

TMX



XLS



XBS



XD



TMXL



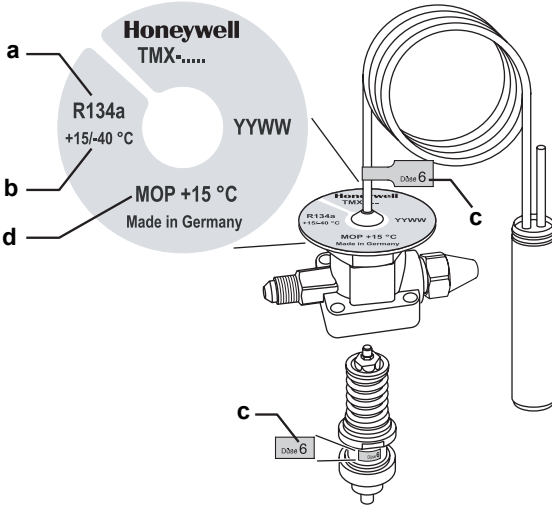
TMXB



PS ⇒ 
 P_{test} ⇒ 

TS = max. 140°C (gas charge - MOP)
 max. 70°C (liquid charge - F)
 $\Delta t_{oh, stat} \approx 3.5 \text{ K}$

§ EN378

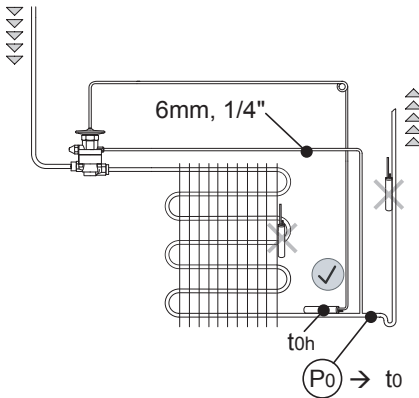
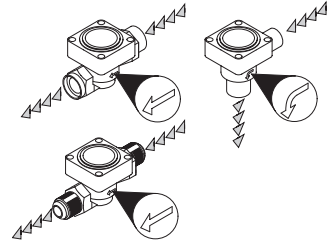
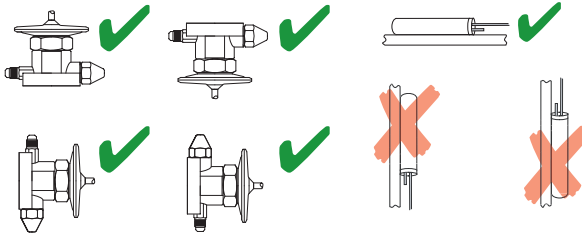


a) R22, R23, R124, R134a, R227, R236fa, R401A, R404A, R407C, R410A, R422D, R507A, R508B, ISC89

b) $t_{0, \max} / t_{0, \min}$

c) 4.5...10 ⇒

d) MOP: Gas Charge
F: Liquid Charge

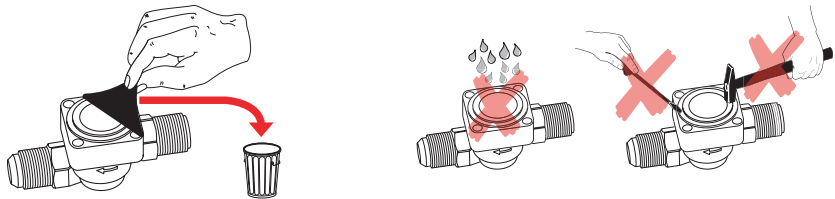


$$\Delta t_{0h} = t_{0h} - t_0$$

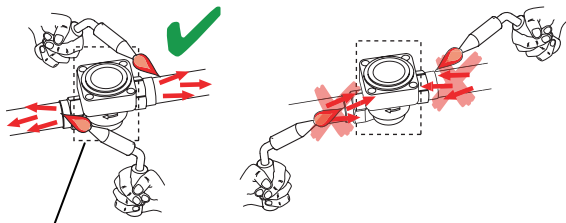
$\Delta t_{0h} \neq \text{ok} \Rightarrow$



