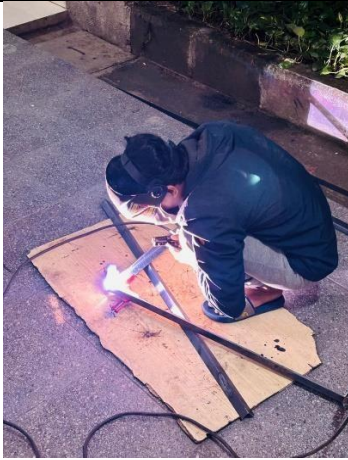


LAMPIRAN



Perakitan alat uji



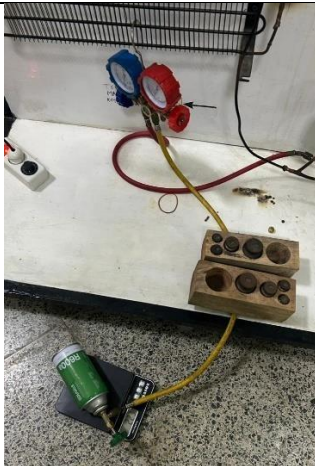
Proses mall pipa



Perakitan pipa



Pemasangan variabel



Pengisian refrigerant



Pengambilan data



Foto hasil akhir

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Saturated Pressure Table

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temperature [°C]	pressure [bar]	density [kg/m³]		enthalpy [kJ/kg]		entropy [J/kg·K]	
		liquid	vapour	liquid	vapour	liquid	vapour
-30,0	0,466	613,61	1,373	133,68	514,40	0,7437	2,3095
-29,0	0,488	612,55	1,433	135,82	515,71	0,7525	2,3084
-28,0	0,511	611,48	1,495	137,97	517,03	0,7612	2,3075
-27,0	0,535	610,42	1,559	140,12	518,35	0,7700	2,3065
-26,0	0,559	609,35	1,625	142,27	519,67	0,7787	2,3057
-25,0	0,584	608,27	1,693	144,43	520,99	0,7874	2,3048
-24,0	0,610	607,20	1,764	146,60	522,31	0,7961	2,3040
-23,0	0,638	606,12	1,836	148,77	523,63	0,8047	2,3033
-22,0	0,666	605,04	1,912	150,94	524,95	0,8134	2,3026
-21,0	0,695	603,96	1,989	153,12	526,28	0,8220	2,3019
-20,0	0,725	602,88	2,069	155,30	527,61	0,8306	2,3013
-19,0	0,756	601,79	2,151	157,49	528,93	0,8393	2,3008
-18,0	0,788	600,70	2,236	159,68	530,26	0,8478	2,3003
-17,0	0,821	599,61	2,323	161,88	531,59	0,8564	2,2998
-16,0	0,855	598,51	2,413	164,08	532,92	0,8650	2,2993
-15,0	0,891	597,41	2,506	166,29	534,26	0,8735	2,2989
-14,0	0,927	596,31	2,602	168,50	535,59	0,8820	2,2986
-13,0	0,965	595,21	2,700	170,71	536,92	0,8906	2,2982
-12,0	1,003	594,10	2,801	172,94	538,26	0,8991	2,2980
-11,0	1,043	592,99	2,905	175,16	539,60	0,9075	2,2977
-10,0	1,085	591,88	3,012	177,40	540,93	0,9160	2,2975
-9,0	1,127	590,76	3,122	179,63	542,27	0,9245	2,2973
-8,0	1,171	589,64	3,235	181,87	543,61	0,9329	2,2972
-7,0	1,216	588,52	3,351	184,12	544,95	0,9413	2,2971
-6,0	1,262	587,40	3,470	186,37	546,29	0,9498	2,2970
-5,0	1,310	586,27	3,593	188,63	547,63	0,9582	2,2969
-4,0	1,359	585,14	3,719	190,89	548,97	0,9666	2,2969
-3,0	1,409	584,00	3,848	193,16	550,31	0,9749	2,2970
-2,0	1,461	582,86	3,981	195,44	551,65	0,9833	2,2970
-1,0	1,515	581,72	4,117	197,72	552,99	0,9917	2,2971
0,0	1,570	580,58	4,257	200,00	554,34	1,0000	2,2972
1,0	1,626	579,43	4,400	202,29	555,68	1,0083	2,2974
2,0	1,684	578,28	4,548	204,59	557,02	1,0167	2,2975
3,0	1,743	577,12	4,699	206,89	558,37	1,0250	2,2978
4,0	1,805	575,96	4,853	209,19	559,71	1,0333	2,2980
5,0	1,867	574,80	5,012	211,50	561,06	1,0415	2,2982
6,0	1,932	573,63	5,175	213,82	562,40	1,0498	2,2985
7,0	1,998	572,46	5,342	216,14	563,74	1,0581	2,2989
8,0	2,065	571,28	5,513	218,47	565,09	1,0663	2,2992
9,0	2,135	570,11	5,688	220,81	566,43	1,0746	2,2996
10,0	2,206	568,92	5,867	223,15	567,78	1,0828	2,3000

