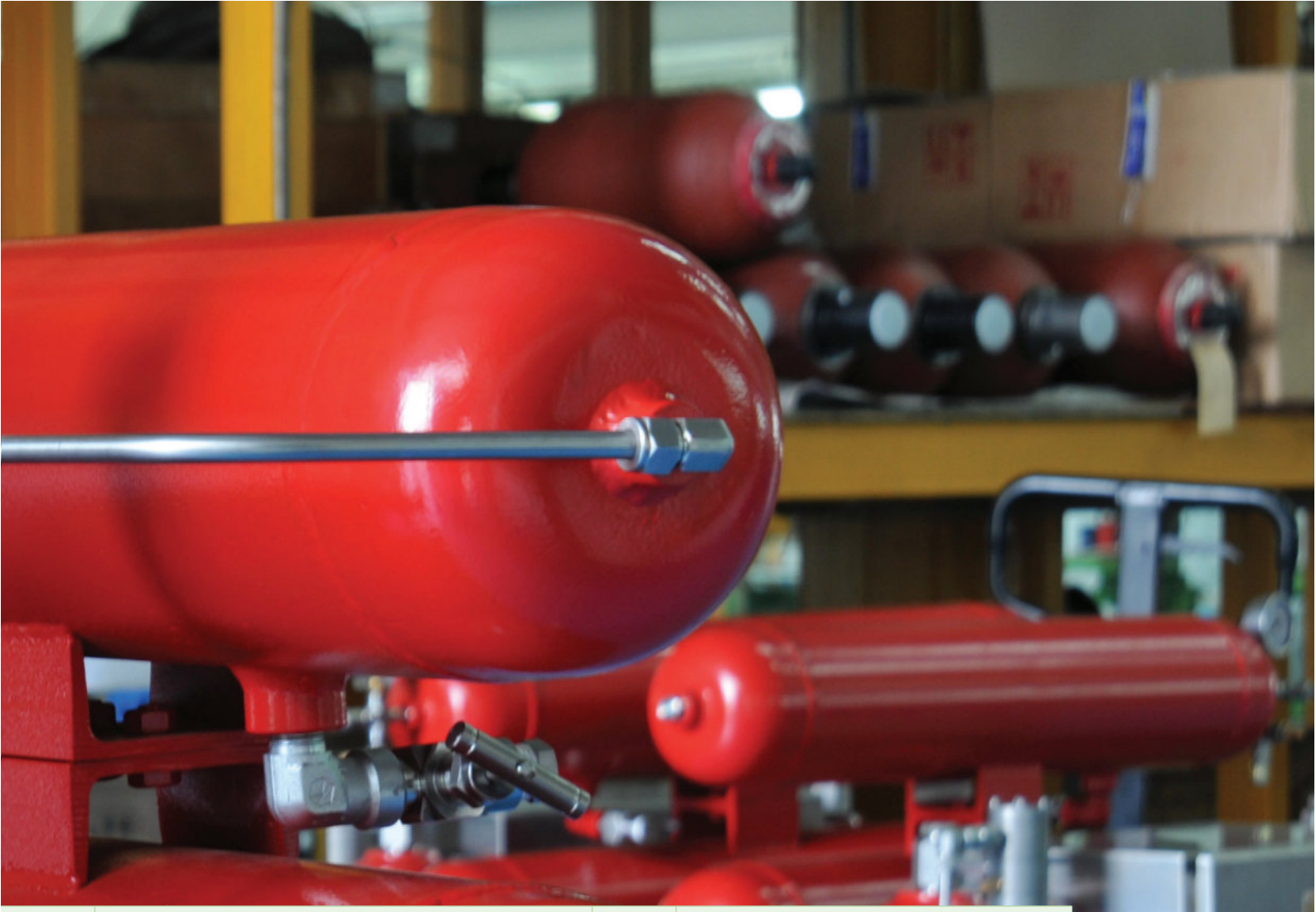
Gas Over Oil Actuators

Type 1 / Single Cylinder Basic
Type 2 / Single Cylinder Line Break
Type 3 / Single Cylinder Reservoir
Type 4 / Double Cylinder Basic
Type 5 / Double Cylinder Line Break
Type 6 / Double Cylinder Reservoir

GO

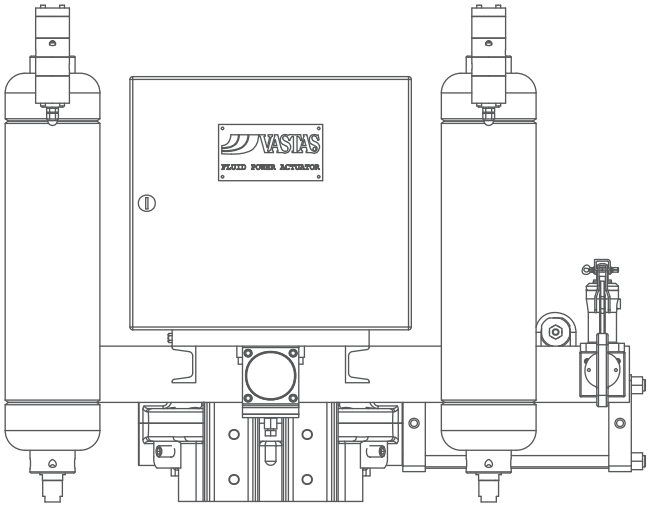
Technical Datasheets

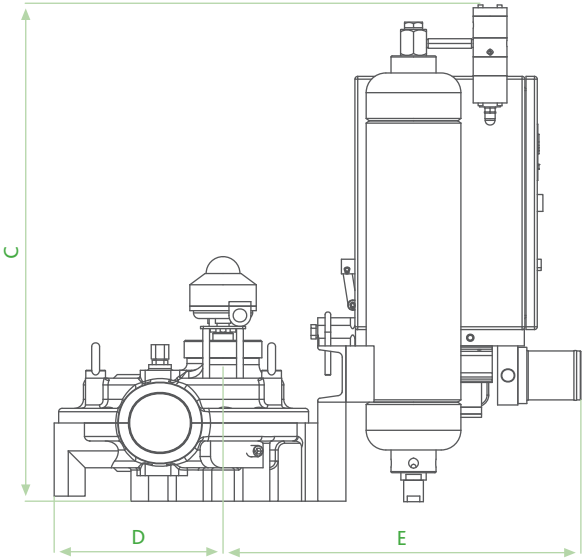
	Cylinder		Scotch Yoke		For 1 Bar					
Figure	ID cyl	Max Power Supply (Bar)	Max Valve Stem mm	ISO 5211 Valve Mounting Flange	BTO 0° Nm	RTO 45° Nm	ETO 90° Nm	BTC 0° Nm	RTC 45° Nm	ETC 90° Nm
G008	80	80,0	50	F12,F14,F16	78	32	55	44	26	63
G010	100	70,0	50	F12,F14,F16	122	49	86	75	43	107
G112	120	70,0	70	F16-F20-F25	226	92	158	136	79	194
G114	140	55,0	70	F16-F20-F25	308	125	216	193	112	276
G116	160	40,0	70	F16-F20-F25	402	163	282	259	150	370
G214	140	70,0	90	F20-F25-F30	383	155	268	219	127	313
G218	180	45,0	90	F20-F25-F30	633	256	444	394	228	563
G225	250	22,0	90	F20-F25-F30	1.222	495	856	806	466	1.151
G316	160	80,0	120	F25-F30-F35	625	253	438	354	205	506
G322	220	40,0	120	F25-F30-F35	1.182	479	828	744	430	1.063
G330	300	22,0	120	F25-F30-F35	2.199	890	1.540	1.456	842	2.079
G416D	160	75,0	140	F30-F35-F40	1.203	289	843	843	198	1.203
G420D	200	45,0	140	F30-F35-F40	2.008	452	1.406	1.406	361	2.008
G425D	250	28,0	140	F30-F35-F40	3.264	707	2.286	2.286	615	3.264
G620D	200	58,0	170	F40-F48	2.370	565	1.660	1.660	394	2.370
G625D	250	35,0	170	F40-F48	3.940	883	2.760	2.760	712	3.940
G630D	300	22,0	170	F40-F48	5.860	1.272	4.104	4.104	1.101	5.860
G722D	220	60,0	190	F48-F60	3.163	752	2.216	2.216	528	3.163
G725D	250	45,0	190	F48-F60	4.246	971	2.974	2.974	748	4.246
G734D	340	22,0	190	F48-F60	8.323	1.797	5.830	5.830	1.573	8.323
G825D	250	75,0	200	F48-F60	4.598	1.104	3.221	3.221	758	4.598
G830D	300	50,0	200	F48-F60	6.998	1.590	4.901	4.901	1.243	6.998
G836D	360	34,0	200	F48-F60	10.453	2.289	7.321	7.321	1.943	10.453

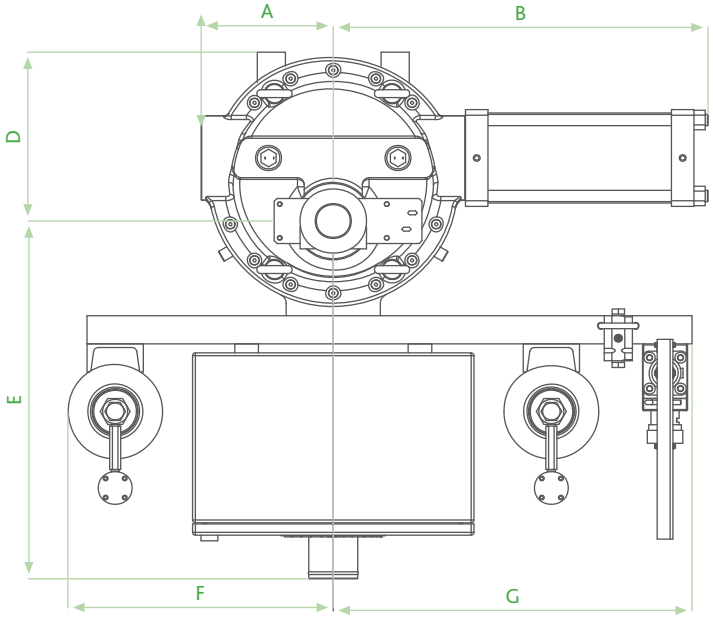


	For Max Bar							Tubes				
	BTO 0° Nm	RTO 45° Nm	ETO 90° Nm	BTC 0° Nm	RTC 45° Nm	ETC 90° Nm	Max Torque Nm	Oil Displace lt/per	Oil charge lt	Oil Tube Nr.	Reservoir Tube Nr.	Line Break Reference Tube Nr.
	6.254	2.532	4.381	3.542	2.047	5.057	8.600	1,4	2,3	4	14	14
	8.551	3.462	5.989	5.255	3.038	7.503	8.600	2,2	3,6	4	14	14
	15.831	6.409	11.088	9.529	5.508	13.605	17.000	4,1	6,7	6	14	32
	16.931	6.854	11.858	10.633	6.146	15.181	17.000	5,7	9,1	10	19	32
	16.082	6.511	11.264	10.373	5.996	14.810	17.000	7,6	11,8	10	24	32
	26.815	10.856	18.782	15.332	8.862	21.890	28.500	6,8	11,3	9	24	32
	28.496	11.537	19.959	17.741	10.255	25.330	28.500	11,7	18,6	14	42	32
	26.874	10.880	18.823	17.738	10.253	25.326	28.500	23,3	36,0	19	74	32
	50.034	20.257	35.044	28.337	16.379	40.457	50.000	11,1	18,4	14	42	32
	47.298	19.149	33.128	29.774	17.210	42.510	50.000	22,0	34,8	19	74	32
	48.373	19.584	33.881	32.036	18.518	45.739	50.000	42,0	64,7	32	143	32
	90.254	21.704	63.215	63.215	14.837	90.254	91.500	11,8	35,4	24	74	32
	90.338	20.347	63.273	63.273	16.227	90.338	91.500	19,7	59,1	42	105	32
	91.391	19.782	64.010	64.010	17.218	91.391	91.500	32,0	96,1	64	105+105	32
	137.448	32.782	96.269	96.269	22.865	137.448	138.000	23,2	69,7	42	143	32
	137.912	30.909	96.594	96.594	24.925	137.912	138.000	38,7	116,0	74	126+126	32
	128.918	27.977	90.295	90.295	24.216	128.918	138.000	57,5	172,5	105	182+182	32
	189.806	45.137	132.941	132.941	31.708	189.806	191.500	31,0	93,1	64	182	32
	191.073	43.715	133.828	133.828	33.643	191.073	191.500	41,7	125,0	74	260	32
	183.111	39.529	128.252	128.252	34.605	183.111	191.500	81,7	245,0	143	260+260	32
	344.866	82.793	241.546	241.546	56.829	344.866	350.000	45,1	135,3	92	143+143	32
	349.884	79.481	245.060	245.060	62.172	349.884	350.000	68,6	205,9	105	220+220	32
	355.398	77.828	248.922	248.922	66.058	355.398	350.000	102,5	307,6	182	347+347	32

Type 1 - **GO Single Cylinder - Basic**

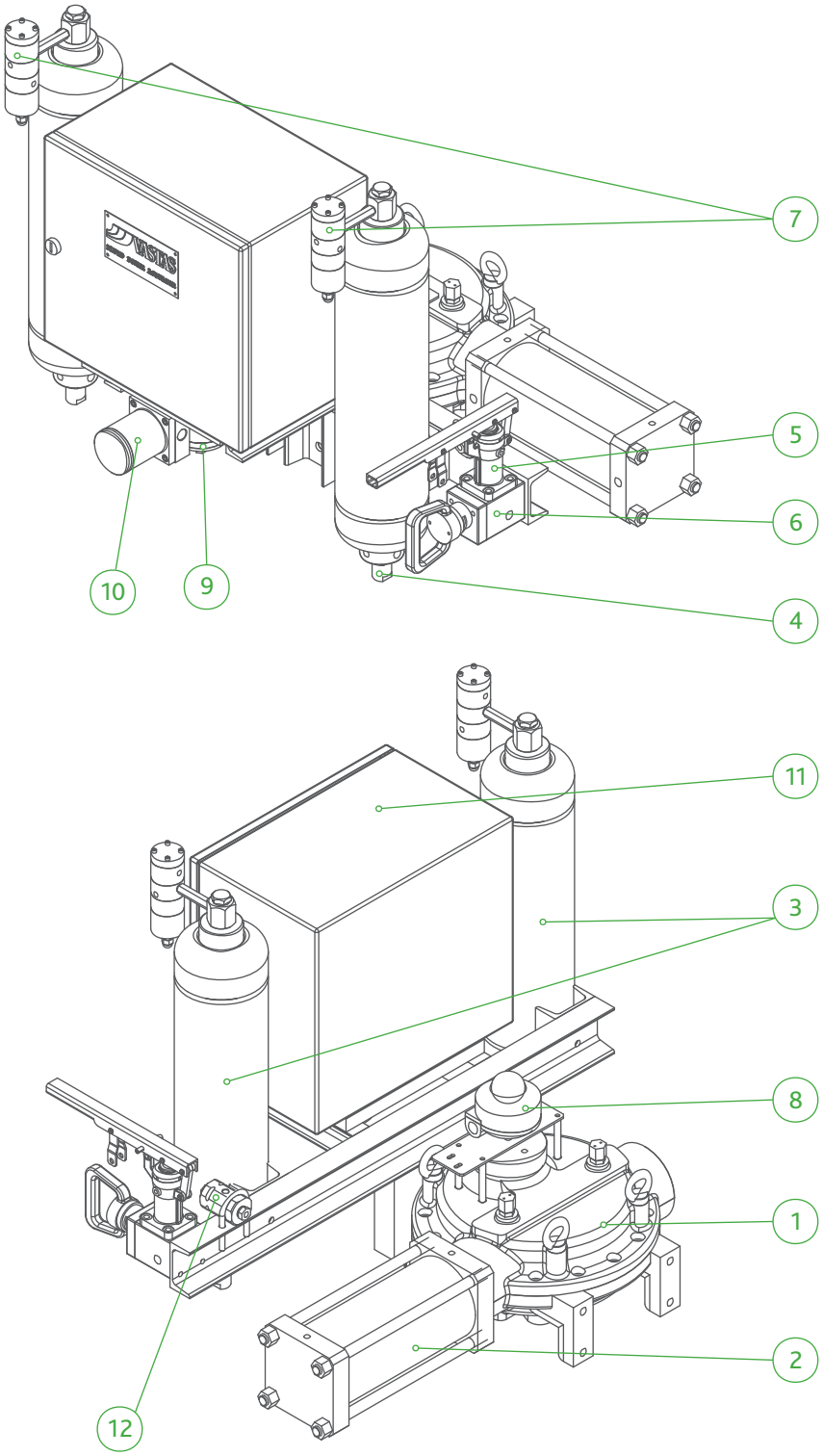






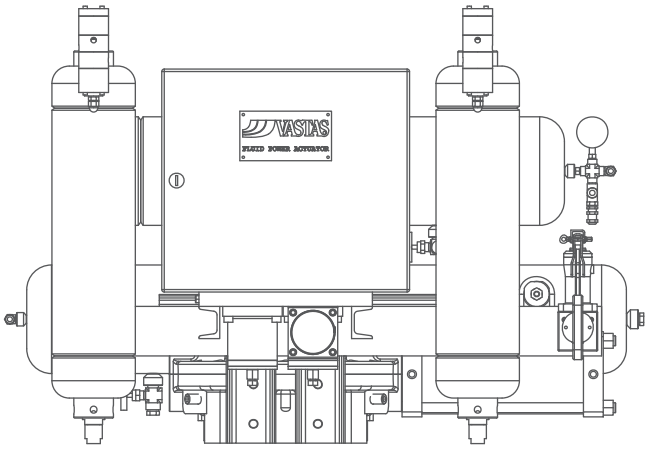
	A	B	C	D	E	F	G	Weight
G008S	160	465	775	165	580	400	600	195
G010S	160	465	775	165	580	400	600	225
G112S	200	575	820	256	605	450	650	270
G114S	200	575	1070	256	605	450	650	300
G116S	200	575	1070	256	605	450	650	350
G214S	235	670	885	300	640	472	650	370
G218S	235	670	1135	300	640	472	650	420
G225S	235	700	1385	300	640	472	650	500
G316S	265	785	1175	345	655	500	725	506
G322S	265	800	1425	345	655	500	725	580
G330S	265	830	1425	345	655	530	750	660

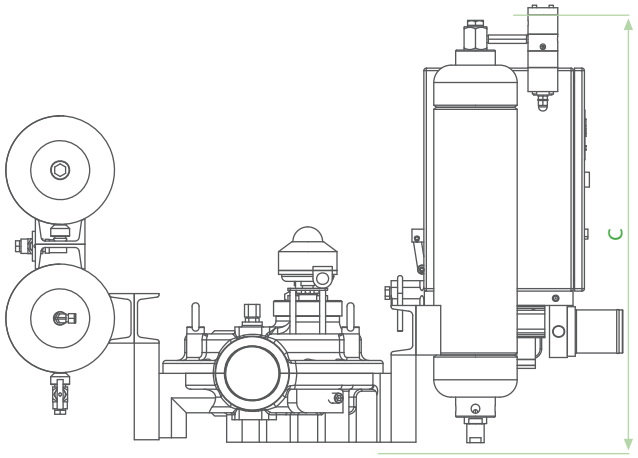
Datasheet & Part List

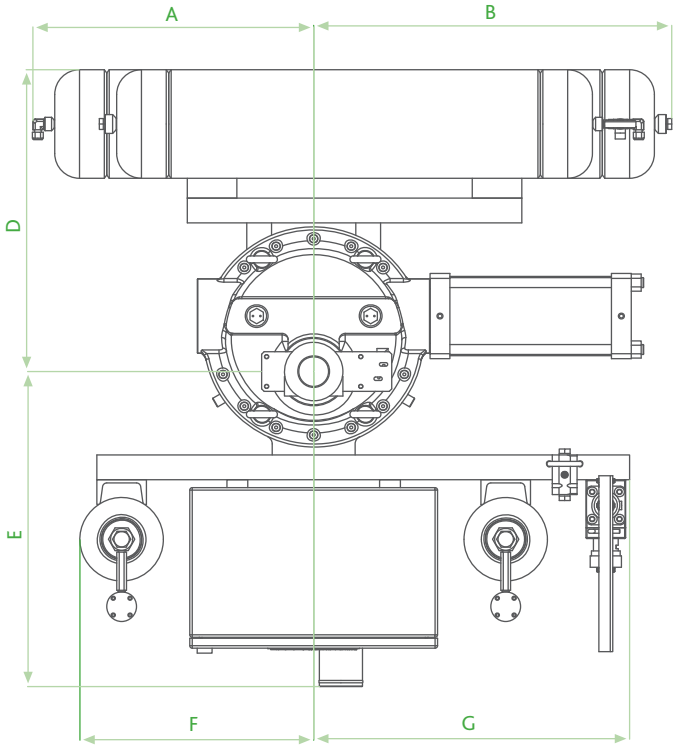


	Part Name
1	Scotch Yoke
2	Hydraulic Cylinder
3	Gas Over Oil Tube
4	Speed Regulation & Hydraulic Filter
5	Hydraulic Hand Pump
6	Hydraulic Position Valve
7	Torque Limit Switch
8	Switch Box
9	Gas Filter
10	Junction Box
11	Control Box
12	Double Position Check Valve