1

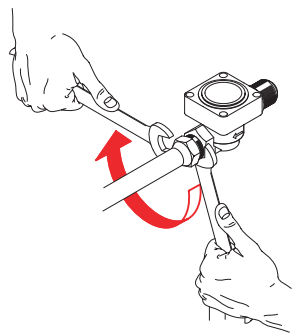


2 TMXL

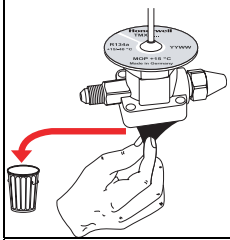


max. 100°C

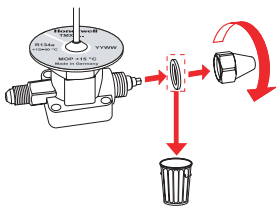
2 TMXB



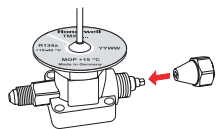
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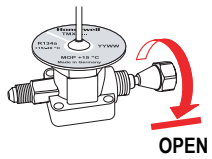
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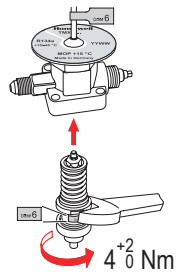
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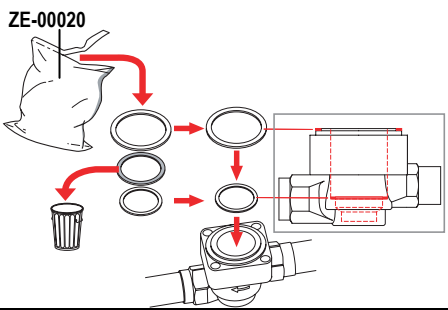
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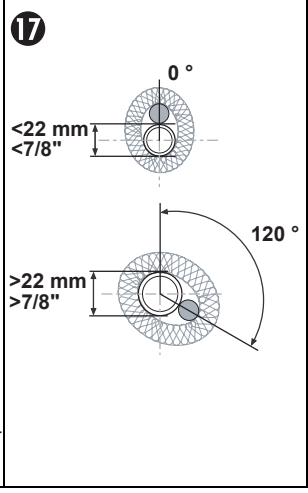
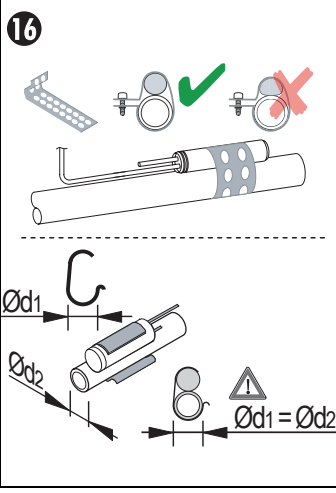
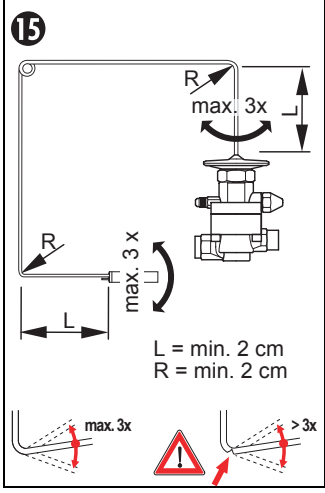
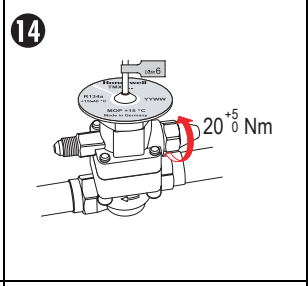
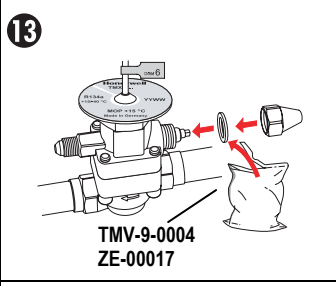
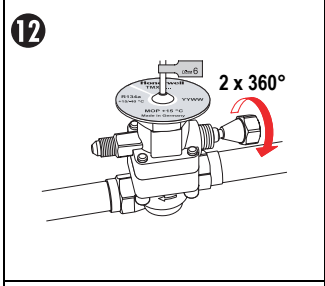
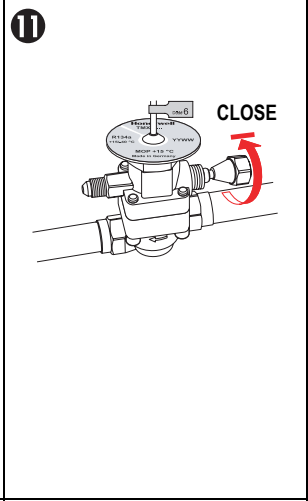
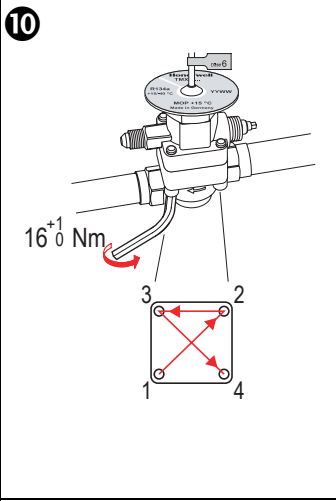
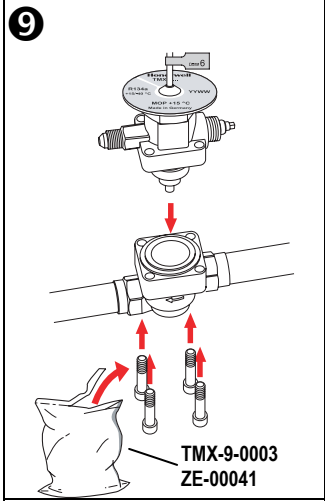


