

**VeGA**  
*Cryo*

**GLOBE CONTROL VALVES  
FOR CRYOGENIC  
SERVICE**

1-6940 Cryo valves are especially designed for cryogenic service. The construction is the same of 1-6941 and 1-6943 standard globe valves with the exception of the extension bonnet with cold box to keep the cryogenic liquid out of the packing area allowing buildup of gas in the warmer bonnet area.



1-6943 SERIES VALVE WITH 1-X-252 SERIES D63 TYPE PNEUMATIC DIAPHRAGM ACTUATOR PROVIDED WITH SIDE-MOUNTED HANDWHEEL (OPTIONAL).

### MAIN FEATURES

- Wide range of sizes: from DN 3/4" to DN 24";
- Ratings from ANSI 150 up to ANSI 2500 (B10 to B100 for EN ratings);
- Quick change design;
- High flow capacity thanks to optimized body shape design;
- High rangeability thanks to CCF plug design;
- Up to sealing class VI IEC 60534-4 with Soft seat ring insert;
- Unbalanced Contoured plug version available up to DN 6";

### GENERAL DATA

#### BODY

- Type: globe, straight way single port;
- Construction: cast, forged for DN 3/4" and 1" ANSI 900÷2500;
- Materials: wide material selection (from ASME and EN standards) is available, according to material tables. Other materials are available on request;
- Sizes: 3/4" through 24";
- Connections:
  - ANSI, EN flanged
  - BW ANSI B16.25
  - UNI EN 12627 butt welding ends
  - Socket welding up to NPS 2"
- Ratings: according to EN 12516-1 and ASME B16.34 materials
  - PN 10/16/25/40/63/100
  - ANSI 150/300/600 up to DN 24", ANSI 900/1500 (up to DN 12"), ANSI 2500 (up to DN 4")

#### FLOW DIRECTION

Flow under the plug.

#### BONNET

- Type: extension bonnet with cold box;
- Constructions: flanged type, fabricated by welding
- Materials: same as body;
- Low Emission certified packings are available on request.

**PLUG**

- Sizes: full or reduced ports as per 1-6941 and 1-6943 STD Cv table;
- Type:
  - Balanced and unbalanced, cage guided: port 1/2" to 24", for 1-6943;
  - Contoured unbalanced: up to DN 6", for 1-6941.
- Materials: see table of materials;

**FLOW CHARACTERISTIC**

- Linear;
- Equal percentage.

**SEAT**

- Mounting: free fitted in the body without screwing or forcing. Centered in the cage granting alignment with the plug, body and seat. Coupling sealed by means of a flat gasket;
- Materials: see materials of construction table.

**CAGE**

- Constructions: rolled or forged cylinder, drilled or V-ported, tightened between body and bonnet;
- Materials: see materials of construction table.

**STEM PACKINGS**

Two packing types are available:

- Pure PTFE rings;
- Special low emission EXPANDED GRAPHITE based packing TA-Luft certified with Live Loading System;

All packings are equipped with scraper to protect stuffing box internal components from external icing, and additional seal bushing.