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Saturated Pressure Table

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temperature [°C]	pressure [bar]	density [kg/m³]		enthalpy [kJ/kg]		entropy [kJ/kg·K]	
		liquid	vapour	liquid	vapour	liquid	vapour
11,0	2,279	567,74	6,051	225,50	569,12	1,0911	2,3004
12,0	2,354	566,55	6,239	227,85	570,47	1,0993	2,3008
13,0	2,431	565,35	6,432	230,21	571,81	1,1075	2,3013
14,0	2,509	564,15	6,629	232,57	573,15	1,1157	2,3018
15,0	2,590	562,95	6,831	234,94	574,50	1,1239	2,3023
16,0	2,672	561,74	7,038	237,32	575,84	1,1320	2,3028
17,0	2,757	560,53	7,249	239,70	577,18	1,1402	2,3034
18,0	2,843	559,31	7,465	242,09	578,52	1,1484	2,3039
19,0	2,932	558,09	7,687	244,48	579,87	1,1565	2,3045
20,0	3,022	556,86	7,913	246,88	581,21	1,1647	2,3051
21,0	3,115	555,63	8,145	249,29	582,55	1,1728	2,3058
22,0	3,210	554,39	8,382	251,70	583,89	1,1810	2,3064
23,0	3,306	553,15	8,625	254,12	585,23	1,1891	2,3071
24,0	3,405	551,90	8,872	256,55	586,56	1,1972	2,3078
25,0	3,507	550,65	9,126	258,98	587,90	1,2053	2,3085
26,0	3,610	549,39	9,385	261,42	589,24	1,2134	2,3092
27,0	3,716	548,13	9,650	263,86	590,57	1,2215	2,3100
28,0	3,824	546,86	9,920	266,32	591,91	1,2296	2,3108
29,0	3,934	545,59	10,20	268,78	593,24	1,2377	2,3115
30,0	4,047	544,31	10,48	271,24	594,57	1,2458	2,3123
31,0	4,162	543,03	10,77	273,71	595,90	1,2538	2,3131
32,0	4,280	541,74	11,06	276,19	597,23	1,2619	2,3140
33,0	4,400	540,44	11,37	278,68	598,56	1,2700	2,3148
34,0	4,523	539,14	11,67	281,17	599,88	1,2780	2,3157
35,0	4,648	537,83	11,99	283,67	601,21	1,2861	2,3165
36,0	4,775	536,51	12,31	286,18	602,53	1,2941	2,3174
37,0	4,906	535,19	12,64	288,69	603,85	1,3022	2,3183
38,0	5,038	533,86	12,97	291,22	605,17	1,3102	2,3192
39,0	5,174	532,53	13,32	293,74	606,49	1,3182	2,3201
40,0	5,312	531,19	13,67	296,28	607,80	1,3263	2,3211
41,0	5,453	529,84	14,02	298,82	609,11	1,3343	2,3220
42,0	5,597	528,48	14,39	301,37	610,43	1,3423	2,3230
43,0	5,743	527,12	14,76	303,93	611,73	1,3503	2,3239
44,0	5,892	525,75	15,14	306,50	613,04	1,3583	2,3249
45,0	6,044	524,37	15,53	309,07	614,34	1,3664	2,3259
46,0	6,199	522,99	15,93	311,65	615,64	1,3744	2,3269
47,0	6,357	521,60	16,33	314,24	616,94	1,3824	2,3279
48,0	6,518	520,20	16,74	316,84	618,24	1,3904	2,3289
49,0	6,682	518,79	17,17	319,45	619,53	1,3984	2,3299
50,0	6,849	517,37	17,60	322,06	620,82	1,4064	2,3309

