



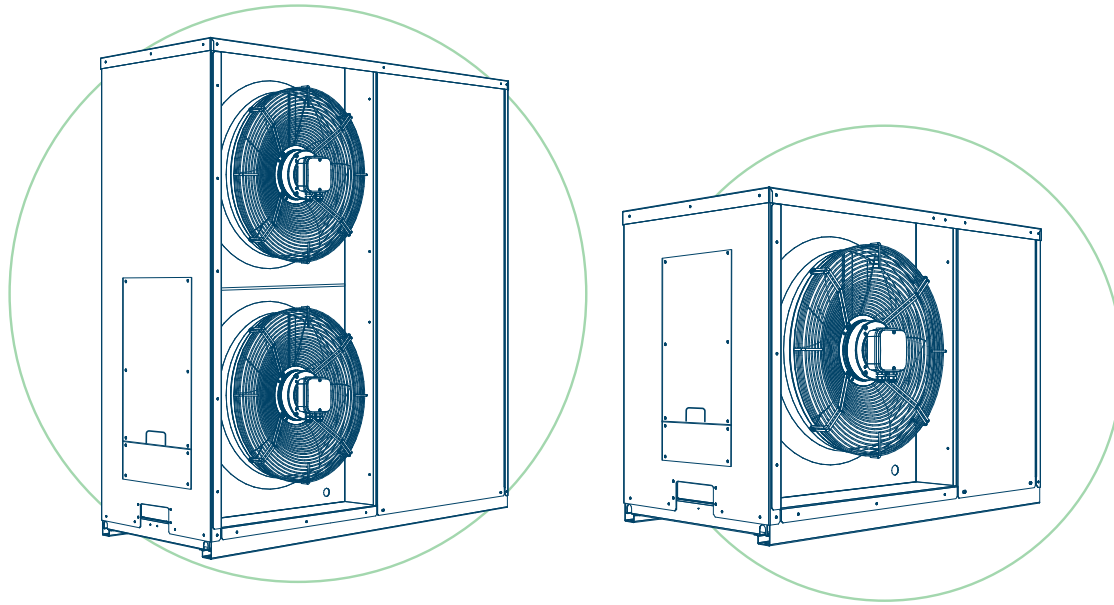
SUSTAINABLE COLD SOLUTIONS

TRANSCRITICAL CO₂ CONDENSING UNITS



We know the art of achieving
a perfect temperature


BEIJER REF



Product Description

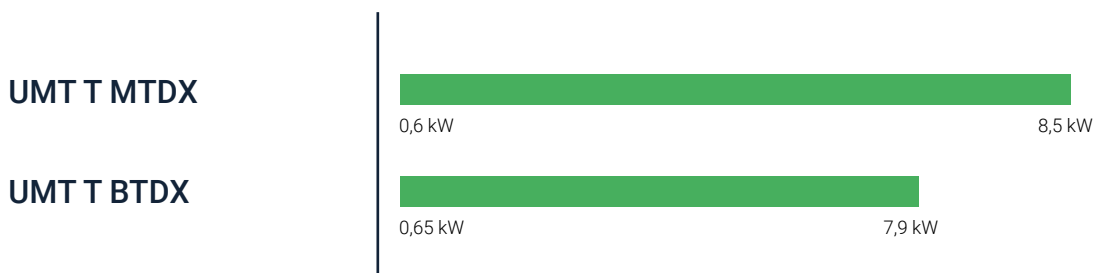
Condensing unit for transcritical CO₂ applications equipped with TOSHIBA BLDC compressor(s) with inverter, integrated gas cooler and EC fans. This is a high-efficiency solution designed to ensure a small footprint and low noise.