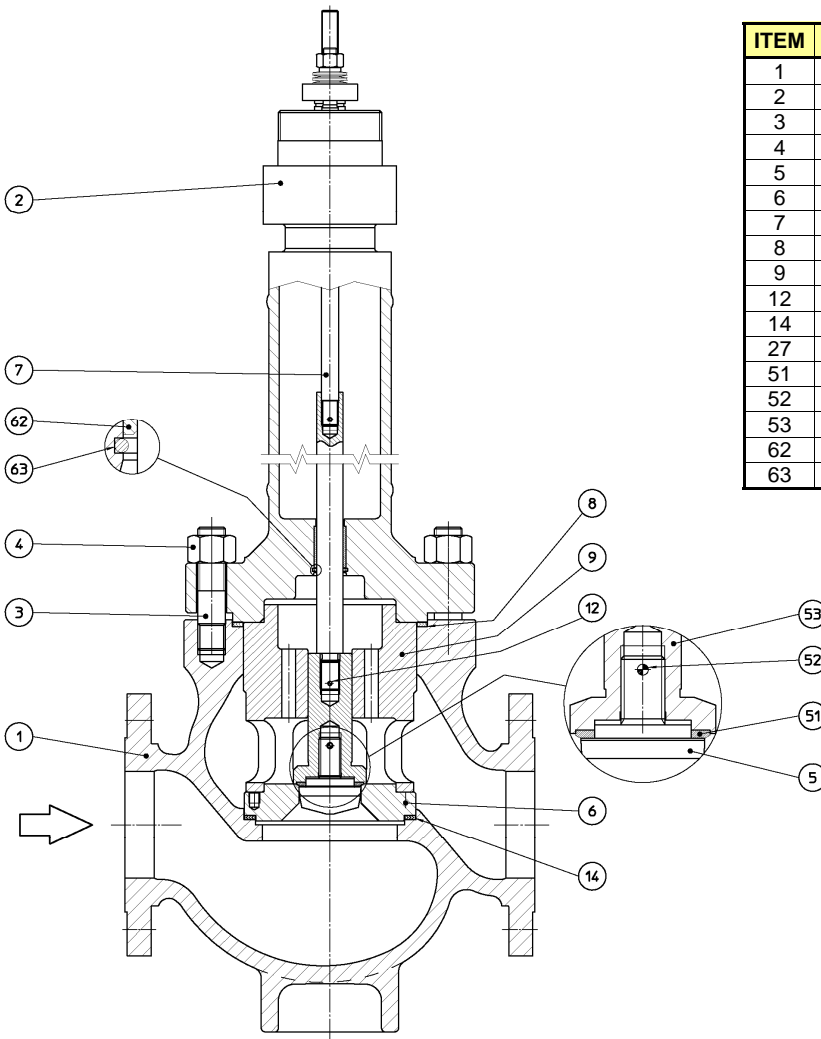
**SPECIAL EXECUTIONS AVAILABLE ON REQUEST**

- Double packing with leak off connection;

**LEAKAGE CLASSES**

In accordance with IEC 60534-4 leakage classes, up to class VI for both balanced and unbalanced construction up to maximum admissible working temperatures.

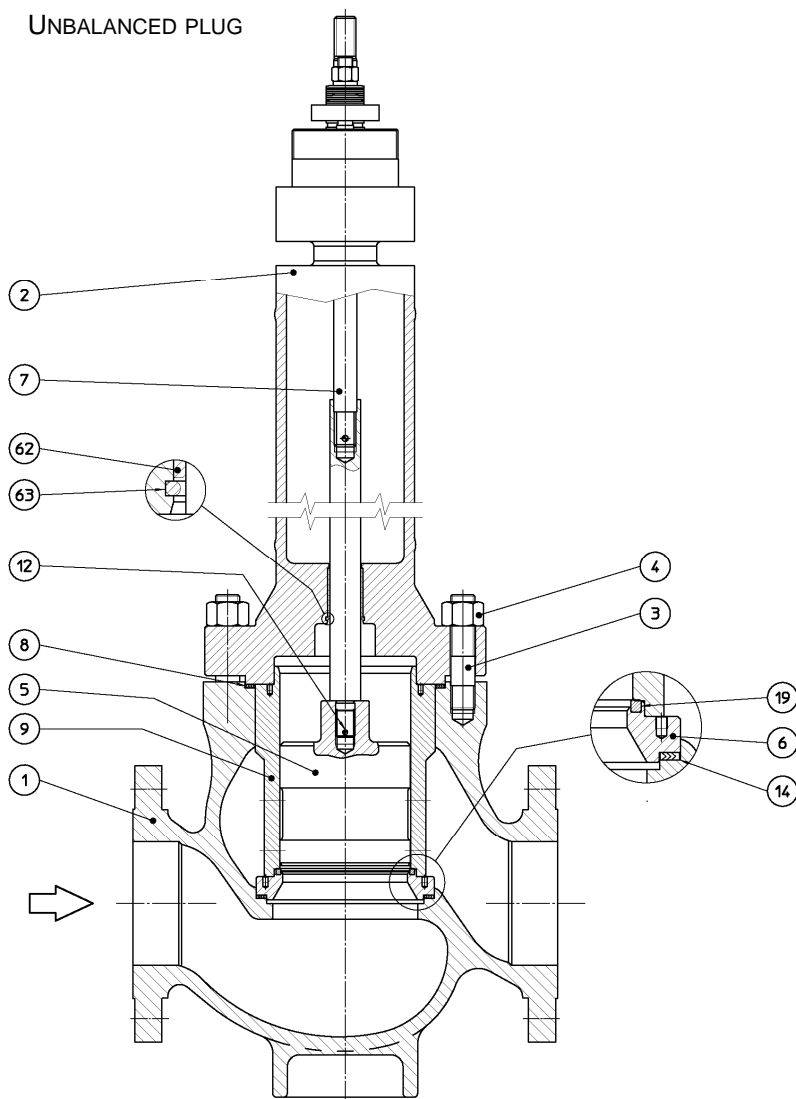
**1-6941 CONTOURED PLUG VALVE ASSEMBLY**