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Saturated Pressure Table

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temperature [°C]	pressure [bar]	density [kg/m³]		enthalpy [kJ/kg]		entropy [kJ/kg·K]	
		liquid	vapour	liquid	vapour	liquid	vapour
51,0	7,019	515,95	18,04	324,68	622,11	1,4144	2,3319
52,0	7,192	514,51	18,48	327,31	623,39	1,4224	2,3330
53,0	7,368	513,07	18,94	329,95	624,67	1,4304	2,3340
54,0	7,547	511,62	19,41	332,60	625,95	1,4384	2,3351
55,0	7,730	510,16	19,89	335,25	627,22	1,4464	2,3361
56,0	7,916	508,69	20,37	337,91	628,49	1,4543	2,3372
57,0	8,105	507,21	20,87	340,59	629,76	1,4623	2,3382
58,0	8,297	505,72	21,38	343,27	631,02	1,4703	2,3393
59,0	8,493	504,22	21,90	345,96	632,28	1,4783	2,3403
60,0	8,692	502,71	22,43	348,66	633,53	1,4863	2,3414
61,0	8,894	501,19	22,97	351,36	634,78	1,4943	2,3425
62,0	9,100	499,66	23,52	354,08	636,02	1,5023	2,3435
63,0	9,309	498,12	24,08	356,81	637,26	1,5103	2,3446
64,0	9,522	496,56	24,66	359,55	638,49	1,5183	2,3457
65,0	9,739	495,00	25,24	362,29	639,72	1,5263	2,3467
66,0	9,959	493,42	25,84	365,05	640,94	1,5343	2,3478
67,0	10,18	491,83	26,45	367,81	642,15	1,5423	2,3489
68,0	10,41	490,23	27,08	370,59	643,36	1,5503	2,3499
69,0	10,64	488,62	27,72	373,37	644,57	1,5584	2,3510
70,0	10,88	486,99	28,37	376,17	645,77	1,5664	2,3520
71,0	11,11	485,35	29,04	378,98	646,96	1,5744	2,3531
72,0	11,36	483,70	29,72	381,79	648,14	1,5824	2,3541
73,0	11,60	482,03	30,41	384,62	649,31	1,5905	2,3551
74,0	11,85	480,35	31,12	387,46	650,48	1,5985	2,3562
75,0	12,11	478,65	31,85	390,31	651,64	1,6065	2,3572
76,0	12,37	476,94	32,59	393,17	652,79	1,6146	2,3582
77,0	12,63	475,21	33,35	396,04	653,94	1,6227	2,3592
78,0	12,89	473,46	34,12	398,93	655,07	1,6307	2,3602
79,0	13,16	471,70	34,91	401,82	656,20	1,6388	2,3611
80,0	13,44	469,92	35,72	404,73	657,31	1,6469	2,3621
81,0	13,72	468,13	36,55	407,65	658,42	1,6550	2,3630
82,0	14,00	466,31	37,40	410,59	659,51	1,6631	2,3640
83,0	14,29	464,48	38,26	413,53	660,60	1,6712	2,3649
84,0	14,58	462,62	39,15	416,49	661,67	1,6793	2,3658
85,0	14,87	460,75	40,06	419,46	662,73	1,6874	2,3667
86,0	15,17	458,85	40,99	422,45	663,78	1,6956	2,3675
87,0	15,48	456,94	41,94	425,45	664,82	1,7037	2,3684
88,0	15,79	455,00	42,91	428,47	665,85	1,7119	2,3692
89,0	16,10	453,04	43,91	431,49	666,86	1,7201	2,3700
90,0	16,42	451,05	44,93	434,54	667,86	1,7283	2,3708