Main Advantages

 <p>CO₂ REFRIGERANT</p>	 <p>EFFICIENT SOLUTION</p>	 <p>LOW NOISE</p>	 <p>SMALL FOOTPRINT</p>	 <p>EASY START-UP</p>	 <p>DC BRUSHLESS ROTARY COMPRESSOR</p>	 <p>GAS COOLER EQUIPPED</p>
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Cooling Capacity

Transcritical Condensing Units DX



Standard Accessories

- TOSHIBA BLDC COMPRESSORS
- CAREL CONTROLLER
- INVERTER MODULATION FOR CAPACITY CONTROL 25-100%
- INTEGRATED GAS COOLER WITH EC FAN
- DESIGN PRESSURE 130 BAR (HIGH PRESSURE SIDE) 80 BAR (LIQUID LINE) 80 BAR (SUCTION LINE)
- LIQUID RECEIVER 8 LITER ON MODELS 030 -045 MTDX AND N45 AND N67BTDX; 12 LITERS FOR MODELS 067-100 MTDX AND 067 -100 BTDX
- K65 CONNECTIONS

Accessories on Request

- LOW NOISE FRAME (DAY OPERATION 33 DB(A) @10M; NIGHT OPERATION 30 DB(A))
- OIL MANAGEMENT (OIL SEPARATOR + RESERVOIR, OIL LEVEL CONTROL, OIL RETURN SOLENOID VALVE)
- WINTER KIT (SUGGESTED FOR AMBIENT TEMPERATURE <-20°C)
- EPOXY OR ELECTROFIN GAS COOLER CORROSION COIL PROTECTION.
- ADIABATIC KIT WATER SPRAY, INCLUDING CONTROLLER

Check the Unit CO₂ Charge

Cooling Capacity:
 MT from 0,6 kW up to 8,5 kW
 BT from 0,65 kW up to 7,9 kW

CUBO₂ Smart is an high efficiency condensing unit (for CO₂ transcritical application) equipped with BLDC variable speed compressor.
 It is compact, easy to install and can directly communicate with the refrigerant units.
 Thanks to these features it is a very efficient (even at partial load) without any compromise with the food conservation.

DOWNLOAD BROCHURE

CO₂ CHARGE CALCULATION V4.0

- 1_ Enter our website www.scmfrigo.com
- 2_ Click on the 'Products' section at the top
- 3_ Click within the product group 'CO₂ Condensing Units'.
- 4_ Finally, click here!

The screenshot shows the web application interface for CO₂ charge calculation. It includes a navigation bar with the SCM logo, language selection (English), and user information (user External). The main content area is titled 'Air CO₂ condensing units for medium temperature applications' and features a 'Configuration' section with 'Selection' and 'Verify' tabs. The 'Selection' tab is active, showing a 'Serie' dropdown set to 'Cubo2Smart' and a 'Compressor brand' dropdown set to 'Toshiba BLDC'. Below this is a product image of the condensing unit. The 'Input data' section contains a table for user input:

Parameter	Unit	Value
Required Capacity	kW	0,00
Tolerance	%	30,00
Evaporation temperature	°C	-5,00
Ambient temperature	°C	35,00

<https://cubo2calculation.scmfrigo.com/#/home>

AT THE FOLLOWING LINK YOU CAN CHECK THE UNIT CHARGE.
 Ask our sales department for the password