7



8

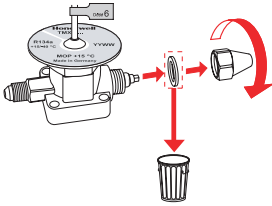




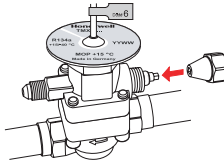


$\Delta t_{oh} \neq ok$

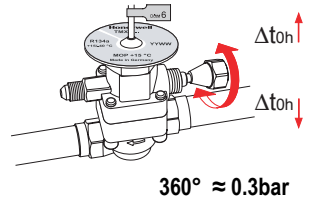
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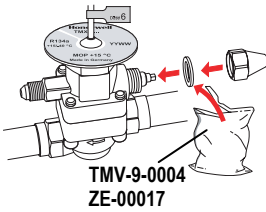
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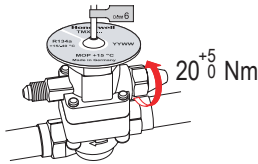
3



4



5



$\Delta t_{oh} > 0$



$\Delta t_{oh} \uparrow \Rightarrow MOP \downarrow$

$\Delta t_{oh} \downarrow \Rightarrow MOP \uparrow$



C	Q ₀ [kW]												
	R22	R23	R124	R134a	R227	R236fa	R401A	R404A	R407C	R410A	R507	R508B	ISC89
4.5	16.3	18.6	9.4	11.1	6.6	6.0	13.0	12.3	16.3	20.5	12.3	12.2	5.6
4.75	21.5	24.5	12.4	15.0	8.7	8.0	17.1	16.2	21.5	27.0	16.2	16.1	7.4
5	27.9	31.9	16.1	18.8	11.3	10.3	22.2	21.0	27.9	35.1	21.0	20.9	9.6
6	40.7	46.5	23.5	26.0	16.4	15.1	32.4	30.6	40.7	51.2	30.6	30.5	14.0
7	52.3	59.7	30.2	33.3	21.1	19.4	41.6	39.3	52.3	65.8	39.3	39.2	18.0
8	61.6	70.4	35.6	40.8	24.9	22.8	49.0	46.3	61.6	77.5	46.3	46.2	21.2
10	72.1	82.3	41.7	48.0	29.1	26.7	57.3	54.2	72.1	90.7	54.2	54.1	24.8