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Saturated Pressure Table

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temperature [°C]	pressure [bar]	density [kg/m³]		enthalpy [kJ/kg]		entropy [kJ/kg·K]	
		liquid	vapour	liquid	vapour	liquid	vapour
91,0	16,74	449,04	45,97	437,60	668,84	1,7365	2,3715
92,0	17,07	447,00	47,05	440,67	669,81	1,7447	2,3723
93,0	17,40	444,94	48,15	443,77	670,76	1,7530	2,3729
94,0	17,74	442,85	49,27	446,87	671,70	1,7613	2,3736
95,0	18,08	440,73	50,43	450,00	672,62	1,7696	2,3743
96,0	18,43	438,58	51,62	453,14	673,52	1,7779	2,3749
97,0	18,78	436,39	52,84	456,30	674,40	1,7862	2,3754
98,0	19,14	434,18	54,09	459,49	675,27	1,7946	2,3760
99,0	19,50	431,93	55,38	462,68	676,11	1,8029	2,3764
100,0	19,87	429,64	56,70	465,90	676,94	1,8114	2,3769
101,0	20,24	427,31	58,06	469,14	677,74	1,8198	2,3773
102,0	20,61	424,95	59,46	472,41	678,52	1,8283	2,3777
103,0	21,00	422,54	60,90	475,69	679,27	1,8368	2,3780
104,0	21,39	420,09	62,38	479,00	680,00	1,8453	2,3783
105,0	21,78	417,60	63,91	482,33	680,70	1,8539	2,3785
106,0	22,18	415,05	65,49	485,69	681,37	1,8625	2,3786
107,0	22,58	412,45	67,11	489,07	682,01	1,8711	2,3787
108,0	22,99	409,80	68,80	492,48	682,62	1,8798	2,3787
109,0	23,41	407,09	70,53	495,92	683,20	1,8886	2,3787
110,0	23,83	404,32	72,33	499,39	683,74	1,8974	2,3785
111,0	24,25	401,48	74,19	502,89	684,24	1,9062	2,3783
112,0	24,69	398,57	76,12	506,43	684,70	1,9152	2,3780
113,0	25,12	395,58	78,13	510,00	685,12	1,9241	2,3776
114,0	25,57	392,51	80,21	513,61	685,49	1,9332	2,3771
115,0	26,02	389,36	82,37	517,26	685,81	1,9423	2,3765
116,0	26,48	386,11	84,63	520,96	686,07	1,9515	2,3758
117,0	26,94	382,75	86,99	524,70	686,27	1,9608	2,3749
118,0	27,41	379,28	89,45	528,50	686,41	1,9702	2,3739
119,0	27,88	375,69	92,03	532,35	686,47	1,9797	2,3727
120,0	28,37	371,96	94,74	536,26	686,46	1,9893	2,3714
121,0	28,86	368,08	97,60	540,24	686,36	1,9991	2,3698
122,0	29,35	364,03	100,6	544,29	686,15	2,0090	2,3681
123,0	29,85	359,78	103,8	548,43	685,84	2,0192	2,3660
124,0	30,36	355,31	107,2	552,66	685,40	2,0295	2,3637
125,0	30,88	350,59	110,9	557,01	684,81	2,0400	2,3610
126,0	31,40	345,57	114,8	561,47	684,06	2,0509	2,3580
127,0	31,94	340,20	119,1	566,09	683,09	2,0620	2,3544
128,0	32,48	334,39	123,7	570,90	681,88	2,0736	2,3503
129,0	33,02	328,05	128,9	575,93	680,36	2,0857	2,3454
130,0	33,58	320,99	134,7	581,25	678,44	2,0985	2,3396

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Saturated Pressure Table

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temperature [°C]	pressure [bar]	density [kg/m³]		enthalpy [kJ/kg]		entropy [kJ/kg·K]	
		liquid	vapour	liquid	vapour	liquid	vapour
131,0	34,14	312,97	141,5	586,99	675,96	2,1123	2,3324
132,0	34,72	303,49	149,6	593,34	672,64	2,1275	2,3233
133,0	35,30	291,48	160,2	600,76	667,88	2,1453	2,3106
134,0	35,89	273,30	176,7	610,83	659,61	2,1696	2,2894
130,0	33,58	320,99	134,7	581,25	678,44	2,0985	2,3396

Calculated by Refprop version 10.0

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