T amb [°C]		Evaporation Temperature[°C]											
		-35		-30		-25		-20					
		min	max	min	max	min	max	min	max	min	max		
UMT T N45 BTDX		Cooling Capacity [W]		COP		Cooling Capacity [W]		COP		Cooling Capacity [W]		COP	
	40	694	1915	1,19	836	2299	1,38	975	2668	1,55	1148	3110	1,77
	38	709	1933	1,22	857	2318	1,42	1002	2687	1,60	1181	3129	1,83
	32	761	2004	1,38	926	2393	1,60	1090	2764	1,81	1288	3204	2,07
	25	815	2084	1,57	995	2477	1,83	1174	2850	2,07	1389	3289	2,38
	15	867	2163	1,81	1058	2561	2,10	1250	2935	2,39	1479	3373	2,76
	5	948	2277	2,24	1155	2684	2,63	1368	3061	3,02	1615	3497	3,53
	Liquid receiver volume 8 liters												
	Weight 176kg												
	Connections Liquid / suction 1/2"												
Sound pressure day operation 40 dB(A)* - night operation 37 dB(A)*													
Minimum Energy Performance Standards 2,39 (according to Ecodesign Directive EN 2009/125/EC)													
Annual Energy Consumption 8767 kWh/year													
MRA/Pmax 230/1+N+PE/50													
UMT T N67 BTDX	40	1125	3058	1,28	1366	3645	1,47	1601	4192	1,63	1871	4807	1,82
	38	1140	3074	1,32	1382	3668	1,51	1617	4221	1,69	1886	4843	1,89
	32	1196	3146	1,47	1440	3759	1,70	1675	4333	1,91	1943	4976	2,15
	25	1253	3234	1,68	1501	3865	1,95	1738	4457	2,20	2005	5117	2,49
	15	1308	3326	1,93	1560	3971	2,25	1799	4578	2,55	2067	5254	2,91
	5	1385	3458	2,41	1648	4126	2,85	1895	4755	3,27	2166	5455	3,79
	Liquid receiver volume 8 liters												
	Weight 176kg												
	Connections Liquid / suction 1/2"												
	Sound pressure day operation 40 dB(A)* - night operation 37 dB(A)*												
Minimum Energy Performance Standards 2,39 (according to Ecodesign Directive EN 2009/125/EC)													
Annual Energy Consumption 13282 kWh/year													
MRA/Pmax 230/1+N+PE/50													
UMT T 067 BTDX	40	950	4380	0,88	1190	5320	1,07	1360	6030	1,15	1660	7210	1,41
	38	950	4380	0,91	1190	5320	1,14	1360	6030	1,18	1660	7210	1,50
	32	950	4380	1,09	1190	5320	1,20	1360	6030	1,37	1660	7210	1,57
	25	950	4380	1,22	1190	5320	1,35	1360	6030	1,54	1660	7210	1,69
	15	950	4380	1,70	1190	5320	1,90	1360	6030	2,15	1660	7210	2,37
	5	950	4380	1,97	1190	5320	2,23	1360	6030	2,41	1660	7210	2,68
	Liquid receiver volume 12 liters												
	Weight 195kg												
	Connections Liquid / suction 1/2"												
	Sound pressure day operation 41dB(A)* - night operation 38 dB(A)*												
Minimum Energy Performance Standards 2,39 (according to Ecodesign Directive EN 2009/125/EC)													
Annual Energy Consumption 19367 kWh/year													
MRA/Pmax 400/3+N+PE/50													
UMT T 100 BTDX	40	1520	6540	0,91	1890	7900	1,09	2140	8940	1,15	2600	10650	1,41
	38	1520	6540	0,96	1890	7900	1,16	2140	8940	1,18	2600	10650	1,51
	32	1520	6540	1,18	1890	7900	1,27	2140	8940	1,43	2600	10650	1,58
	25	1520	6540	1,33	1890	7900	1,44	2140	8940	1,62	2600	10650	1,74
	15	1520	6540	1,93	1890	7900	2,11	2140	8940	2,35	2600	10650	2,54
	5	1520	6540	2,27	1890	7900	2,54	2140	8940	2,69	2600	10650	2,93
	Liquid receiver volume 12 liters												
	Weight 195kg												
	Connections Liquid / suction 5/8"												
	Sound pressure day operation 42 dB(A)* - night operation 39 dB(A)*												
Minimum Energy Performance Standards 2,39 (according to Ecodesign Directive EN 2009/125/EC)													
Annual Energy Consumption 28623 kWh/year													
MRA/Pmax 400/3+N+PE/50													

