

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.

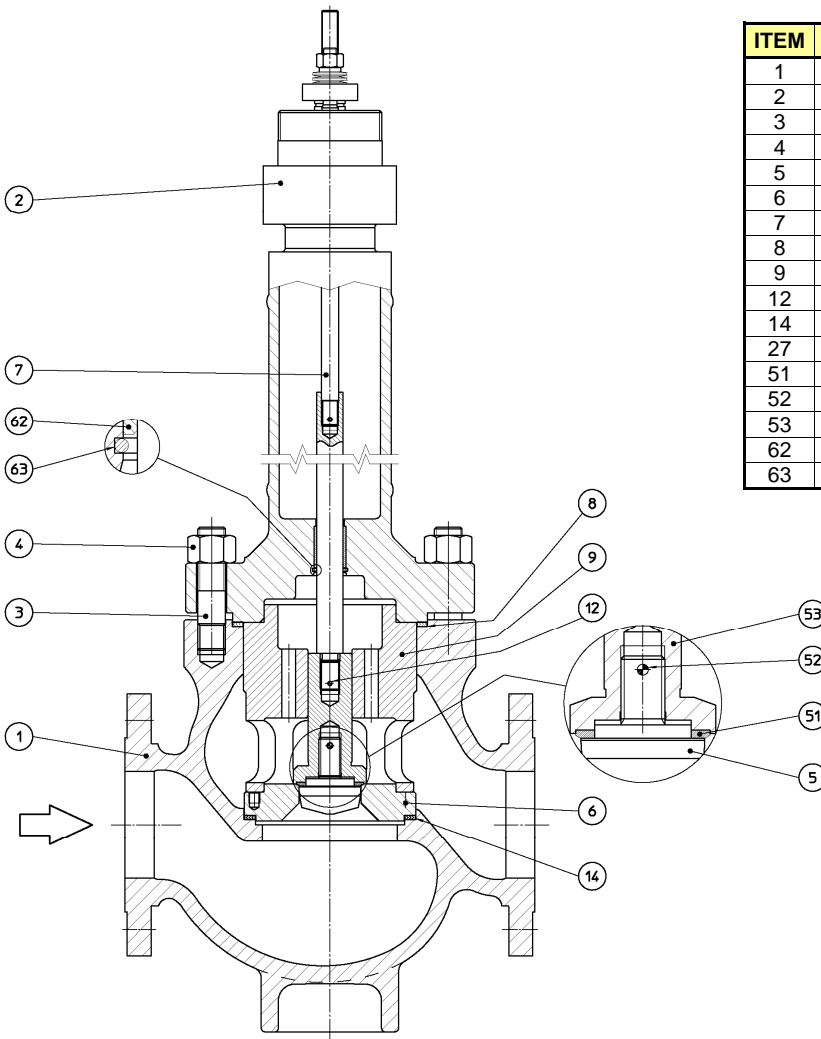
SPECIAL EXECUTIONS AVAILABLE ON REQUEST

- 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.