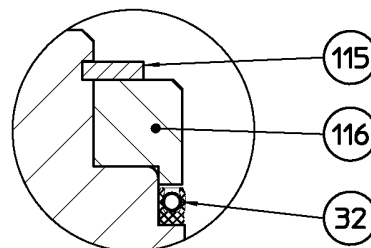
ITEM	PART NAME
1	BODY
2	BONNET
3	BODY STUD
4	NUT
5	VALVE PLUG
6	SEAT
7	STEM
8	GASKET
9	GUIDE
12	PIN
14	GASKET
27	PACKING
51	SEAL RING
52	PIN (up to port 3")
53	PLUG POST (up to port 3")
62	GUIDE BUSHING (if any)
63	STOP RING (if any)

**1-6943 CAGE-GUIDED PLUG VALVE ASSEMBLY**

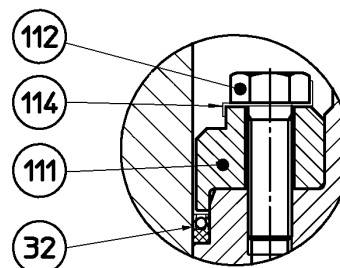
UNBALANCED PLUG



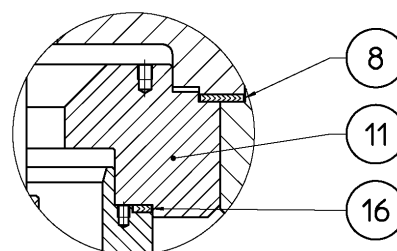
BALANCED PLUG WITH RETAINING RING



BALANCED PLUG WITH SCREWS  
(OVER PORT 2")



BODY-BONNET CONNECTION  
WITH ADAPTER



ITEM	PART NAME
1	BODY
2	EXTENSION BONNET
3	STUD
4	NUT
5	VALVE PLUG
6	SEAT
7	STEM ASSEMBLY
8	GASKET
9	CAGE
11	ADAPTER (if any)
12	PIN

ITEM	PART NAME
16	GASKET (if any)
19	SEAL RING
27	PACKING
32	SEAL RING (if any)
62	GUIDE BUSHING (if any)
63	STOP RING (if any)
111	FLANGE (if any)
112	SCREW (if any)
114	STOP WASHER (if any)
115	RETAINING RING (if any)
116	RING PLUG (if any)

**1-6941 series MATERIALS OF CONSTRUCTION**

ITEM	PART NAME	BASIC CLASS	
		G	H
1	BODY	SA 351 CF8M	SA 351 CF3M
2	BONNET	SA 351 CF8M SA 479 316	SA 351 CF3M SA 479 316L
3	BODY STUD	SA 479 XM-19	
4	NUT	SA 194 Gr.8	
5	VALVE PLUG	A 479 316	A 479 316L
6	SEAT		
7	STEM	A 479 316 <sup>(1)</sup>	A 479 316L <sup>(1)</sup>
8	GASKET	AISI 321 + GRAPHITE	
9	GUIDE	A 351 CF3M Cr Plated	
12	PIN	A 479 304	
14	GASKET	AISI 321 + GRAPHITE	
27	PACKING	SEE PARCOL BULLETIN 1-VII	
51	SEAL RING	PTFE	
52	PIN (up to port 3")	A 479 304	A 479 316L
53	PLUG POST (up to port 3")	A 479 316	A 479 316L
62	GUIDE BUSHING (if any)	AISI 316L + antifriction treatment	
63	STOP RING (if any)	INCONEL X-750 SPRING TEMP.	

