

130 Series for CO₂: Hermetic and Accessible

Temprite technology addresses the challenging demands of CO₂ systems. Building on the best attributes of Temprite's 920 and 920R Series oil separation technology, the 130 Series of coalescent oil separators, reservoirs, and drier shells are designed specifically for transcritical CO₂ systems and optimized for transcritical refrigeration applications.

The 130 Series can be used for subcritical applications where pressure is above 44.8 bar (650 PSI), otherwise both the 920 and 920R Series can be used in subcritical CO₂ applications up to 44.8 bar (650 PSI),

The 130 Series are the first coalescing oil separators created for transcritical CO₂ to undergo performance testing at internationally recognized testing organizations and have proven to perform the best of any filtration and separation technology.



130 Series Technology

Specifications

- Application range: suitable for R744 (CO₂) transcritical high-, medium-, and low-temperature applications and subcritical applications above 44.8 bar (650 PSI)
- Dual function: filters dirt out of the refrigerant and oil; separates the oil from the refrigerant gas
- Maximum working pressure: 140 bar (2030 PSI)*
- Efficiency: 98.5%+ nominal separation efficiency rating
- Filtration: Sub-micron particulate retention rating
- Connection sizes: 1/2" MPT** to 2" MPT, Butt Weld or ODS** 5/8" – 2-1/8"

* Model 131 MWP 160 bar, Model 139 MWP 140 bar on request

** MPT = Male Pipe Thread, ODS = Outside Diameter Solder

Advantages

High Efficiency: most efficient oil-refrigerant filtering/separation technology with a 98.5%+ separation efficiency rating across the widest range of mass flows.

Energy-Saving: minimizes the amount of oil in the evaporator, improving heat transfer efficiency.

Cost-Saving: ensures shorter compressor run times.

Easy Filter Changing: removable top plate allows for easy filter changing after it captures excess dirt circulating in the system.*

Individually Adjustable Mounting Feet: allow for variable field leveling and adjustment.

Internal Oil Level Monitoring: the integral oil reservoir and sensor port allows monitoring of the internal oil level and the controlled return of the cleaned oil to the compressor crank case for continued lubrication of the moving parts.

* Model 131 is hermetic and the filter is not accessible for changing.

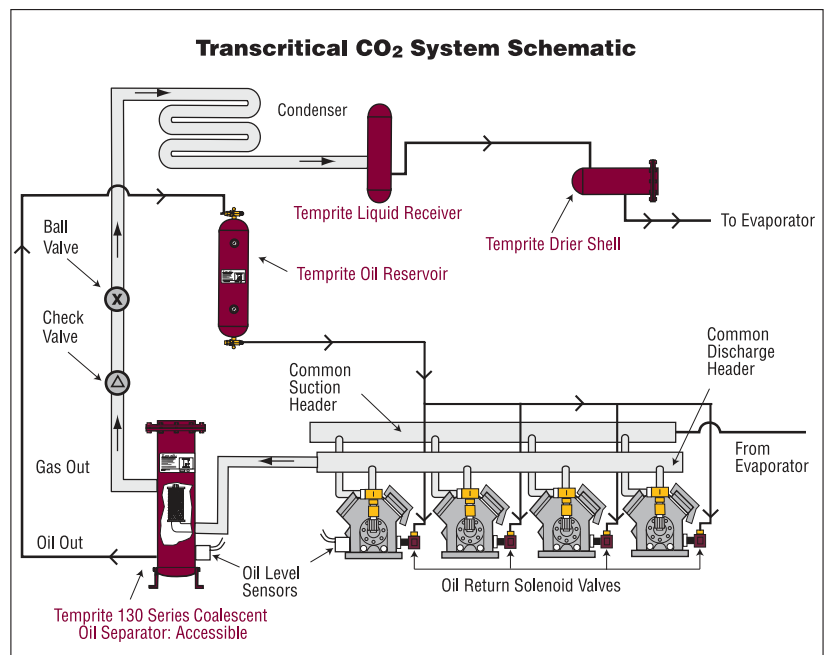
See page 24 for CO₂-compatible reservoirs and page 32 for CO₂-compatible drier shells

See page 21 for sizing.

