ENGINEERING
TOMORROW

Revolutionary **ETS Colibri®** valves Engineered to give you maximum **flexibility** and **dependability**

ETS Colibri® brings to the market one of a kind, uniquely designed electric expansion valve.

Innovative Design

Compact, hermetic and in-line valve design driven by stepper motor technology.

colibri.danfoss.com

3x Faster
ETS Colibri® can be driven fully closed in less than 4 seconds

4x Lighter
Thanks to its unique compact design.

Re-engineered for the next level

ETS Colibri® is the most innovative and uniquely designed electric expansion valve in the market.

Danfoss has a proud heritage of over 30 years in designing and producing electric expansion valves. During this time, we've dedicated all our experience to perfecting our products – giving you the most reliable and innovative valves in the market.

Today, ETS Colibri® is a result of our dedication and passion for engineering, built around uncompromised quality and performance. Its focus on energy efficiency ensues from placing great attention to our customers' needs.

ETS 12C – ETS 24C

ETS 25C – ETS 50C – ETS 100C

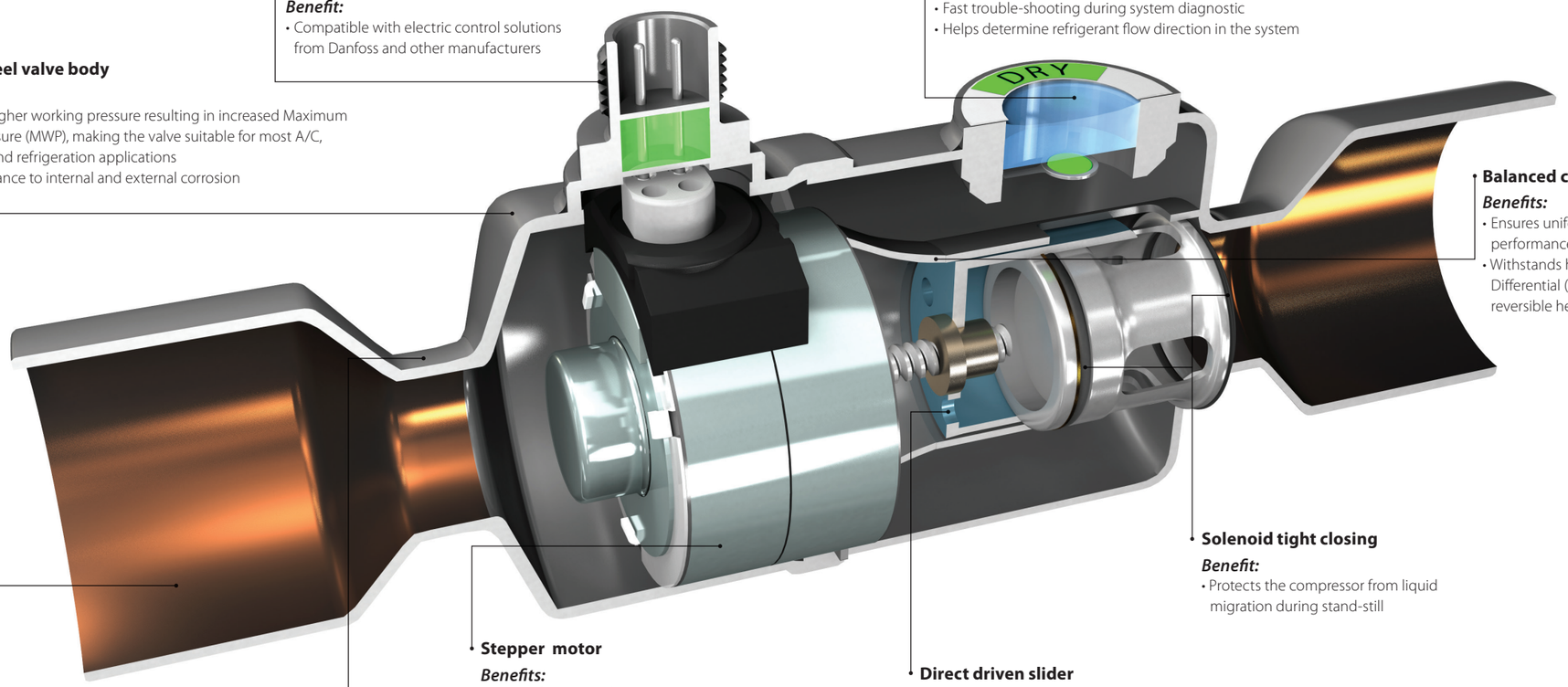
Compact, hermetic and in-line design

Compact design: Easily fits anywhere in the system
Lightweight body: No extra support necessary in your system to avoid tubing cracks caused by vibration
In-line design: Flexibility to install the valve in almost any plane
Hermetic: Uncompromised integrity of internal components and fewer leak points in the system result in reduced refrigerant loss potential and fewer service calls