**1-6943 series MATERIALS OF CONSTRUCTION**

ITEM	PART NAME	BASIC CLASS	
		G	H
1	BODY	SA 351 CF8M	SA 351 CF3M
2	BONNET	SA 351 CF8M SA 479 316	SA 351 CF3M SA 479 316L
3	BODY STUD	SA 479 XM-19	
4	NUT	SA 194 Gr.8	
5	PLUG	A 479 316	A 479 316L
6	SEAT		
7	STEM	A 479 316 <sup>(1)</sup>	A 479 316L <sup>(1)</sup>
8	GASKET	AISI 321 + GRAPHITE	
9	CAGE	A 182 F316 Cr plated	A 182 F316L Cr plated
11	ADAPTER - if any	A 479 316L	
12	PIN	A 479 304	
13	SPACER RING - if any	A 182 F316L	
14	GASKET	AISI 321 + GRAPHITE	
15	SPACER - if any	A 182 F316L	
16	GASKET - if any	AISI 321 + GRAPHITE	
19	SEAL RING	PTFE + PFA	
27	PACKING	SEE PARCOL BULLETIN 1-VII	
32	SEAL RING (if any)	Graphite loaded PTFE	
62	GUIDE BUSHING (if any)	AISI 316L + antifriction treatment	
63	STOP RING (if any)	INCONEL X-750 SPRING TEMP.	
111	FLANGE	A 479 316L	
112	SCREW	A 479 316	
114	STOP WASHER	A 479 304 ANNEALED	
115	RETAINING RING	X12CrNi17-7	
116	RING PLUG	A 479 316	

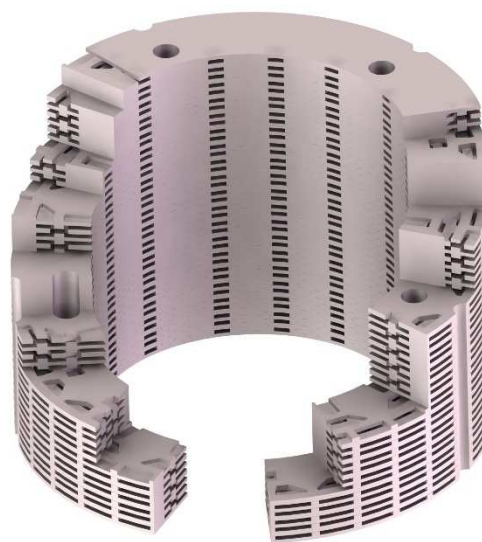
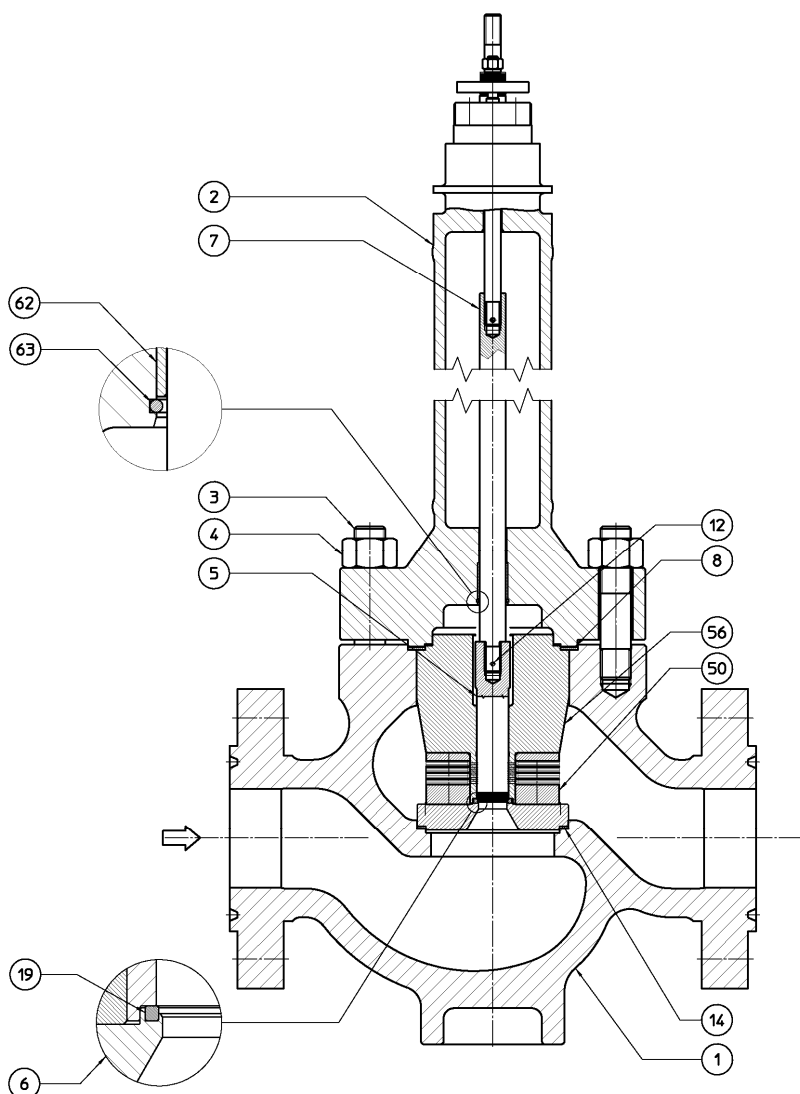