Type 2 - **GO Single Cylinder - Line Break**

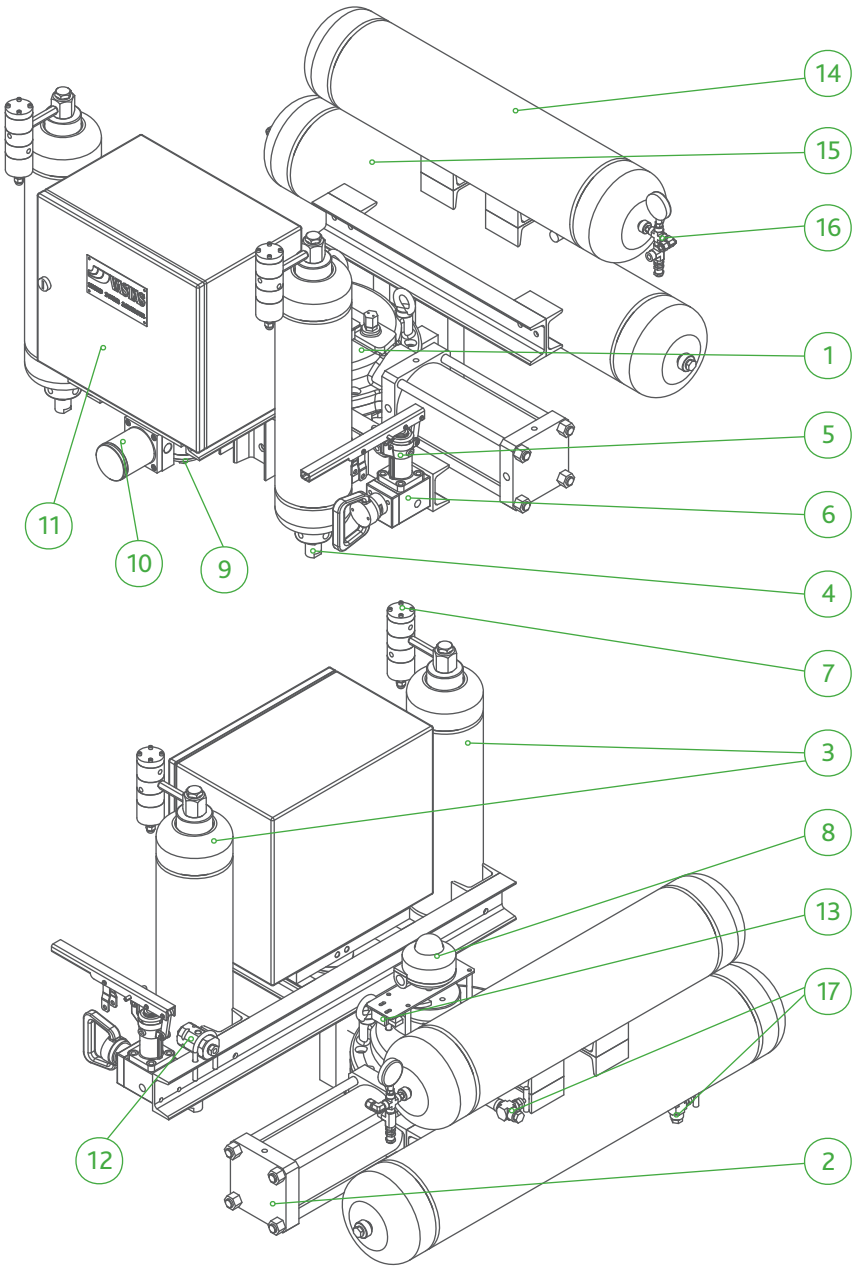






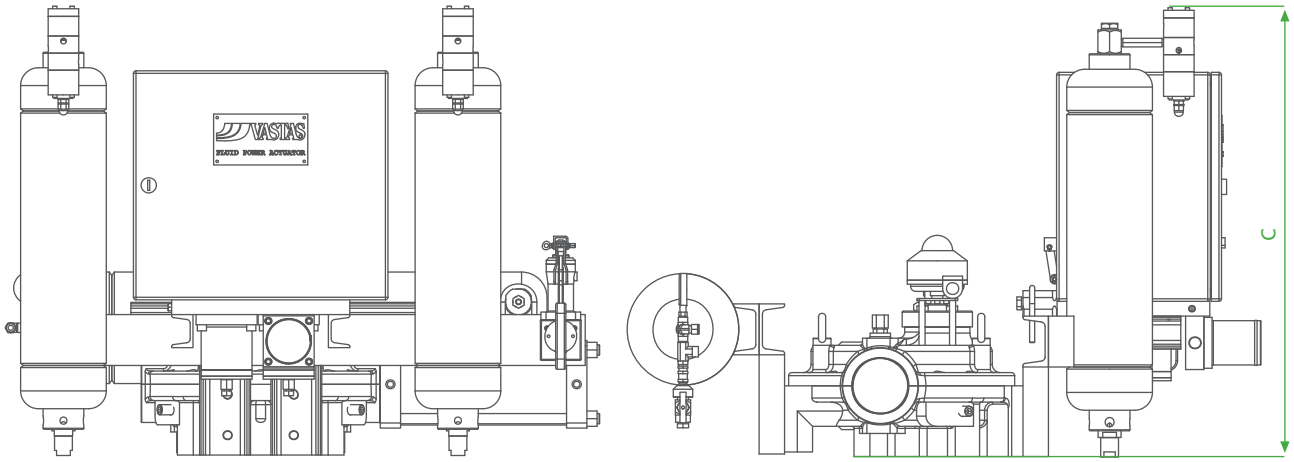
	A	B	C	D	E	F	G	Weight
G008S	395	675	945	165	580	400	600	260
G010S	395	675	945	165	580	400	600	290
G112S	552	738	820	565	605	450	650	370
G114S	552	800	1070	565	605	450	650	400
G116S	552	738	1070	610	605	450	650	455
G214S	567	723	885	610	640	472	650	490
G218S	710	940	1135	610	640	472	650	550
G225S	810	1040	1385	660	640	472	650	670
G316S	690	960	1175	655	655	500	725	650
G322S	790	1060	1425	700	655	500	725	740
G330S	690	960	1425	845	655	530	750	900

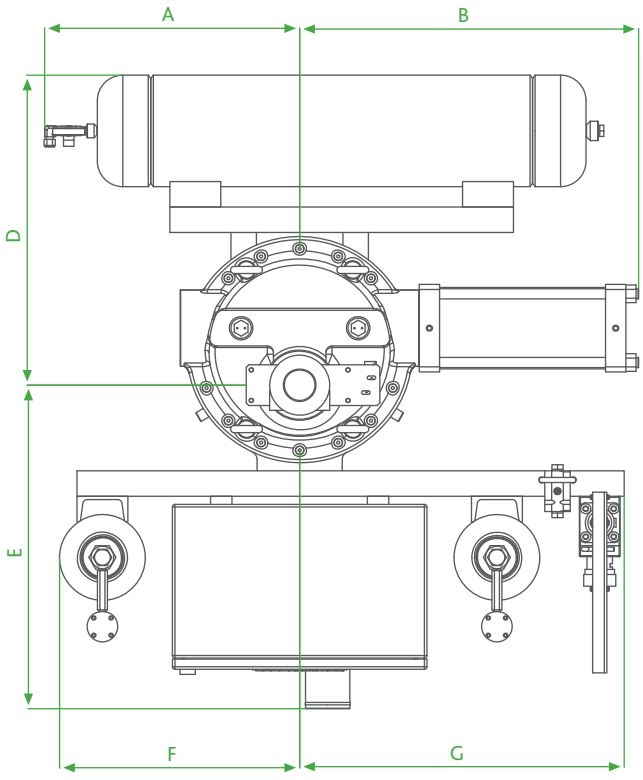
Datasheet & Part List



	Part Name
1	Scotch Yoke
2	Hydraulic Cylinder
3	Gas Over Oil Tube
4	Speed Regulation & Hydraulic Filter
5	Hydraulic Hand Pump
6	Hydraulic Position Valve
7	Torque Limit Switch
8	Switch Box
9	Gas Filter
10	Junction Box
11	Control Box
12	Double Position Check Valve
13	Roller Pneumatic Switch
14	Reservoir Tube
15	Line Break Tube
16	Safety Relief Valve
17	Needle Valve

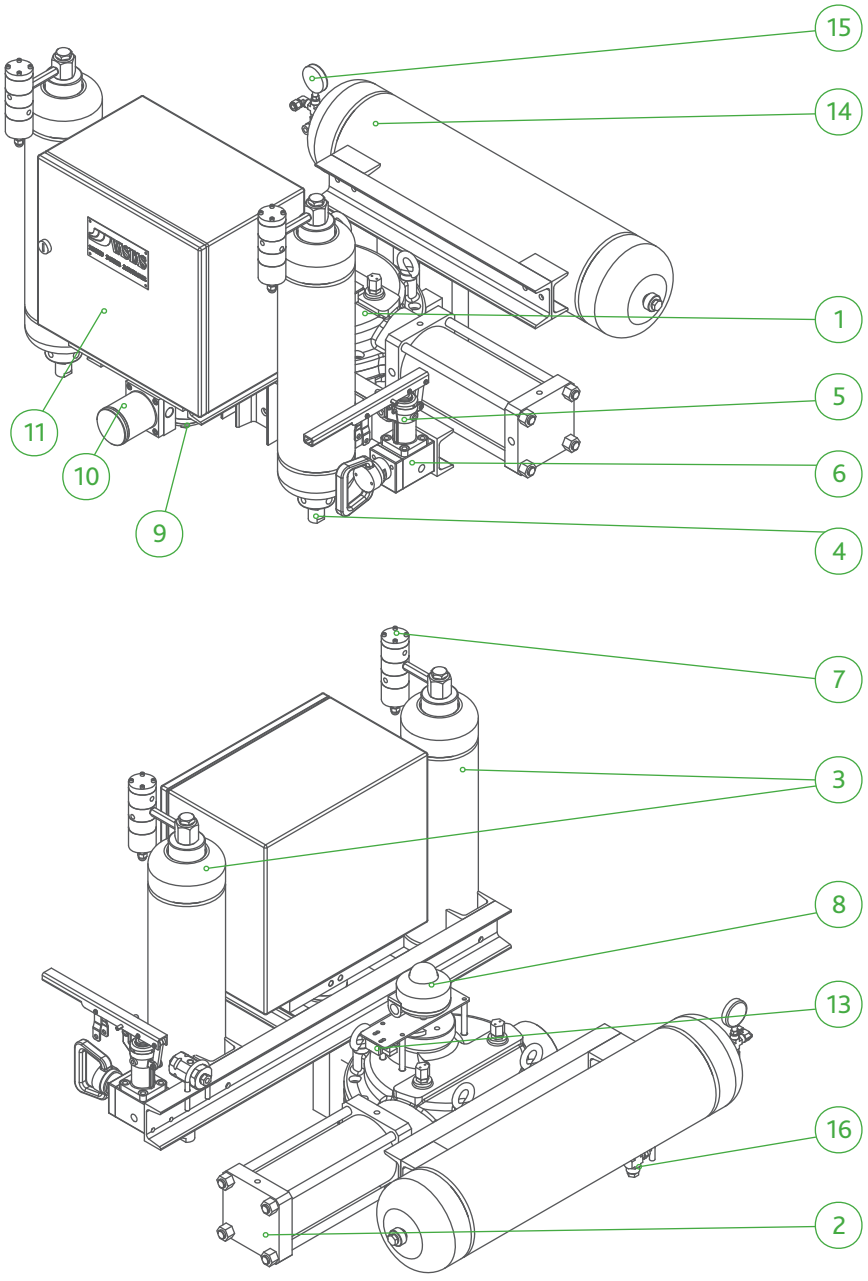
Type 3 - **GO Single Cylinder - Reservoir**





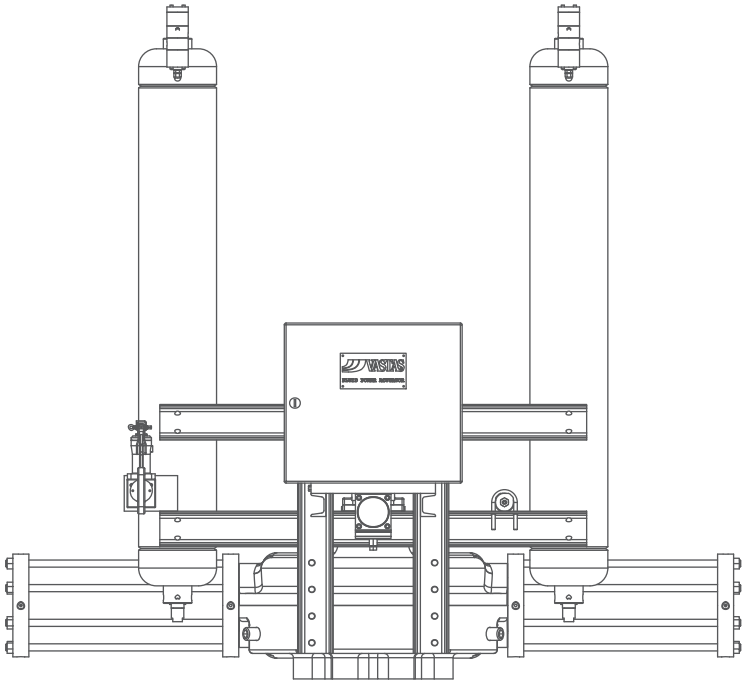
	A	B	C	D	E	F	G	Weight
G008S	455	615	775	165	580	400	600	230
G010S	455	615	775	165	580	400	600	260
G112S	468	605	820	540	605	450	650	315
G114S	593	730	1070	540	605	450	650	345
G116S	468	605	1070	590	605	450	650	395
G214S	505	667	885	610	640	472	650	430
G218S	780	940	1135	610	640	472	650	470
G225S	880	1040	1385	660	640	472	650	550
G316S	760	900	1175	655	655	500	725	566
G322S	860	1000	1425	700	655	500	725	630
G330S	800	940	1425	845	655	530	750	710

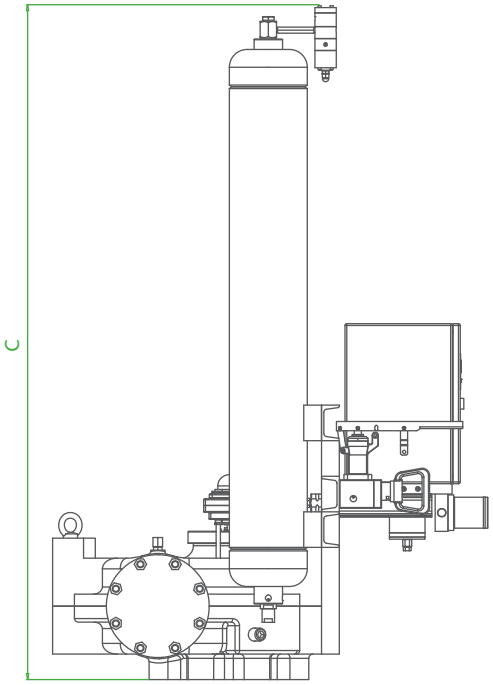
Datasheet & Part List

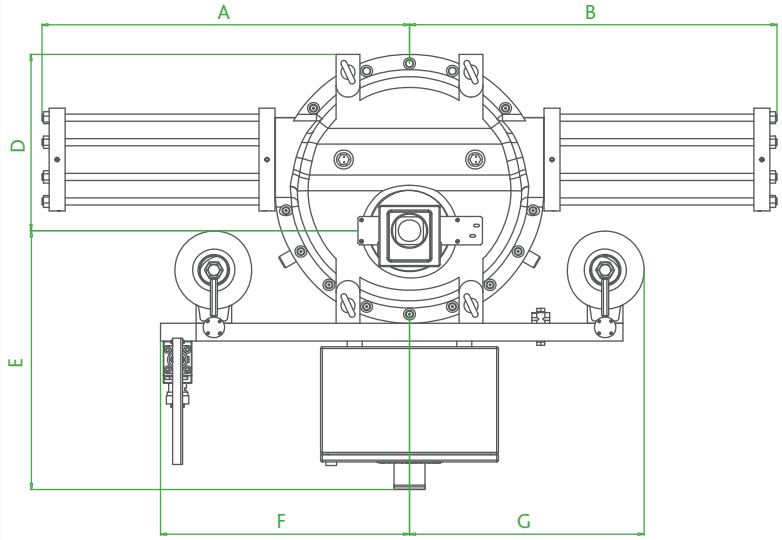


	Part Name
1	Scotch Yoke
2	Hydraulic Cylinder
3	Gas Over Oil Tube
4	Speed Regulation & Hydraulic Filter
5	Hydraulic Hand Pump
6	Hydraulic Position Valve
7	Torque Limit Switch
8	Switch Box
9	Gas Filter
10	Junction Box
11	Control Box
12	Double Position Check Valve
13	Roller Pneumatic Switch
14	Reservoir TUbe
15	Safety Relief Valve
16	Needle Valve

