



US00D749138S

(12) **United States Design Patent**
Martinez Sanudo et al.

(10) **Patent No.:** **US D749,138 S**
(45) **Date of Patent:** **** Feb. 9, 2016**

(54) **TWIN SCREW PUMP**

(71) Applicant: **Q-Pumps S.A de C.V**, Queretaro (MX)

(72) Inventors: **Alejandro Martinez Sanudo**, Queretaro (MX); **Geraldo Vega Borbolla**, Queretaro (MX); **Jose Rangel Hernandez**, Queretaro (MX)

(73) Assignee: **Q-Pumps S.A. de C.V.**, Queretaro, QRO (MX)

(**) Term: **14 Years**

(21) Appl. No.: **29/515,051**

(22) Filed: **Jan. 20, 2015**

(30) **Foreign Application Priority Data**

Dec. 19, 2014 (MX) MX/f/2014/004039

(51) **LOC (10) Cl.** **15-02**

(52) **U.S. Cl.**
USPC **D15/7**

(58) **Field of Classification Search**
USPC D15/7-9; D23/231, 232, 225; 417/60, 417/235, 265, 321, 355, 358, 363, 359, 417/410.1, 415-416, 405, 900; 60/408, 60/412; 184/26-37; 415/140-147; 123/495, 509; 137/565.34
CPC F02M 37/04; F02M 37/14
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,805,875 A 5/1931 Levin
2,287,716 A 6/1942 Whitfield

(Continued)

FOREIGN PATENT DOCUMENTS

GB 453415 A 9/1936
GB 1379575 A 1/1975

(Continued)

OTHER PUBLICATIONS

Bornemann, Hygienic twin screw pumps for food, pharmaceuticals and more, SLH-4G—the next generation, pp. 1-8, ITT Engineered for Life.

Primary Examiner — Ralf Seifert

(74) *Attorney, Agent, or Firm* — Fraser Clemens Martin & Miller LLC; James D. Miller

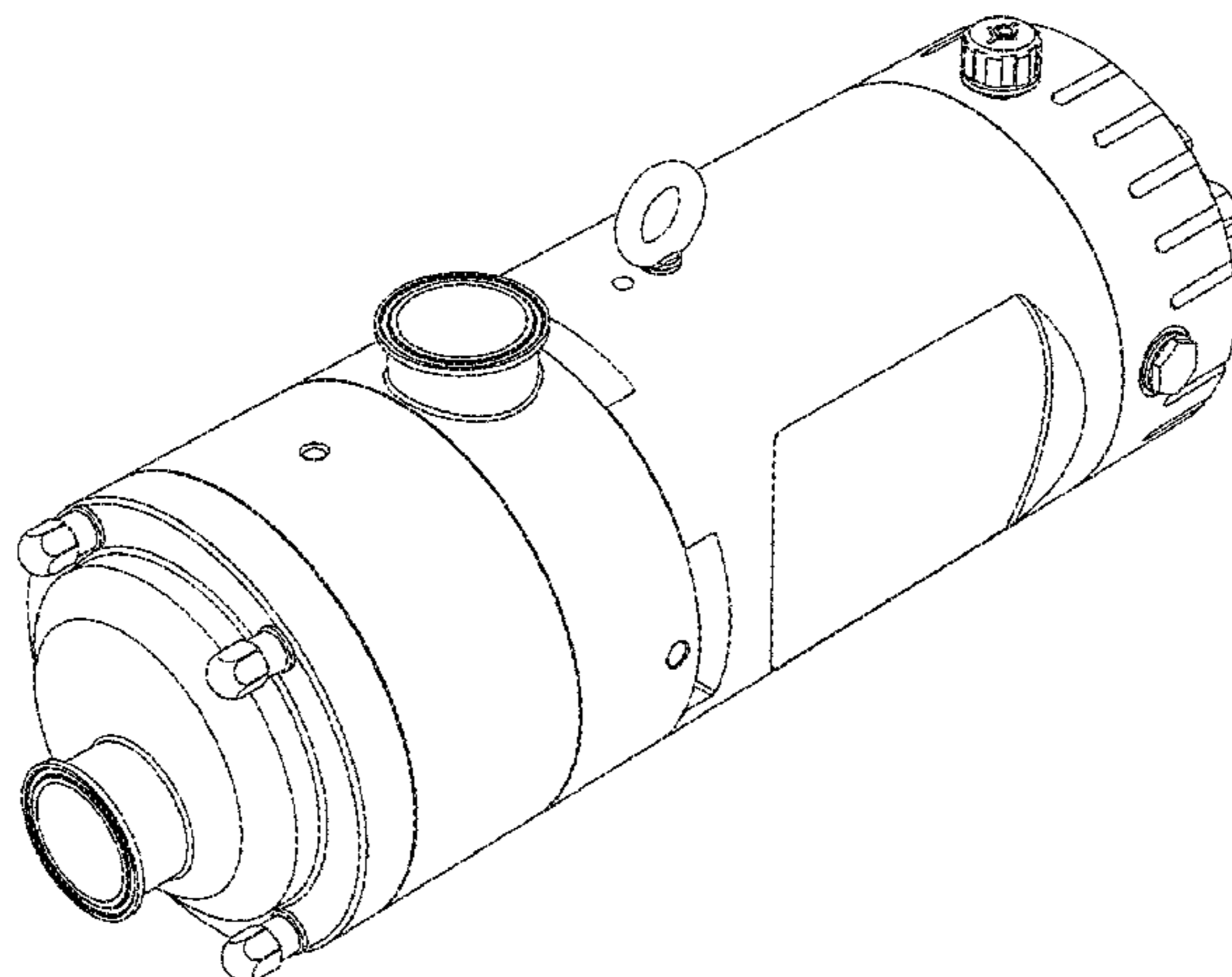
(57) **CLAIM**

The ornamental design for a twin screw pump, as shown and described.

DESCRIPTION

FIG. 1 is a conventional perspective view of the twin screw pump showing our new design;
FIG. 2 is a rear, left-side, bottom perspective view of the twin screw pump shown in FIG. 1;
FIG. 3 is a front elevational view of the twin screw pump shown in FIG. 1;
FIG. 4 is rear elevational view of the twin screw pump shown in FIG. 1;
FIG. 5 is a top plan view of the twin screw pump shown in FIG. 1;
FIG. 6 is a bottom plan view of the twin screw pump shown in FIG. 1;
FIG. 7 is a right side elevational view of the twin screw pump shown in FIG. 1;
FIG. 8 is a left side elevational view of the twin screw pump shown in FIG. 1;
FIG. 9 is a conventional perspective view of a twin screw pump showing the second embodiment of our new design;
FIG. 10 is a rear, left-side, bottom perspective view of the twin screw pump shown in FIG. 9;
FIG. 11 is a front elevational view of the twin screw pump shown in FIG. 9;
FIG. 12 is rear elevational view of the twin screw pump shown in FIG. 9;
FIG. 13 is a top plan view of the twin screw pump shown in FIG. 9;
FIG. 14 is a bottom plan view of the twin screw pump shown in FIG. 9;
FIG. 15 is a right side elevational view of the twin screw pump shown in FIG. 9; and,
FIG. 16 is a left side elevational view of the twin screw pump shown in FIG. 9.
The ornamental design which is claimed is shown in solid lines in the drawing figures. Any broken lines in the drawing figures are for illustrative purposes only and form no part of the claimed design.

1 Claim, 16 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2,683,994 A 7/1954 Whitfield
 4,078,653 A 3/1978 Suter
 4,684,335 A 8/1987 Goodridge
 6,129,533 A 10/2000 Brandt et al.
 6,301,782 B1 10/2001 Jacks, Jr.
 6,406,281 B1 6/2002 Aggradi et al.
 D464,362 S * 10/2002 Tsai D15/7
 D466,523 S * 12/2002 Saito D15/9
 D501,486 S 2/2005 Leone et al.
 6,854,955 B2 2/2005 Shaffer et al.
 D516,583 S 3/2006 Strong
 D565,600 S 4/2008 Tazioli
 D590,842 S 4/2009 Clark et al.