VEGA CRYO CONTROL VALVE AFTER TYPE TEST ON LIQUID NITROGEN

All components made of A 479 316 or A 479 316L can be replaced by double marking material A 479 316/316L without notice

<sup>(1)</sup> A 479 XM-19-HS when low emission packing is provided.

**TRIM OPTIONS**

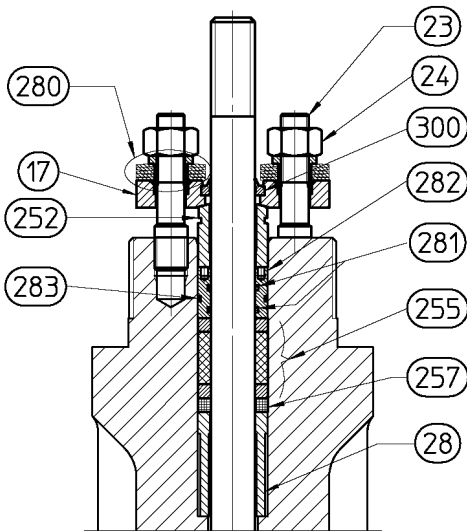


LIMIPHON® DISK STACK

1-9111 CAGE-GUIDED PLUG AND LIMIPHON® DISK STACK

ITEM	PART NAME	MATERIALS	
1	BODY	SA 351 CF8M	SA 351 CF3M
2	EXTENSION BONNET	SA 351 CF8M	SA 351 CF3M
		SA 479 316	SA 479 316L
3	STUD	SA 479 XM-19	
4	NUT	SA 194 Gr.8	
5	VALVE PLUG	A 479 316	A 479 316L
6	SEAT	A 479 316	A 479 316L
7	STEM ASSEMBLY	A 479 316 <sup>(1)</sup>	A 479 316L <sup>(1)</sup>
8	GASKET	AISI 321 + GRAPHITE	
12	PIN	A 479 304	
14	GASKET	AISI 321 + GRAPHITE	
19	SEAL RING	PTFE + PFA	
50	LIMIPHON® DISK STACK	A 479 316	
56	CAGE	A 182 F316	A 182 F316L
		Cr plated	Cr plated
62	GUIDE BUSHING	AISI 316L + antifriction treatment	
63	STOP RING	INCONEL X-750 SPRING TEMP.	