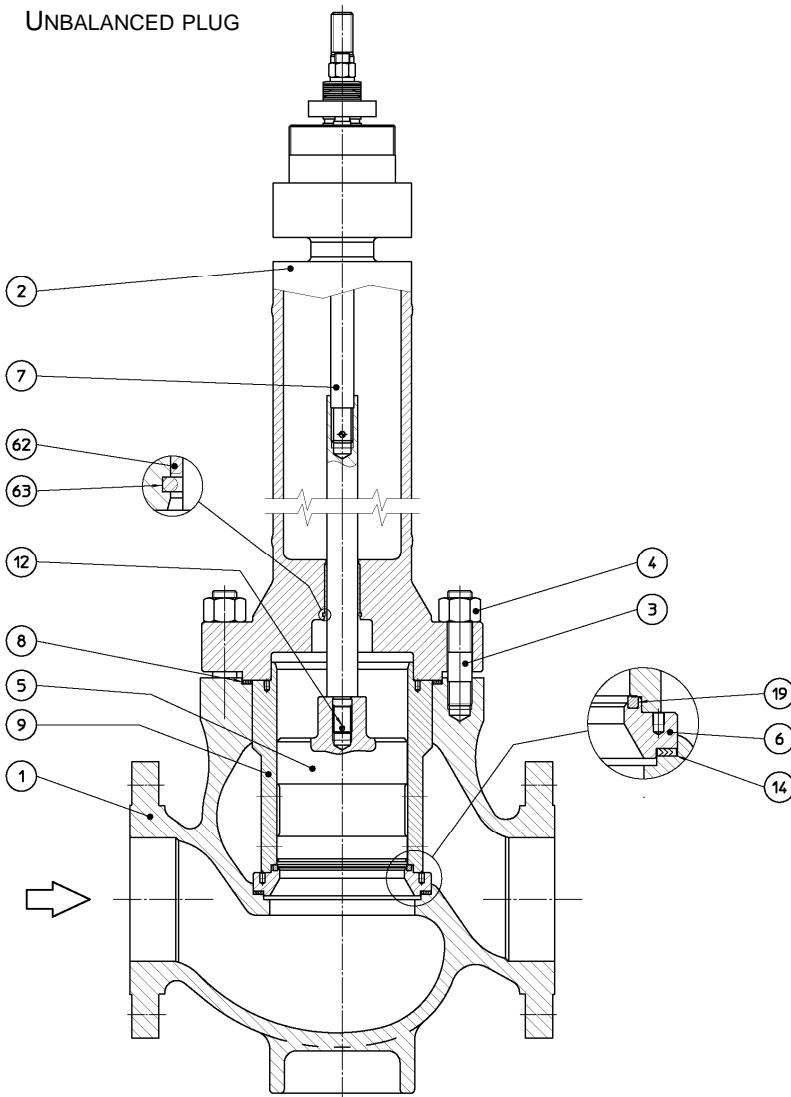
1-6941 CONTOURED PLUG VALVE ASSEMBLY



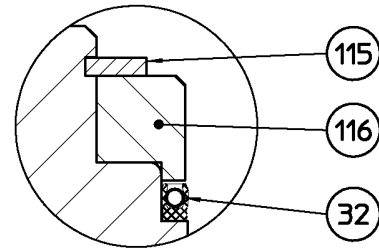
| ITEM | PART NAME |
|------|---------------------------|
| 1 | BODY |
| 2 | BONNET |
| 3 | BODY STUD |
| 4 | NUT |
| 5 | VALVE PLUG |
| 6 | SEAT |
| 7 | STEM |
| 8 | GASKET |
| 9 | GUIDE |
| 12 | PIN |
| 14 | GASKET |
| 27 | PACKING |
| 51 | SEAL RING |
| 52 | PIN (up to port 3") |
| 53 | PLUG POST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

1-6943 CAGE-GUIDED PLUG VALVE ASSEMBLY

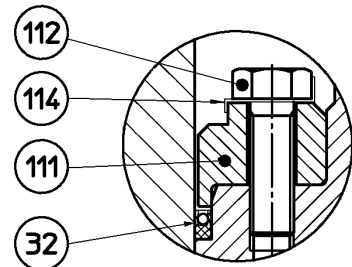
UNBALANCED PLUG



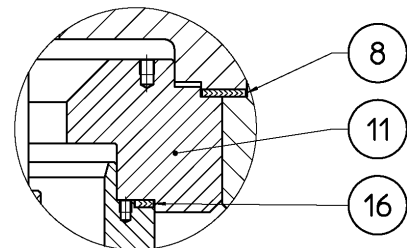
BALANCED PLUG WITH RETAINING RING



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 ⁽¹⁾ | A 479 316L ⁽¹⁾ |
| 8 | GASKET | AISI 321 + GRAPHITE | |
| 9 | GUIDE | A 351 CF3M Cr Plated | |
| 12 | PIN | A 479 304 | A 479 316L |
| 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 ⁽¹⁾ | A 479 316L ⁽¹⁾ |
| 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 | |