D604,745 S 11/2009 Sinico
 D609,595 S 2/2010 Soderstrom
 D619,624 S 7/2010 Iwagoshi et al.
 7,862,315 B2 1/2011 Rohlfing et al.
 D657,799 S 4/2012 Jung
 D657,800 S * 4/2012 Villagomez, Jr. D15/7
 D695,318 S 12/2013 Link et al.
 D700,624 S * 3/2014 Taniguchi D15/7
 D726,771 S * 4/2015 Pansegrouw D15/7
 2013/0251581 A1 9/2013 Christov et al.

FOREIGN PATENT DOCUMENTS

WO 2007026109 A1 3/2007
 WO 2013083740 A2 6/2013

* cited by examiner

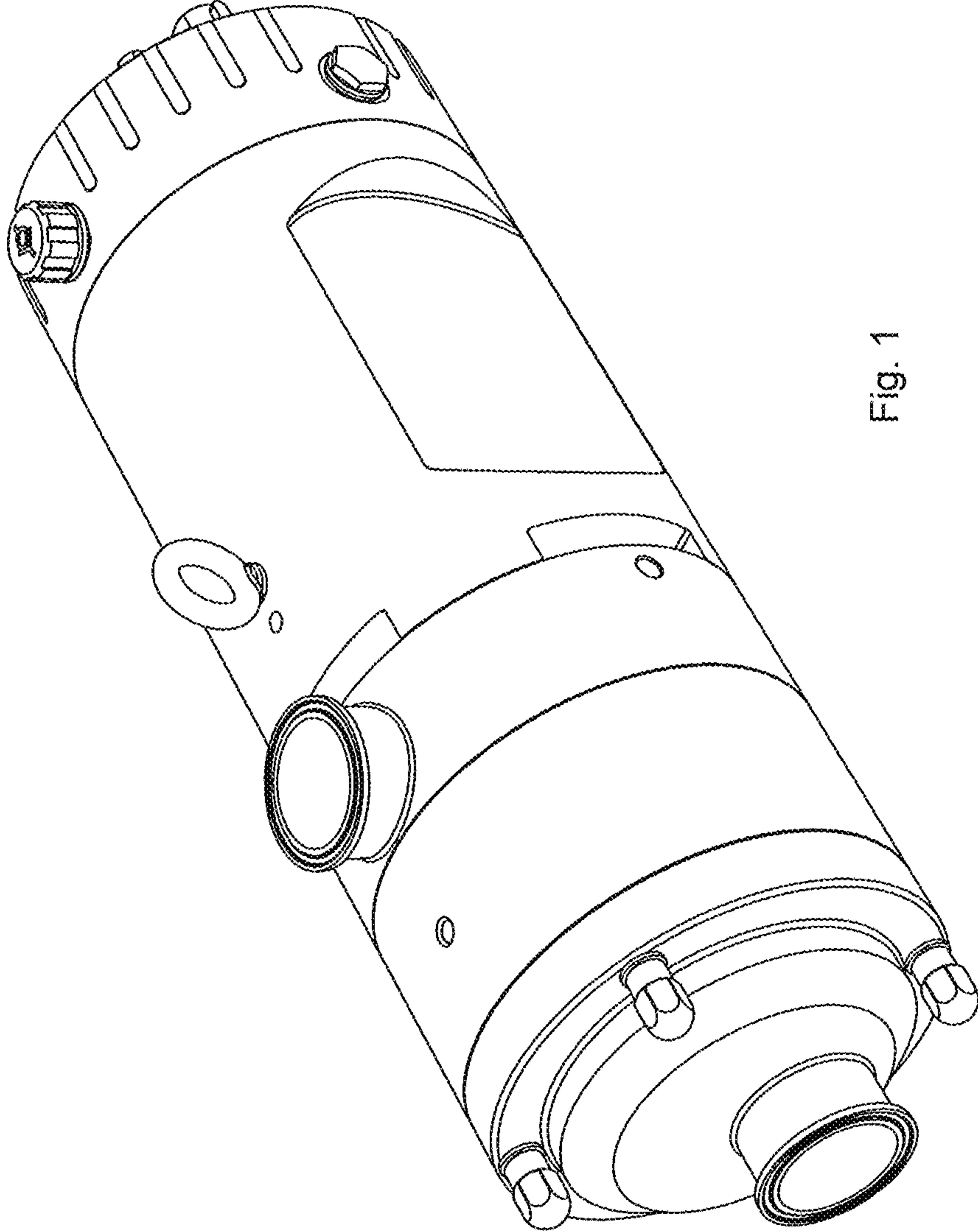


Fig. 1

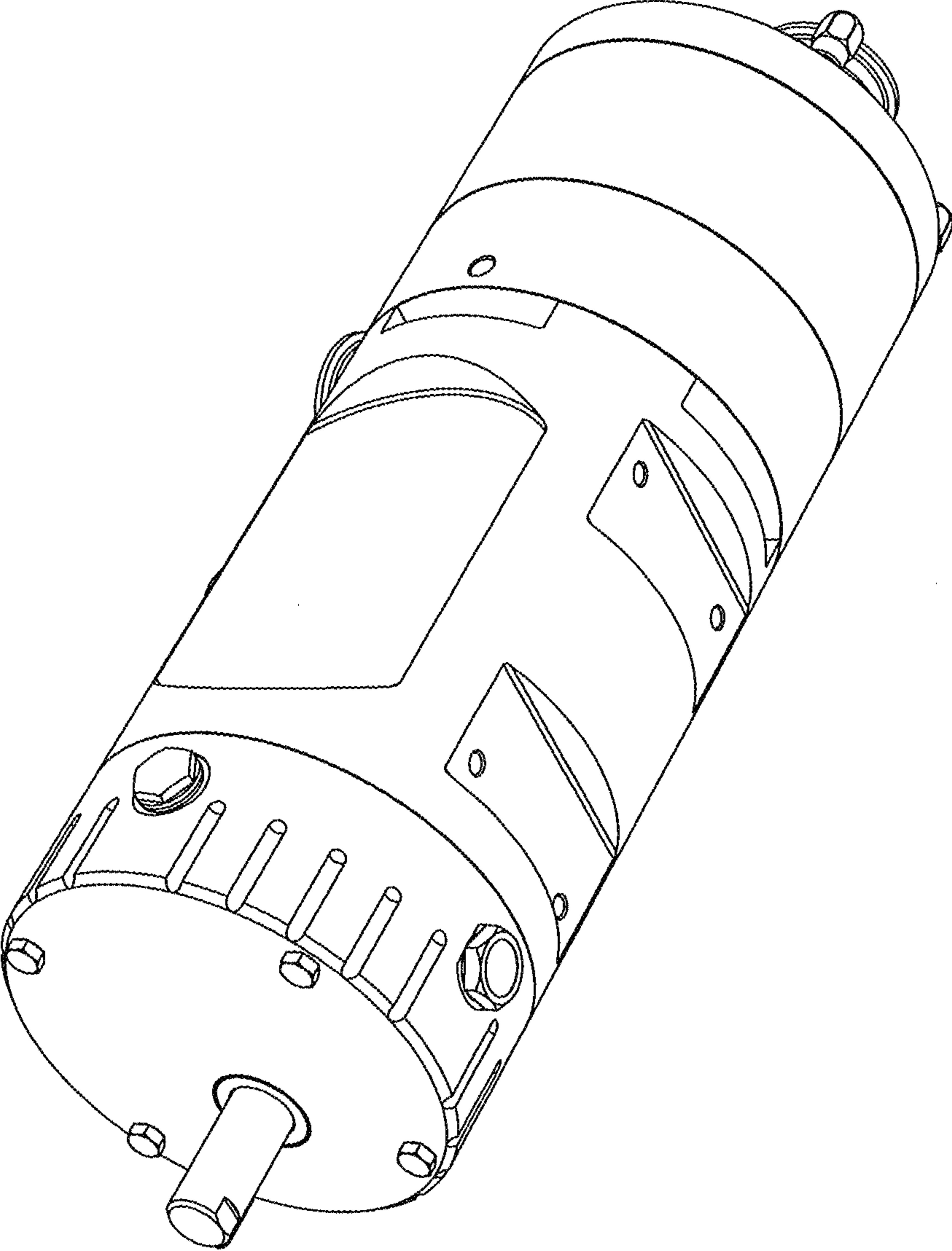


Fig. 2