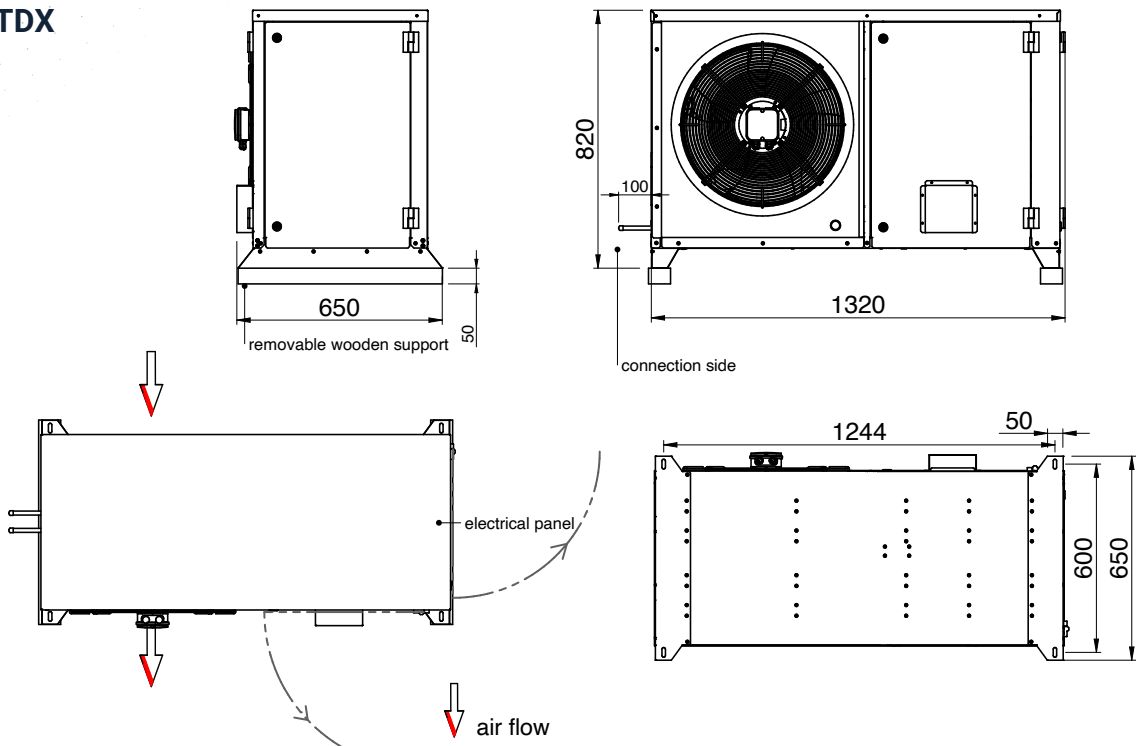
NOTE: Interstage SST variable from -5 °C to 0°C according to operating conditions
 (*based on free field area weed semi-spherical sound emission in 10m distance; tolerance ± 2 dB(A))