CO₂4U™

Temprite engineers work with customers and specialists in the CO₂ field to develop products that work with the leading refrigeration technology.

Let us know what you need for your CO₂ system. We can produce liquid receivers and other high-pressure components for CO₂ applications to meet customer requirements. See page 30 for Liquid Receivers. Contact Temprite for more information.



130 Series for CO₂

Model 131: Hermetic

Maximum Working Pressure: 160 bar (2320 PSI)

Part #	Model #	A Dim.	B Dim.	C Dim.	D Dim.
		Inlet/Outlet/Oil Connector	Outlet Location	Height	Diameter
013101310	131	1/4" FPT*	115 mm 4.5"	165 mm 6.5"	73 mm 2.9"
013101311	131	3/8" FPT*	115 mm 4.5"	165 mm 6.5"	73 mm 2.9"

* FPT = Female Pipe Thread

THE CONNECTIONS ON THE OIL SEPARATOR MUST BE THE SAME SIZE AS (OR LARGER THAN) THE DISCHARGE LINE SIZE.

NOTE: See page 10 for the 920 & 920R Series of products, suitable for subcritical applications up to 44.8 bar (650 PSI).

The 920 & 920R Series are compatible with subcritical CO₂ and ammonia (NH₃).

Models 133A, 135A, 137A: Accessible

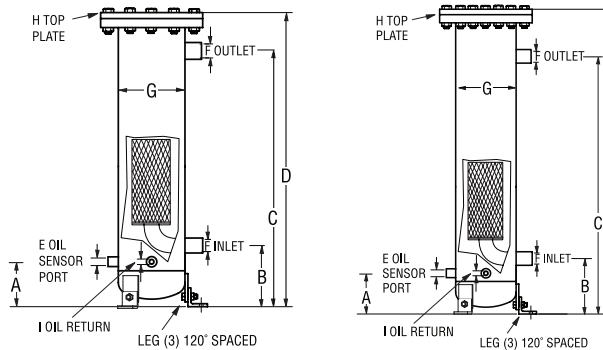
Maximum Working Pressure: 140 bar (2030 PSI)

Compatible with traditional refrigerants, new blends and natural refrigerants.*

Connection Options: ODS, BW or MPT.

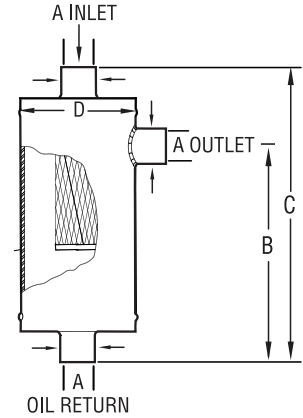
Metric sizes also available: contact Temprite.

* Traditional refrigerants such as R-22 and blends like R-404a; new blends such as R-427a and R-448a; and natural refrigerants such as ammonia (NH₃) and CO₂.



