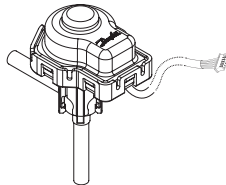
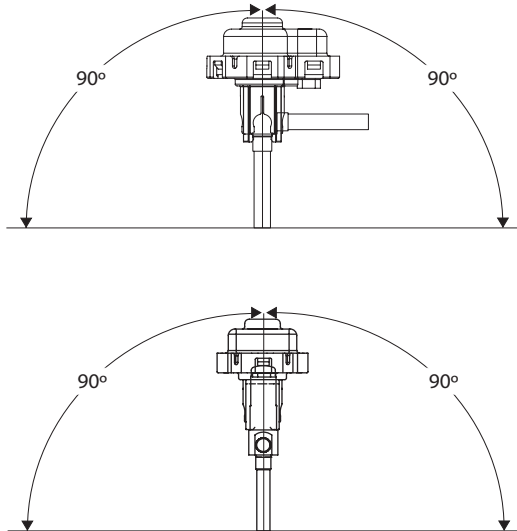
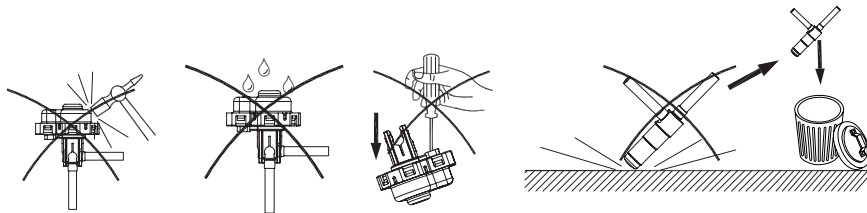


## Installation guide

# Electric expansion valve Type ETS 5M

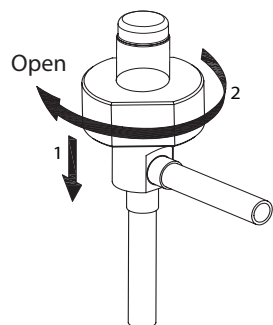
034R9834

034R9834

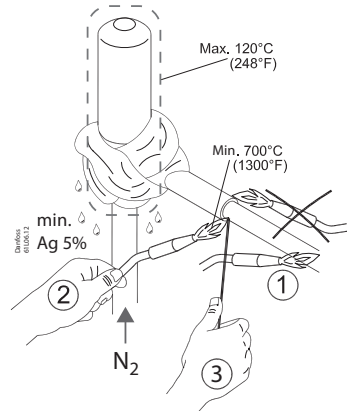
<b>Refrigerants</b> For a complete list of approved refrigerants, please visit <a href="http://store.danfoss.com/">http://store.danfoss.com/</a> and search for individual code numbers, where refrigerants are listed as part of product specifications.	<b>Max. working pressure</b> PS / MWP: 4.9 MPa / 49 barg / 710 psig			
	<b>Refrigerant temperature</b> $t_{Min.} : -30\text{ }^{\circ}\text{C} / -22\text{ }^{\circ}\text{F}$ , $t_{Max.} : 70\text{ }^{\circ}\text{C} / 158\text{ }^{\circ}\text{F}$			
<b>⚠ Safety notes for flammable refrigerants (R454C, R454A, R1234ze, R290, R32, R452B, R454B, R455A, R1234yf)</b> <ul style="list-style-type: none"><li>- This product is validated in accordance to ATEX, EN 378, ISO 5149, ASHRAE 15, IEC 60335-2-x or equivalent standards.</li><li>- Ignition risk is evaluated in accordance to ISO 5149 and IEC 60335.</li><li>- See safety note below.</li></ul>	<b>Allowable ambient temperature</b> $-30\text{ }^{\circ}\text{C} / -22\text{ }^{\circ}\text{F} - 70\text{ }^{\circ}\text{C} / 158\text{ }^{\circ}\text{F}$		<b>Phase current</b> 240 mA	
	<b>Stepper motor type</b> Unipolar			<b>Resistance</b> 50 $\Omega$
	<b>Nominal voltage</b> 12 V DC			
<b>⚠ Safety notes:</b> <ul style="list-style-type: none"><li>- The product can be applied on systems with R454C, R454A, R1234ze, R290, R32, R452B, R454B, R455A, R1234yf as the working fluid.</li><li>- For countries where safety standards are not an indispensable part of the safety system Danfoss recommend the installer to get a third party approval of the system containing flammable refrigerant.</li><li>- Note, please follow specific selection criteria stated in the datasheet for these particular refrigerants.</li><li>- The valve must only be used in closed circuit refrigeration system, where no oxygen is present acc. EN 378, ISO 5149 ASHRAE 15 or IEC 60335-2-x or equivalent standards.</li></ul>	<b>1 Mounting Angle</b> 			
	<b>⚠ Warning!</b>  Do not connect directly to AC / DC power source. Connect valve to appropriate controller / driver only. Do not operate valve while assembling or disassembling.			