T amb [°C]		Evaporation Temperature[°C]														
		-15		-10		-5		0		5						
		min	max	min	max	min	max	min	max	min	max					
UMT T 030 MTDX		min	max	COP	min	max	COP	min	max	COP	min	max	COP			
	40	429	2140	1,38	523	2507	1,58	575	2759	1,59	674	3143	1,79	787	3541	2,04
	38	440	2165	1,44	526	2514	1,59	622	2889	1,80	727	3283	2,04	850	3704	2,31
	32	455	2181	1,54	551	2548	1,76	653	2939	2,02	768	3362	2,32	905	3826	2,68
	25	506	2350	1,81	613	2752	2,09	728	3197	2,43	852	3678	2,83	988	4188	3,33
	15	682	3033	3,16	816	3577	3,76	971	4185	4,56	1153	4859	5,64	1364	5598	7,18
	5	814	3564	4,63	973	4194	5,70	1161	4899	7,20	1270	5290	7,25	1364	5598	7,18
Liquid receiver volume		8 liters														
Weight		165kg														
Connections		Liquid / suction 1/2"														
Sound pressure day operation		40 dB(A)* - night operation 37 dB(A)*														
Minimum Energy Performance Standards		3,41 (according to Ecodesign Directive EN 2009/125/EC)														
Annual Energy Consumption		4590 kWh/year														
MRA/Pmax		230/1+N+PE/50														
UMT T 045 MTDX	40	648	3233	1,38	789	3785	1,58	868	4165	1,59	1018	4746	1,79	1188	5346	2,01
	38	665	3270	1,46	794	3796	1,59	939	4362	1,80	1098	4957	2,04	1283	5593	2,31
	32	686	3293	1,54	832	3847	1,76	986	4437	2,02	1160	5077	2,32	1366	5778	2,68
	25	755	3541	1,81	915	4142	2,09	1085	4809	2,43	1270	5529	2,83	1474	6293	3,33
	15	1021	4571	3,14	1221	5384	3,76	1452	6295	5,64	1722	7305	5,64	2039	8412	7,17
	5	1220	5370	4,64	1457	6314	5,71	1737	7369	7,25	1899	7953	7,25	2039	8412	7,17
	Liquid receiver volume		8 liters													
Weight		165kg														
Connections		Liquid / suction 1/2"														
Sound pressure day operation		40 dB(A)* - night operation 37 dB(A)*														
Minimum Energy Performance Standards		3,42 (according to Ecodesign Directive EN 2009/125/EC)														
Annual Energy Consumption		6922 kWh/year														
MRA/Pmax		230/1+N+PE/50														
UMT T 067 MTDX	40	1038	4753	1,40	930	5489	1,57	1459	6296	1,75	1380	7159	1,96	1600	6790	2,18
	38	1061	4755	1,45	955	5504	1,63	1485	6325	1,83	1414	6856	2,05	1681	7820	2,29
	32	1094	4722	1,57	1086	5508	1,79	1320	6385	2,04	1580	7328	2,31	1866	8383	2,51
	25	1001	4904	1,69	1221	5790	1,99	1470	6764	2,34	1748	7820	2,76	2053	8951	3,34
	15	1479	6466	3,02	1779	7638	3,63	2121	8969	4,40	2509	10470	4,25	2945	12149	6,88
	5	1825	7592	4,44	2175	8943	5,40	2356	10491	6,68	2777	11411	6,81	2945	12149	6,88
	Liquid receiver volume		12 liters													
Weight		165kg														
Connections		Liquid / suction 1/2"														
Sound pressure day operation		41 dB(A)* - night operation 38 dB(A)*														
Minimum Energy Performance Standards		3,28 (according to Ecodesign Directive EN 2009/125/EC)														
Annual Energy Consumption		10324 kWh/year														
MRA/Pmax		230/1+N+PE/50														
UMT T 100 MTDX	40	1549	7904	1,56	1854	8193	1,57	2028	9113	1,57	2365	10366	1,75	2719	11672	1,94
	38	1583	7098	1,45	1864	8202	1,58	2188	9411	1,77	2534	10704	1,98	2890	12034	2,18
	32	1550	7047	1,53	1750	8325	1,73	2273	9491	1,97	2644	10866	2,25	3048	12314	2,52
	25	1597	7503	1,76	1929	8812	2,04	2324	10232	2,35	2744	11750	2,71	3182	13355	3,12
	15	2252	9791	3,04	2725	11455	3,60	3250	13414	4,29	3824	15611	5,16	4443	18053	6,26
	5	2749	11392	4,44	3282	13421	5,36	3874	15738	6,57	4195	17042	6,48	4443	18053	6,26
	Liquid receiver volume		12 liters													
Weight		165kg														
Connections		Liquid / suction 5/8"														
Sound pressure day operation		42 dB(A)* - night operation 39 dB(A)*														
Minimum Energy Performance Standards		3,27 (according to Ecodesign Directive EN 2009/125/EC)														
Annual Energy Consumption		15634 kWh/year														
MRA/Pmax		400/3+N+PE/50														