133A, 135A

137A



Part #	Model # Inlet/ Outlet	A Dim.	B Dim.	C Dim.	D Dim.	E Dim.	F Dim.	G Dim.	H Dim.	I Dim.
		Sensor/ Oil Loc.	Inlet Loc.	Outlet Loc.	Height	Sensor	Inlet/ Outlet	Dia.	Dia.	Oil Return
013301330	133A 1/2" MPT*	118 mm 4.6"	152 mm 6"	325 mm 12.8"	435 mm 17"	3/4" FPT*	1/2" MPT*	102 mm 4.0"	176 mm 6.9"	1/4" FPT*
013301331	133A 1/2" BW*	118 mm 4.6"	152 mm 6"	325 mm 12.8"	435 mm 17"	3/4" FPT*	1/2" BW*	102 mm 4.0"	176 mm 6.9"	1/4" FPT*
013304332	133A 5/8" ODS*	118 mm 4.6"	152 mm 6"	325 mm 12.8"	435 mm 17"	3/4" FPT*	5/8" ODS*	102 mm 4.0"	176 mm 6.9"	1/4" FPT*
013501350	135A 3/4" MPT*	118 mm 4.6"	152 mm 6"	433 mm 17.1"	545 mm 21.4"	3/4" FPT*	3/4" MPT*	102 mm 4.0"	176 mm 6.9"	1/4" FPT*
013501351	135A 3/4" BW*	118 mm 4.6"	152 mm 6"	433 mm 17.1"	545 mm 21.4"	3/4" FPT*	3/4" BW*	102 mm 4.0"	176 mm 6.9"	1/4" FPT*
013504352	135A 7/8" ODS*	118 mm 4.6"	152 mm 6"	433 mm 17.1"	545 mm 21.4"	3/4" FPT*	7/8" ODS*	102 mm 4.0"	176 mm 6.9"	1/4" FPT*
013710142	137A 1" MPT*	131 mm 5.1"	171 mm 6.7"	584 mm 23"	702 mm 27.6"	3/4" FPT*	1" MPT*	141 mm 5.56"	216 mm 8.5"	1/4" FPT*
013701370	137A 1-1/4" MPT*	131 mm 5.1"	171 mm 6.7"	584 mm 23"	702 mm 27.6"	3/4" FPT*	1-1/4" MPT*	141 mm 5.56"	216 mm 8.5"	1/4" FPT*
013701375	137A 1" BW*	131 mm 5.1"	171 mm 6.7"	584 mm 23"	702 mm 27.6"	3/4" FPT*	1" BW*	141 mm 5.56"	216 mm 8.5"	1/4" FPT*
013701371	137A 1-1/4" BW*	131 mm 5.1"	171 mm 6.7"	584 mm 23"	702 mm 27.6"	3/4" FPT*	1-1/4" BW*	141 mm 5.56"	216 mm 8.5"	1/4" FPT*
013704375	137A 1-1/8" ODS*	131 mm 5.1"	171 mm 6.7"	584 mm 23"	702 mm 27.6"	3/4" FPT*	1-1/8" ODS*	141 mm 5.56"	216 mm 8.5"	1/4" FPT*
013704372	137A 1-3/8" ODS*	131 mm 5.1"	171 mm 6.7"	584 mm 23"	702 mm 27.6"	3/4" FPT*	1-3/8" ODS*	141 mm 5.56"	216 mm 8.5"	1/4" FPT*

* FPT = Female Pipe Thread, MPT = Male Pipe Thread, BW = Butt Weld, ODS = Outside Diameter Solder

THE CONNECTIONS ON THE OIL SEPARATOR MUST BE THE SAME SIZE AS (OR LARGER THAN) THE DISCHARGE LINE SIZE.

NOTES: See page 10 for the 920 & 920R Series of products, suitable for subcritical applications up to 44.8 bar (650 PSI). The 920 & 920R Series are compatible with subcritical CO₂ and ammonia (NH₃).

See page 24 for CO₂-compatible reservoirs and page 32 for CO₂-compatible drier shells.

See page 21 for sizing.

130 Series for CO₂

Maximum Working Pressure: 140 bar (2030 PSI)

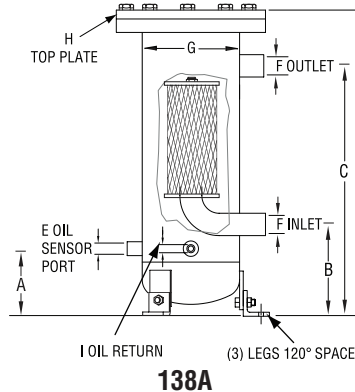
Model 138A: Accessible

Compatible with traditional refrigerants, new blends and natural refrigerants.*

Connection Options: ODS, BW or MPT.

Metric sizes also available: contact Temprite.

* Traditional refrigerants such as R-22 and blends like R-404a; new blends such as R-427a and R-448a; and natural refrigerants such as ammonia (NH₃) and CO₂.