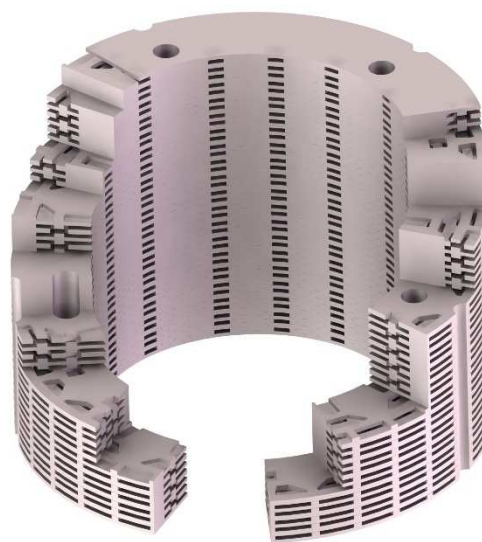
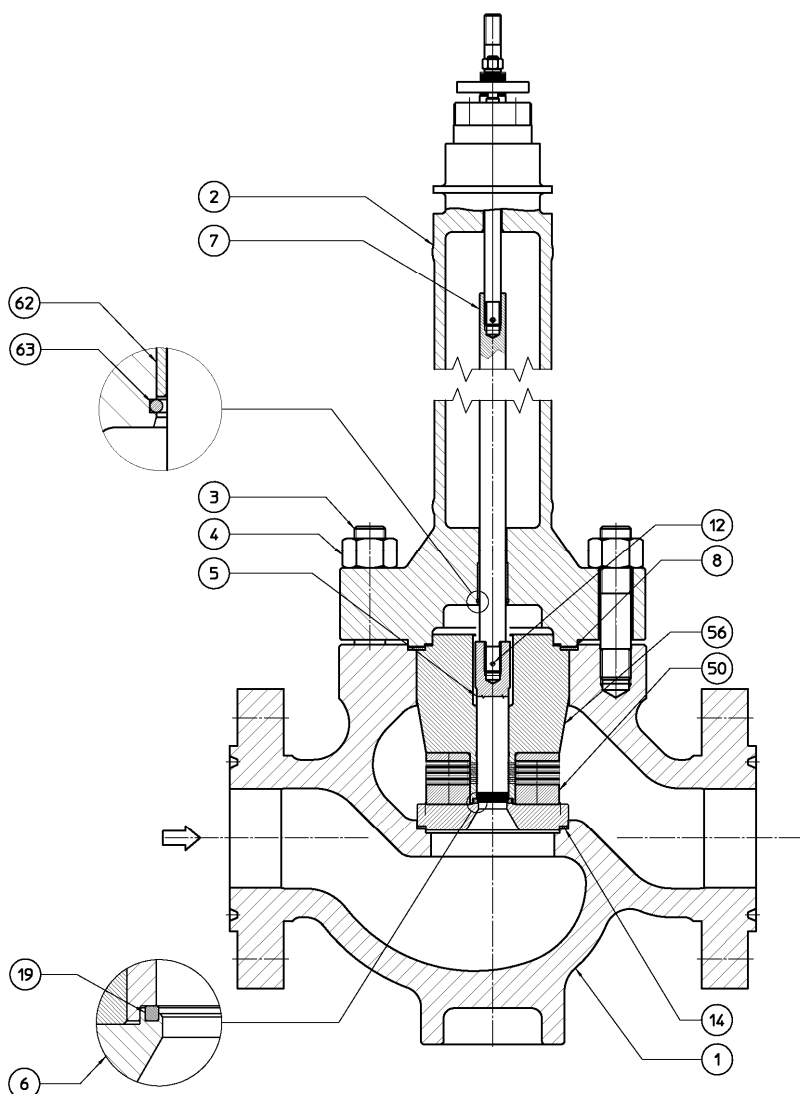


VEGA CRYO CONTROL VALVE AFTER TYPE TEST ON LIQUID NITROGEN

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

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

TRIM OPTIONS

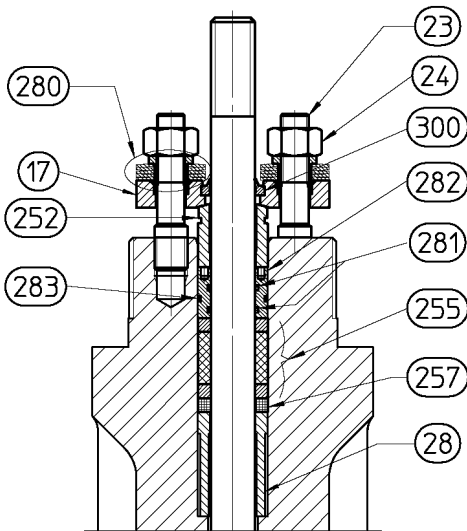


LIMIPHON® DISK STACK

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 ⁽¹⁾ | A 479 316L ⁽¹⁾ |
| 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