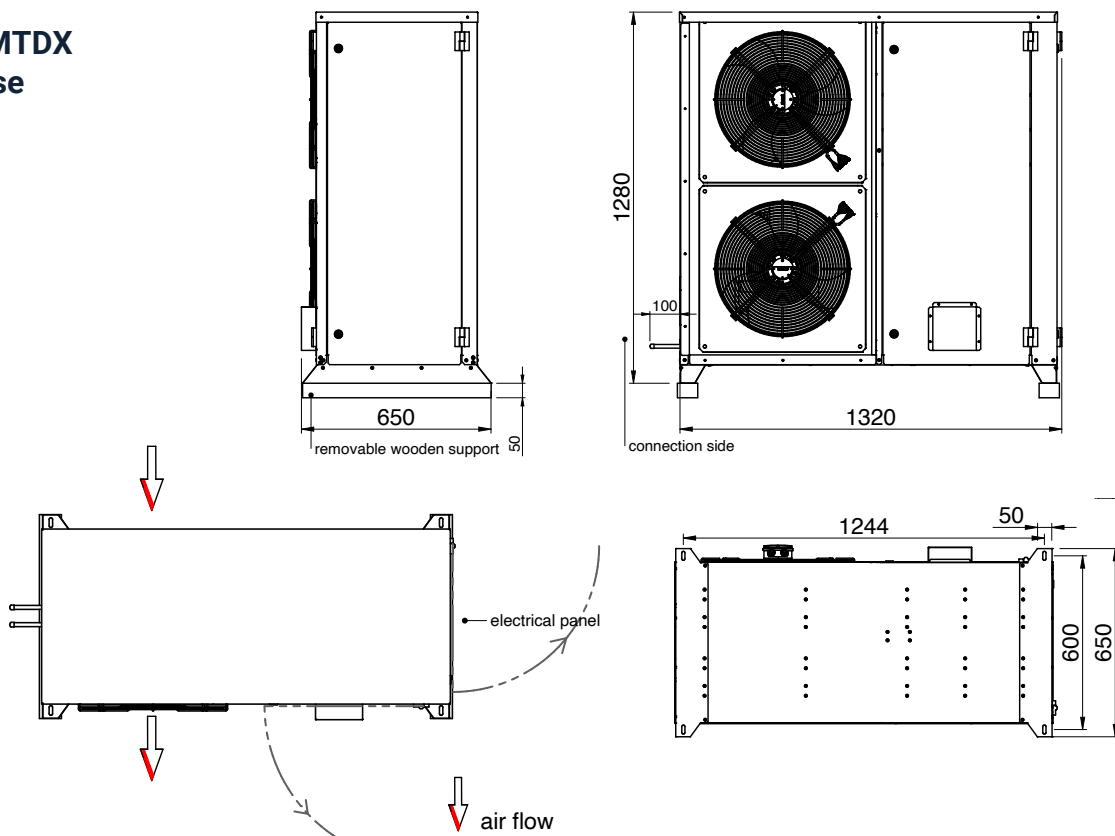
NOTE: Interstage SST variable from 0 °C to 5°C according to operating conditions
 (*based on free field area weed semi-spherical sound emission in 10m distance; tolerance ± 2 dB(A))