Part #	Model # Inlet/ Outlet	A Dim.	B Dim.	C Dim.	D Dim.	E Dim.	F Dim.	G Dim.	H Dim.	I Dim
		Oil Sensor/ Port	Inlet	Outlet	Height	Sensor	Inlet/ Outlet	Dia.	Dia.	Oil Return
013801380	138A 1-1/2" MPT*	131 mm 5.1"	171 mm 6.7"	752 mm 29.6"	870 mm 34.2"	3/4" FPT*	1-1/2" MPT*	141 mm 5.6"	216 mm 8.5"	1/4" FPT*
013801381	138A 1-1/2" BW*	131 mm 5.1"	171 mm 6.7"	752 mm 29.6"	870 mm 34.2"	3/4" FPT*	1-1/2" BW*	141 mm 5.6"	216 mm 8.5"	1/4" FPT*
013804382	138A 1-5/8" ODS*	131 mm 5.1"	171 mm 6.7"	752 mm 29.6"	870 mm 34.2"	3/4" FPT*	1-5/8" ODS*	141 mm 5.6"	216 mm 8.5"	1/4" FPT*

* FPT = Female Pipe Thread, MPT = Male Pipe Thread, BW = Butt Weld, ODS = Outside Diameter Solder

Model 139A: Accessible

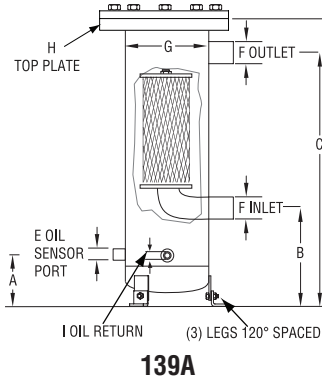
Maximum Working Pressure: 130 bar (1885 PSI)
140 bar available upon request.

Compatible with traditional refrigerants, new blends and natural refrigerants.*

Connection Options: ODS, BW or MPT.

Metric sizes also available: contact Temprite.

* Traditional refrigerants such as R-22 and blends like R-404a; new blends such as R-427a and R-448a; and natural refrigerants such as ammonia (NH₃) and CO₂.



Part #	Model # Inlet/ Outlet	A Dim.	B Dim.	C Dim.	D Dim.	E Dim.	F Dim.	G Dim.	H Dim.	I Dim.
		Sensor/ Oil Loc.	Inlet Loc.	Outlet Loc.	Height	Sensor	Inlet/ Outlet	Dia.	Dia.	Oil Return
013911391	139A 1-1/2" BW*	162 mm 6.4"	210 mm 8.3"	765 mm 30.1"	927 mm 36.5"	3/4" FPT*	1-1/2" BW*	219 mm 8.6"	324 mm 12.75"	1/4" FPT*
013921392	139A 2" BW*	162 mm 6.4"	210 mm 8.3"	765 mm 30.1"	927 mm 36.5"	3/4" FPT*	2" BW*	219 mm 8.6"	324 mm 12.75"	1/4" FPT*
013904392	139A 1-5/8" ODS*	162 mm 6.4"	210 mm 8.3"	765 mm 30.1"	927 mm 36.5"	3/4" FPT*	1-5/8" ODS*	219 mm 8.6"	324 mm 12.75"	1/4" FPT*
013904395	139A 2-1/8" ODS*	162 mm 6.4"	210 mm 8.3"	765 mm 30.1"	927 mm 36.5"	3/4" FPT*	2-1/8" ODS*	219 mm 8.6"	324 mm 12.75"	1/4" FPT*

* FPT = Female Pipe Thread, MPT = Male Pipe Thread, BW = Butt Weld, ODS = Outside Diameter Solder

THE CONNECTIONS ON THE OIL SEPARATOR MUST BE THE SAME SIZE AS (OR LARGER THAN) THE DISCHARGE LINE SIZE.

NOTES: See page 10 for the 920 & 920R Series of products, suitable for subcritical applications up to 44.8 bar (650 PSI). The 920 & 920R Series are compatible with subcritical CO₂ and ammonia (NH₃).

See page 24 for CO₂-compatible reservoirs and page 32 for CO₂-compatible drier shells.

See page 21 for sizing.