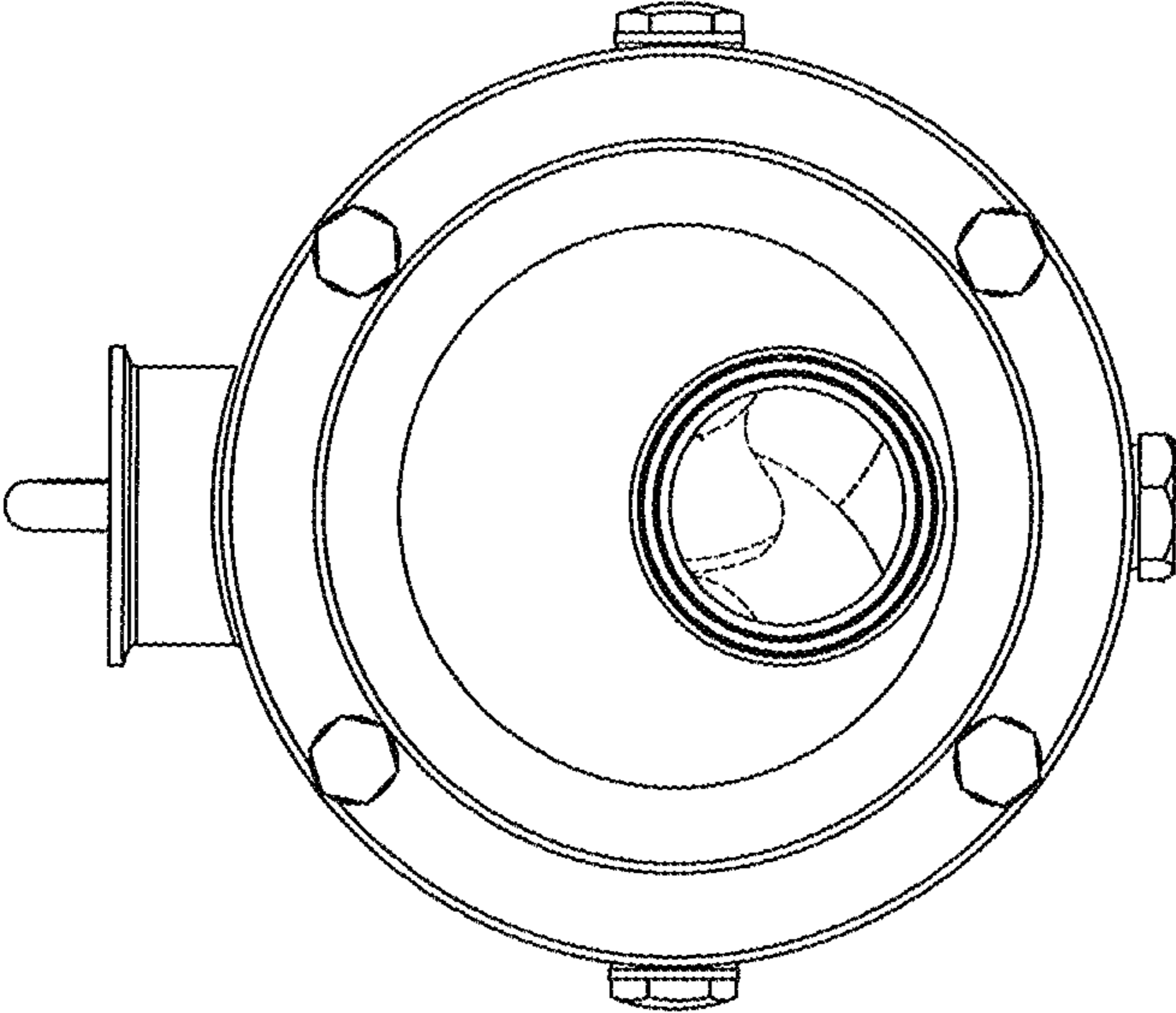


Fig. 3

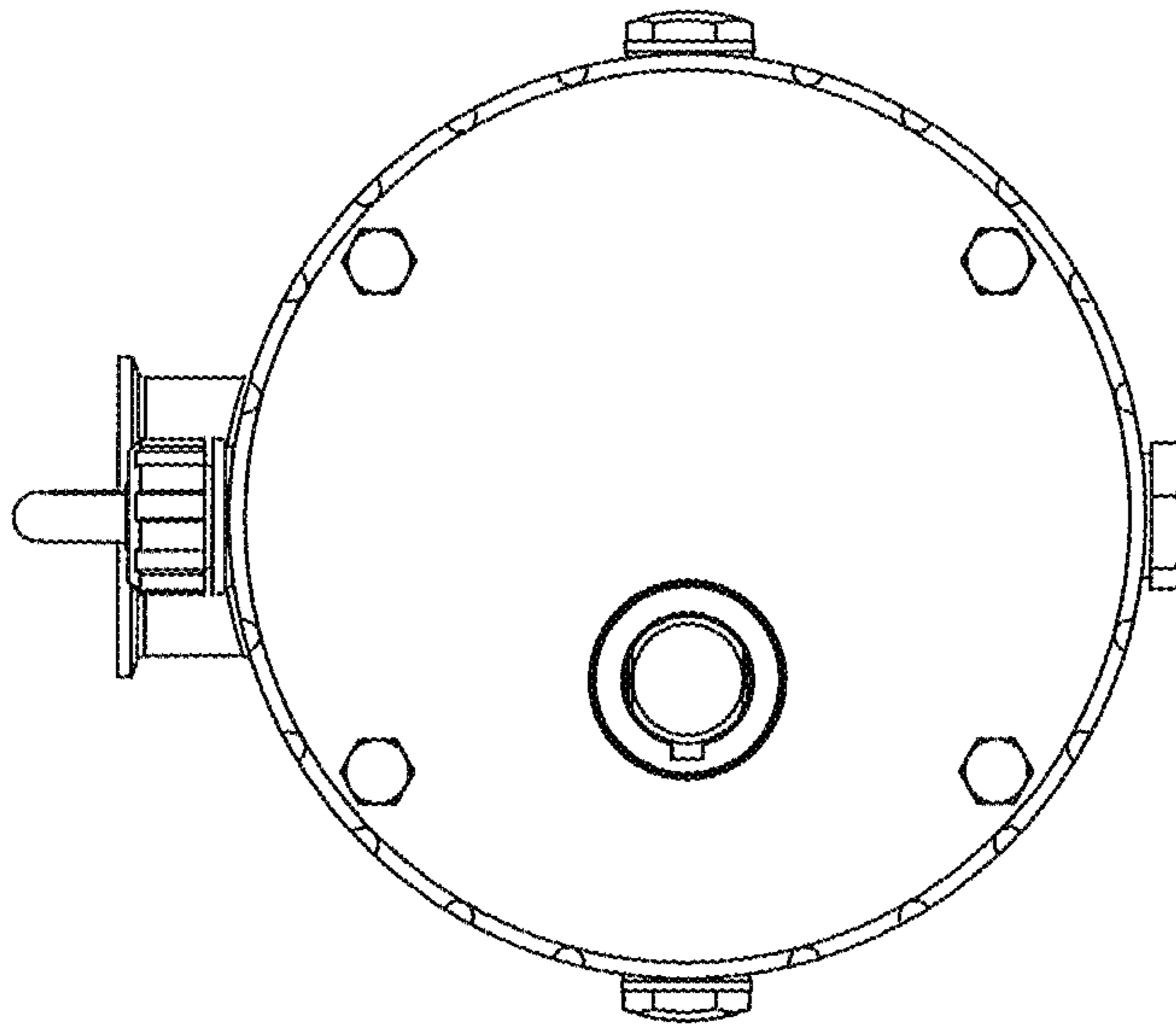


Fig. 4

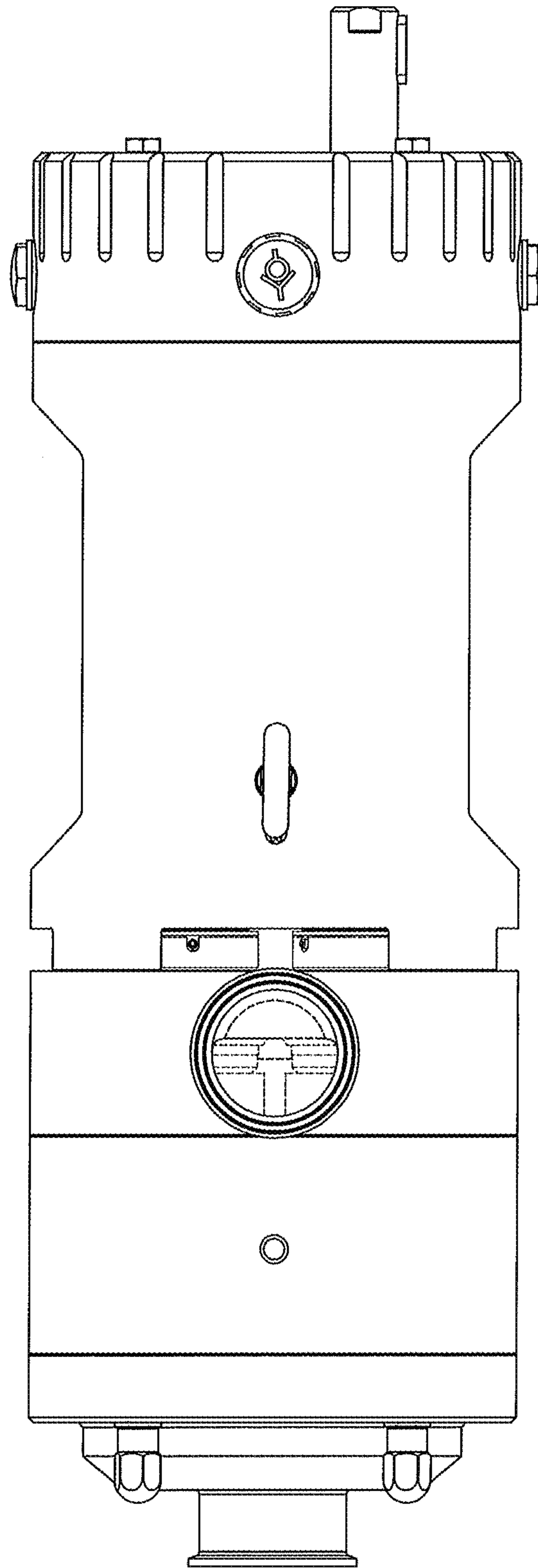


Fig. 5

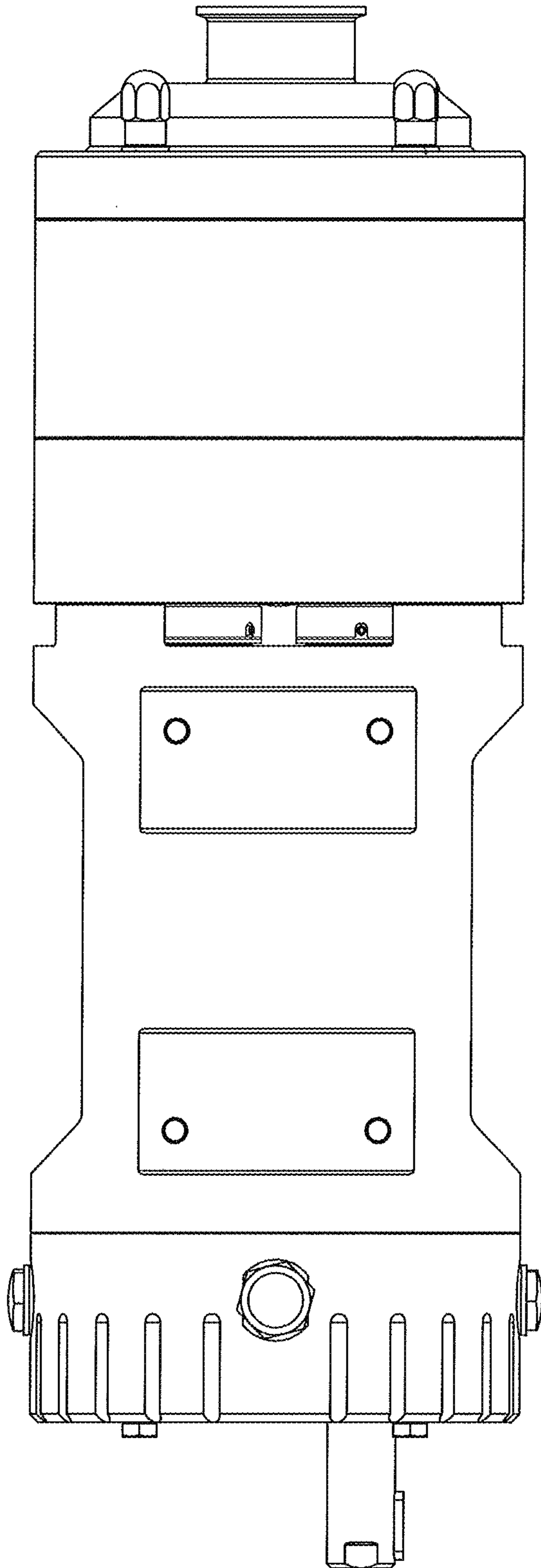