Type 4 - **GO Double Cylinder - Basic**

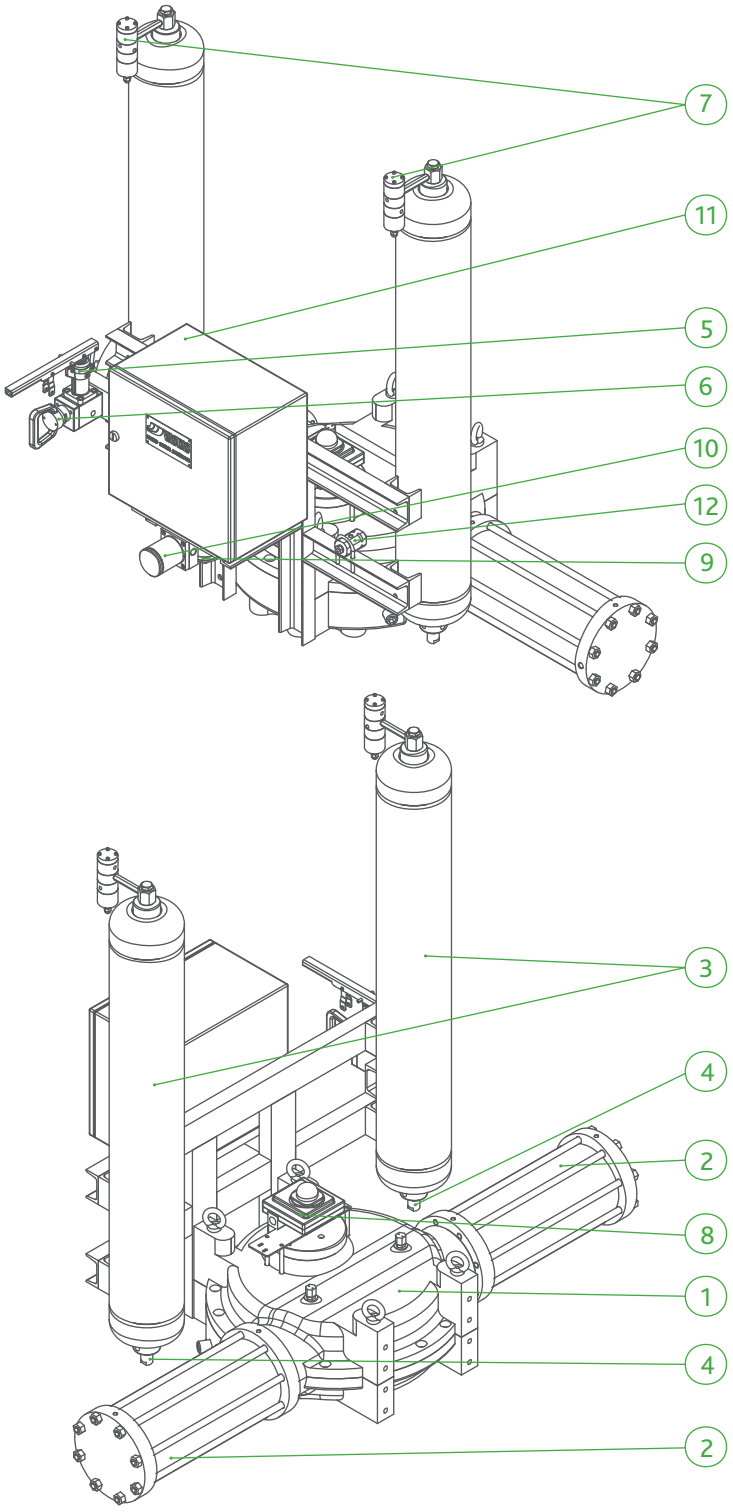






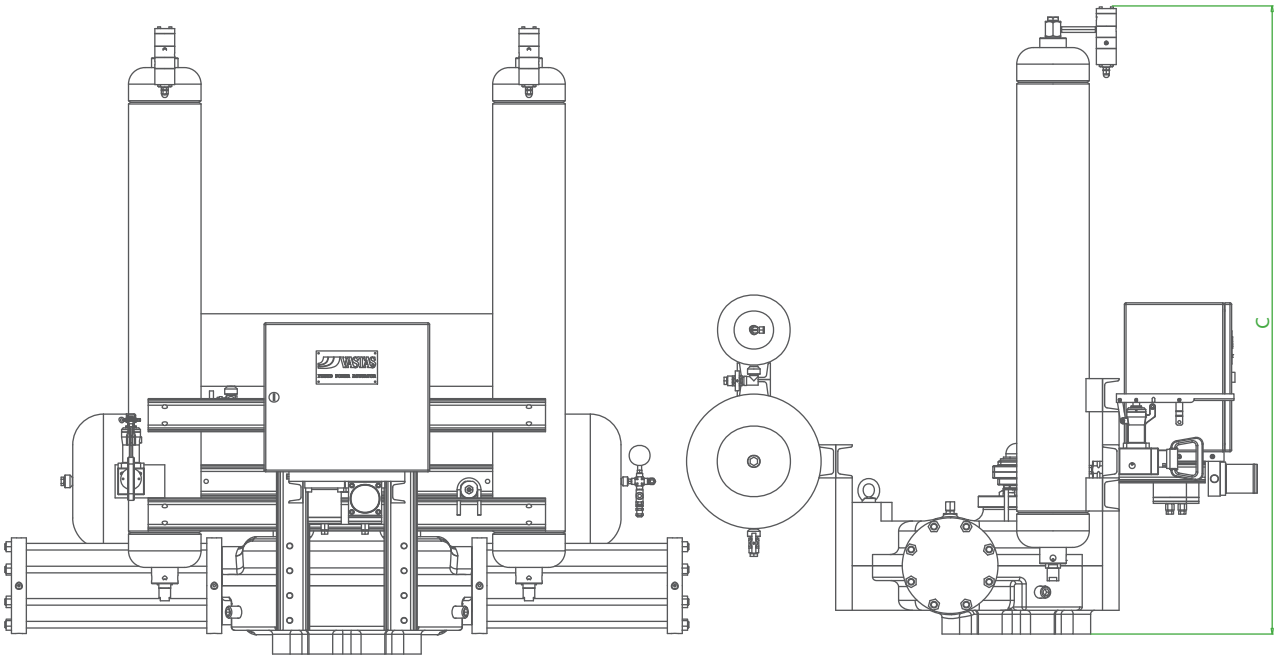
	A	B	C	D	E	F	G	Weight
G416D	870	870	1230	415	700	750	560	540
G420D	900	900	1780	415	700	750	560	610
G425D	930	930	1800	415	700	750	590	700
G620D	1035	1035	1900	500	730	710	660	1140
G625D	1060	1060	2100	500	730	760	660	1250
G630D	1100	1100	2150	500	730	850	660	1400
G722D	1165	1165	1945	560	760	760	740	2550
G725D	1180	1180	2150	560	760	760	740	2625
G734D	1250	1250	2000	560	760	950	740	2890
G825D	1310	1310	1980	670	790	865	865	3000
G830D	1360	1360	2180	670	790	865	865	3160
G836D	1400	1400	2100	670	870	1000	865	3350

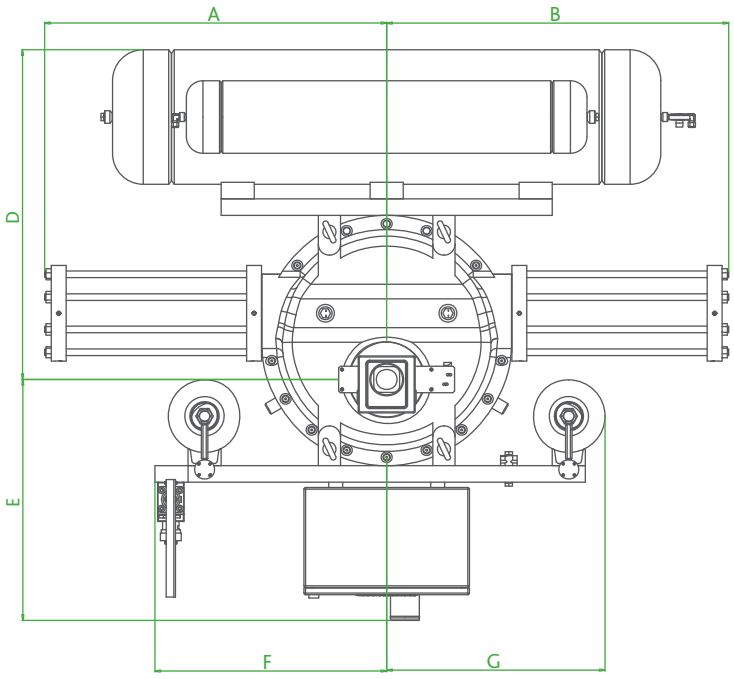
Datasheet & Part List



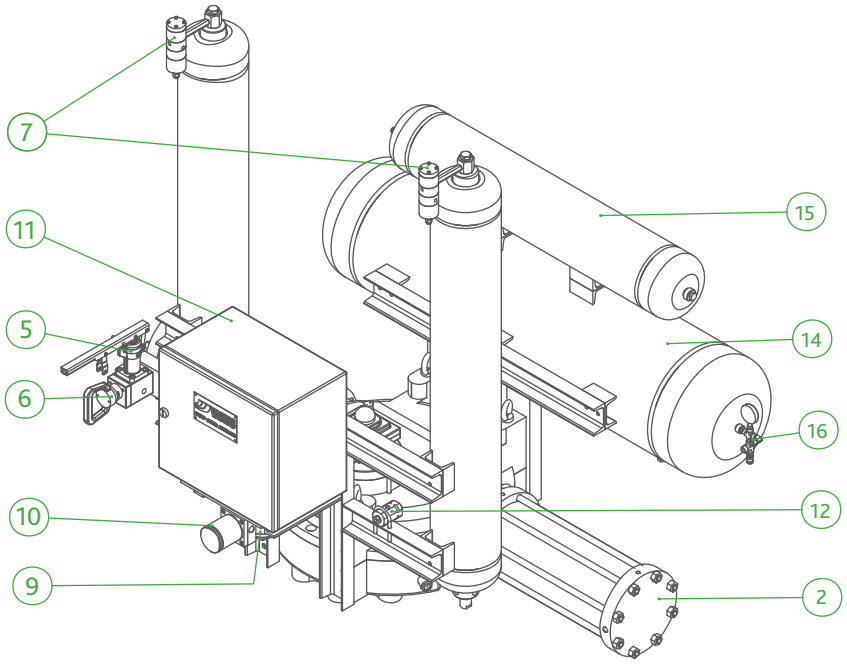
	Part Name
1	Scotch Yoke
2	Hydraulic Cylinder
3	Gas Over Oil Tube
4	Speed Regulation & Hydraulic Filter
5	Hydraulic Hand Pump
6	Hydraulic Position Valve
7	Torque Limit Switch
8	Switch Box
9	Gas Filter
10	Junction Box
11	Control Box
12	Double Position Check Valve

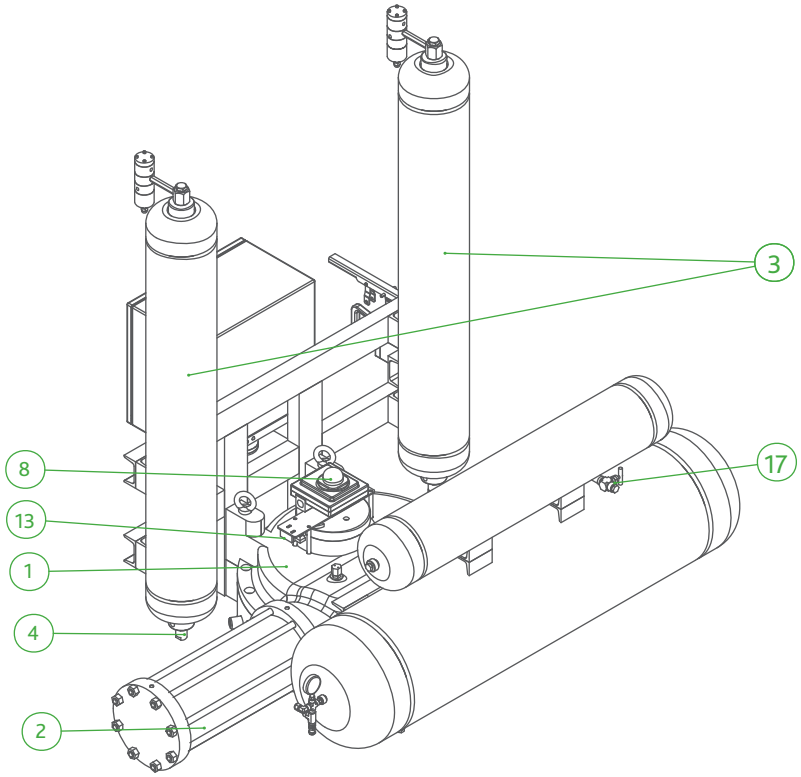
Type 5 - **GO Double Cylinder - Line Break**





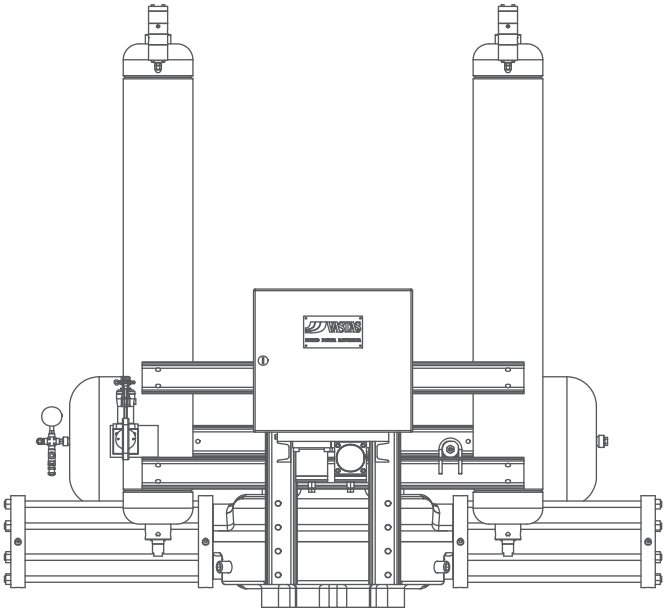
	A	B	C	D	E	F	G	Weight
G416D	916	985	1230	780	700	750	560	770
G420D	916	985	1230	840	700	750	560	970
G425D	916	985	1230	840	700	750	590	1170
G620D	1035	1035	1900	1000	730	710	660	1440
G625D	1060	1060	2100	950	730	760	660	1760
G630D	1100	1100	2150	1050	730	850	660	2060
G722D	1165	1165	1945	1107	760	760	740	3000
G725D	1180	1180	2150	1160	760	760	740	3260
G734D	1250	1250	2000	1160	760	950	740	3900
G825D	1310	1310	1980	1120	790	865	865	3540
G830D	1360	1360	2180	1120	790	865	865	3880
G836D	1400	1400	2100	1220	870	1000	865	4850

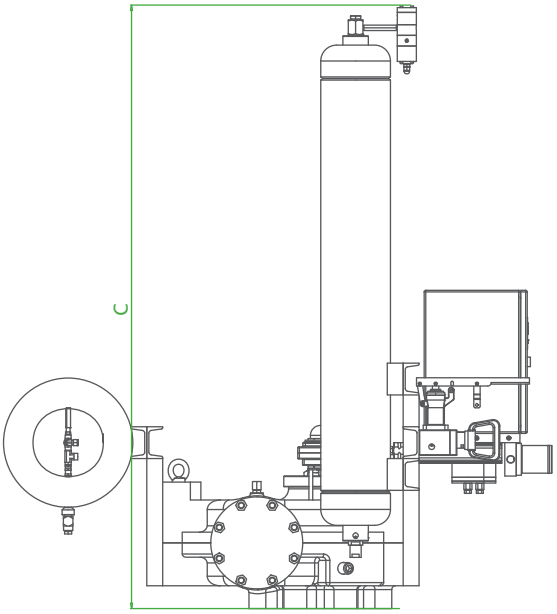


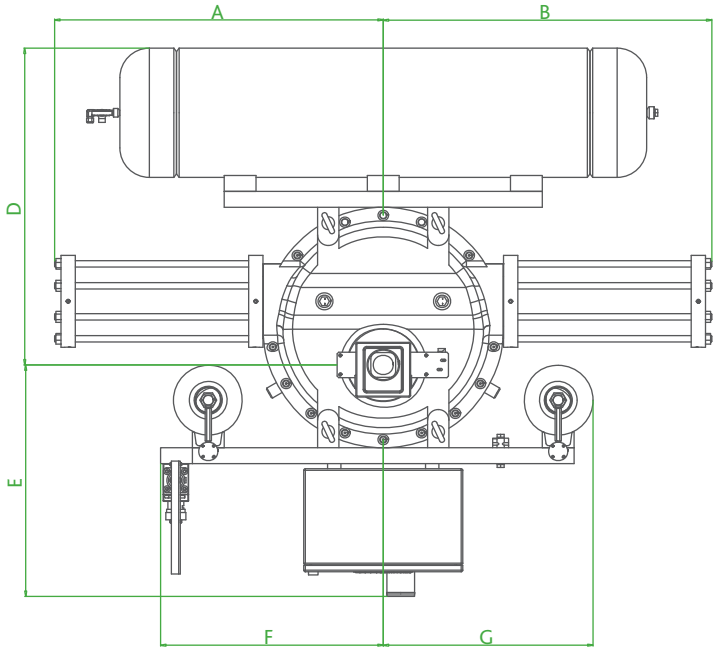


	Part Name
1	Scotch Yoke
2	Hydraulic Cylinder
3	Gas Over Oil Tube
4	Speed Regulation & Hydraulic Filter
5	Hydraulic Hand Pump
6	Hydraulic Position Valve
7	Torque Limit Switch
8	Switch Box
9	Gas Filter
10	Junction Box
11	Control Box
12	Double Position Check Valve
13	Roller Pneumatic Switch
14	Reservoir TUbe
15	Line Break Tube
16	Safety Relief Valve
17	Needle Valve

Type 6 - **GO Double Cylinder - Reservoir**

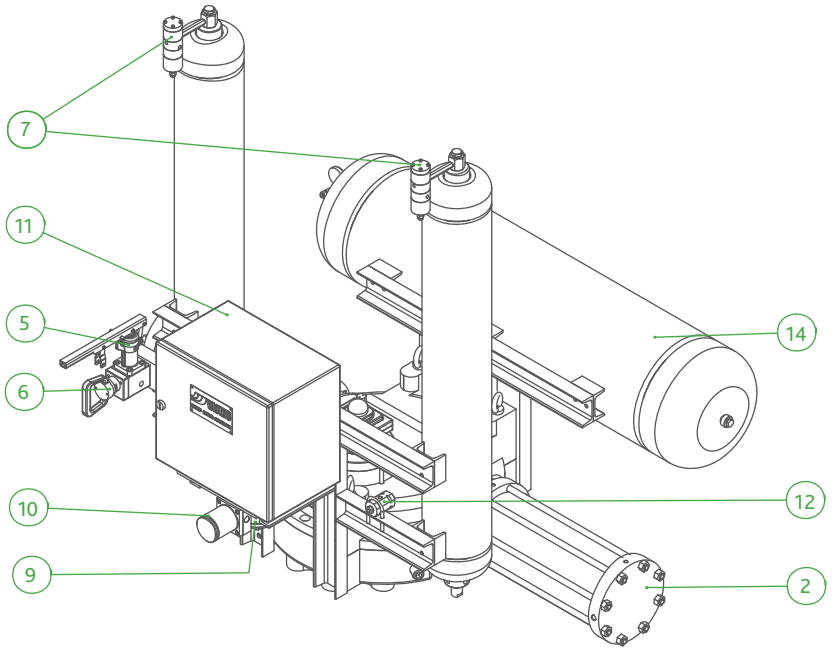


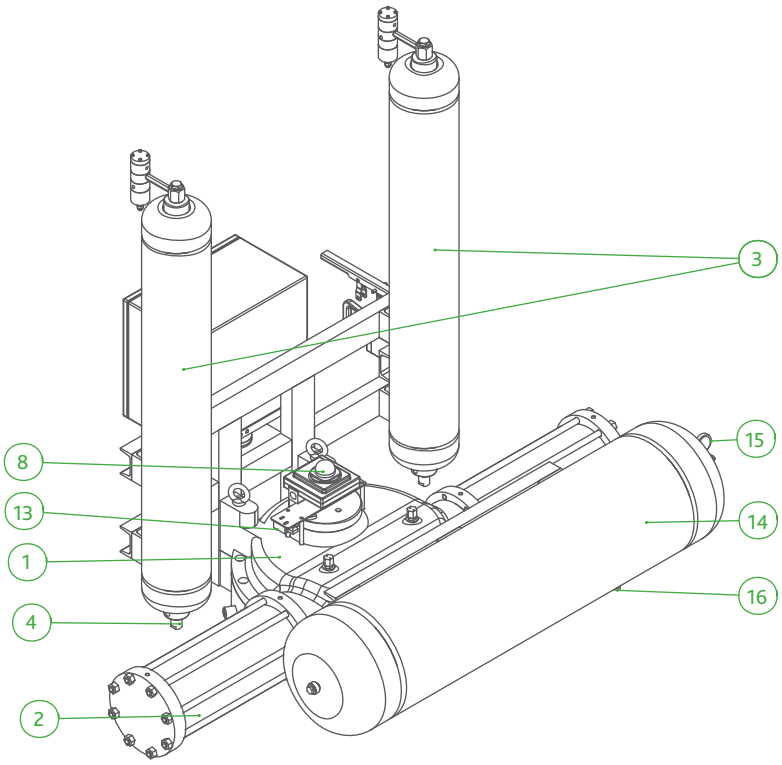




	A	B	C	D	E	F	G	Weight
G416D	916	985	1230	780	700	750	560	710
G420D	916	985	1230	840	700	750	560	910
G425D	916	985	1230	840	700	750	590	1100
G620D	1035	1035	1900	1000	730	710	660	1380
G625D	1060	1060	2100	950	730	760	660	1700
G630D	1100	1100	2150	1050	730	850	660	2000
G722D	1165	1165	1945	1107	760	760	740	2940
G725D	1180	1180	2150	1160	760	760	740	3200
G734D	1250	1250	2000	1160	760	950	740	3850
G825D	1310	1310	1980	1120	790	865	865	3480
G830D	1360	1360	2180	1120	790	865	865	3822
G836D	1400	1400	2100	1220	870	1000	865	4800