Dimensional Data

BTDX - MTDX Standard

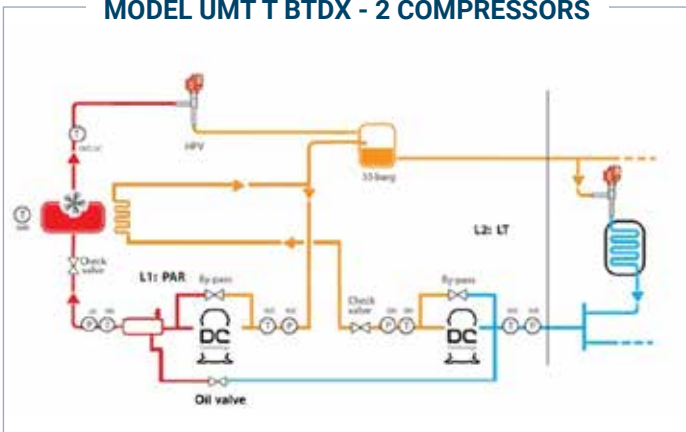


BTDX - MTDX Low Noise

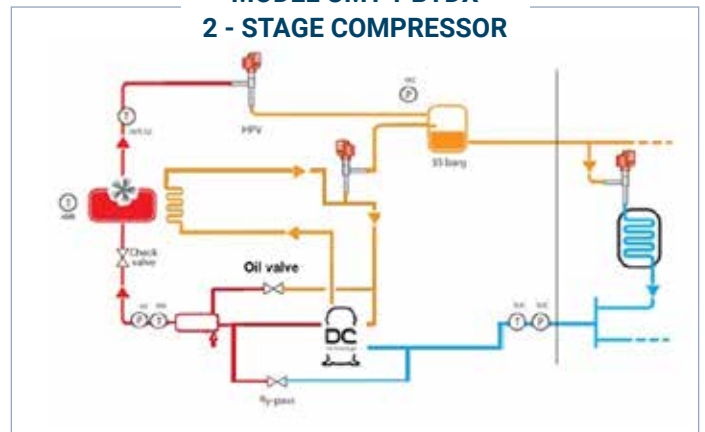


Unit Configuration

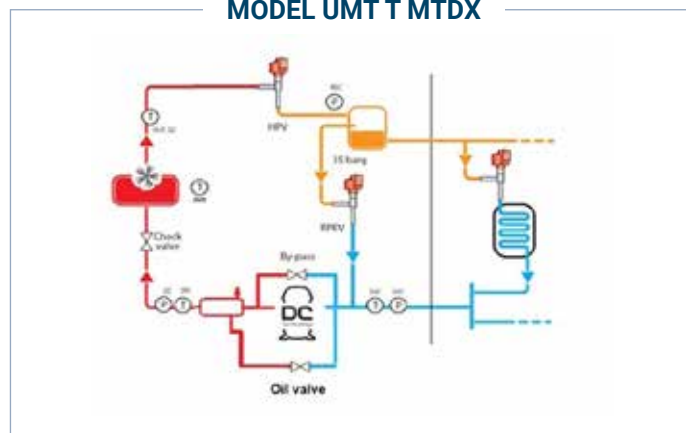
MODEL UMT T BTDX - 2 COMPRESSORS



MODEL UMT T BTDX
2 - STAGE COMPRESSOR

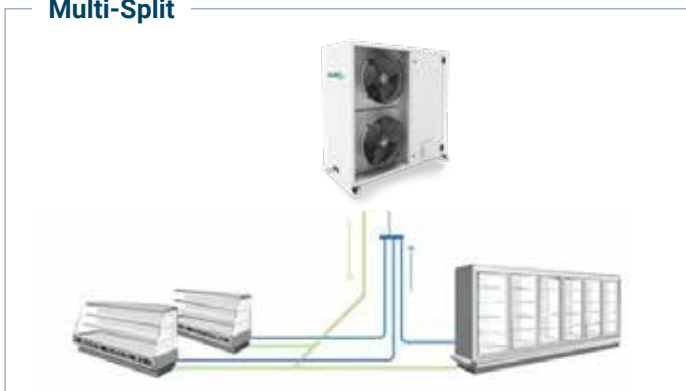


MODEL UMT T MTDX



Installation Design

Multi-Split



Branch



Pipe Connections (Multi-Split or Branch)

