



**ENARDO**  
an HMT Company

## The ENARDO ES-660 — Maximum Protection Against Tank-Hatch Vapor Leaks

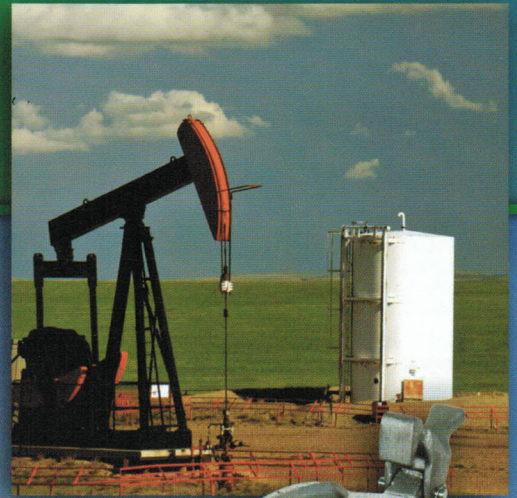
ENARDO's ES-660 high-performance thief hatch is a quantum step forward in maximum sealing technology to virtually eliminate product loss and harmful vapor emissions from storage tank thief hatches.\*

Unlike standard tank hatches, the ES-660 is proven to deliver *the highest level of protection* in the industry against thief hatch product leakage and fugitive emissions. For applications that require ultra-tight sealing and where strict emissions standards are enforced, the ENARDO ES-660 is a performance breakthrough—especially during extended periods of time when tank breathing is not required.

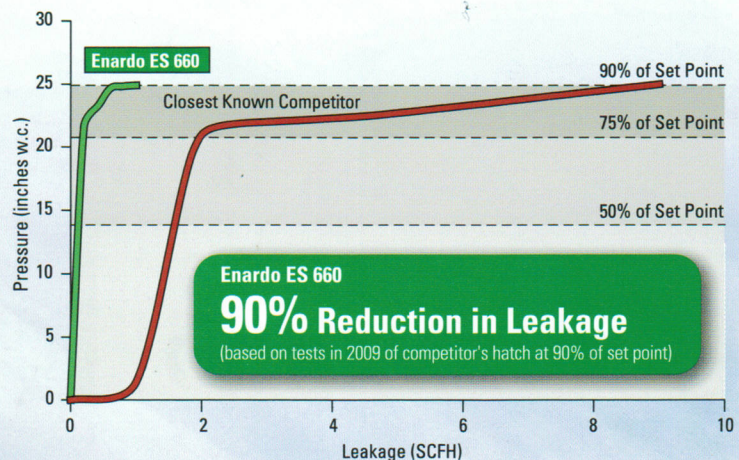
Only the ES-660 is engineered with ENARDO's precision-manufactured internal components and multiple seal selections to offer maximum emissions control. The ES-660 offers the same reliability, product performance and extra long life you've come to expect from ENARDO, and is available as a complete replacement for any standard API 8-inch thief hatch or as a simple retrofit for any ENARDO Series 660 hatch.

**The ENARDO ES-660. Advanced emissions-control from the inside out.**

\*When out-breathing is not required to protect the tank from excessive pressure.



### Hatch Performance Comparison





## The ENARDO ES-660. Advanced emissions-control from the inside out.

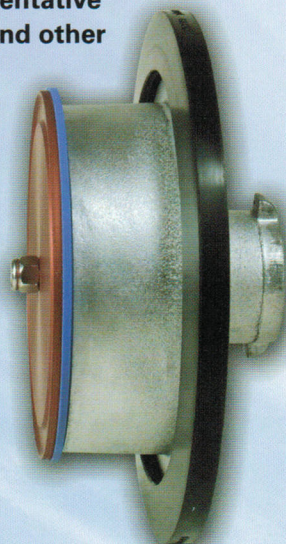
Wherever liquids and gases are processed or stored, wherever the world depends on safety and environmental vapor control solutions, ENARDO is *there*, engineering the vital tank venting products that protect life, equipment and the world around us.

ENARDO tank vent valves, flame and detonation arrestors, and thief hatches play mission-critical roles in global oilfield and industrial applications, helping man and machine work cleaner, safer and more cost-efficient.

Materials of Construction	
Model	ES-660
Construction	Aluminum (non-sparking)
Optional Equipment	<ul style="list-style-type: none"> <li>• Plastic Trim (PT)</li> <li>• Base Gasket</li> <li>• Bolt Set</li> <li>• Non-Corrosive Coating</li> <li>• Gasket Material (see Compatibility Chart)</li> </ul>
Shipping Weight	25 lbs. (approx.)

Valve Setting Range	
Model	ES-660
Bolt Pattern	10-3/8" Circle API
Pressure	2, 3, 4, 6, 8, 12, 16, 24 and 32 oz.
Vacuum	0.4, 0.9 and 3.5 oz

Ask your ENARDO representative today about the ES-660 and other ENARDO products engineered specifically for oilfield and industrial applications, or contact ENARDO directly at 800.336.2736 or [sales@enardo.com](mailto:sales@enardo.com). Visit us at [enardo.com](http://enardo.com).



### ES-660 Gasket Compatibility Chart

	NITRILE BUNA-N	HYDROGENATED NITRILE	TEFLON®	VITON®	FLUORO- SILICONE
	NBR	HNBR	FEP	FKM	FVMQ
AMINES	4	4	1	4	4
BUTANE	1	1	1	1	3
CRUDE OIL	2	2	1	1	2
DIESEL OIL	1	1	1	1	1
ETHANE	1	1	1	1	3
GASOLINE	1	1	1	1	1
GLYCOL	1	1	1	1	1
HEXANE	1	1	1	1	3
ISOOCTANE	1	1	1	1	1
ISOPENTANE	1	1	1	1	1
METHANE	1	1	1	1	3
NATURAL GAS	1	1	1	1	3
<b>NATURAL GAS CONDENSATE</b>					
HYDROGEN SULFIDE (<= 200 ppm)	4	4	1	2	3
HYDROGEN SULFIDE (> 200 ppm)	4	4	1	3	3
MERCAPTANS	1	1	1	1	1
CARBON DIOXIDE (CO2)	1	1	1	1	1
PARAFFINS (ALKANES)	1	1	1	1	1
CYCLOHEXANE	1	1	1	1	1
<b>AROMATICS</b>					
BENZENE	4	4	1	1	3
TOLUENE	4	4	1	1	2
ETHYL BENZENE	4	4	1	1	1
XYLENE	4	4	1	1	1
PENTANE	1	1	1	1	3
PROPANE	1	1	1	1	2
PRODUCED WATER	1	1	1	2	1
SATURATED STEAM	4	4	1	4	3

HIGH TEMPERATURE OPERATING LIMIT (F)	212	300	400	400	350
LOW TEMPERATURE FLEXIBILITY (F)	-20	-30	-100	0	-100
WEATHERING RESISTANCE	3	2	1	1	1

#### COMPATIBILITY RATING

1 SATISFACTORY	2 FAIR	3 DOUBTFUL	4 UNSATISFACTORY
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This compatibility chart is for reference only. Data is limited to chemicals that might be encountered in hydrocarbon production field applications. Due to the variety of operating conditions and applications for gasket materials, the user, through his or her own analysis and testing, is solely responsible for making the final selection of gasket material, and assuring that all performance, safety, and warning requirements of the application are met.



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