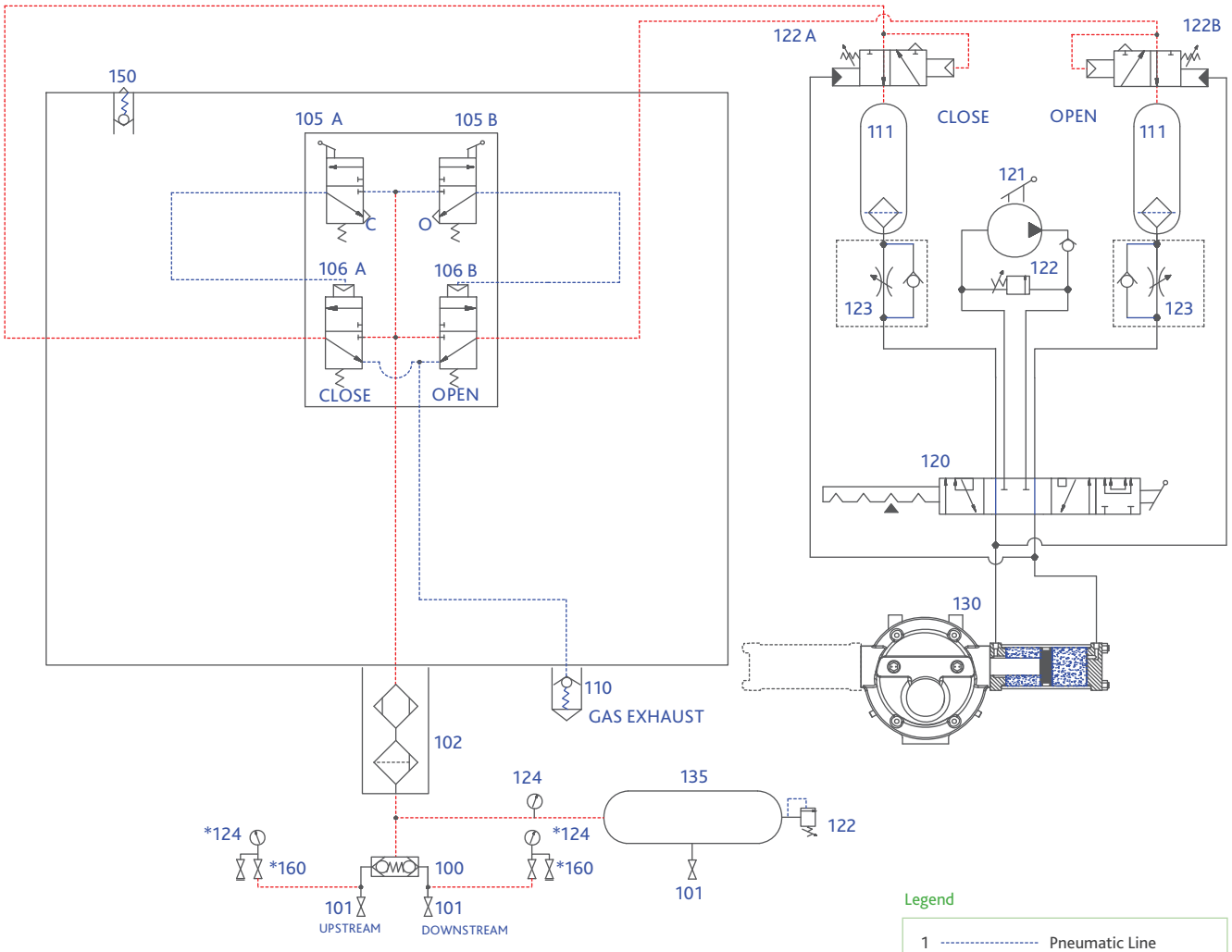
Datasheet & Part List





	Part Name
1	Scotch Yoke
2	Hydraulic Cylinder
3	Gas Over Oil Tube
4	Speed Regulation & Hydraulic Filter
5	Hydraulic Hand Pump
6	Hydraulic Position Valve
7	Torque Limit Switch
8	Switch Box
9	Gas Filter
10	Junction Box
11	Control Box
12	Double Position Check Valve
13	Roller Pneumatic Switch
14	Reservoir Tube
15	Safety Relief Valve
16	Needle Valve

P&ID
GOLA-0R0



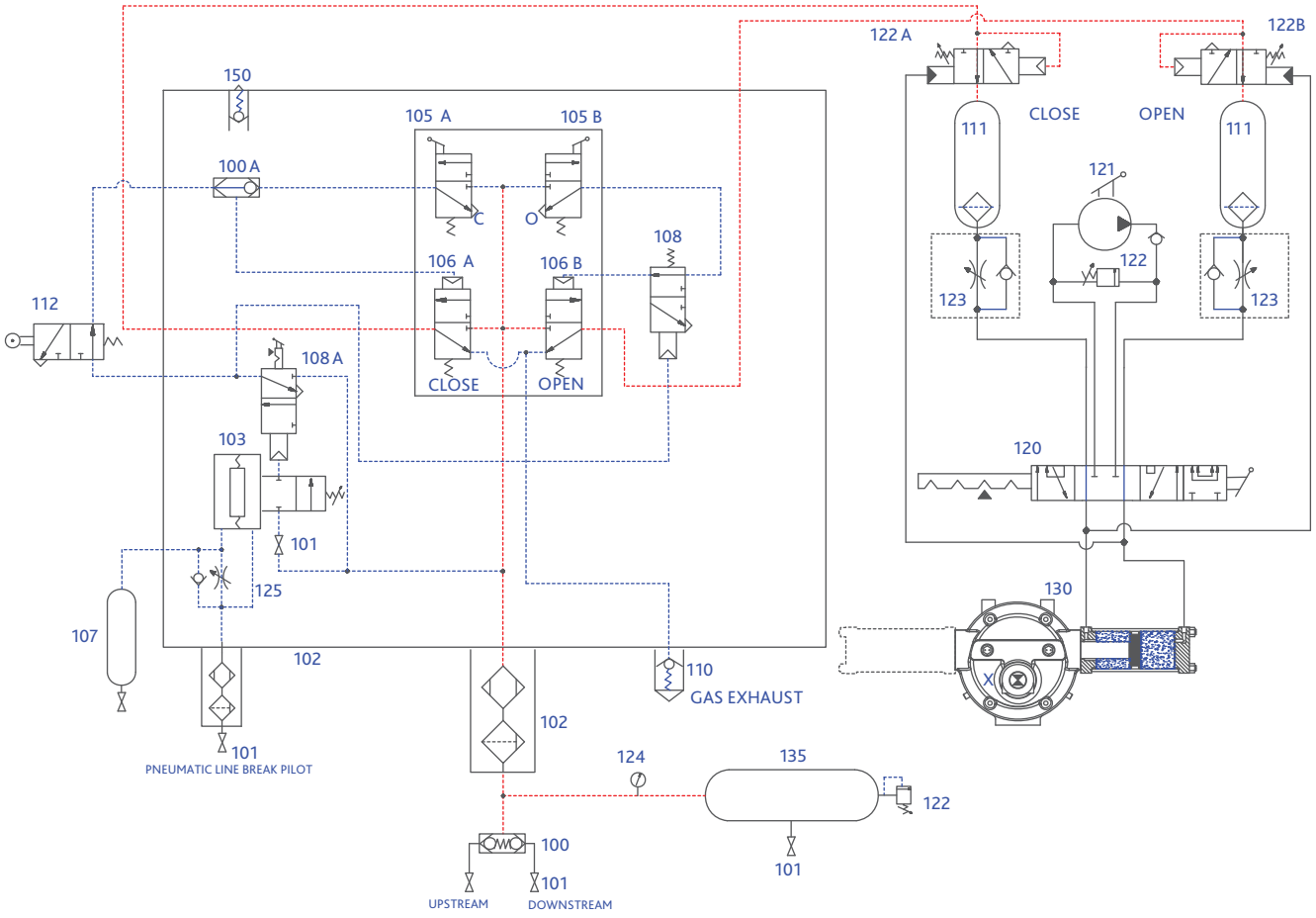
Parts	Name
100	High Pressure Shuttle Valve
101	Stopper Valve
102	Gas Dehydrating Filter
104	High Pressure Shuttle Valve
110	Exhaust Silencer
111	Gas Hydrolic Tank
120	Hand Operated Directional Control Valve
121	Hydraulic Hand Pump
122	Safety Valve
122a	Hydraulic Torque Limit Switch
122b	Hydraulic Torque Limit Switch
123	Undirectional Flow Regulator(Adjus. Setting)
124	Pressure Gauge
130	Double Acting Gas Over Oil Actuator
135	Reservoir
150	Control Valves Anclosure Cabinet
160	2 Way Manifold

* Optional

105-A	3/2 N.C. Hand Op. Spring Return Valve (To Open)
105-B	3/2 N.C. Hand Op. Spring Return Valve (To Close)
106-A	3/2 N.C.Pneum.pilot Spring Return Valve (To Open)
106-B	3/2 N.C.Pneum.pilot Spring Return Valve (To Close)

Gas Over Oil Actuator
Local Control
Pneumatic Line Break

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Legend

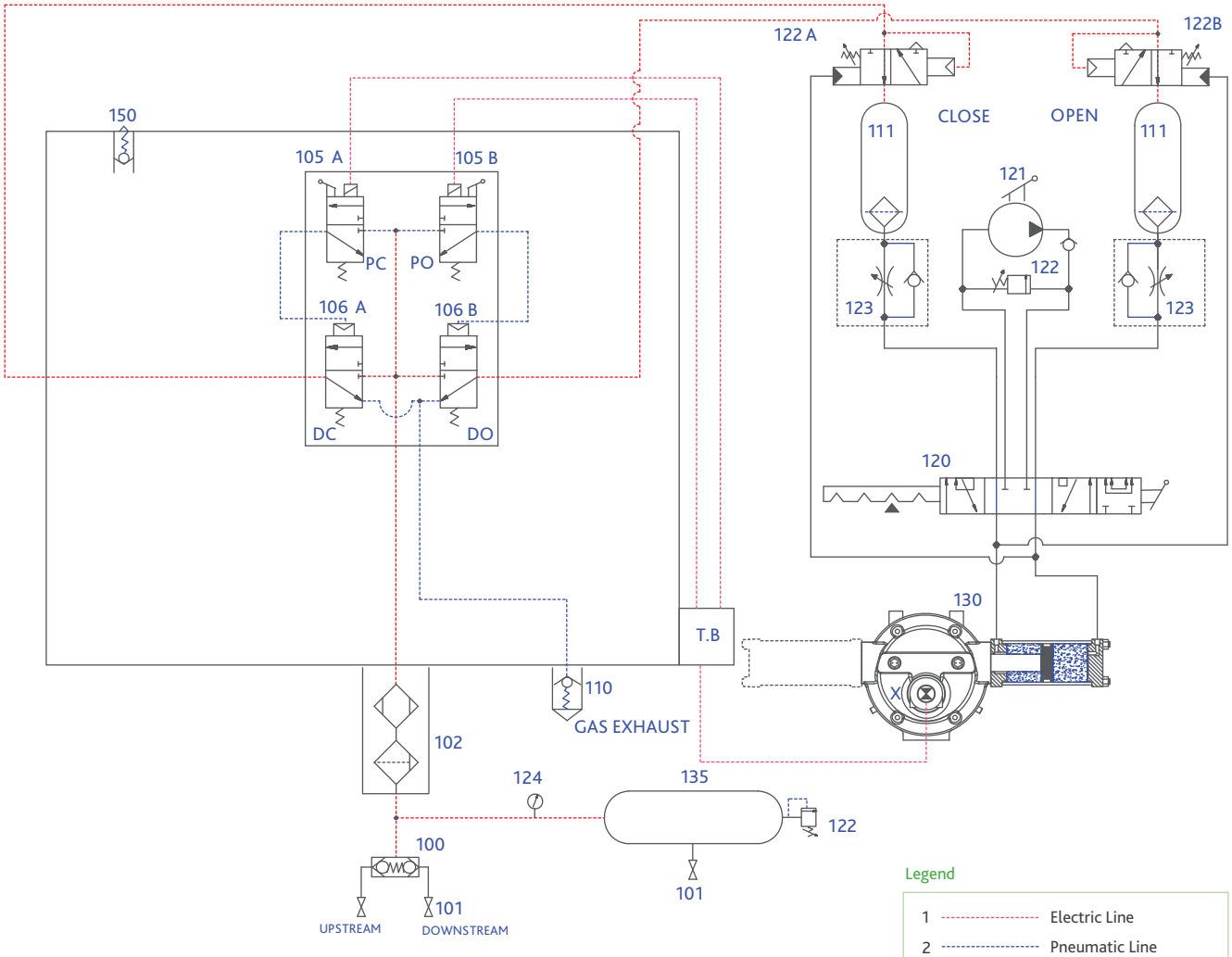
1	Pneumatic Line
2	Pneumatic Power Line
3	Hydraulic Line

Parts	Name
100	High Pressure Shuttle Valve
100A	OR Valve
101	Stopper Valve
102	Gas Dehydrating Filter
104	High Pressure Shuttle Valve
107	LBV Reference Tube
108	3/2 Pneumatic Pilot Spring Return Valve
108A	3/2 Pneumatic Pilot Hand Return Valve
110	Exhaust Silencer
111	Gas Hydrolic Tank
120	Hand Operated Directional Control Valve
121	Hydraulic Hand Pump
122	Safety Valve
122A	Hydraulic Torque Limit Switch
122B	Hydraulic Torque Limit Switch
123	Undirectional Flow Regulator (Adjus. Setting)
124	Pressure Gauge
125	Undirectional Flow Regulator (Adjus. Setting)
130	Double Acting Gas Over Oil Actuator
135	Reservoir
150	Control Valves Anclosure Cabinet

105-A	3/2 N.C. Hand Op. Spring Return Valve (To Open)
105-B	3/2 N.C. Hand Op. Spring Return Valve (To Close)
106-A	3/2 N.C.Pneum.pilot Spring Return Valve (To Open)
106-B	3/2 N.C.Pneum.pilot Spring Return Valve (To Close)

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Gas Over Oil Actuator
Local & Remote Control

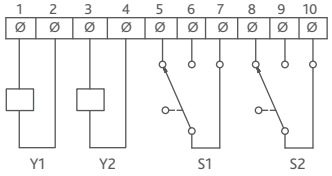


Parts	Name
101	Stopper Valve
102	Gas Dehydrating Filter
104	High Pressure Shuttle Valve
108	3/2" Spneumatic Pilot Spring Return Valve
110	Exhaust Silencer
111	Gas Hydrolic Tank
121	Hydraulic Hand Pump
122	Safety Valve
122a	Hydraulic Torque Limit Switch
122b	Hydraulic Torque Limit Switch
123	Undirectional Flow Regulator(Adjus. Setting)
124	Pressure Gauge
130	Double Cting Gas Over Oil Actuator
135	Resevoir
150	Control Valves Anclosure Cabinet
105-a	3/2 N.C. Hand Operated Spring Return Valve (To Open)
105-b	3/2 N.C. Hand Operated Spring Return Valve (To Close)
106-a	3/2 N.C.Pneum.pilot Spring Return Valve (To Open)
106-b	3/2 N.C.Pneum.pilot Spring Return Valve (To Close)
T.B	Terminal Box
X	Switch Box

Legend

1	----------	Electric Line
2	----------	Pneumatic Line
3	----------	Pneumatic Power Line
4	————	Hydraulic Line

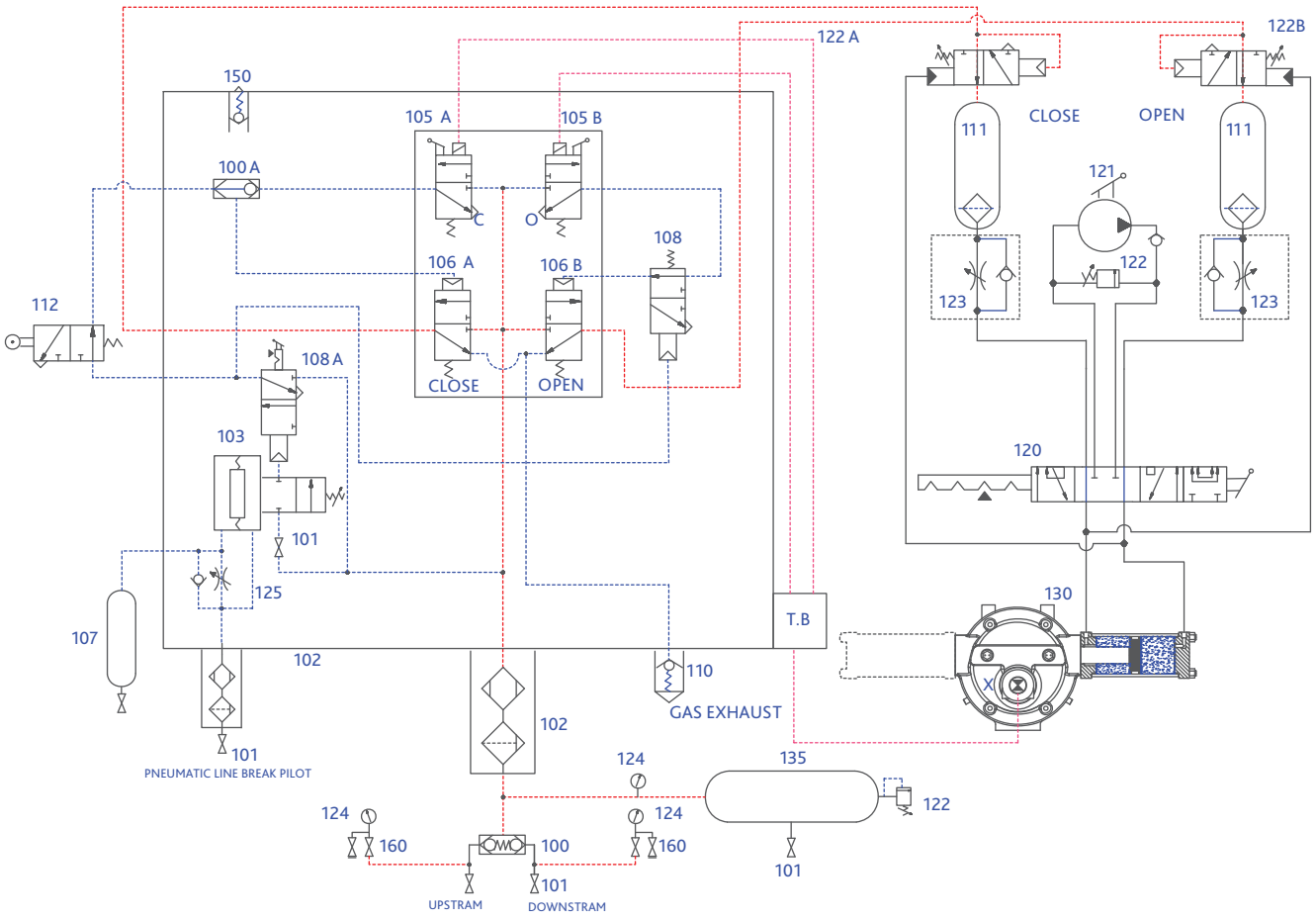
Electrical Wiring Diagram



Y1 - CLOSE SELENOID
Y2 - OPEN SELENOID
S1 - CLOSE POSITION LIMIT SWITCH
S2 - OPEN POSITION LIMIT SWITCH

Gas Over Oil Actuator
Local & Remote Control
Pneumatic Line Break

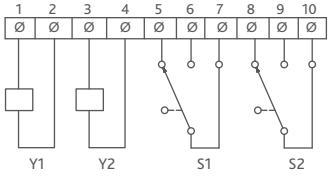
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Legend