Fig. 6

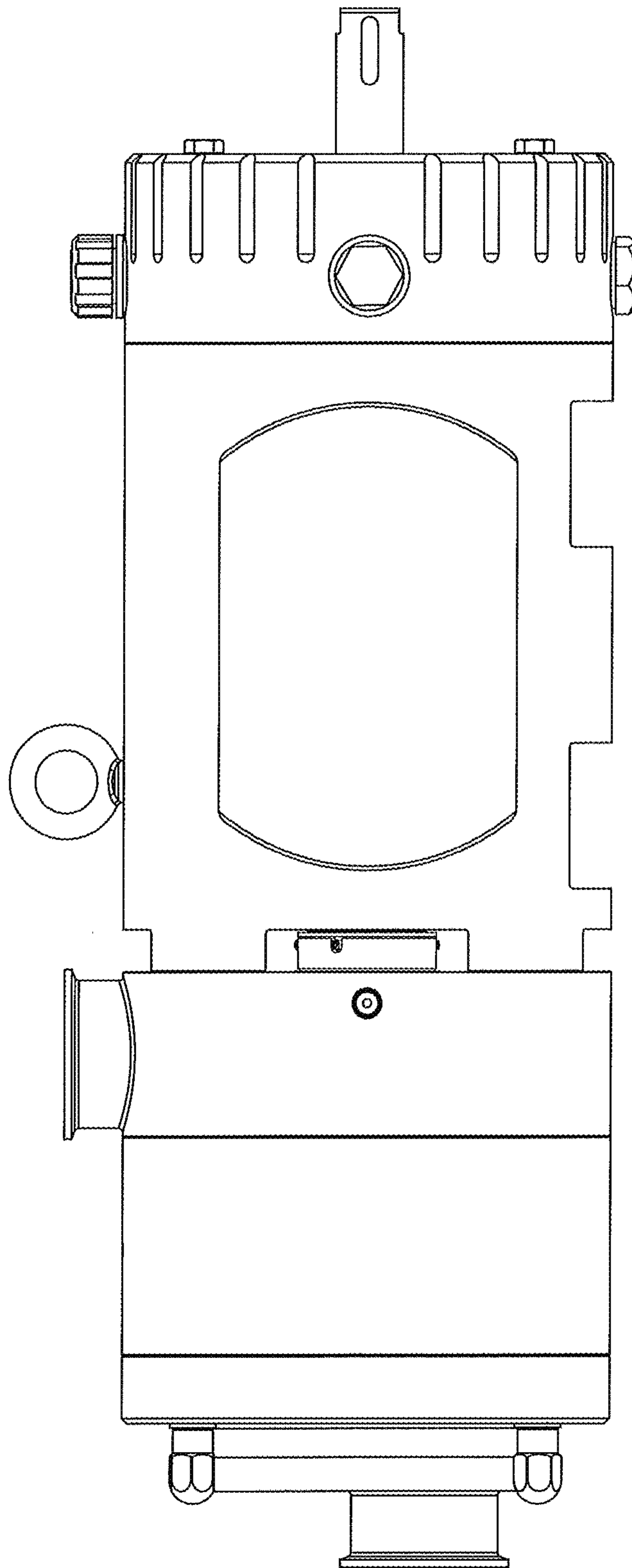


Fig. 7

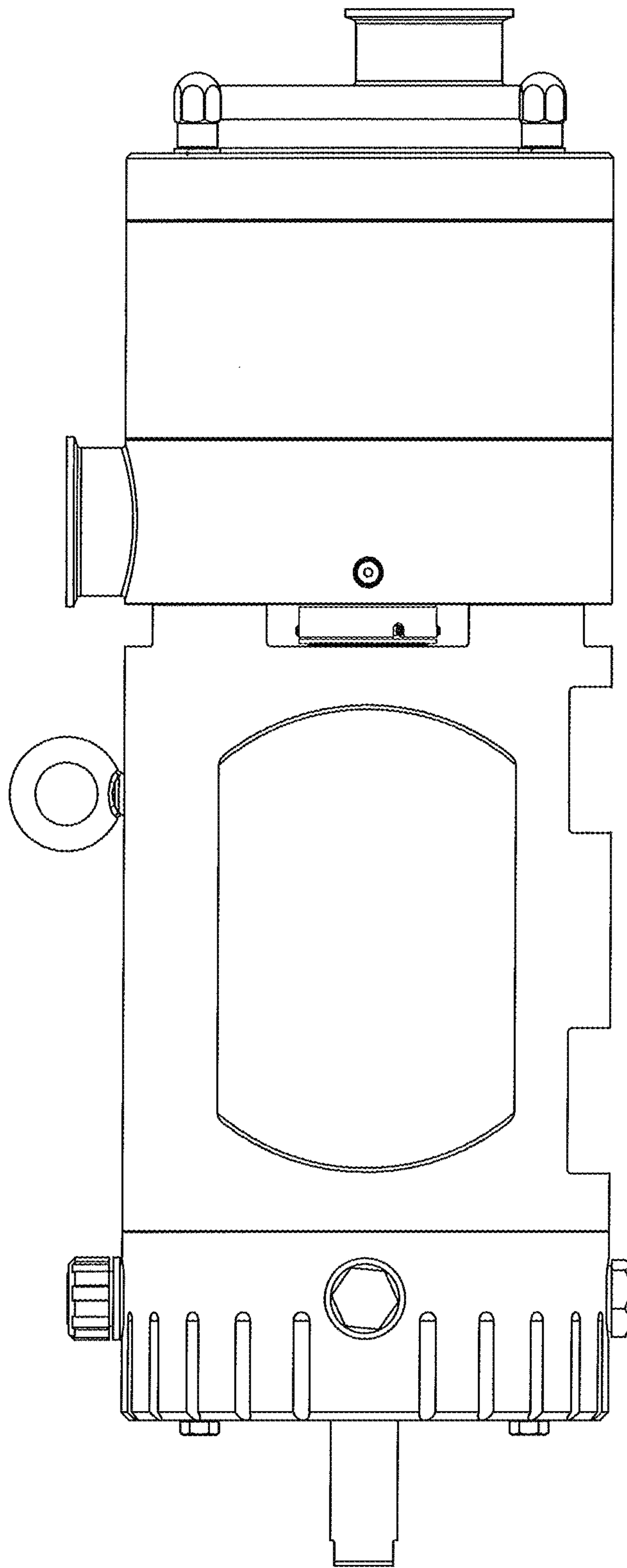


Fig. 8

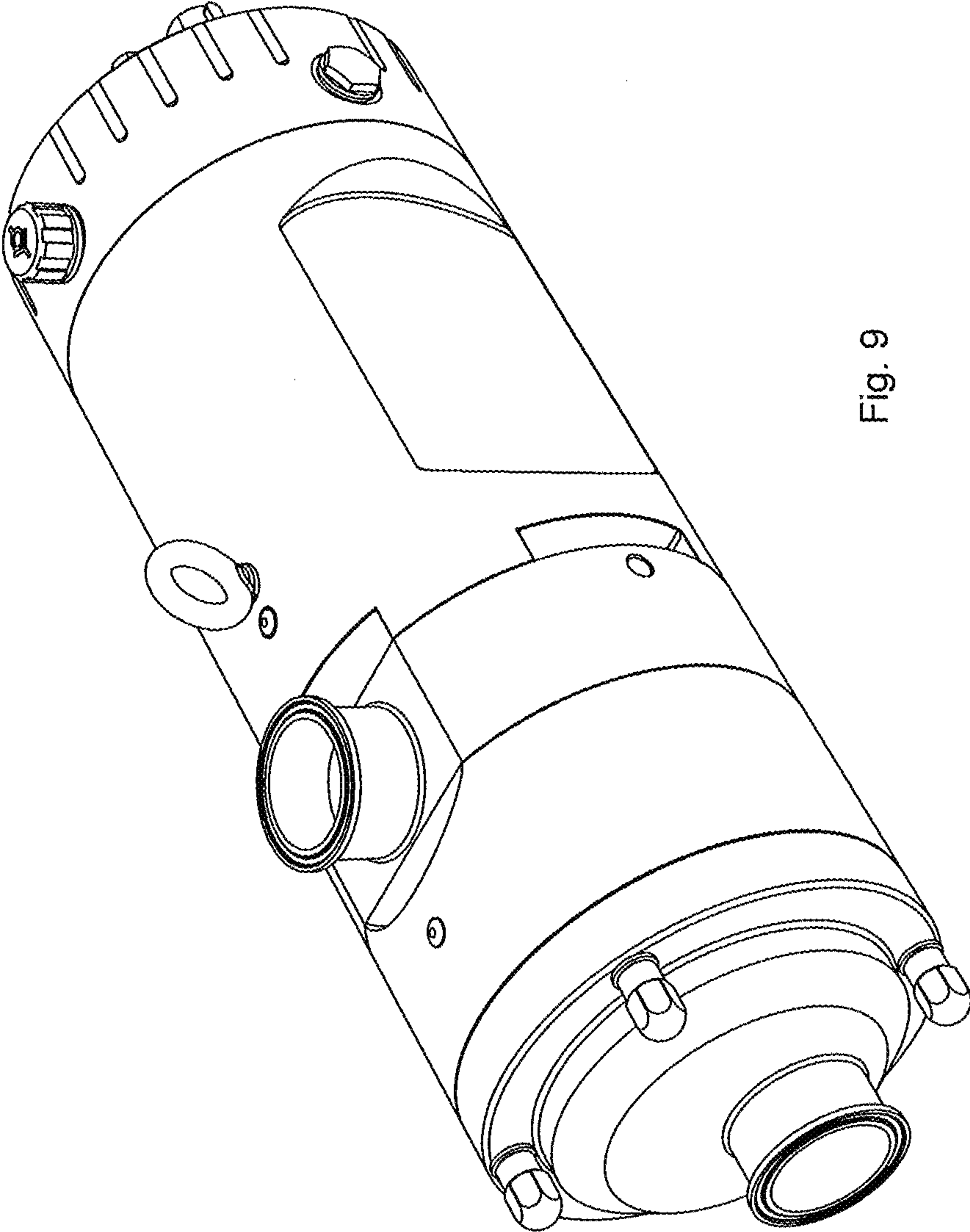


Fig. 9