M12 electrical connector
Benefit:
- Compatible with electric control solutions from Danfoss and other manufacturers

Sight glass with moisture indicator
Benefits:
- Easy confirmation of proper valve operation
- Fast trouble-shooting during system diagnostic
- Helps determine refrigerant flow direction in the system

Stainless steel valve body
Benefits:
- Withstands higher working pressure resulting in increased Maximum Working Pressure (MWP), making the valve suitable for most A/C, heat pump, and refrigeration applications
- Ensures resistance to internal and external corrosion



Balanced cage assembly
Benefits:
- Ensures uniform and repeatable bi-flow performance capabilities
- Withstands higher Maximum Working Pressure Differential (MOPD) required for applications like reversible heat pumps using R410A

Solenoid tight closing
Benefit:
- Protects the compressor from liquid migration during stand-still

Stepper motor
Benefits:
- Precise flow control
- Design simplicity: fewer opportunities for failures to occur resulting in higher reliability

Direct driven slider
Benefit:
- Ensures precise control of superheat in all operating conditions

Bi-metal connectors (stainless steel outside with copper inside)
Benefits:
- Same brazing alloy as copper to copper, just much faster installation time
- Eliminates the need to wet wrap the valve
- Significantly reduces the risk of valve damage due to overheating during installation

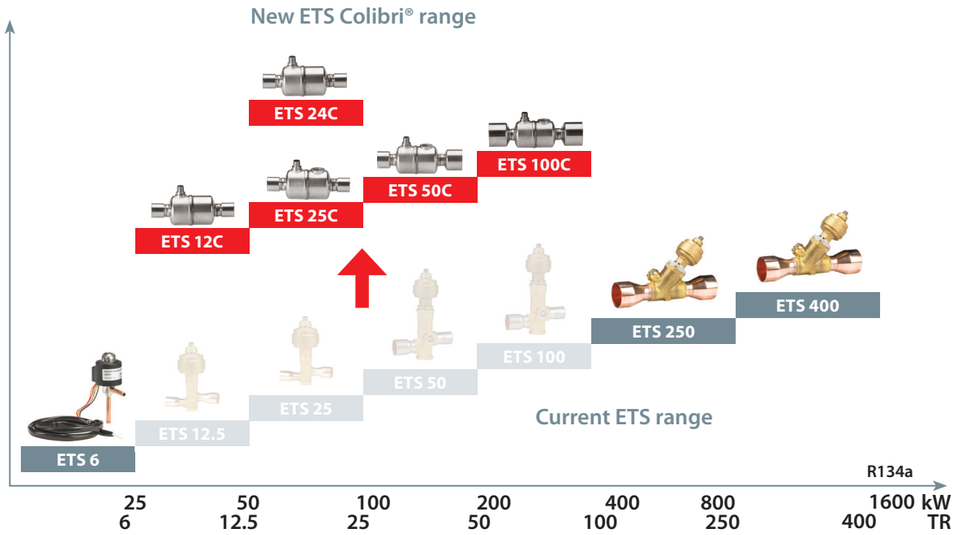
Laser welded joints
Benefit:
- 100% leak tested – no risk of external leakage

ETS Colibri® has been designed for precise liquid injection into evaporators for air-conditioning, heat pump and refrigeration applications. In addition, Colibri® valves are approved for oil-free operation, e.g. in systems with Danfoss Turbocor® oil-free compressors.

Thanks to its unique design, the Colibri® range can also be used as suction modulating valves in applications such as transportation and food retail.

The benefits of its linear opening and closing characteristics:
- Simpler control scheme allows for faster software development
- Faster reaction time at start-up leads to a low chance of starving the compressor

Electric expansion valves range



Technical data

Compatible refrigerants	**R410A, R407C, R404A, R507, R134a, R290 (for other refrigerants, contact your Danfoss representative)**
Refrigerant temperature range	–40 °C to 70 °C (–40 °F to 158 °F)
MOPD	40 bar (588 psi)
Max. working pressure (PS/MWP)	50 bar (735 psig)
Stepper motor type	Bi-polar - permanent magnet
Step mode	2 phase full step, micro-stepping (recommended)
Max. total power	7.2 W
Step rate	160 steps/sec. recommended (current control)
Total steps	600
Full travel time	3.75 sec. at recommended step rate

50 bar
working pressure ensures compatibility with all of the most widely used refrigerants.

ENGINEERING
TOMORROW

ETS Colibri®.
Innovative electric expansion valves for **best in class** air-conditioning, heat pump, and refrigeration systems.

Increased energy efficiency with uncompromised quality.