1	----------	Electric Line
2	----------	Pneumatic Line
3	----------	Pneumatic Power Line
4	————	Hydraulic Line

Electrical Wiring Diagram



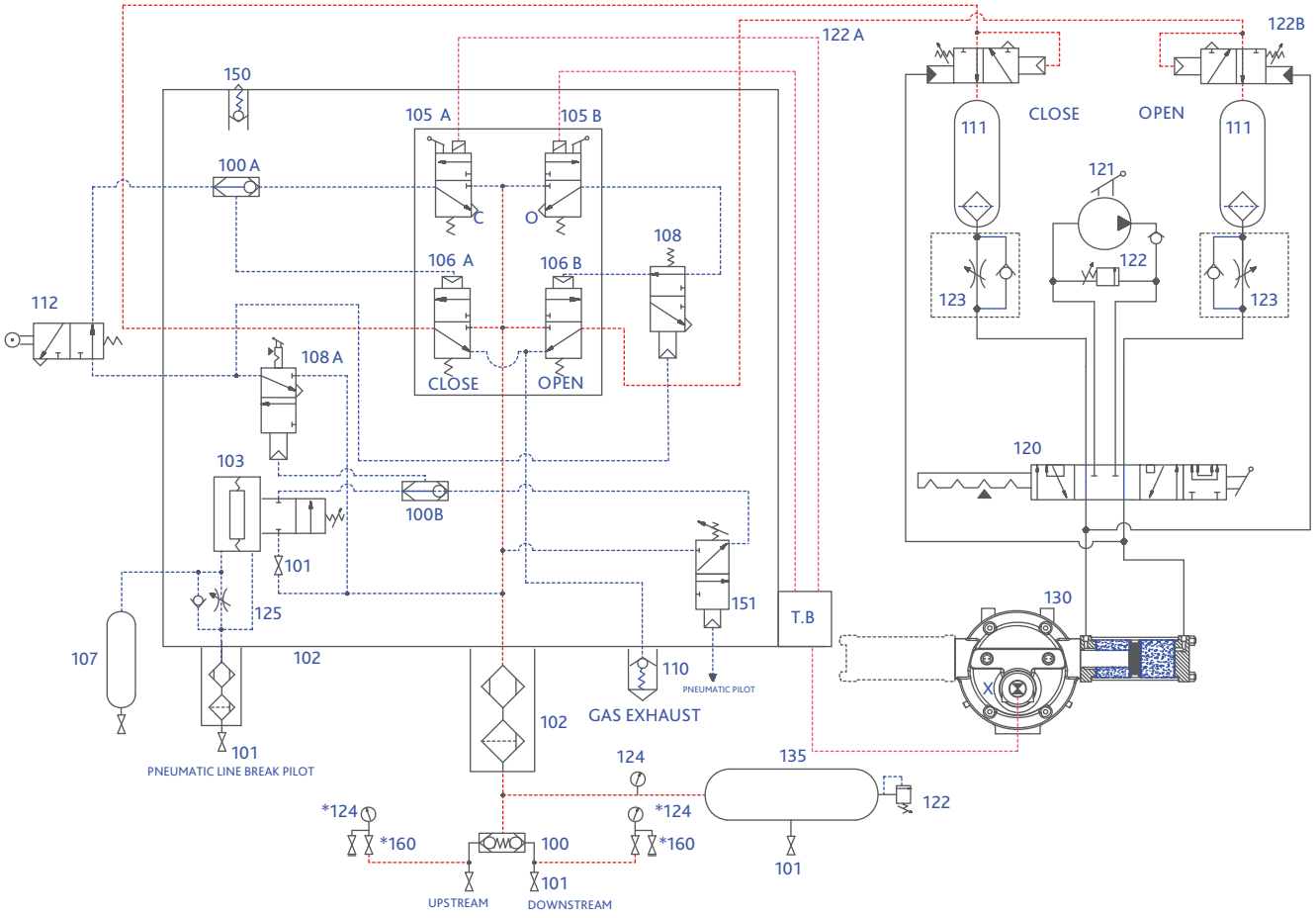
Y1 - CLOSE SELENOID
Y2 - OPEN SELENOID
S1 - CLOSE POSITION LIMIT SWITCH
S2 - OPEN POSITION LIMIT SWITCH

Parts	Name
100	High Pressure Shuttle Valve
100a	Or Valve
101	Stopper Valve
102	Gas Dehydrating Filter
103	Adjustable Diferantial Valve
104	High Pressure Shuttle Valve
107	LBV Reference Tube
108	3/2 Pneumatic Pilot Spring Return Valve
108a	3/2 Pneumatic Pilot Hand Return Valve
110	Exhaust Silencer
111	Gas Hydrolic Tank
112	3/2 N.O.Spring Return Cam Valve
120	Hand Operated Directional Control Valve
121	Hydraulic Hand Pump
122	Safety Valve
122a	Hydraulic Torque Limit Switch
122b	Hydraulic Torque Limit Switch
123	Undirectional Flow Regulator(Adjus. Setting)
124	Pressure Gauge
125	Undirectional Flow Regulator(Adjus. Setting)
130	Double Acting Gas Over Oil Actuator
135	Reservoir
150	Control Valves Anclosure Cabinet
160	2 Way Manifold

T.B	Terminal Box
X	Electrical Position Switch Box
105-a	3/2 N.C. Hand & Elec. Op. Spring Return Valve (To Open)
105-b	3/2 N.C. Hand & Elec. Op. Spring Return Valve (To Close)
106-a	3/2 N.C.Pneum.pilot Spring Return Valve (To Open)
106-b	3/2 N.C.Pneum.pilot Spring Return Valve (To Close)

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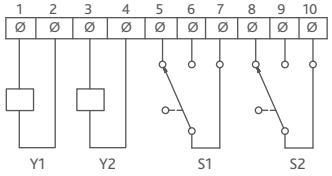
Gas Over Oil Actuator
Local & Remote Control
Low Pressure ESD
Pneumatic Line Break



Legend

1	----------	Electric Line
2	----------	Pneumatic Line
3	----------	Pneumatic Power Line
4	————	Hydraulic Line

Electrical Wiring Diagram

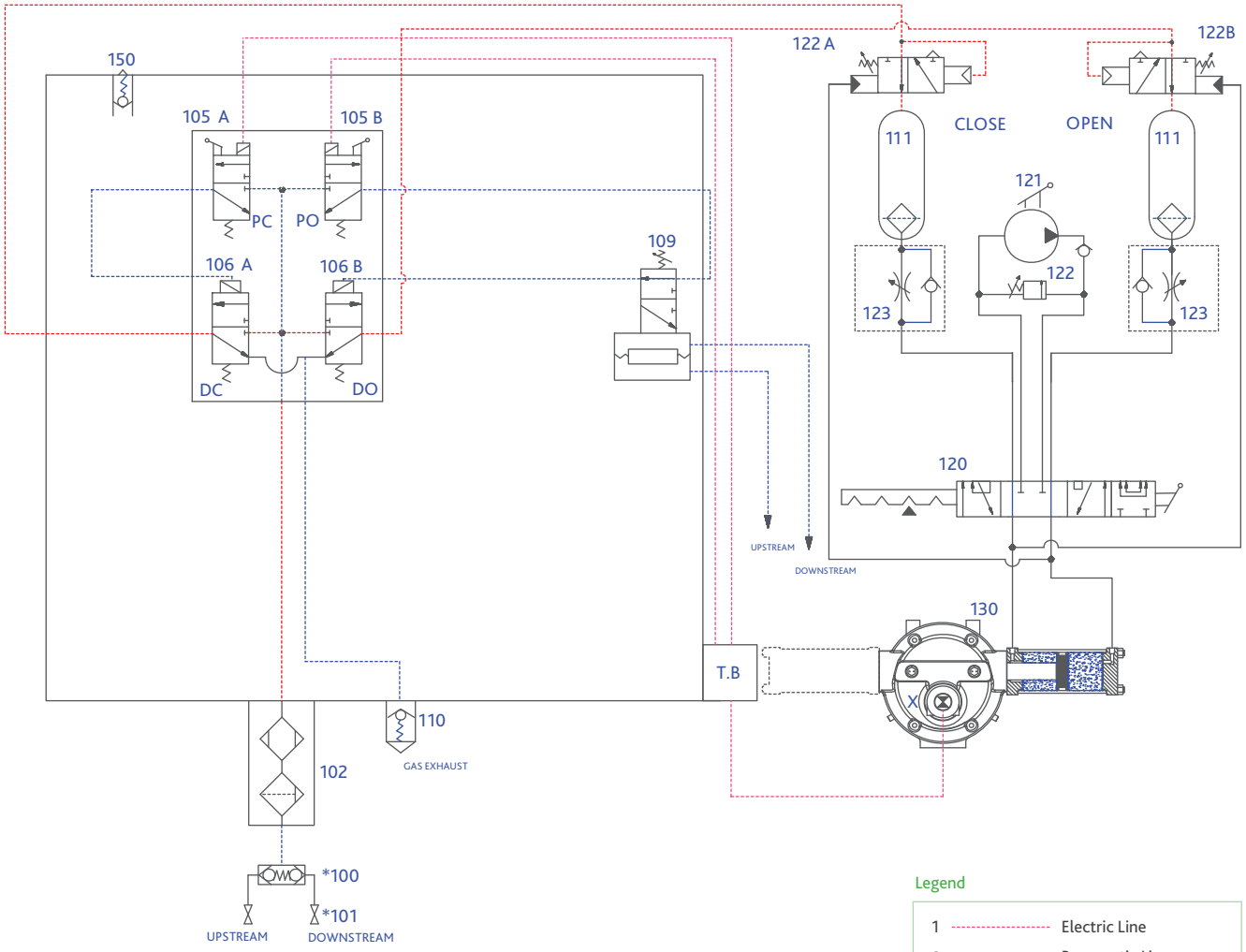


Y1 - CLOSE SELENOID
Y2 - OPEN SELENOID
S1 - CLOSE POSITION LIMIT SWITCH
S2 - OPEN POSITION LIMIT SWITCH

Parts	Name
100	High Pressure Shuttle Valve
100a	Or Valve
100b	Or Valve
101	Stopper Valve
102	Gas Dehydrating Filter
103	Adjustable Diferantial Valve
104	High Pressure Shuttle Valve
107	LBV Reference Tube
108	3/2 Pneumatic Pilot Spring Return Valve
108a	3/2 Pneumatic Pilot Hand Return Valve
110	Exhaust Silencer
111	Gas Hydrolic Tank
112	3/2 N.O.Spring Return Cam Valve
120	Hand Operated Directional Control Valve
121	Hydraulic Hand Pump
122	Safety Valve
122a	Hydraulic Torque Limit Switch
122b	Hydraulic Torque Limit Switch
123	Undirectional Flow Regulator(Adjus. Setting)
124	Pressure Gauge
125	Undirectional Flow Regulator(Adjus. Setting)
130	Double Acting Gas Over Oil Actuator
135	Reservoir
150	Control Valves Anclosure Cabinet
151	Pneumatic Pilot Control (Low Pressure Esd)
160	2 Way Manifold
T.B	Terminal Box
X	Electrical Position Switch Box
105-a	3/2 N.C. Hand & Elec. Op. Spring Return Valve (To Open)
105-b	3/2 N.C. Hand & Elec. Op. Spring Return Valve (To Close)
106-a	3/2 N.C.Pneum.pilot Spring Return Valve (To Open)
106-b	3/2 N.C.Pneum.pilot Spring Return Valve (To Close)

Gas Over Oil Actuator
Local & Remote Control
Opening Prevention for High Differential Pressure

P&ID
GOCD-0R0



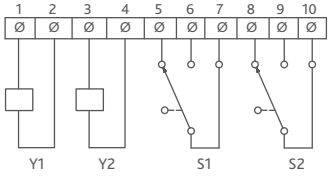
Parts	Name
100	Double Check Valve
101	Stop Valve
102	Gas Dehydrating Filter
105-a	3/2 N.C. Elec. Op. Spring Return Valve (To Open)
105-b	3/2 N.C. Elec. Op. Spring Return Valve (To Close)
106-a	3/2 N.C.Pne.pilot Spring Return Valve (To Open)
106-b	3/2 N.C.Pne.pilot Spring Return Valve (To Close)
109	Adjustable Diferantial Valve
110	Exhaust
111	Gas Hydraulic Tank
120	Hand Operated Directional Control Valve
121	Hydraulic Hand Pump
122	Safety Valve
122a	Hydraulic Torque Limit Switch
122b	Hydraulic Torque Limit Switch
123	Undirectional Flow Regulator(Adjus. Setting)
130	Double Acting Gas Over Oil Actuator
150	Control Valves Anclosure Cabinet
T.B	Terminal Box
X	Switch Box

* Optional

Legend

1	Electric Line
2	Pneumatic Line
3	Pneumatic Power Line
4	Hydraulic Line

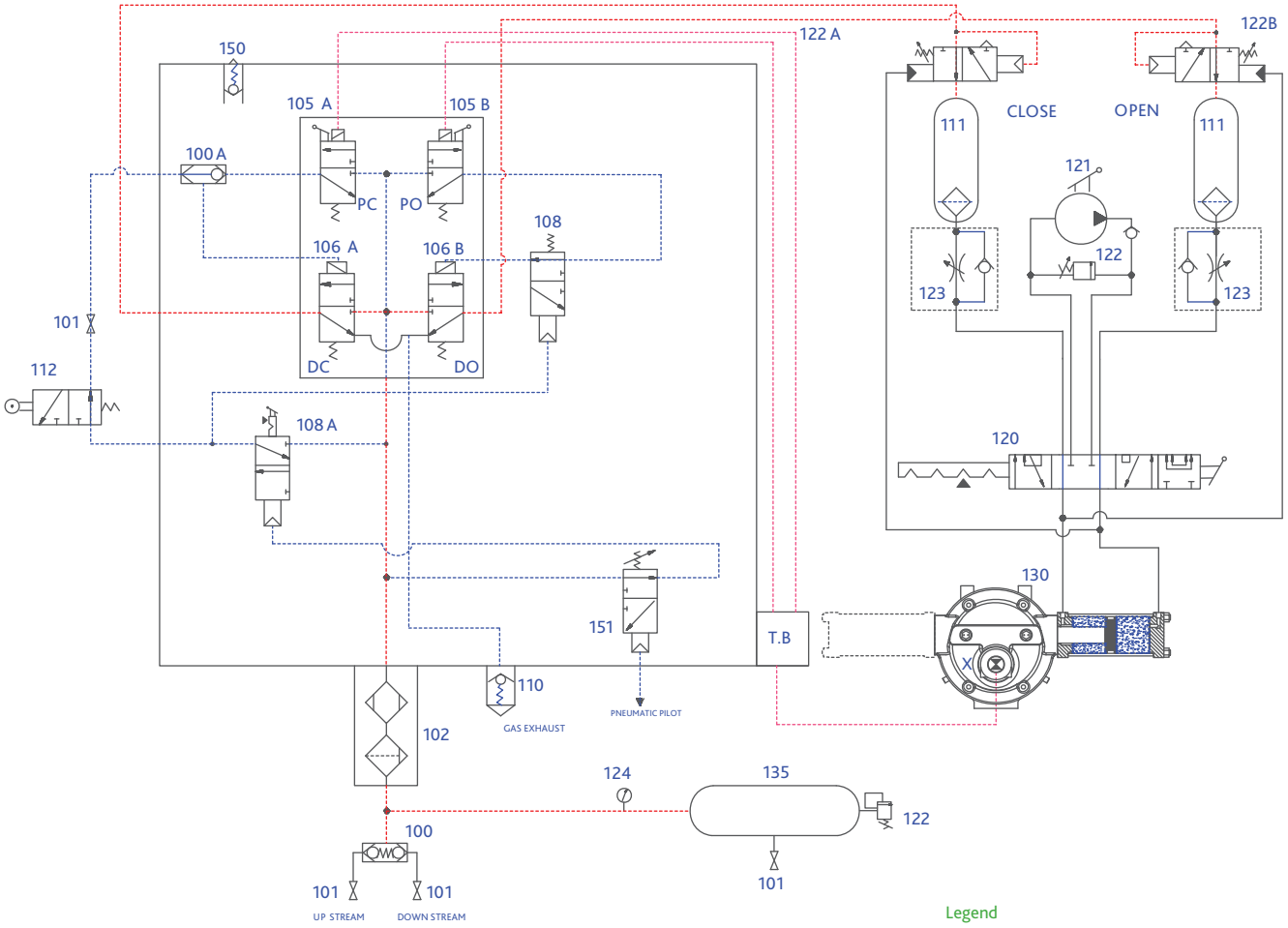
Electrical Wiring Diagram



Y1 - CLOSE SELENOID
Y2 - OPEN SELENOID
S1 - CLOSE POSITION LIMIT SWITCH
S2 - OPEN POSITION LIMIT SWITCH

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GOCE-0R0

Gas Over Oil Actuator
Local & Remote Control
Low Pressure ESD



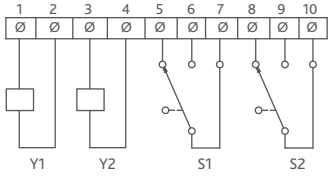
Low Pressure Set Range: 10-35 Bar, 25-55 Bar

Parts	Name
100	High Pressure Shuttle Valve
100a	Or Valve
100b	Check Valve
101	Stopper Valve
102	Gas Dehydrating Filter
104	High Pressure Shuttle Valve
108	3/2 Pneumatic Pilot Spring Return Valve
108a	3/2 Pneumatic Pilot Hand Return Valve
110	Exhaust
111	Gas Hydrolic Tank
112	3/2 N.O.Spring Return Cam Valve
120	Hand Operated Directional Control Valve
121	Hydraulic Hand Pump
122	Safety Valve
122a	Hydraulic Torque Limit Switch
122b	Hydraulic Torque Limit Switch
124	Pressure Gauge
130	Double Cting Gas Over Oil Actuator
135	Reservoir
150	Control Valves Anclosure Cabinet
151	Pneumatic Pilot Control
105-a	3/2 N.C. Hand Operated Spring Return Valve (To Open)
105-b	3/2 N.C. Hand Operated Spring Return Valve (To Close)
106-a	3/2 N.C.Pneum.pilot Spring Return Valve (To Open)
106-b	3/2 N.C.Pneum.pilot Spring Return Valve (To Close)
T.B	Terminal Box
X	Switch Box

Legend

1	----------	Electric Line
2	----------	Pneumatic Line
3	----------	Pneumatic Power Line
4	————	Hydraulic Line