**PACKING**



GLE TYPE TA-LUFT CERTIFIED

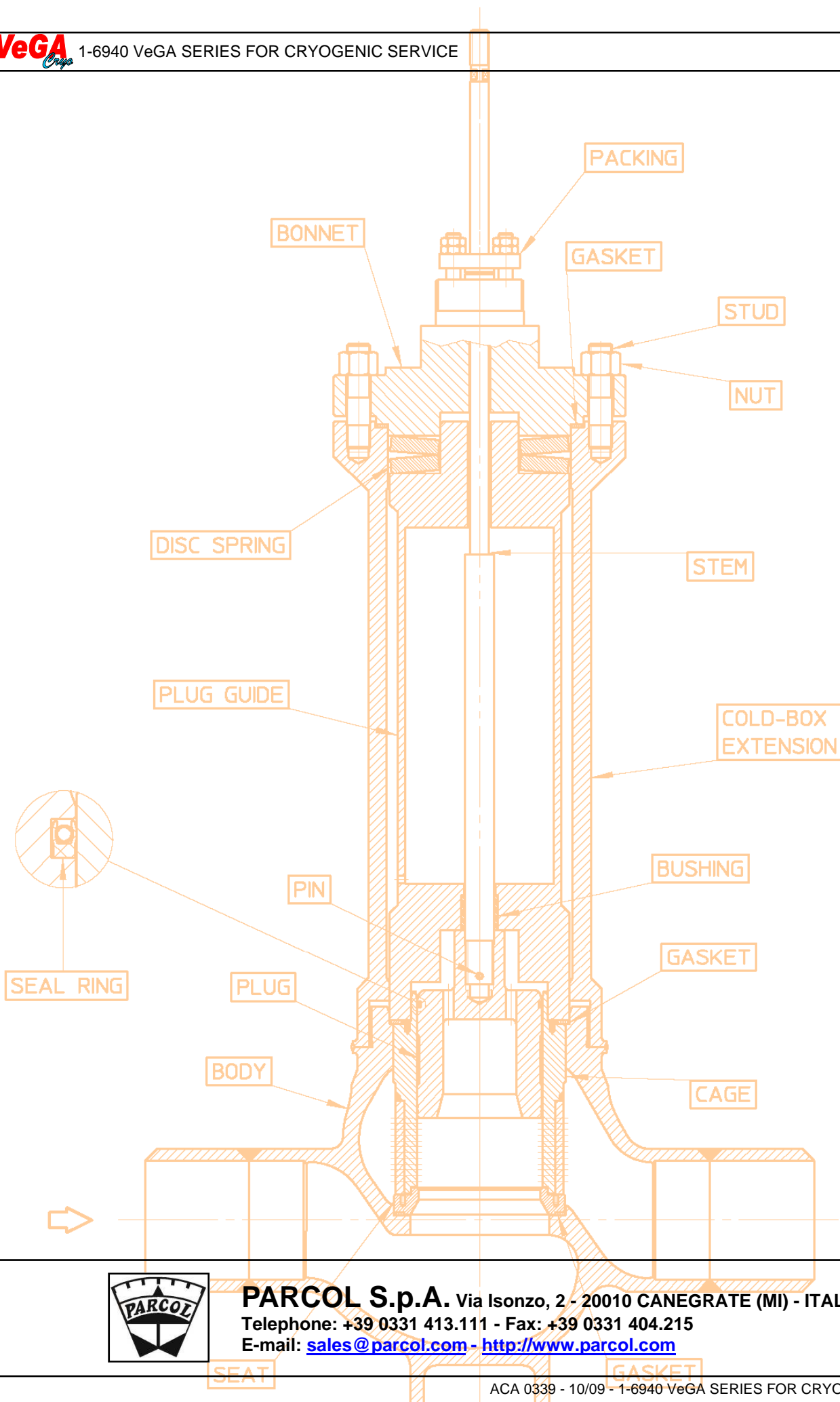
ITEM	PART NAME	MATERIALS	
17	PACKING FLANGE	AISI 316	
23	STUD	ASTM A193 B8 Cl.1	
24	NUT	ASTM A194 Gr.8	
28	BUSHING	AISI 316L	
252	PACKING FOLLOWER	AISI 316	
255	PACKING BOX	EXPANDED GRAPHITE (low emission certified)	PURE PTFE
257	INTERMEDIATE RING	AISI 316	
280	BELLEVILLE WASHER	INCONEL 718 HARDENED 390 HB	
281	SEAL RING	NB-70	
282	GUIDE BUSHING	Aluminuim Bronze	
283	SEAL RING	NB-70	
300	SCRAPER	PTFE	



GLE TYPE SEALING RINGS



LIVE LOADING DETAIL



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SEAT

GASKET