

# Enardo ES-665 and Enardo ES-665-L

## Thief Hatch

D104246X106

### Introduction

Enardo™ ES-665 Series high-performance thief hatches are a quantum step forward in sealing technology. Unlike standard tank hatches, the Enardo ES-665 Series is proven to deliver the highest level of protection in the industry against thief hatch product leakage and fugitive emissions. Engineered with precision-manufactured internal components and multiple seal selections, only the Enardo ES-665 Series provide ultra-tight sealing for applications that require maximum emissions control.

Enardo ES-665 Series are available as a complete replacement for any standard API 8 in. thief hatch or as a simple retrofit for any Enardo 660 or ES-660 Series hatch.

The Enardo ES-665 spring-loaded thief hatch is designed with a round base and cover. It is intended for use on steel and fiberglass tanks which require a tighter seal for reduced vapor loss.

Enardo ES-665-L is a spring-loaded thief hatch designed with a long basin and cover. The long basin serves as a thief shelf. The design also includes an inclining base to keep the basin level.

### Model Numbers

Enardo ES-665 and Enardo ES-665-L

### Performance

0.10 SCFH at 90% of set pressure, at ambient conditions

### Bolt Pattern

8 in. API

### Valve Setting Range

**Pressure:** 4, 6, 8, 12, 16, 24 and 32 oz./sq. in.

**Vacuum:** 0.4, 0.9 and 3.5 oz./sq. in.

### Construction Materials

**Construction:** Aluminum (non-sparking)

**Pressure Gasket:** HNBR (standard), Viton®, Fluorosilicone and Ethylene Propylene Diene Monomer (EPDM)

**Vacuum Gasket:** Viton®, Fluorosilicone (standard) and EPDM

**Optional Equipment:** Base Gasket, Bolt Set, Non-Corrosive Coating, Bonding Strap, Thrust Bearing

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Figure 1. Enardo ES-665



Figure 2. Enardo ES-665-L

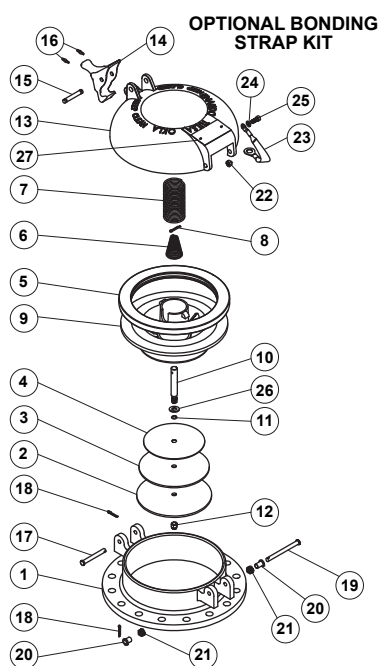


Figure 3. Enardo ES-665 Assembly Drawing

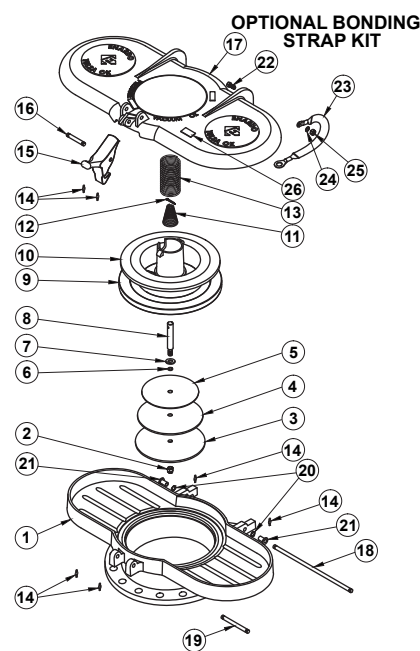


Figure 4. Enardo ES-665-L Assembly Drawing

### Approximate Shipping Weight

**Enardo ES-665:** 25 lbs

**Enardo ES-665-L:** 45 lbs

### Additional Technical Data

For more technical information, contact your local Sales Office or log on to:

[www.enardo.com](http://www.enardo.com)