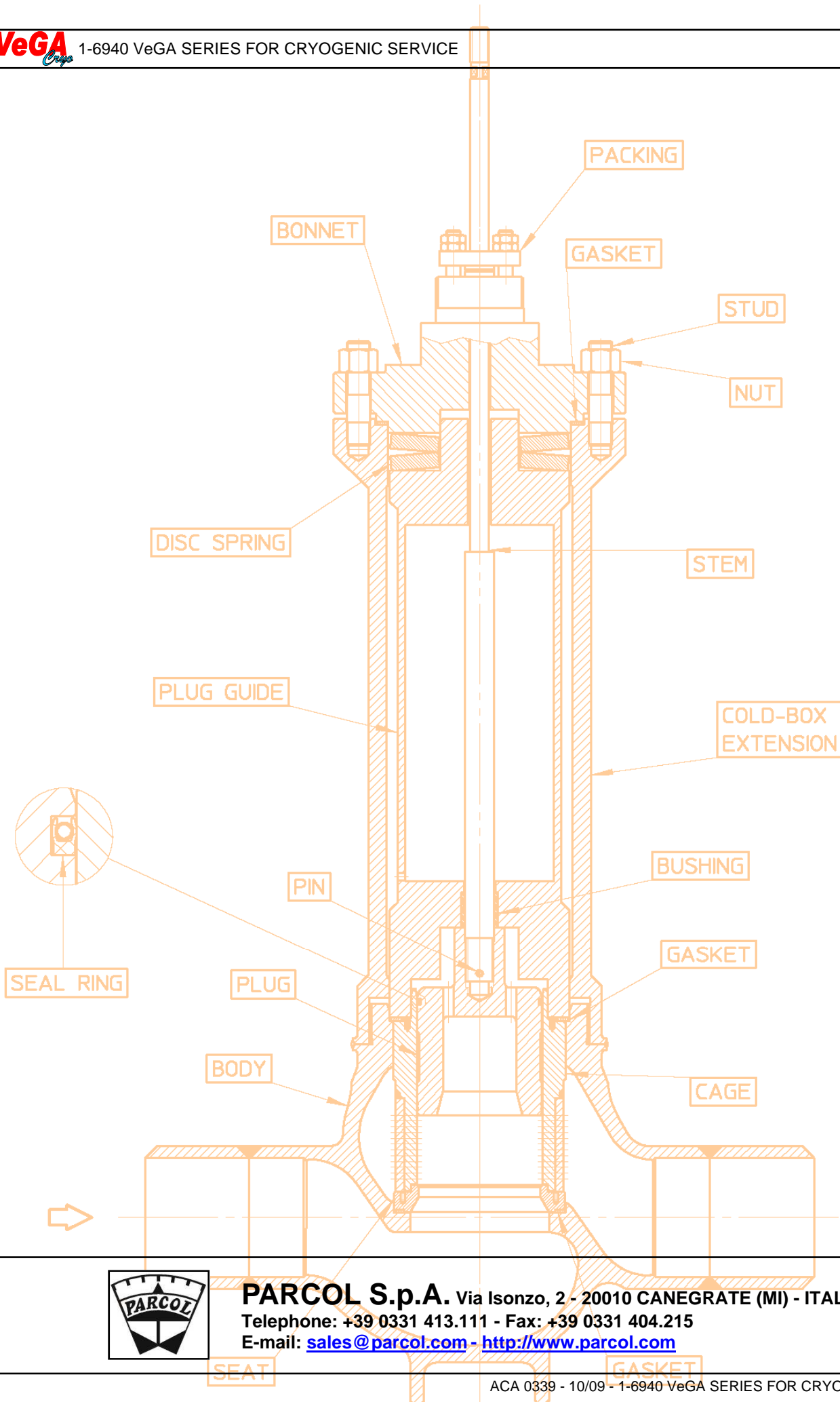
| ITEM | PART NAME | MATERIALS | |
|------|-------------------|---|-----------|
| 17 | PACKING FLANGE | AISI 316 | |
| 23 | STUD | ASTM A193 B8 Cl.1 | |
| 24 | NUT | ASTM A194 Gr.8 | |
| 28 | BUSHING | AISI 316L | |
| 252 | PACKING FOLLOWER | AISI 316 | |
| 255 | PACKING BOX | EXPANDED GRAPHITE (low 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 | Aluminum Bronze | |
| 283 | SEAL RING | NB-70 | |
| 300 | SCRAPER | PTFE | |



GLE TYPE SEALING RINGS



LIVE LOADING DETAIL



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