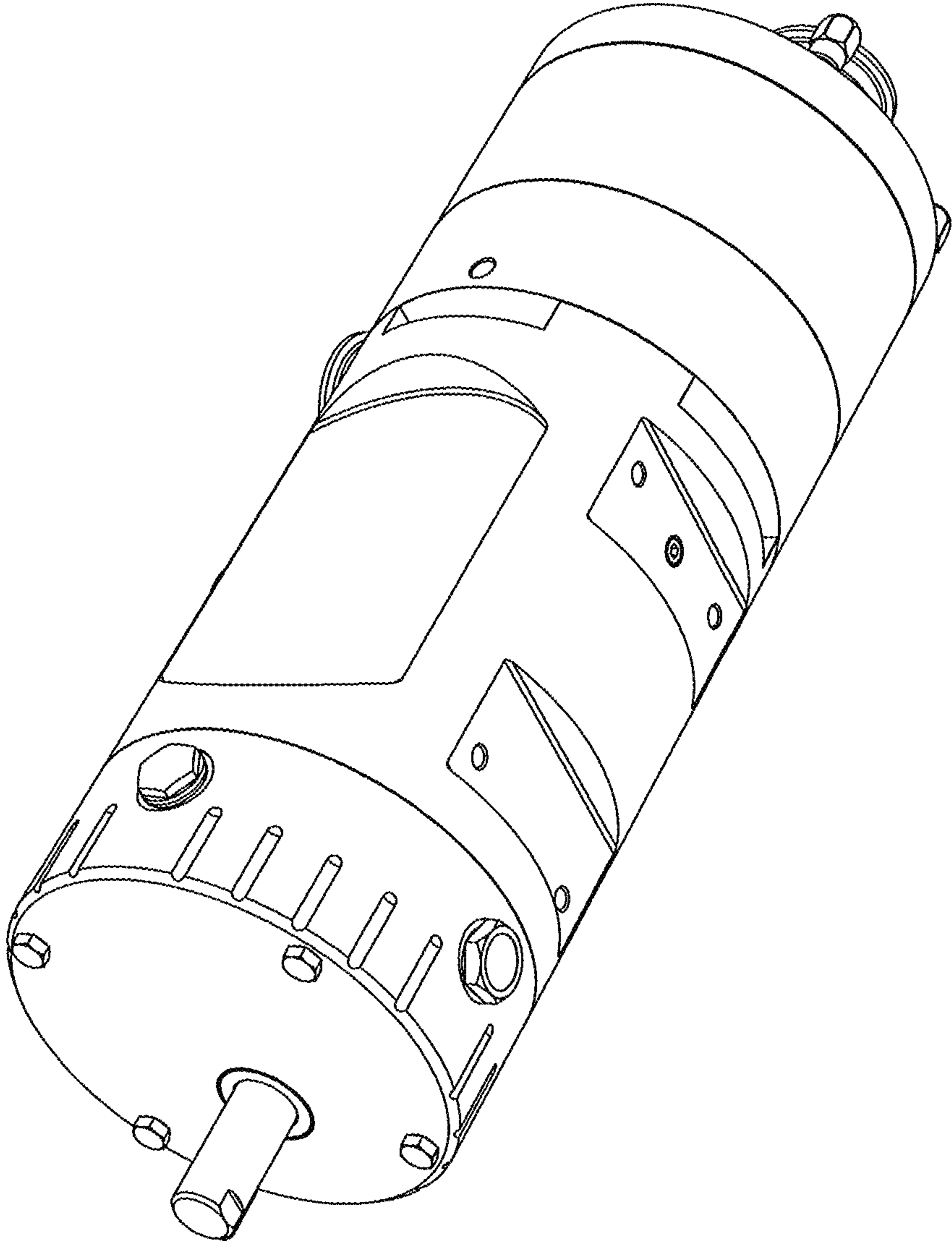


Fig. 10

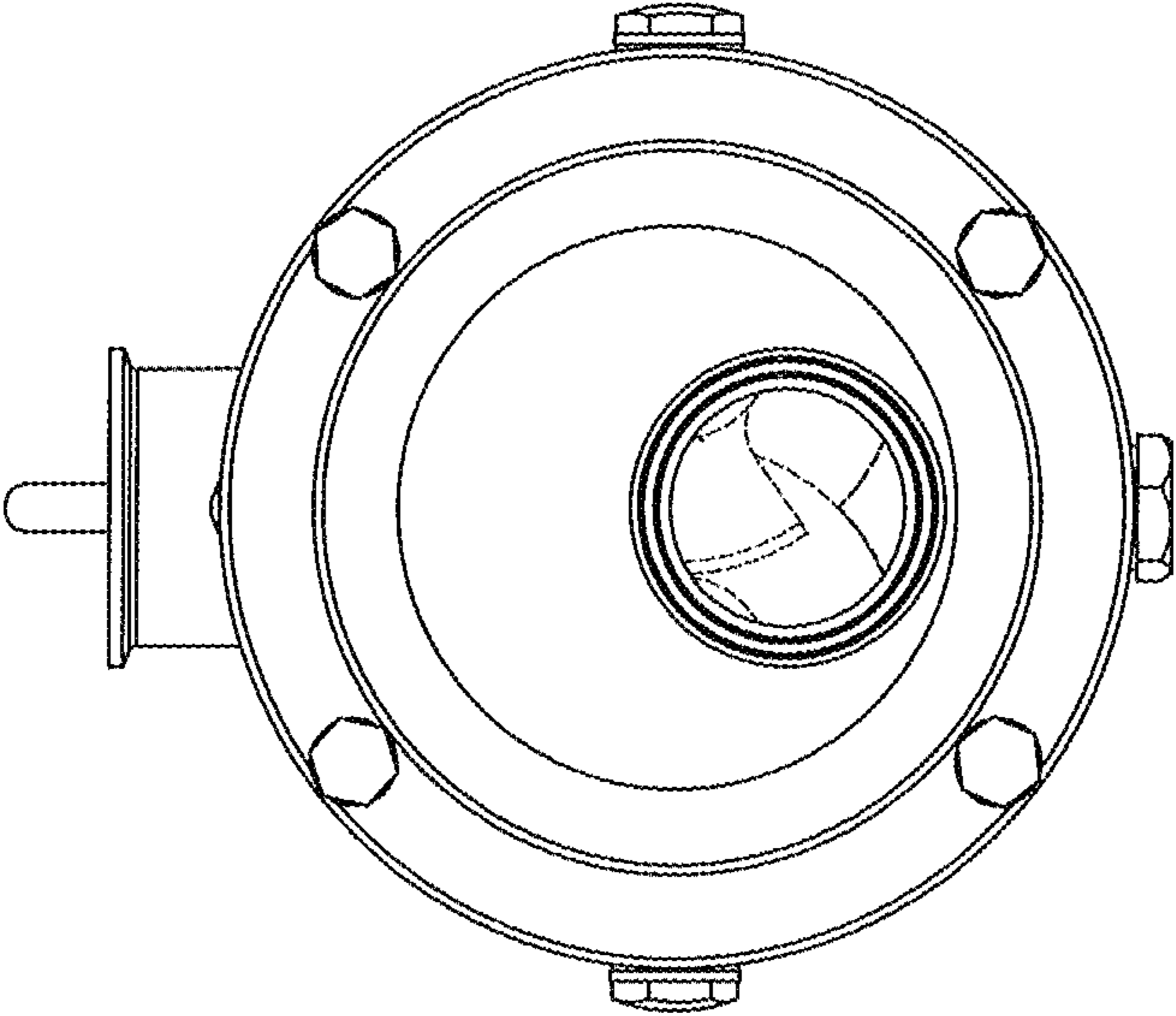


Fig. 11

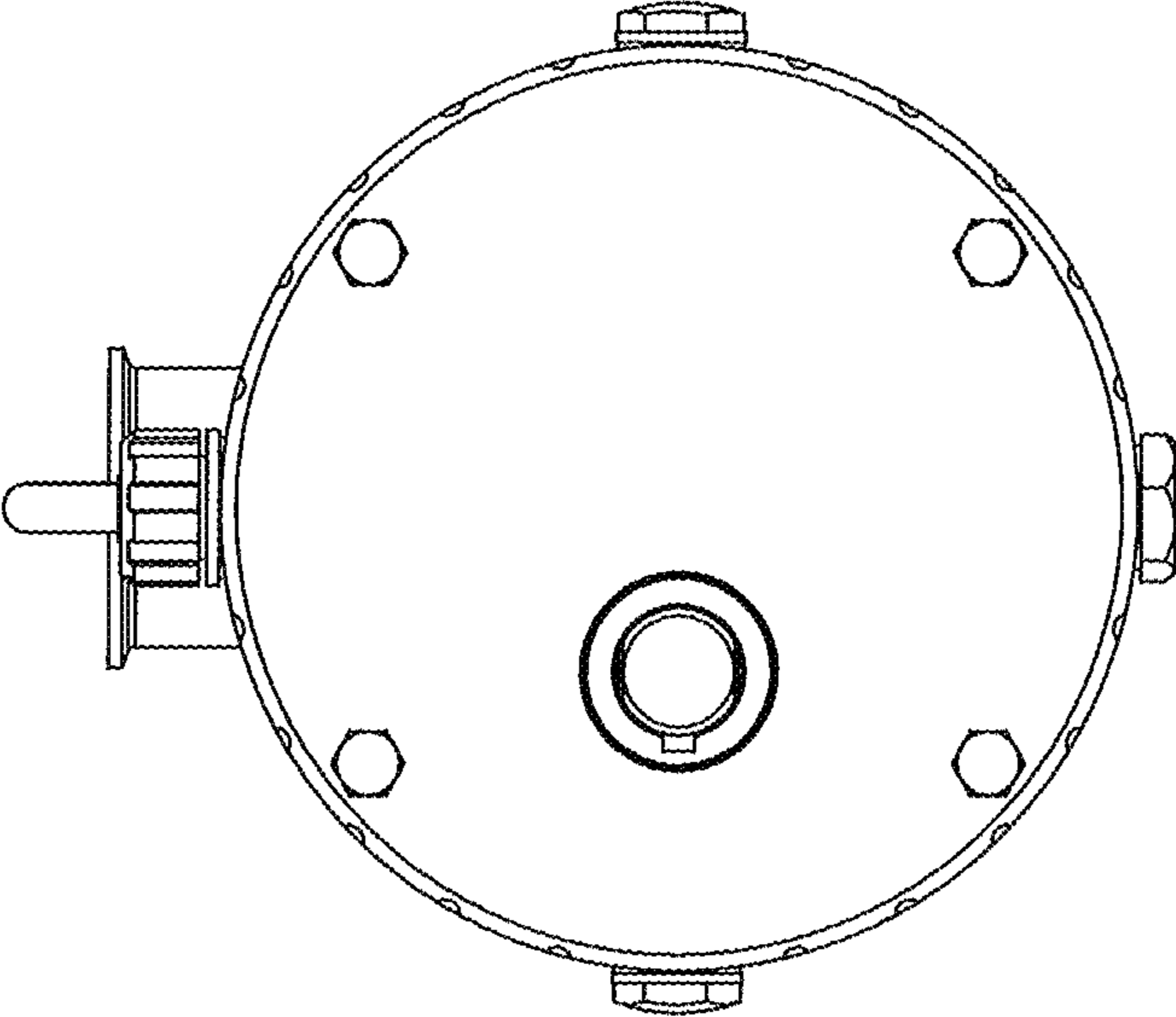


Fig. 12

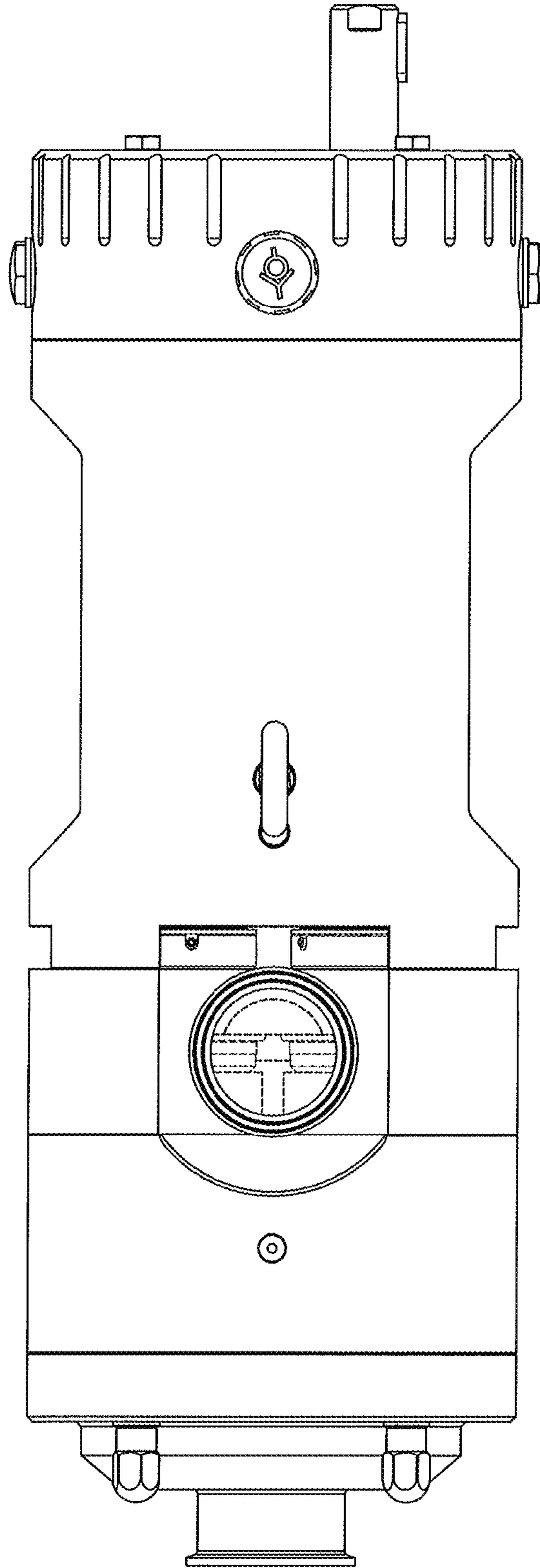