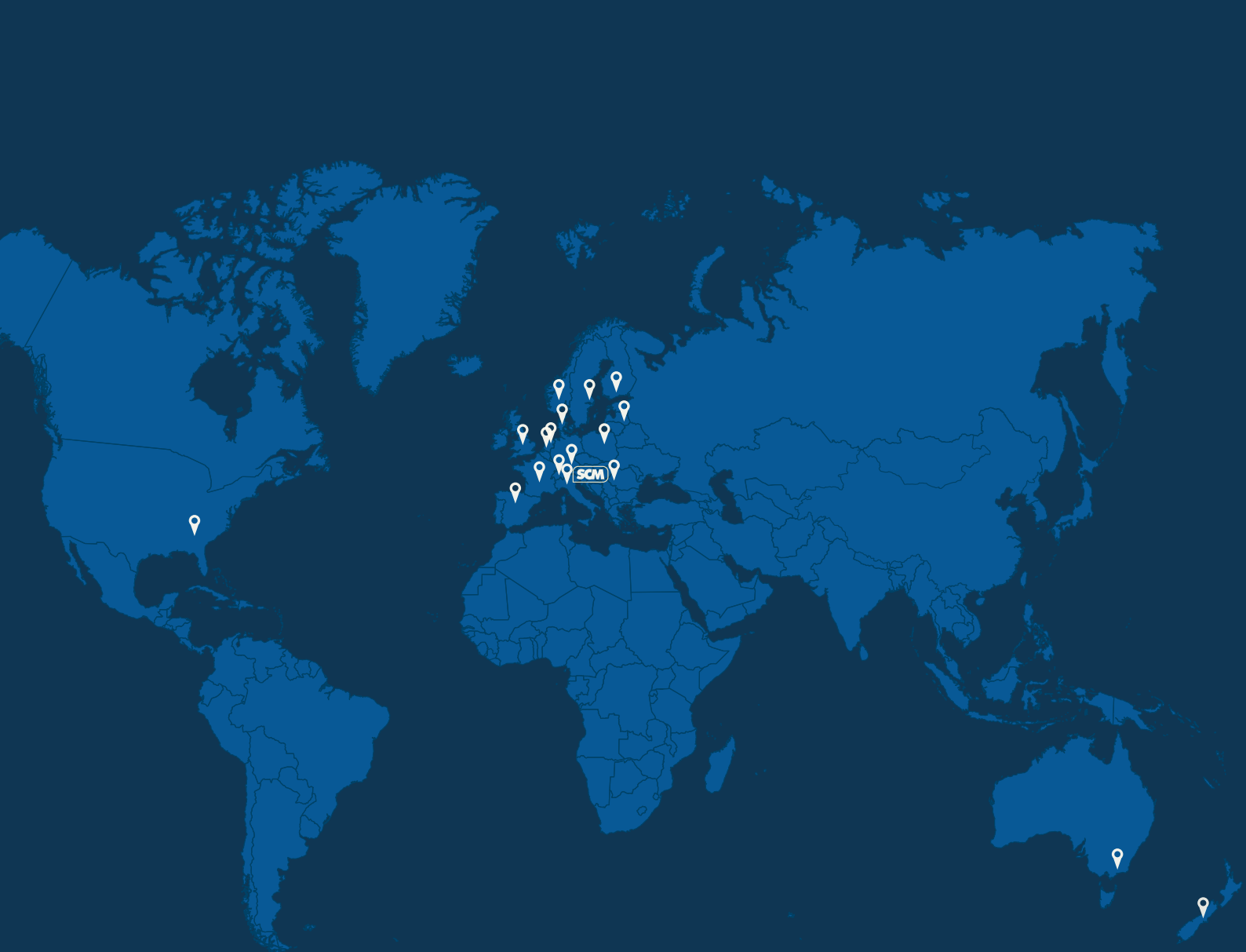
The connection between the Condensing Unit and more remote evaporators can be the same one used for Multi-Split or branch system.

The preferred one is the one is able to guarantee the highest gas velocity in the suction line (for a good oil return) with a low pressure drop.

For Multi-Split layout, the system requires a dedicated suction line for each evaporator that will be collected by a manifold installed close to the condensing unit.

Please refer to the example reported in the pictures.

- Liquid line must be properly sized to supply the farther evaporators (liquid velocity < 1 m/s is suggested).
- Suction line must be properly sized to have a good oil return with a low pressure drop (gas velocity min 5m/s).



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