t ₀	-10 °C	-70 °C	+10 °C	-10 °C	+10 °C	+10 °C	-10 °C	-10 °C	-10 °C	-10 °C	-10 °C	-70 °C	-40 °C
t _c	+25 °C	-30 °C	+50 °C	+25 °C	+50 °C	+50 °C	+25 °C	+25 °C	+25 °C	+25 °C	+25 °C	-30 °C	+25 °C
Δt _{cu}	1 K	1 K	1 K	1 K	1 K	1 K	1 K	1 K	1 K	1 K	1 K	1 K	1 K

a	b	d	PS [bar(a)]	P _{test} [bar(a)]
R22	+30 °C to -45 °C	F	36	39.6
	+15 °C to -45 °C	MOP +15 °C	36	39.6
	+10 °C to -45 °C	MOP +10 °C	36	39.6
	±0 °C to -45 °C	MOP ±0 °C	29	31.9
	-10 °C to -45 °C	MOP -10 °C	29	31.9
	-18 °C to -45 °C	MOP -18 °C	29	31.9
R23	-40 °C to -80 °C	MOP -40 °C	29	31.9
	-55 °C to -80 °C	MOP -55 °C	29	31.9
R124	+50 °C to -10 °C	F	29	31.9
R134a	+20 °C to -40 °C	F	34	37.4
	+25 °C to -40 °C	MOP +25 °C	34	37.4
	+20 °C to -40 °C	MOP +20 °C	34	37.4
	+15 °C to -40 °C	MOP +15 °C	34	37.4
	+10 °C to -40 °C	MOP +10 °C	34	37.4
	±0 °C to -40 °C	MOP ±0 °C	29	31.9
R227	+40 °C to -10 °C	F	29	31.9
R236fa	+30 °C to -10 °C	F	29	31.9
R401A	+10 °C to -40 °C	MOP +10 °C	34	37.4
R404A	+10 °C to -50 °C	F	36	39.6
	+10 °C to -50 °C	MOP +10 °C	36	39.6

a	b	d	PS [bar(a)]	P _{test} [bar(a)]
R404A	±0 °C to -50 °C	MOP ±0 °C	36	39.6
	-10 °C to -50 °C	MOP -10 °C	34	37.4
	-18 °C to -50 °C	MOP -18 °C	34	37.4
	-30 °C to -50 °C	MOP -30 °C	29	31.9
	-30 °C to -50 °C	MOP -30 °C	29	31.9
R407C	+30 °C to -30 °C	F	36	39.6
	+15 °C to -30 °C	MOP +15 °C	36	39.6
	+10 °C to -30 °C	MOP +10 °C	36	39.6
	±0 °C to -30 °C	MOP ±0 °C	29	31.9
R410A	+15 °C to -50 °C	MOP +15 °C	40	44.0
	-10 °C to -50 °C	MOP -10 °C	29	31.9
	-15 °C to -50 °C	MOP -15 °C	29	31.9
	-20 °C to -50 °C	MOP -20 °C	29	31.9
	-40 °C to -70 °C	MOP -40 °C	29	31.9
R422D	+15 °C to -45 °C	MOP +15 °C	36	39.6
	-18 °C to -45 °C	MOP -18 °C	29	31.9
R507A	+10 °C to -50 °C	MOP +10 °C	36	39.6
	±0 °C to -50 °C	MOP ±0 °C	36	39.6
	-18 °C to -50 °C	MOP -18 °C	34	37.4
R508B	-55 °C to -100 °C	MOP -55 °C	29	31.9
ISC 89	-40 °C to -70 °C	MOP -40 °C	29	31.9

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