## 2 Open position

Always open valve to overdrive before brazing using manual coil.  
ETS 5M manual coil:  
Code no. 034G3803



## 3 Brazing option 1

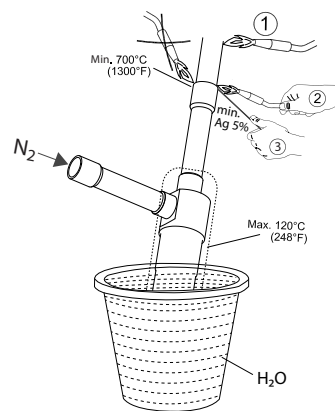


N<sub>2</sub> gas from opposite side of soldering point.



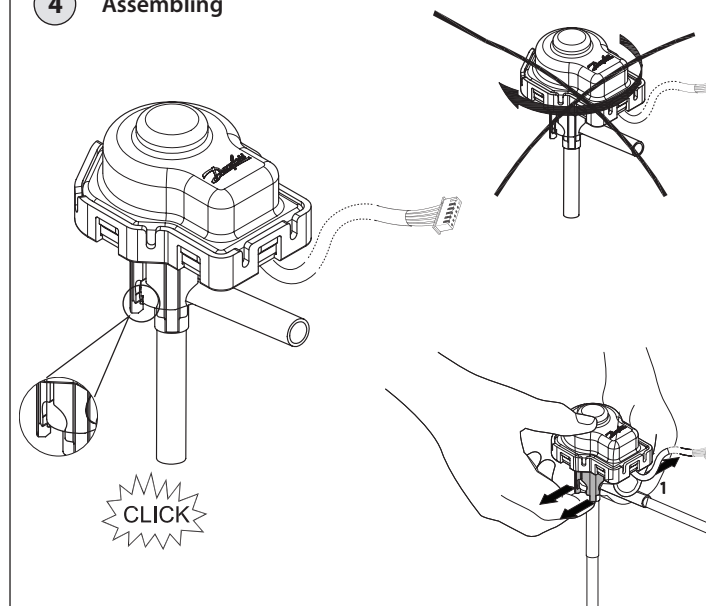
Max. 30sec

## Brazing option 2



Max. 15sec

## 4 Assembling



## 5 Connection

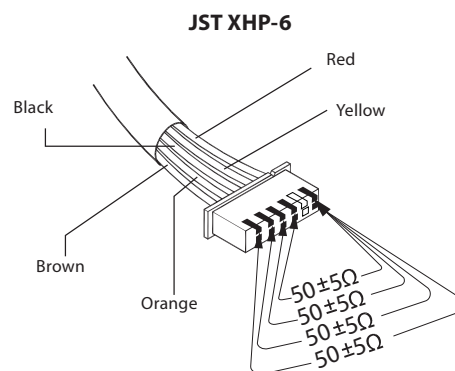
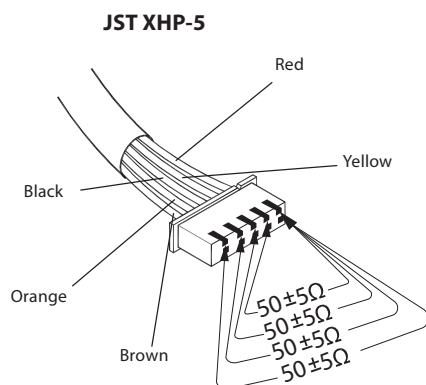
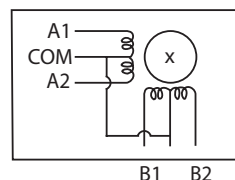
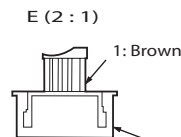


Table:1 Stepper motor open and close sequence

	Yellow (A1)	Orange (A2)	Brown (B1)	Black (B2)	Red (Com)	
Valve Opening ↓ ↓	ON	OFF	OFF	OFF	0	Valve Closing ↑ ↑
	ON	OFF	ON	OFF	0	
	OFF	OFF	ON	OFF	0	
	OFF	ON	ON	OFF	0	
	OFF	ON	OFF	OFF	0	
	OFF	ON	OFF	ON	0	
	OFF	OFF	OFF	ON	0	
	ON	OFF	OFF	ON	0	



B1 B2



### Plug Coding

JST XHP-6: 1 2 3 4 5 6  
JST XHP-5: 1 2 3 4 5

### Color coding JST 5/6

5/6: RED - Common  
-/5: No wire -  
4/4: Yellow - Coil A1  
3/3: Black - Coil B2  
2/2: Orange - Coil A2  
1/1: Brown - Coil B1