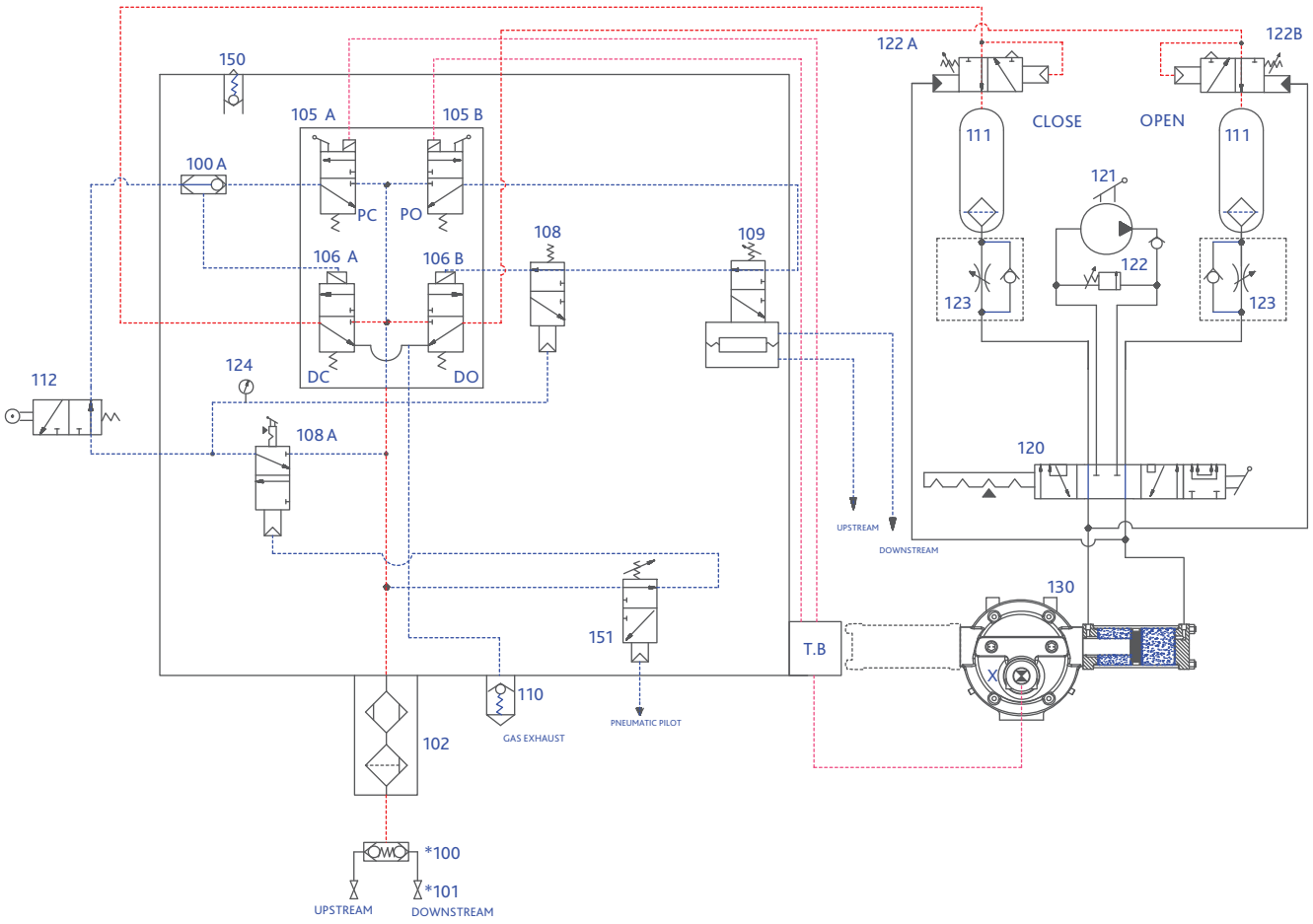
Electrical Wiring Diagram



Y1 - CLOSE SELENOID
Y2 - OPEN SELENOID
S1 - CLOSE POSITION LIMIT SWITCH
S2 - OPEN POSITION LIMIT SWITCH

Gas Over Oil Actuator
Local & Remote Control
Low Pressure ESD
Opening Prevention for High Differential Pressure

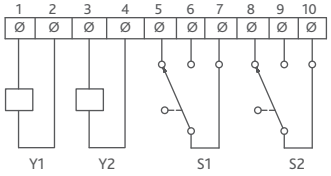
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Legend

1	----------	Electric Line
2	----------	Pneumatic Line
3	----------	Pneumatic Power Line
4	————	Hydraulic Line

Electrical Wiring Diagram



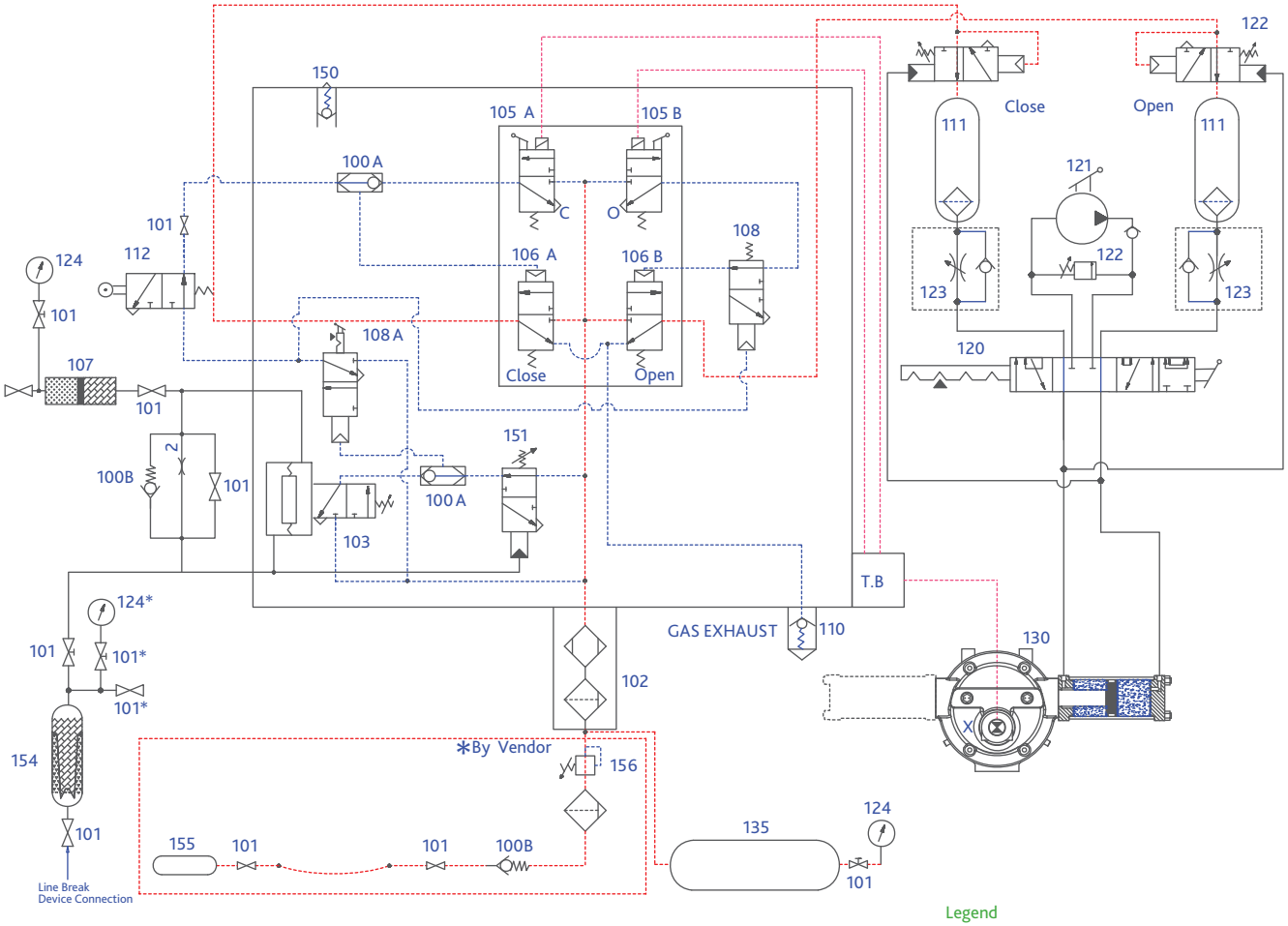
Y1 - CLOSE SELENOID
Y2 - OPEN SELENOID
S1 - CLOSE POSITION LIMIT SWITCH
S2 - OPEN POSITION LIMIT SWITCH

Parts	Name
100	Double Check Valve
100a	Or Valve
101	Stop Valve
102	Gas Dehydrating Filter
105-a	3/2 N.C. Elec. Op. Spring Return Valve (To Open)
105-b	3/2 N.C. Elec. Op. Spring Return Valve (To Close)
106-a	3/2 N.C.Pne.pilot Spring Return Valve (To Open)
106-b	3/2 N.C.Pne.pilot Spring Return Valve (To Close)
108	3/2 Pneumatic Pilot Spring Return Valve
108a	3/2 Pneumatic Pilot Hand Return Valve
109	Adjustable Diferantial Valve
110	Exhaust
111	Gas Hydraulic Tank
112	3/2 N.O.Spring Return Cam Valve
120	Hand Operated Directional Control Valve
121	Hydraulic Hand Pump
122	Safety Valve
122a	Hydraulic Torque Limit Switch
122b	Hydraulic Torque Limit Switch
123	Undirectional Flow Regulator(Adjus. Setting)
124	Pressure Gauge
130	Double Acting Gas Over Oil Actuator
150	Control Valves Anclosure Cabinet
151	Pneumatic Pilot Control (Low Pressure Esd)
T.B	Terminal Box
X	Switch Box

* Optional

P&ID
GOCG-0R0

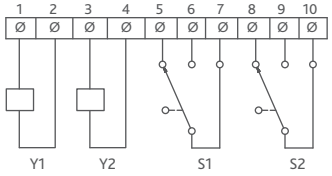
Double Action Gas Over Oil Actuator
Local & Remote Control
Liquid Line Break & Low Pressure ESD



Legend

1	Electric Line
2	Pneumatic Line
3	Pneumatic Power Line
4	Hydraulic Line

Electrical Wiring Diagram

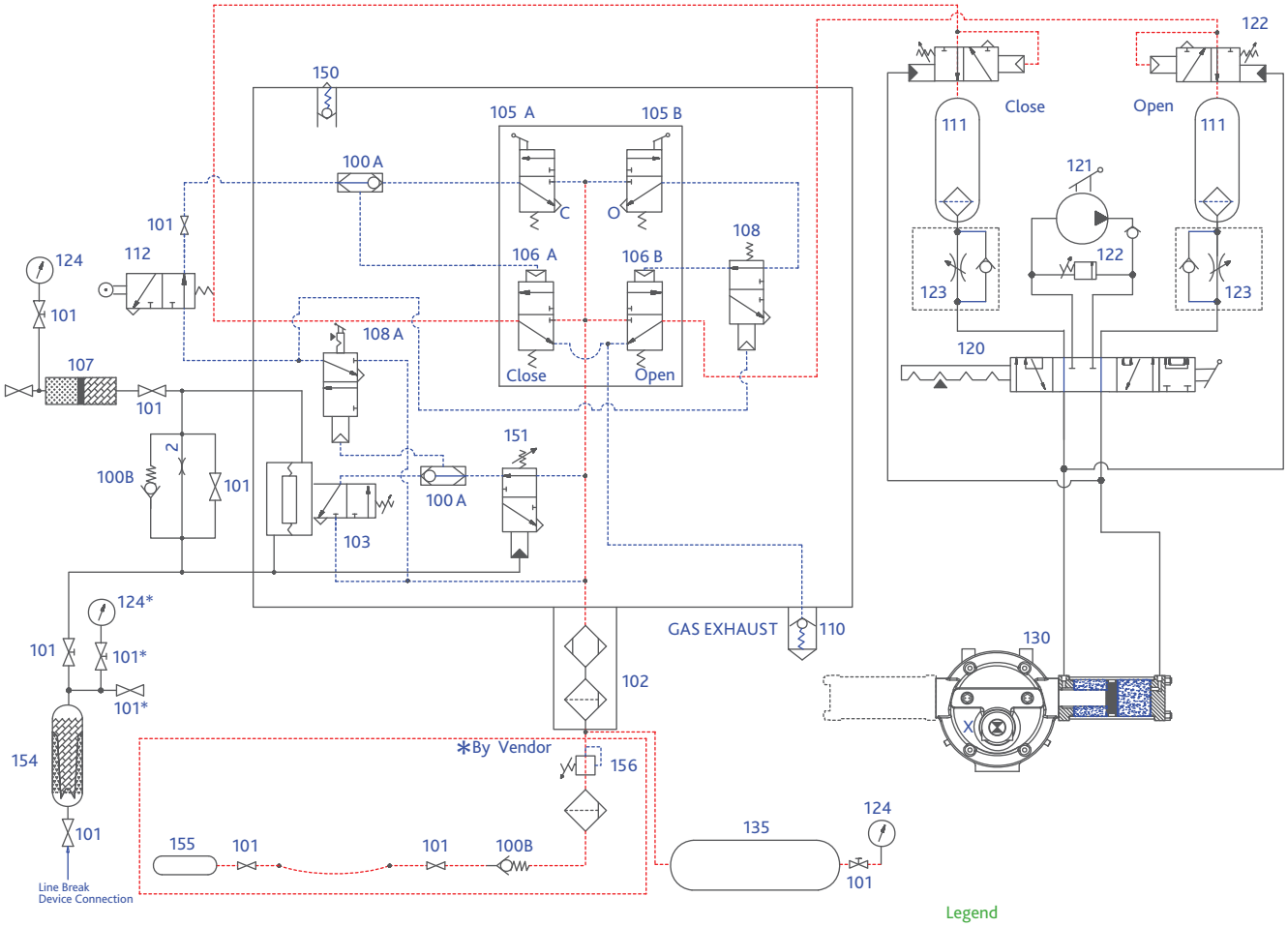


Y1 - CLOSE SELENOID
Y2 - OPEN SELENOID
S1 - CLOSE POSITION LIMIT SWITCH
S2 - OPEN POSITION LIMIT SWITCH

Parts	Name
100a	Or Valve
100b	Check Valve
101	Stopper Valve
102	Gas Dehydrating Filter
103	Adjustable Diferantial Valve
104	High Pressure Shuttle Valve
105-a	3/2 N.C. Elec. & Hand Op. Spring Return Valve (To Open)
105-b	3/2 N.C. Elec. & Hand Op. Spring Return Valve (To Close)
106-a	3/2 N.C.Pneum.pilot Spring Return Valve (To Open)
106-b	3/2 N.C.Pneum.pilot Spring Return Valve (To Close)
107	LBV Reference Tube Tank
108	3/2 Pneumatic Pilot Spring Return Valve
108a	3/2 Pneumatic Pilot Hand Return Valve
110	Exhaust Silencer
111	Gas Hydraulic Tank
112	3/2 N.O.Spring Return Cam Valve
120	Hand Operated Directional Control Valve
121	Hydraulic Hand Pump
122	Hydraulic Torque Limit Switch
123	Undirectional Flow Regulator(Adjus. Setting)
124	Pressure Gauge
130	Double Acting Gas Over Oil Actuator
135	Reservoir
150	Control Valves Anclosure Cabinet
151	Pneumatic Pilot Control (Low Pressure Esd)
154	Separator
155	N2 Bottle
156	Pressure Regulator
T.B	Terminal Box
* Optional	

Double Action Gas Over Oil Actuator
Local Control
Liquid Line Break & Low Pressure ESD

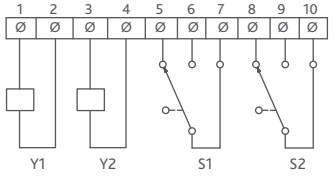
P&ID
GOLG-0R0



Legend

1	----------	Electric Line
2	----------	Pneumatic Line
3	----------	Pneumatic Power Line
4	————	Hydraulic Line

Electrical Wiring Diagram

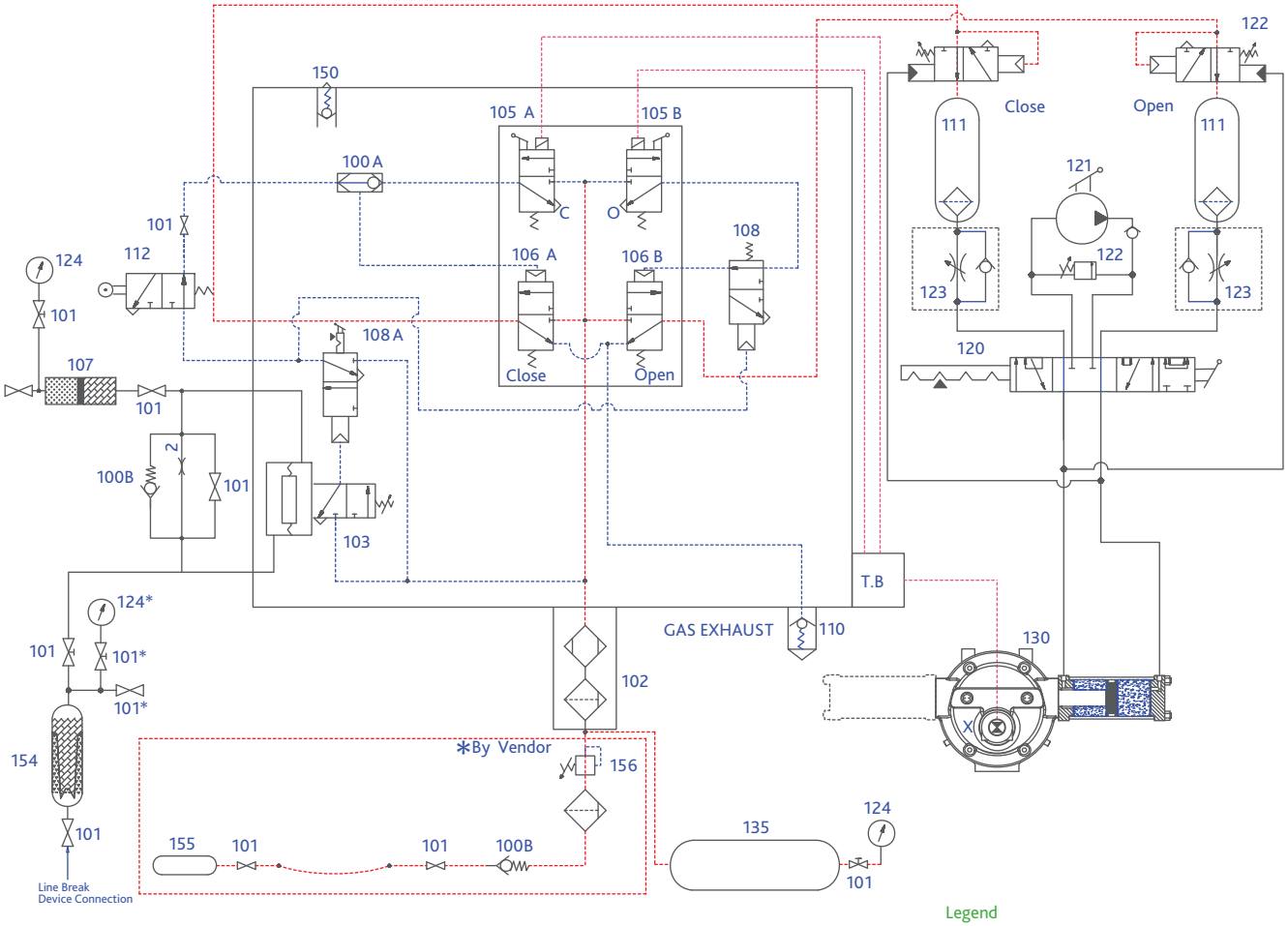


Y1 - CLOSE SELENOID
Y2 - OPEN SELENOID
S1 - CLOSE POSITION LIMIT SWITCH
S2 - OPEN POSITION LIMIT SWITCH

Parts	Name
100a	Or Valve
100b	Check Valve
101	Stopper Valve
102	Gas Dehydrating Filter
103	Adjustable Diferantial Valve
104	High Pressure Shuttle Valve
105-a	3/2 N.C. Hand Op. Spring Return Valve (To Open)
105-b	3/2 N.C. Hand Op. Spring Return Valve (To Close)
106-a	3/2 N.C.Pneum.pilot Spring Return Valve (To Open)
106-b	3/2 N.C.Pneum.pilot Spring Return Valve (To Close)
107	LBV Reference Tube Tank
108	3/2 Pneumatic Pilot Spring Return Valve
108a	3/2 Pneumatic Pilot Hand Return Valve
110	Exhaust Silencer
111	Gas Hydraulic Tank
112	3/2 N.O.Spring Return Cam Valve
120	Hand Operated Directional Control Valve
121	Hydraulic Hand Pump
122	Hydraulic Torque Limit Switch
123	Undirectional Flow Regulator(Adjus. Setting)
124	Pressure Gauge
130	Double Acting Gas Over Oil Actuator
135	Reservoir
150	Control Valves Anclosure Cabinet
151	Pneumatic Pilot Control (Low Pressure Esd)
154	Separator
155	N2 Bottle
156	Pressure Regulator
* Optional	