# Enardo ES-665 and Enardo ES-665-L

Thief Hatch

**Table 1. Enardo ES-665**

KEY	QUANTITY	PART NAME	PART NUMBER
1	1	Base, Hatch	4501102
2	1	Disk, Pallet	8559029
3	1	Gasket, Vacuum	See Table 3
4	1	Seal Support	8554636
5	1	Gasket, Envelope	See Table 2
6	1	Spring, Vacuum	See Table 5
7	1	Spring, Pressure	See Table 4
8	1	Pin, Cotter, 1/8 in. x 1 in.	2022101
9	1	Center	4501055
10	1	Stem	8568824
11	1	O-ring, 010	2012710
12	1	Nut, 3/8 – 16 in. Hex Nylock	2059201
13	1	Lid	4522100
14	1	Latch	4524200
15	1	Pin, Latch	4505103
16	2	Clip, Hinge Pin	2027100
17	1	Pin, Clevis, 5/16 in. x 2 5/8 in.	4505118
18	2	Pin, Cotter, 1/8 in. x 1/2 in.	2000703
19	1	Pin, Clevis, 5/16 in. x 3 1/2 in.	4505113
20	2	Bushing	8600403
21	2	Spring, Hinge	4504006
22	1	Nut, 1/4 – 20 in. (Optional)	2013322
23	1	Bonding Strap (Optional)	2050006
24	1	Washer, Lock 1/4 in. (Optional)	2012560
25	1	Screw, 1/4 in. – 20 x 1 in. (Optional)	2021817
26	1	Washer, Flat, 5/16 in.	2012584
27	1	Nameplate	4501209

**Table 2. Enardo ES-665-L**

KEY	QUANTITY	PART NAME	PART NUMBER
1	1	Base, Hatch	4501801
2	1	Nut, 3/8 in. -16 Hex Nylock	2059201
3	1	Disk, Pallet (Green)	8559029
4	1	Gasket, Vacuum	See Table 3
5	1	Seal Support	8554636
6	1	O-ring, 010	2012710
7	1	Washer, Flat, 5/16 in.	2012584
8	1	Stem	8568824
9	1	Gasket, Envelope	See Table 2
10	1	Center	4501055
11	1	Spring, Vacuum	See Table 5
12	1	Pin, Cotter, 1/8 in. x 1 in.	2022101
13	1	Spring, Pressure	See Table 4
14	6	Clip, Hinge Pin	2027100
15	1	Latch, Hatch	4524200
16	1	Pin, Latch	4505103
17	1	Lid	4522800
18	1	Pin, Hatch Hinge	4505101
19	1	Pin, Latch	4505107
20	2	Spring, Hinge	4504006
21	2	Bushing	8600403
22	1	Screw, 1/4 in. - 20 x 1 in. (optional)	2021817
23	1	Bonding Strap (optional)	2050006
24	1	Washer, Lock 1/4 in. (optional)	2012560
25	1	Nut, 1/4 in. - 20 (optional)	2013322
26	1	Nameplate	4501209
27	2	Washer (optional)	2020608
28	1	Thrust Bearing (optional)	2020609

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## Thief Hatch

**Table 3. Pressure (Envelope) Gasket Options**

MATERIAL	PART NUMBER
HNBR (standard)	4504601
Blue Viton®	4504603
Fluorosilicone	4504605
EPDM	4504604

**Table 4. Vacuum Gasket Options**

MATERIAL	PART NUMBER
Fluorosilicone (standard)	4504705
Blue Viton®	4504708
EPDM	4504711

**Table 5. Pressure Spring Options**

SETTING, OZ./SQ. IN.	MATERIAL	COLOR 1	COLOR 2	PART NUMBER
4	H.D. Steel (Galvanized)	Dark Green	Dark Green	4502300
6	H.D. Steel (Galvanized)	Brown	Brown	4502500
8	H.D. Steel (Galvanized)	Orange	Orange	4502700
12	H.D. Steel (Galvanized)	Pink	Pink	4502900
16	H.D. Steel (Galvanized)	Dark Blue	Dark Blue	4503100
24	Music Wire	Red	Red	4503300
32	H.D. Steel (Galvanized)	Purple	Purple	4503201
4	Inconel®	Dark Green	White	4502400
6	Inconel®	Brown	White	4502600
8	Inconel®	Orange	White	4502800
12	Inconel®	Pink	White	4503000
16	Inconel®	Dark Blue	White	4503200
24	Inconel®	Red	White	4503400
32	Inconel®	Purple	White	4503600

**Table 6. Vacuum Spring Options**

SETTING, OZ./SQ. IN.	MATERIAL	COLOR 1	COLOR 2	PART NUMBER
0.4	H.D. Steel (Galvanized)	Light Blue	Light Blue	4503700
0.9	Music Wire	Gray	Gray	4504100
3.5	H.D. Steel (Galvanized)	Yellow	Yellow	4503900
0.4	Inconel®	Light Blue	White	4503800
0.9	Inconel®	Gray	White	4504200

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