Temprite 130 Series for Natural Refrigerants: Transcritical and Subcritical CO₂ (Tons and kW)

Model	131	133A	135A	137A	138A	139A
Connection Size	1/4"	1/2"	3/4"	1" or 1-1/4"*	1-1/2"	1-1/2" or 2" BW**
Temp. °F	Tons @ 100°F Gas Cooler Outlet 10°F Superheat 0°F Subcooling					
60	6.29	11.19	41.84	121.76	177.05	230.47
55	5.93	10.54	39.41	114.67	166.74	217.06
50	5.56	9.89	36.97	107.60	156.45	203.66
45	5.21	9.26	34.63	100.77	146.52	190.74
40	4.87s	8.66	32.38	94.24	137.03	178.38
35	4.54	8.08	30.21	87.91	127.82	166.40
30	4.23	7.52	28.12	81.82	118.97	154.87
25	3.94	7.01	26.19	76.21	110.82	144.26
20	3.65	6.48	24.24	70.55	102.58	133.54
15	3.37	6.00	22.44	65.30	94.95	123.60
10	3.12	5.54	20.73	60.32	87.71	114.17
5	2.88	5.12	19.13	55.66	80.93	105.36
0	2.65	4.71	17.60	51.22	74.48	96.95
Temp. °F	Tons @ 20°F Condensing 10°F Superheat 0°F Subcooling					
+20	7.03	12.45	46.67	135.87	197.84	257.48
+10	5.95	10.54	39.52	115.06	167.53	218.03
0	5.01	8.88	33.29	96.92	141.12	183.66
-10	4.20	7.43	27.87	81.13	118.13	153.74
-20	3.49	6.18	23.17	67.44	98.20	127.80
-30	2.88	5.10	19.13	55.69	81.08	105.53
-40	2.35	4.17	15.64	45.52	66.29	86.27
Temp. °C	kW @ 37.78°C Gas Cooler Outlet 5.6°C Superheat 0°C Subcooling					
15.56	22.13	39.36	147.15	428.23	622.67	810.58
12.78	20.84	37.07	138.59	403.30	586.42	763.38
10	19.56	34.78	130.04	378.42	550.24	716.28
7.222	18.31	32.57	121.78	354.40	515.31	670.82
4.444	17.13	30.46	113.89	331.44	481.93	627.36
1.667	15.98	28.42	106.24	309.18	449.55	585.22
-1.111	14.87	26.45	98.89	287.77	418.43	544.69
-3.889	13.85	24.64	92.11	268.04	389.74	507.36
-6.667	12.82	22.81	85.26	248.12	360.78	469.65
-9.444	11.87	21.11	78.92	229.66	333.93	434.71
-12.22	10.96	19.50	72.90	212.14	308.46	401.55
-15	10.12	17.99	67.27	195.76	284.64	370.53
-17.78	9.31	16.56	61.90	180.14	261.93	340.97
Temp. °C	kW @ -6.667°C Condensing 5.56°C Superheat 0°C Subcooling					
-6.7	24.71	43.77	164.15	477.85	695.80	905.54
-12.2	20.93	37.07	139.00	404.65	589.21	766.83
-17.8	17.63	31.22	117.09	340.85	496.32	645.93
-23.3	14.76	26.14	98.02	285.33	415.48	540.72
-28.9	12.27	21.73	81.48	237.19	345.37	449.48
-34.4	10.13	17.94	67.28	195.85	285.18	371.14
-40	8.28	14.67	55.00	160.11	233.14	303.41

* Customer specified: Butt Weld or Male Pipe Thread

** Butt Weld only.

THE CONNECTIONS ON THE OIL SEPARATOR MUST BE THE SAME SIZE AS (OR LARGER THAN) THE DISCHARGE LINE SIZE.

See page 18 for the 920 and 920R Series of components, suitable for subcritical applications up to 44.8 bar (650 PSI). The 920 and 920R Series are also ammonia compatible.

130 Series Notes:

1. Tons = Capacity in evaporator (12,000 BTUH/Hr/Ton), based on Condensing Temperature stated in chart, 10°F Superheat, 0°F Subcooling
2. kW = Capacity based on Condensing Temperature stated in chart, 5.56°C Superheat, 0°C Subcooling.
3. For applications other than reciprocating compressors (scroll, screw type, 2-stage), please contact Temprite engineering at temprite@temprite.com.