Fig. 13

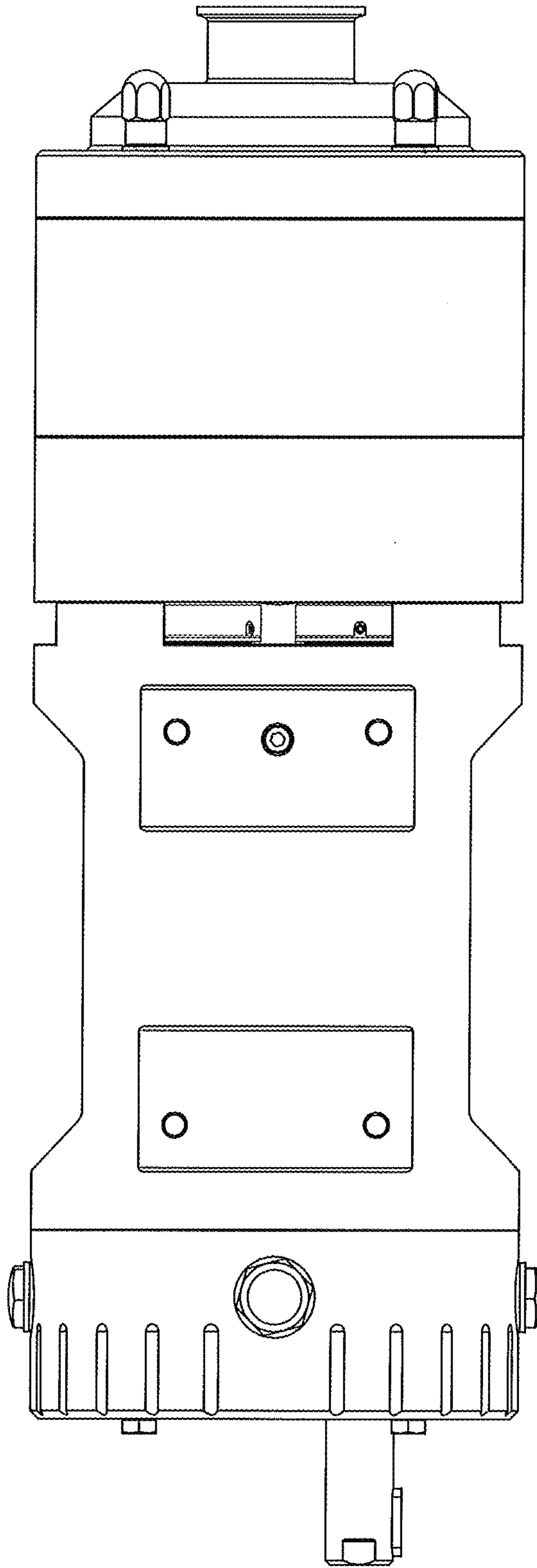


Fig. 14

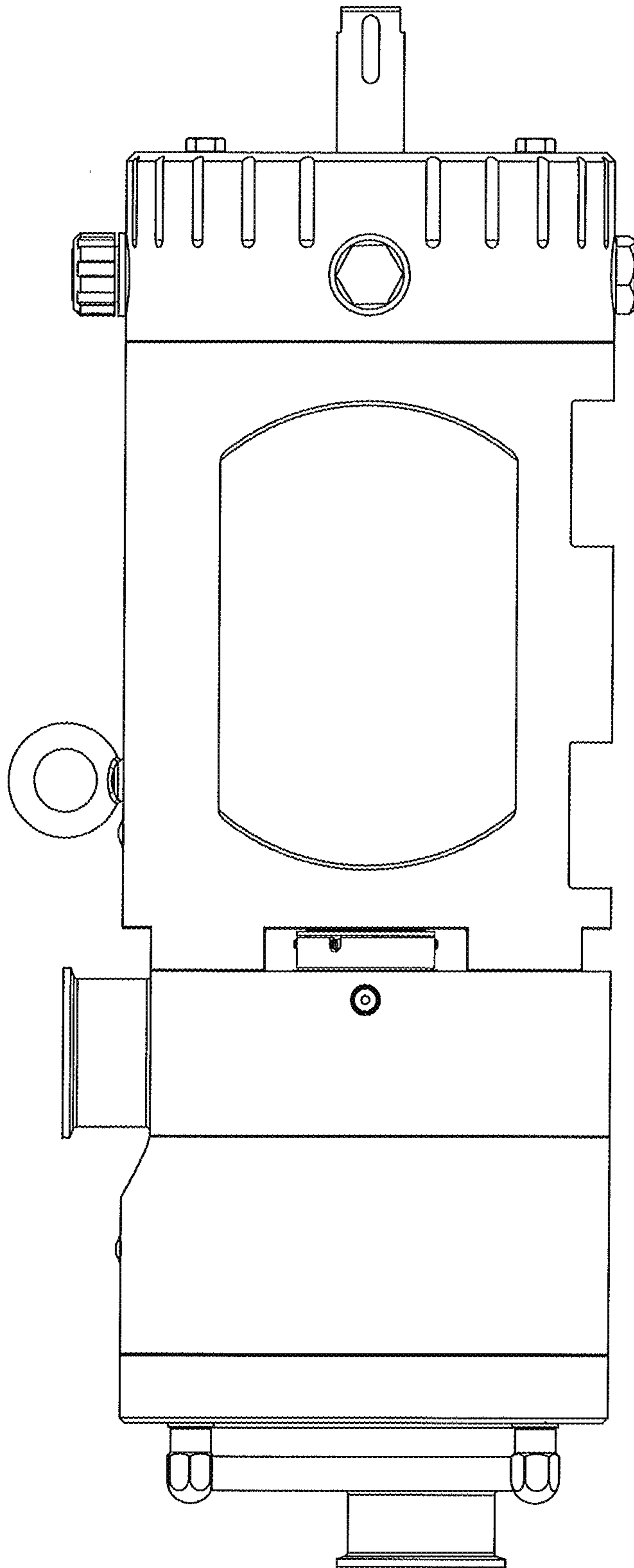


Fig. 15

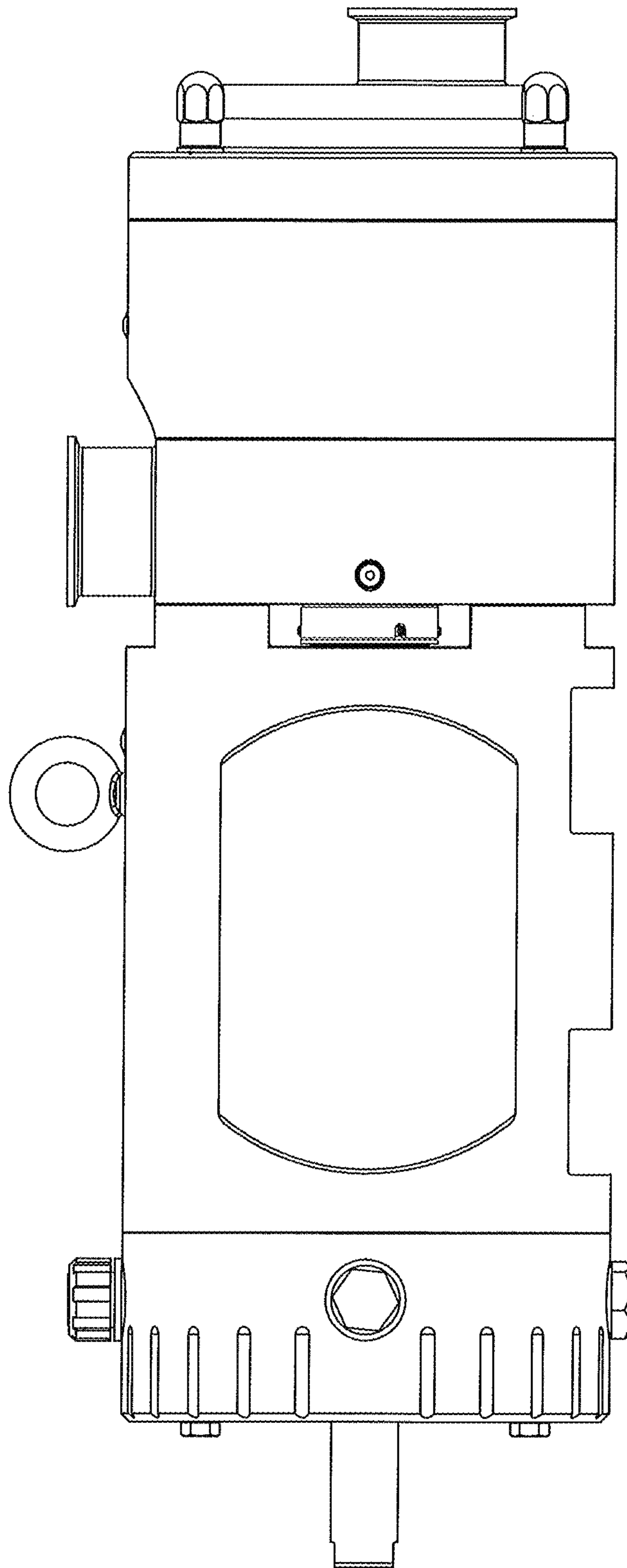


Fig. 16