P&ID
GOCL-0R0

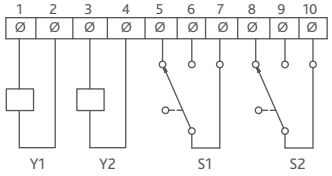
Double Action Gas Over Oil Actuator
Local & Remote Control
Liquid Line Break



Legend

1	Electric Line
2	Pneumatic Line
3	Pneumatic Power Line
4	Hydraulic Line

Electrical Wiring Diagram



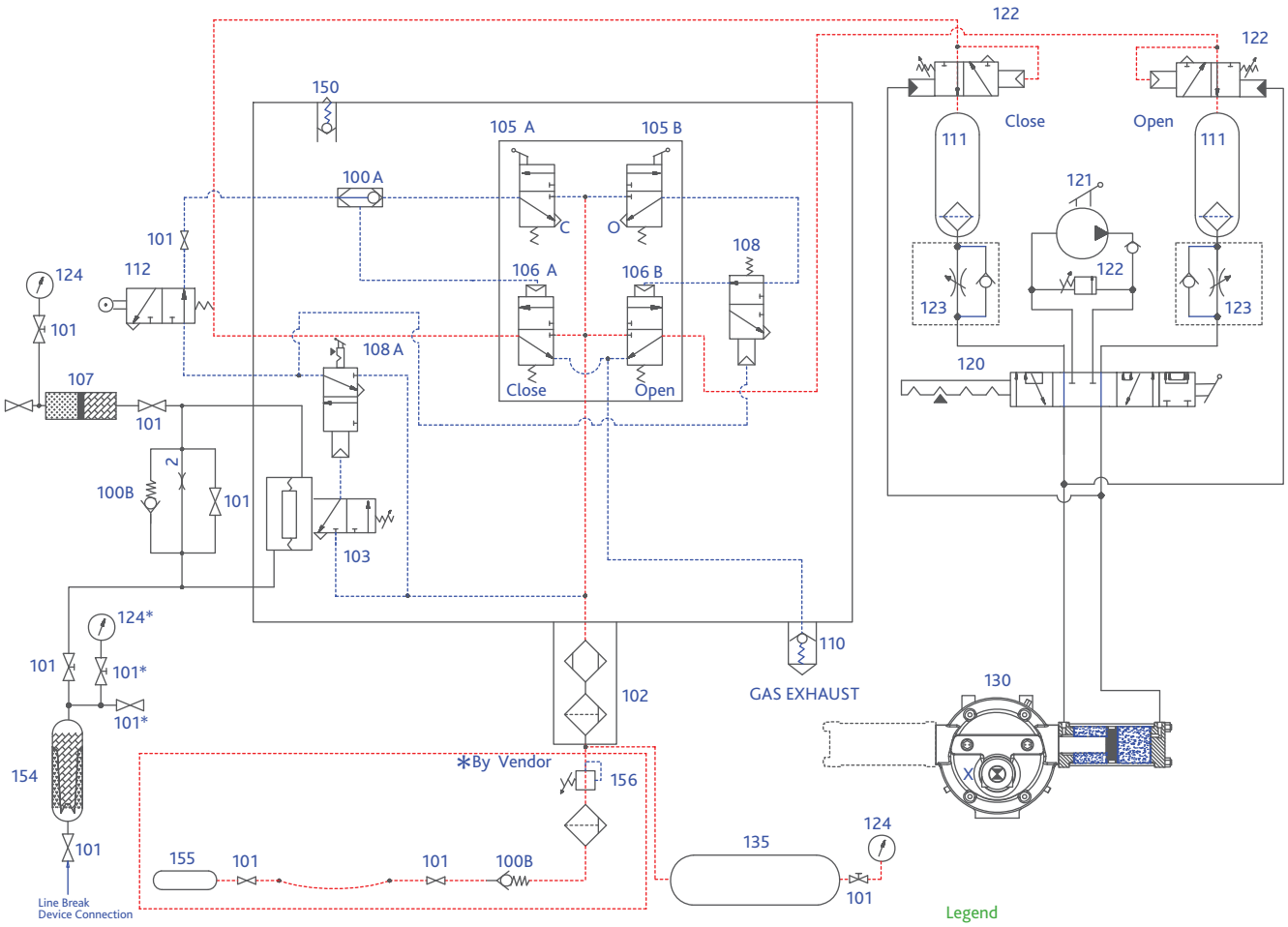
Y1 - CLOSE SELENOID
Y2 - OPEN SELENOID
S1 - CLOSE POSITION LIMIT SWITCH
S2 - OPEN POSITION LIMIT SWITCH

Parts	Name
100a	Or Valve
100b	Check Valve
101	Stopper Valve
102	Gas Dehydrating Filter
103	Adjustable Diferantial Valve
104	High Pressure Shuttle Valve
105-a	3/2 N.C. Elec. & Hand Op. Spring Return Valve (To Open)
105-b	3/2 N.C. Elec. & Hand Op. Spring Return Valve (To Close)
106-a	3/2 N.C.Pneum.pilot Spring Return Valve (To Open)
106-b	3/2 N.C.Pneum.pilot Spring Return Valve (To Close)
107	LBV Reference Tube Tank
108	3/2 Pneumatic Pilot Spring Return Valve
108a	3/2 Pneumatic Pilot Hand Return Valve
110	Exhaust Silencer
111	Gas Hydraulic Tank
112	3/2 N.O.Spring Return Cam Valve
120	Hand Operated Directional Control Valve
121	Hydraulic Hand Pump
122	Hydraulic Torque Limit Switch
123	Undirectional Flow Regulator(Adjus. Setting)
124	Pressure Gauge
130	Double Acting Gas Over Oil Actuator
135	Reservoir
150	Control Valves Anclosure Cabinet
154	Separator
155	N2 Bottle
156	Pressure Regulator
T.B	Terminal Box

* Optional

Double Action Gas Over Oil Actuator
Local Control
Liquid Line Break

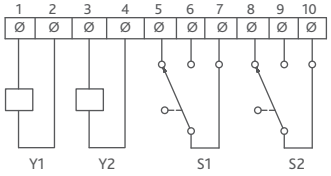
P&ID
GOLL-0R0



Legend

1	----------	Electric Line
2	----------	Pneumatic Line
3	----------	Pneumatic Power Line
4	————	Hydraulic Line

Electrical Wiring Diagram

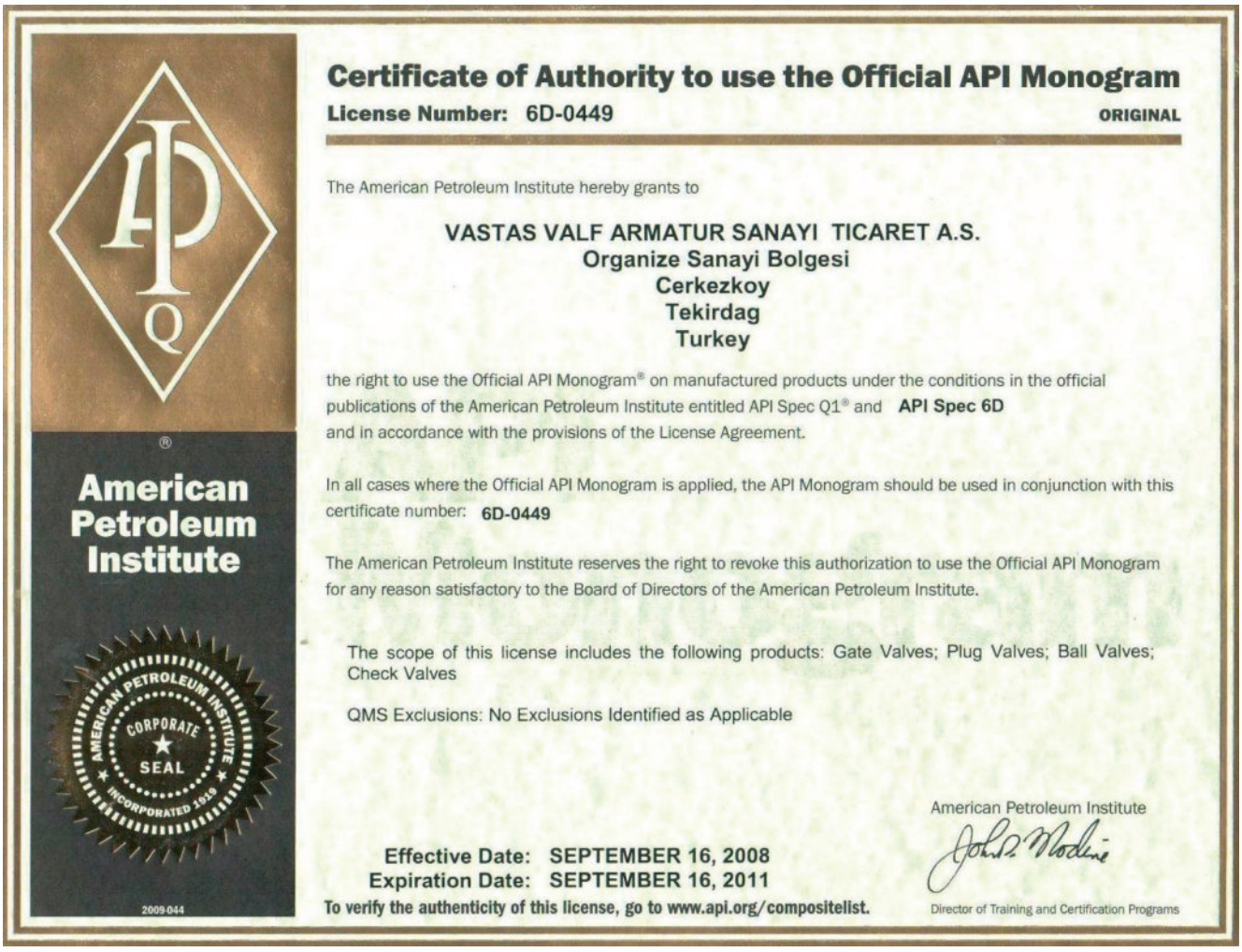


Y1 - CLOSE SELENOID
Y2 - OPEN SELENOID
S1 - CLOSE POSITION LIMIT SWITCH
S2 - OPEN POSITION LIMIT SWITCH

Parts	Name
100a	Or Valve
100b	Check Valve
101	Stopper Valve
102	Gas Dehydrating Filter
103	Adjustable Diferantial Valve
104	High Pressure Shuttle Valve
105-a	3/2 N.C. Hand Op. Spring Return Valve (To Open)
105-b	3/2 N.C. Hand Op. Spring Return Valve (To Close)
106-a	3/2 N.C.Pneum.pilot Spring Return Valve (To Open)
106-b	3/2 N.C.Pneum.pilot Spring Return Valve (To Close)
107	LBV Reference Tube Tank
108	3/2 Pneumatic Pilot Spring Return Valve
108a	3/2 Pneumatic Pilot Hand Return Valve
110	Exhaust Silencer
111	Gas Hydraulic Tank
112	3/2 N.O.Spring Return Cam Valve
120	Hand Operated Directional Control Valve
121	Hydraulic Hand Pump
122	Hydraulic Torque Limit Switch
123	Undirectional Flow Regulator(Adjus. Setting)
124	Pressure Gauge
130	Double Acting Gas Over Oil Actuator
135	Reservoir
150	Control Valves Anclosure Cabinet
154	Separator
155	N2 Bottle
156	Pressure Regulator

* Optional

Certificates



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AMERICAN PETROLEUM INSTITUTE CORPORATE SEAL INCORPORATED 1919

2009-044

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Industrie Service

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Related performance test on GOH Actuator
GOH Actuatoründe ilgili Performans Testleri

User " Kullanıcı"	:	General / Genel
Project No. " Proje No"	:	TGK 04-3711R (017)
Manufacturer İmalatçı	:	VASTAŞ Valf Armatürleri Sanayi Tic A.Ş. Çerkezköy - Tekirdağ - TURKEY
Manufact. project no. İmalatçı Proje no	:	GOH
Manufacturer year Imalat Yılı	:	2007
Drawings No. Resim No.	:	In the related Vastaş drawing No: GOH-01-HP/E Vastaşın ilgili Resim No : GOH-01-HP/E
Max working pres. Max. Çalışma Basıncı	:	100 Bar
Related test standart Test Standardı	:	Related Vastaş procedure VA-IMSGOH-R0 & Requirements of BOTAŞ Spec No: 4-NGTL 0-GN-P-002-5101

GOH1 Actuator has been performance tested according to related Related Vastaş procedure VA-IMSGOH-R0 & Requirements of BOTAŞ Spec No: 4-NGTL 0-GN-P-002-5101 under observation of TUV SUD Inspector in the VASTAŞ Factory for general using purpose. After the satisfactory results related Performance Test report of GOH1 Actuator has been approved by TUV Inspector.
TUV SUD inspector investigated related material certificates, test report of pressure vessel, welder certificates, WPS, PQR and NDT staff certificates.
TUV SUD. Inspector prepared and approved this certificate Due to Client request.

GOH1 Aktuator performans testleri ilgili Vastaş proceduru VA-IMSGOH-R0 ve BOTAŞ spek no: 4-NGTL 0-GN-P-002-5101 gerekliliklerine gore TÜV SÜD inspektörleri nezaretinde VASTAŞ fabrikasında genel olumlu görülmesinden sonar TÜV SÜD i onaylamıştır. Ayrıca TÜV SÜD inspektör raporlarını,kaynakçı sertifikalarını, WPS, incelemiştir.
Taleb dogrultusunda bu sertifika TÜV SÜ

Test Date	"Test Tarihi"	: 06-0
Test Place	"Test Yeri"	: Çerk
Anex "Ekler"		: Appr
Test Result Test Sonucu		: Satis : Uygu

Place / yer	**Date / tarih**
Istanbul-TURKEY	20.08.2007

TÜV Industrie Service GmbH
TÜV SÜD Gruppe
TÜV SÜD / Türkiye
Yıldız Posta Cad. No.17 Kat:5
TR-34394 Esentepe / İstanbul / TÜRKİYE
Tel. : (+90) 212 347 98
Fax : (+90) 212 347 98
e-mail: info@tuv-sud.c

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Related performance test on GOH Actuator
GOH Actuatoründe ilgili Performans Testleri

User " Kullanıcı"	:	General / Genel
Project No. " Proje No"	:	TGK 04-3711R (025)
Manufacturer İmalatçı	:	VASTAŞ Valf Armatürleri Sanayi Tic A.Ş. Çerkezköy - Tekirdağ - TURKEY
Manufact. project no. İmalatçı Proje no	:	GOH 04
Manufacturer year Imalat Yılı	:	2008
Drawings No. Resim No.	:	In the related Vastaş drawing No: GOH, GOH-01-HP,GOH-01-E
Max working pres. Max. Çalışma Basıncı	:	100 Bar
Min working temp. Min. Çalışma sıcaklığı	:	-29 °C
Related test standart Test Standardı	:	Related Vastaş procedure VA-IMSGOH-R0 & Requirements of BOTAŞ Spec No: 4-NGTL 0-GN-P-002-5101

GOH 04 Actuator has been performance tested according to related Related Vastaş procedure VA-IMSGOH-R0 & Requirements of BOTAŞ Spec No: 4-NGTL 0-GN-P-002-5101 under observation of TUV SUD Inspector in the VASTAŞ Factory for general using purpose. After the satisfactory results related Performance Test report of GOH1 Actuator has been approved by TUV Inspector.
TUV SUD inspector investigated related material certificates, test report of pressure vessel, welder certificates, WPS, PQR and NDT staff certificates.
TUV SUD. Inspector prepared and approved this certificate Due to Client request.
GOH 04, G04-08-01 Seri nolu Aktuator performans testleri ilgili Vastaş proceduru VA-IMSGOH-R0 ve BOTAŞ spek no: 4-NGTL 0-GN-P-002-5101 gerekliliklerine gore TÜV SÜD inspektörleri nezaretinde VASTAŞ fabrikasında genel kullanıma sunulmak için test edilmiştir. Sonucun olumlu görülmesinden sonra TÜV SÜD inspektörleri performans test raporlarını onaylamıştır. Ayrıca TÜV SÜD inspektörleri malzeme sertifikaları, basınçlı ekipman test raporlarını,kaynakçı sertifikalarını, WPS, PQR ve NDT elemanların Sertifikalarını incelemiştir.
Taleb dogrultusunda bu sertifika TÜV SÜD tarafından onaylanarak firmaya sunulmuştur.

Test Date	"Test Tarihi"	: 25.03.2008
Test Place	"Test Yeri"	: Çerkezköy / Tekirdag TURKEY
Anex "Ekler"		: Approved Test Report "onaylı Test raporu"
Test Result Test Sonucu		: Satisfactory : Uygun bulunmuştur.

Place / yer	**Date / tarih**
Istanbul-TURKEY	20.08.2007

TÜV SÜD Turkey
HAKIM OZLUK

TÜV Industrie Service GmbH
TÜV SÜD Gruppe
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Industrie Service

Performans test on GOH01 Gas over Hydraulic Actuator
GOH01 Pnömatik-Hidrolik Aktuatör Performans Testi

User " Kullanıcı"	:	General / Genel
Project No. " Proje No"	:	TGK 04-3711R (22)
Manufacturer İmalatçı	:	VASTAŞ Valf Armatürleri Sanayi Tic A.Ş. Çerkezköy - Tekirdağ - TURKEY
Manufact. project no. İmalatçı Proje no	:	GOH I
Manufacturer year İmalat Yılı	:	2008
rings No. ı No.	:	In the related Vastaş drawings GOH, GOH-01-HP, GOH-01-E
working pres. Çalışma Basıncı	:	100 Bar
working Temp. Çalışma Sıcaklığı	:	-29 °C
ted test standart Standardı	:	Related Vastaş procedure VA-IMSGOH-R0 & Requirements of BOTAŞ Spec No: 4-NGTL 0-GN-P-002-5101

01 Actuator has been Low temperature leak tested internally and externally according ated VASTAŞ procedure VA-IMS-GOH-R0 & Requirements of BOTAŞ Spec No: 4- L 0-GN-P-002-5101 under observation of TUV SUD Inspector in the VASTAŞ Factory eneral using purpose. TÜV SÜD also inspected to torque meter open and closed tests. SUD inspector investigated related material certificates, calibration certificate of ure gauge and torque meter, improvement certificates for fixed and portable erature indicators. After the satisfactory results;
SUD. Inspector prepared and approved this certificate Due to Client request.

01, G01-08-06 Seri no'lu Aktuatör, ilgili Vastaş proseduru VA-IMS-GOH-R0 ve AŞ Spec No: 4-NGTL 0-GN-P-002-5101 gerekliliklerine göre TÜV SÜD inspektörleri retinde VASTAŞ fabrikasında sızdırmazlık testlerine tabi tutulmuş, açma-kapama iyonları gözlenmiştir. Ayrıca TÜV SÜD inspektörleri malzeme sertifikaları, manometre rkmetrelerin kalibrasyon sertifikalarını, basınçlı ekipman test raporlarını, kaynakçı ikalarını, WPS, PQR ve NDT elemanların sertifikalarını incelemiştir. Performans ri ile ilgili detaylı bilgiler 25.01.2008, GOH01 Performans test raporlarında mevcuttur.

cun olumlu görülmesinden sonra müşteri talebi dogrultusunda bu sertifika TÜV SÜD ndan onaylanarak firmaya sunulmuştur.

