



# Technical Bulletin (TB-0025A)

## Oil Separators

Version 9, May 2017

### Oil Separator Components and Accessories

#### Introduction

BITZER US manufactures a series of ASME oil separators intended for use as a primary oil separator with screw compressors. The separators in this document do not contain coalescing filters.

The dimensions and ports are similar to the BITZER European version (PED) found in the main software and website. However, there are differences such as the PED version uses flanged connections.

To download 2D and 3D drawings of BITZER US separators, please visit: [www.bitzerpv.com](http://www.bitzerpv.com).

#### Ordering

The separators are sold as kits with the same model number used by BITZER worldwide with a “US” suffix (e.g. OA1954US). The voltage specific parts (heaters, oil level control and sensors) must be ordered separately (see page 2).

Oil Separators (Standard Refrigerants)								
Model Number (Kit)	Vessel Part Number	*Initial Oil Charge Liters (Gallons)	MWP (psi)	Weight (lbs)	Crankcase Heaters Required	Oil Outlet	Ref Inlet	Ref Outlet
OA1954US	771-0003-01	18 (5)	406	118	1 x 140W	1-1/4"-12	2 1/8	1 5/8
OA4188US	771-0004-01	40 (11)	450	252	2 x 140W	1-3/4"-12	3 1/8	3 1/8
OA9111US	771-0005-01	90 (24)	450	537	3 x 140W	1-3/4"-12	4 1/8	4 1/8
OA14111US	771-0006-01	140 (37)	450	746	3 x 140W	2-1/4"-12	4 1/8	4 1/8
OA25112US	771-0007-01	250 (66)	450	1357	3 x 200W	3-1/8" IDS	5 1/8	5 1/8

Oil Separators (Ammonia)								
Model Number	Vessel Part Number	*Initial Oil Charge Liters (Gallons)	MWP (psi)	Weight (lbs)	Crankcase Heaters Required	Oil Outlet	Ref Inlet	Ref Outlet
OA1954US-NH3	771-0003-03	18 (5)	406	124	1 x 140W	3/4" NPS	2"	2"
OA4188US-NH3	771-0004-03	40 (11)	450	262	2 x 140W	1-1/4"NPS	3"	3"
OA9111US-NH3	771-0005-03	90 (24)	450	553	3 x 140W	1-1/2"NPS	4"	4"
OA14111US-NH3	771-0006-03	140 (37)	450	765	3 x 140W	2" NPS	4"	4"
OA25112US-NH3	771-0007-03	250 (66)	450	1235	3 x 200W	3" NPS	5"	5"

\* An additional 1 gallon of oil is recommended for each compressor's circuit oil piping

## Optional Parts and Accessories (Order Separately)

DESCRIPTION		PART #	PICTURE
<b>For Standard Oil Separators (OA)</b>			
Oil Level Sensor: 5 vdc 1/2" NPT (for ESC201 usage)		<b>791-9906-02</b>	
Oil Level Sensor: Relay style switch; 1/2" NPT	115V	<b>791-9906-15</b>	
	230V	<b>791-9906-23</b>	
Heater: 140W, 9-1/4" Long	120V	<b>892-1140-01</b>	
	230V	<b>892-1140-02</b>	
Heater: 200W, 7.5" Long (for OA25112US vessel only)	120V	<b>343213-08</b>	
	230V	<b>343213-07</b>	

<b>For Ammonia Oil Separators (OA)</b>			
Optional NH3 Drain Valve	1/2-14 NPTF x 5/8-18 UNF	<b>263012000</b>	
Oil Level Sensor: Relay style switch; 1" NPT (NH3 Vessels)	24 volt	<b>791-9906-24</b>	
	120 volt	<b>791-9907-15</b>	
	230 volt	<b>791-9907-23</b>	
Heater: 140W, 9-1/4" Long	120 volt	<b>892-1140-01</b>	
	230 volt	<b>892-1140-02</b>	

