Basics of Refrigeration

Live-Online Training, BITZER Kühlmaschinenbau GmbH

Course Schedule - Calendar week 06/2023

Training leadership:	**Rouven Otto, M. Sc., TWK**

Monday, 05.02.

09:00 subseq.	**R. Otto**	Welcome, general remarks BITZER Kühlmaschinenbau and TWK Basics of thermodynamics *(temperature, pressure, enthalpy, vapour pressure curve, steam table, density)*
10:00	*Break*	
10:10	**R. Otto**	Basics of thermodynamics Structure and operational principles of the refrigerant cycle *(evaporation, compression, condensation, expansion, function of the main components, pipes)*
11:00	*Break*	
11:10	**R. Otto**	Structure and operational principles of the refrigerant cycle
12:00	*Lunch break*	
12:40	**R. Otto**	Structure and operational principles of the refrigerant cycle Superheat, subcooling *(Definition, reasons, how to achieve superheat and subcooling, determination in the refrigerant circuit, examples)*
13:40	Coffee break	
13:50	**R. Otto**	Superheat, subcooling
14:50	*Break*	
15:00	**R. Otto**	Superheat, subcooling
16:00	End of first day	

Tuesday, 05.02.

09:00	**R. Otto**	Discussion of homework, open questions
10:00	*Break*	
10:10	**R. Otto**	Expansion device *(capillary tube, thermostatic expansion valve with internal and external pressure compensation, electronic expansion valve)*
11:00	*Break*	
11:10	**R. Otto**	Evaporator *(evaporator capacity, dry and flooded evaporation, evaporator designs, air coolers and liquid coolers)*
12:00	*Lunch break*	
12:40	**R. Otto**	Compressor *(compressor parameters, performance data, compressor application limits, compressor designs, reciprocating, scroll, rolling piston, screw compressors)*
13:40	*Break*	
13:50	**R. Otto**	Compressor Condenser *(condenser sections, desuperheating, condensing, subcooling, condenser designs, air- and water-cooled condensers)*
14:50	*Break*	
15:00	**R. Otto**	Condenser
15:30	**R. Otto**	Discussion of open questions
16:00	End of training	