Date	"Test Tarihi"	: 25.01.2008
Place	"Test Yeri"	: Çerkezköy / Tekirdag TURKEY
: "Ekler"		Approved Test Reports "onaylı Test raporları"

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Industrie Service

Performans test on GOH02 Gas over Hydraulic Actuator
GOH02 Pnömatik-Hidrolik Aktuatör Performans Testi

User " Kullanıcı"	:	General / Genel
Project No. " Proje No"	:	TGK 04-3711R (23)
Manufacturer İmalatçı	:	VASTAŞ Valf Armatürleri Sanayi Tic A.Ş. Çerkezköy - Tekirdağ - TURKEY
Manufact. project no. İmalatçı Proje no	:	GOH II
Manufacturer year İmalat Yılı	:	2008
Drawings No. Resim No.	:	In the related Vastaş drawings GOH, GOH-01-HP, GOH-01-E
Max working pres. Max. Çalışma Basıncı	:	100 Bar
Min working Temp. Min. Çalışma Sıcaklığı	:	-29 °C
Related test standart Test Standardı	:	Related Vastaş procedure VA-IMSGOH-R0 & Requirements of BOTAŞ Spec No: 4-NGTL 0-GN-P-002-5101

GOH02 Actuator has been Low temperature leak tested internally and externally according to related VASTAŞ procedure VA-IMS-GOH-R0 & Requirements of BOTAŞ Spec No: 4-NGTL 0-GN-P-002-5101 under observation of TUV SUD Inspector in the VASTAŞ Factory for general using purpose. TÜV SÜD also inspected to torque meter open and closed tests. TUV SUD inspector investigated related material certificates, calibration certificate of pressure gauge and torque meter, improvement certificates for fixed and portable temperature indicators. After the satisfactory results;
TUV SUD. Inspector prepared and approved this certificate Due to Client request.

GOH02, G02-08-02 Seri no'lu Aktuatör, ilgili Vastaş proseduru VA-IMS-GOH-R0 ve BOTAŞ Spec No: 4-NGTL 0-GN-P-002-5101 gerekliliklerine göre TÜV SÜD inspektörleri nezaretinde VASTAŞ fabrikasında sızdırmazlık testlerine tabi tutulmuş, açma-kapama fonksiyonları gözlenmiştir. Ayrıca TÜV SÜD inspektörleri malzeme sertifikaları, manometre ve torkmetrelerin kali sertifikalarını, WPS, I testleri ile ilgili detaylı

Sonucun olumlu görü tarafından onaylanar

Test Date	"Test T	
Test Place	"Test Y	
Anex "Ekler"		
Test Result Test Sonucu		
Place / yer		
Istanbul-TURKEY		

TÜV Industrie Service GmbH
TÜV SÜD Gruppe
TÜV SÜD / Türkiye
Yıldız Posta Cad. No.17 Kat:5
TR-34394 Esentepe / İstanbul / TÜI

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TÜV CERT
CERTIFICATE / SERTİFİKA

Industrie Service

Performans test on GOH03 Gas over Hydraulic Actuator
GOH03 Pnömatik-Hidrolik Aktuatör Performans Testi

User " Kullanıcı"	:	General / Genel
Project No. " Proje No"	:	TGK 04-3711R (24)
Manufacturer İmalatçı	:	VASTAŞ Valf Armatürleri Sanayi Tic A.Ş. Çerkezköy - Tekirdağ - TURKEY
Manufact. project no. İmalatçı Proje no	:	GOH III
Manufacturer year İmalat Yılı	:	2008
Drawings No. Resim No.	:	In the related Vastaş drawings GOH, GOH-01-HP, GOH-01-E
Max working pres. Max. Çalışma Basıncı	:	100 Bar
Min working Temp. Min. Çalışma Sıcaklığı	:	-29 °C
Related test standart Test Standardı	:	Related Vastaş procedure VA-IMSGOH-R0 & Requirements of BOTAŞ Spec No: 4-NGTL 0-GN-P-002-5101

GOH03 Actuator has been Low temperature leak tested internally and externally according to related VASTAŞ procedure VA-IMS-GOH-R0 & Requirements of BOTAŞ Spec No: 4-NGTL 0-GN-P-002-5101 under observation of TUV SUD Inspector in the VASTAŞ Factory for general using purpose. TÜV SÜD also inspected to torque meter open and closed tests. TUV SUD inspector investigated related material certificates, calibration certificate of pressure gauge and torque meter, improvement certificates for fixed and portable temperature indicators. After the satisfactory results;
TUV SUD. Inspector prepared and approved this certificate Due to Client request.

GOH03, G03-08-03 Seri no'lu Aktuatör, ilgili Vastaş proseduru VA-IMS-GOH-R0 ve BOTAŞ Spec No: 4-NGTL 0-GN-P-002-5101 gerekliliklerine göre TÜV SÜD inspektörleri nezaretinde VASTAŞ fabrikasında sızdırmazlık testlerine tabi tutulmuş, açma-kapama fonksiyonları gözlenmiştir. Ayrıca TÜV SÜD inspektörleri malzeme sertifikaları, manometre ve torkmetrelerin kalibrasyon sertifikalarını, basınçlı ekipman test raporlarını, kaynakçı sertifikalarını, WPS, PQR ve NDT elemanların sertifikalarını incelemiştir. Performans testleri ile ilgili detaylı bilgiler 25.01.2008, GOH03 Performans test raporlarında mevcuttur.

Sonucun olumlu görülmesinden sonra müşteri talebi dogrultusunda bu sertifika TÜV SÜD tarafından onaylanarak firmaya sunulmuştur.

Test Date	"Test Tarihi"	: 25.01.2008
Test Place	"Test Yeri"	: Çerkezköy / Tekirdag TURKEY
Anex "Ekler"		: Approved Test Reports "onaylı Test raporları"
Test Result Test Sonucu		: Satisfactory : Uygun bulunmuştur.
Place / yer	**Date / tarih**	**TÜV SÜD Turkey**
Istanbul-TURKEY	05.02.2008	HAKIM OZLUK

TÜV Industrie Service GmbH
TÜV SÜD Gruppe
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TÜV SÜD Turkey
HAKIM OZLUK
Mitglied der CONFEDERATION EUROPÉENNE D'ORGANISMES DE CONTROLE
CEOC

Certificate

Standard **ISO 9001:2008**

Certificate Registr. No. 01 100 032841

TÜV Rheinland Cert GmbH certifies:

Certificate Holder: **VASTAŞ Valf Armatur Sanayi Ticaret A.Ş.**
O.S.B Sabancı Cad. No:22
Çerkezköy / Tekirdağ
Turkey

Scope: Design, Manufacturing and Servicing of Industrial Valves, Actuators and Gear Boxes

An audit was performed, Report No. 032841. Proof has been furnished that the requirements according to ISO 9001:2008 are fulfilled.
The due date for all future audits is 07-11 (dd.mm).

Validity: The certificate is valid from 2009-12-28 until 2012-12-27.
First certification 2003

Cologne, 2009-12-29

TÜV Rheinland Cert GmbH *)
Am Grauen Stein · 51105 Köln

TGA-ZM-58-95-00

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Certificates

Certificate

Standard **ISO 14001:2004**

Certificate Registr. No. 01 104 031931

TÜV Rheinland Cert GmbH certifies:

Certificate Holder: **VASTAŞ Valf Armatur Sanayi Ticaret A.Ş.**
O.S.B Sabancı Cad. No:22
Çerkezköy / Tekirdağ
Turkey

Scope: Design, Manufacturing and Servicing of Industrial Valves, Actuators and Gear Boxes

An audit was performed, Report No. 031931. Proof has been furnished that the requirements according to ISO 14001:2004 are fulfilled.
The due date for all future audits is 07-11 (dd.mm).

Validity: The certificate is valid from 2009-12-28 until 2012-12-27.
First certification 2003

Cologne, 2009-12-29

TÜV Rheinland Cert GmbH *)
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Certificate

Standard **BS OHSAS 18001:2007**

Certificate Registr. No. 01 113 030063

TÜV Rheinland Cert GmbH certifies:

Certificate Holder: **VASTAŞ Valf Armatur Sanayi Ticaret A.Ş.**
O.S.B Sabancı Cad. No:22
Çerkezköy / Tekirdağ
Turkey

Scope: Design, Manufacturing and Servicing of
Industrial Valves, Actuators and Gear Boxes

An audit was performed, Report No. 030063.
Proof has been furnished that the requirements according to BS OHSAS 18001:2007 are fulfilled.

The due date for all future audits is 07-11 (dd.mm).

Validity: The certificate is valid from 2010-01-04 until 2012-12-27.

Cologne, 2010-01-06

TÜV Rheinland Cert GmbH *)
Am Grauen Stein · 51105 Köln

Deutscher Akkreditierungs Rat
DAR
TGA-ZM-58-95-64

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Certificates

Physical Technical Testing Institute
Ostrava-Radvanice

EC-Type Examination Certificate

(1)
(2) **Equipment or Protective Systems Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

(3) EC-Type Examination Certificate Number:

FTZÚ 09 ATEX 0257

(4) Equipment: **Junction box type: GO-JB1**

(5) Manufacturer: **VASTAS VALF ARMATUR SAN. TIC. A.S.**

(6) Address: **Organize Sanayi Bölgesi Sabanci Cad. No:22 Cerkezköy/Tekirdag - Turkey**

(7) This equipment or protective system and any of acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The Physical Technical Testing Institute, notified body number 1026 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report N°

09/0257 dated 07.12.2010

(9) Compliance with Essential Health and safety requirements has been assured by compliance with:

EN 60079-0:2009 EN 60079-7:2007

(10) If the sign „X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and testing of the specified equipment or protective system in accordance to the Further requirements of the Directive apply to the manufacturing equipment or protective system. These are not covered by this certif

(12) The marking of the equipment or protective system shall include the

Ex II 2G Ex e II T6 Gb

This EC-Type Examination Certificate is valid till: **14.12.2015**

Responsible person:
Dipl. Ing. Šindler Jaroslav
Head of certification body

Date of i

PHYSICAL-TECHNICAL TESTING INSTITUTE FTZÚ Ex AO 210 NB 1026

This certificate is granted subject to the general conditions of the Physical Te
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FTZÚ, Pikartská 7, 716 07 Ostrava Radvanice, tel +420 595 223 111, fax +420 59

IEP ENERGY PETROLEUM INSTITUTE

IEP ATEX

EC-Type Examination Certificate

[1]

[2] **Equipment or Protective Systems İntended for use in Potentially Explosive Atmospheres**

Directive 94/9/EC

[3] EC – Type Examination Certificate Number : **IEP 10 ATEX 012**

[4] Equipment : **Solenoid Valve type : GO-RC1**

[5] Manufacturer : **VASTAS VALF ARMATUR SANAYI VE TICARET A.S.**

[6] Address : **Organize Sanayi Bolgesi Sabancı Caddesi No:22 Cerkezkoy / TEKIRDAG - TURKEY**

[7] This equipment or protective system and any of acceptable variation thereto is specified in the cshedule to this certificate and the documents therein referred to.

[8] The IEP Uluslar Arası Enerji Petrol Gözetim , Sertifikasyon ve Teknik Hizmetler Organizasyonu Tic. Ltd. Sti. , TURKAK notified body number AB-0097-M in accordance with of the Council Directive 94/9/EC of 23 March 1994 certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in confidential Report N : IEP - RP.Ex - 10. 299 date 28.12.2010

[9] Compliance with Essential Health and safety requirements has been assured by compliance with ;

EN 60079-0:2009 and EN 60079-18:2009

[10] If the sign " X " is placed after the certificate number , it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11] This EC-Type Examination Certificate relates only to the design examination and testing of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

[12] The marking of the equipment or protective system shall include the following :

Ex II 2G Ex mb IIA T3

This EC -Type Examination Certificate is valid till : **28.12.2015**

Responsible person :
Nurettin Terzioglu
Head of certification body

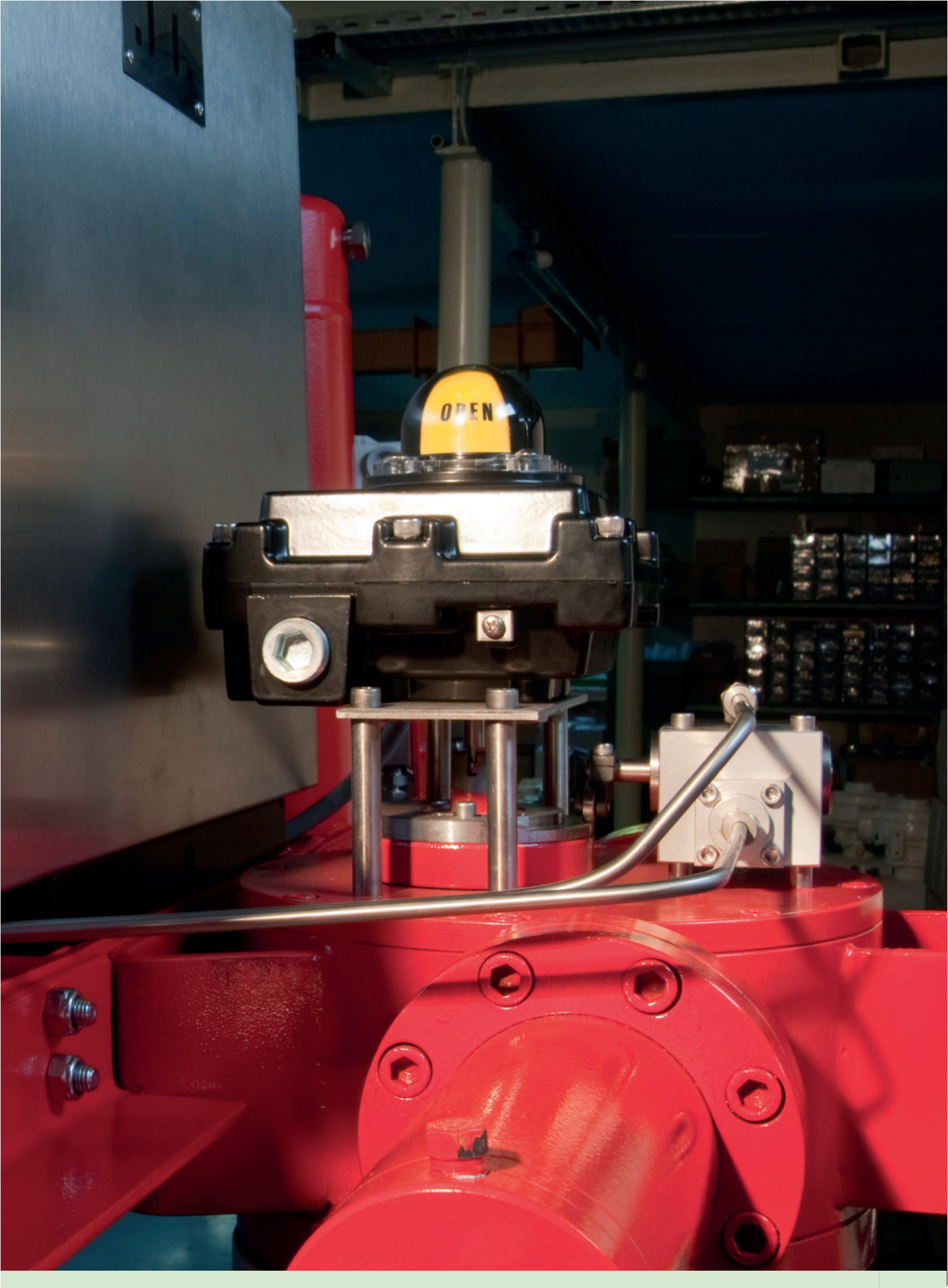
ENERGY PETROLEUM INSTITUTE IEP ATEX INSPECTION AND CERTIFICATION

Date of issue : 29.12.2010

IEP ATEX

IEP Uluslar Arası Enerji Petrol Gözetim , Sertifikasyon ve Teknik Hizmetler Organizasyonu Tic. Ltd. Sti.
MTK Sitesi 5746/1 Sok. No:9 K:2 Camdibi – IZMIR / TURKEY Tel : +90 232 431 17 45 46 & Fax : +90 232 431 17 30
Number of Pages : 1 / 3

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This certificate may only be reproduced in its entirety and without any change , schedule included.


OPEN

Valve Data Sheet

Conforms to the requirements of API 6D & ISO 14313

6D-0449
600-0043

Specification required	
Valve location and function	
Nominal valve size	
Nominal operating pressure	
Maximum field test pressure	
Valve pressure class	
Maximum service temperature	
Minimun service temperature	
Liquid or Gas service	
Flow medium composition	
Specical flow requirements (Blow down,solids piqs,etc.)	

Valve

Vastas Figure: Exxx.xxx

Design Standard														
Type of valve	Gate		Globe		Plug		Ball		Check		Goggle		Relief	
Design type	Full Welded		Split Body		Trunnion		Floating		DBB		Swing		Wafer	
	Pressure Bonnet		Flex		Solid		Conduit		Parallel		Bolted Bonnet			
Full round opening required?			Full Bore		Red. Bore		Regular		Venturi		Min. Bore:			
Shell Material:			Trim Material:								API Trim No:			

End connections

Shell Material:	Yes			No										
	Plain raised face or ring joint?													
	If ring joint, flat or raised face?													
	Size and pressure class, as per	ASME B16.5		or MSS SP 44		or ASME B:16,47 ,Series A								
	Ring gasket or other gasket type and size													
	Note: Gaskets are not fumished as a part of the valve													
Special flanges or mechanical joints?														
Welding end?	Yes			No										
Pipe:	OD:		ID:		Sch:		Material:							
Length: Any special requirements for end-to-end or face to face demension?														

Valve operation

Operation Type :	Wrench		Lever		Gear box		GO Actuator		Gas Actuator		El. Actuator			
Is gearbox handweel required? If so, give details:														
For a handwheel on a horizantal shaft, give distance from centreline of valve opening to handwheel:													mm	
Or, for a handwheel on a vertical shaft, give distance from centreline of valve opening to centre of rim of handwheel:													mm	
Note: For plug valves having loose wrenches, wrenches must be ordred separately.														
Looking device required?							Type :							

Valve support

Spport ribs or legs required?

Other requirements

Supplementary requirements					
Fire test design?	Yes		No		
Anti Static design?	Yes		No		
NACE MR 0175?	Yes		No		
Pressure reliet:If pressure reliet devices are required are there special requiments for these devices?					
Drain connections:Any requirements?					
By-pass connections: Any requirements?					
Supplementary documentation required?					
Third-party witness of processes / testing					
Painting or coating required?					

Gas Over Hydraulic (GO) Actuator Data Sheet

VALVE INFORMATIONS

Type:		Size:			Class:				
Differantial Pressure	Max.		Required Torque	Break at max. Diff. Pressure :					
	Min.			Break at min. Diff. Pressure :					
Stem Dia :	Mounting Flange (ISO Fxx) :			Running :					
Operating Time	Max.		Installation Position	Pipe axis :	Horizontal		Vertical		
	Min.			Valve stem :	Horizontal		Vertical		

ACTUATOR INFORMATIONS

Gas Medium Supply	Source:	Pipeline		Pressure	Max.		Temperature:				
		External			Min.						
Fail Position	Open		Close		Setting pressure:						
Low Pressure Pneumatic Switch			Setting pressure:								
High Pressure Pneumatic Switch			Setting pressure:								
Line Break			Setting pressure / time :								
Protection Class :	Weather-proof		Explosion-proof		Std.:						

OTHER INFORMATIONS

Pneumatic Differantial Switch (with open inhibit) :	Yes		No		Setting pressure:						
Selenoid Valve :	Yes		No		Voltage :		DC		AC		
Position Switch :	Yes		No		Open		Close				
Terminal Box :	Yes		No								
Hand Pumpe :	Yes		No								
Reservoir Tanks :	Volume:		Charge Pressure:			Tank Strok Number:					
	Relief Valve	Yes		No		Setting pressure:					

MATERIAL INFORMATIONS

Reservoir Tanks :	API 5L	Type:	Welding
Pneumatic fittings:	AISI 316	Type:	Let-Lok
Pneumatic tubing:	AISI 316	Type:	Metric
Hydraulic fittings:	AISI 316	Type:	Let-Lok
Hydraulic tubing:	AISI 316	Type:	Metric

Control Schematic No:

Wiring Diagram No:

Remarks:





VASTAS
Valve Production & Services

Vastaş Valf Armatür Sanayi Ticaret A.Ş.

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