## Oil Separator Kit Parts List (All Versions)

DESCRIPTION		PART NUMBER	PICTURE
Drain Valve (HFC Vessels Only)	½-14 NPTF x 5/8-18 UNF	<b>540106050</b>	
Drain Valve Coupling (HFC Vessels Only)	1/2" NPT Full	<b>P000001977</b>	
Oil Thermostat:	70°>140° Temp	<b>860-5021-01</b>	
Heater Well	For 140W heater; 10" Long	<b>308001-84</b>	
	Well for thermostat; 5.5" Long	<b>345906-05</b>	
Heater Well (for OA25112US vessel only)	For 200W heater; 8" Long (1-1/8"-18 UNEF)	<b>345905-05</b>	
Oil Fill Cap	1-1/4" Rota lock	<b>366203-01</b>	
Service Valve for HFC	¼" NPT Flare and Schrader Connections for HFC	<b>803-0001-01</b>	

## Oil Separator Kit Parts List (Kit Specific)

Oil Outlet Valves			OA1954US	OA4188US	OA9111US	OA14111US
1-1/4" Rotalock; 7/8" (22mm) sweat connection for HFC	361321-06		<b>X</b>			
1-3/4" Rotalock; 1- 3/8" (35mm) sweat connection for HFC	361321-08			<b>X</b>	<b>X</b>	
2-1/4" Rotalock threads; 1-5/8" (42mm) sweat connection for HFC	361321-12					<b>X</b>
White Rotalock O-Ring for Roto- lock Valves and Sight Glass	1"-14, Dia 19mm, 1x1.5mm	1-1/4"-12, Dia. 25mm, 4x1.5mm	1-3/4"-12, Dia. 38mm, 1x1.5mm	2-1/4"-12, Dia. 50.8mm, 1.5mm (also for sight glass)		
	<b>372200-02</b>	<b>372200-03</b>	<b>372200-04</b>	<b>372200-06</b>		
						
<b>Oil Separators (Standard Refrigerants)</b>						
Sight Glass	2-1/4"-12	<b>361832-01</b>				
Sight Glass Nut	2-1/4"-12 RL	<b>366304-04</b>				

## Oil Separator Kit Parts List (Ammonia versions only)

Reflex Lense 1101R	2"	P000008160	
Gasket 1103B	2" OD x 1.5" ID	P000008159	
Gasket Vulcanized Fiber 1104	2" OD x 1.6" ID	P000008158	
Sight Glass Kit (includes the 3 items shown above)	999-0041-01		





The items shown below are for historical information as these parts are no longer used on vessels manufactured after 10/2014

Oil Sight Glass Kit	2-1/8"-16 UN-2B Reflex Lens and PTFE Gasket	LI-50A-3AR	
Oil Sight Glass (used on OA1954US...OA2511 2US vessels)	2" NPT	SG-1016	Used on vessels <09/2014 
Packing Gasket for Oil Sight Glass (used with LI-50A- 3AR)	PTFE	2-023-053	
Oil Drain Valve	1"-14 Rotalock connection; 3/8" Flare for HFC	766-3062-02	Used on vessels <09/2014 The oil drain connection on vessels >09/2014 is not included as the connection size has changed to a standard 1/2" NPT pipe connection 
OA1954US Outlet Stub for HFC	2-1/4" Rota lock 1-5/8" (42mm) Sweat for HFC	366000-22	Used on vessels <02/2015 The OA1954US Outlet stub was removed on this vessel and replaced by 1-5/8" IDS Stub 
Oil Level Sensor: Outputs a 5VDC signal for use with ESC201 OR PLC Systems; 36" leads; 3/4"-16 Threads. (2 piece sensor and well)		791-9906-00	

**Historical Information:**

**Important changes from the previous North American Version (pre 2010):**

- The inlets and many ports have changed heights.
- The 18 liter (OA1954US) now has a 1-5/8" outlet (instead of 2-1/8").
- The 90 liter (OA9111US) now has a 4-1/8" inlet and outlet (instead of 3-5/8").
- There is an additional port for an oil level sensor (1/2" NPT). This can be used with the relay style oil level sensor that is now available as an option (115V or 230V).
- Heaters must be ordered separately. The heater size has changed from 70W to 140W.
- After 03/2013 the oil separator kits are sold as non-voltage specific kits. The heaters and oil level sensors must be ordered separate.
- After 03/2013 the 5VDC optical oil level sensor is not supplied as standard in the oil separator kit.
- After 12/2013, the oil sight glass was changed to a 2-1/8" Reflex Lens style.
- After 10/2014 the 1"-14 Rotalock oil drain valve has been omitted and replaced by a standard 1/2" NPT stub connection.
- After 01/2015 the OA1954US vessel's refrigerant outlet has changed to 1-5/8" IDS stub outlet.

**Notes:**