

## The smarter, faster route to **Installation and service**

The ICF Valve Station - member of the Flexline™ family. The unique ICF Flexline™ valve station allows you to substitute your traditional valve train with just one valve and two welds. ICF Flexline™ offers timesaving efficiency, advanced flexibility and clever simplicity from the engineering and design stages to the routine serving of your system.

# 80%

Less installation time  
with just two welds  
for fast and efficient  
installation.

# ICF Flexline™ - Complete Valve Station

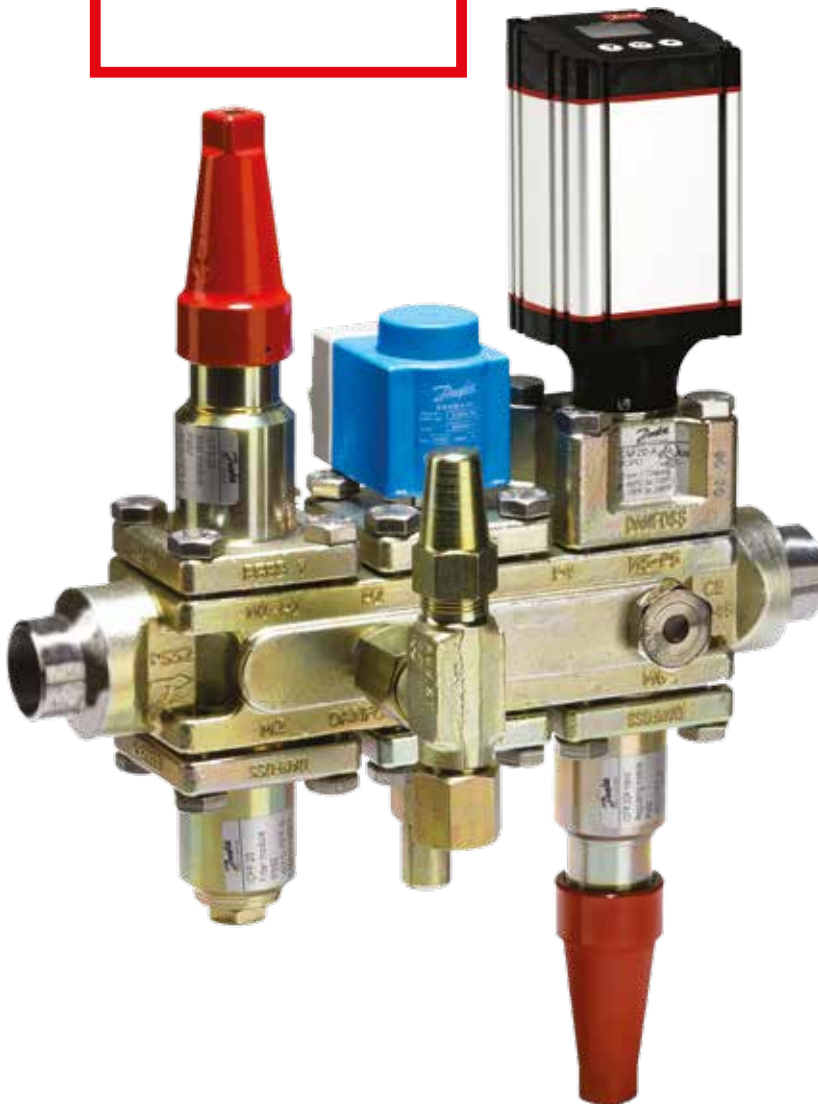
*Advanced flexibility and timesaving efficiency are characteristics of the ICF Flexline™ valve station.*

The multi-ported control solution offers savings in several areas by substituting a string of valves with just one valve station. Consisting of a valve housing and a maximum of four or six function modules the valve station is a true plug and play solution.

90% of all applications are covered in just four basic configurations and allows for more than 50 custom configurations. The ICF Flexline™ valve station is designed for both low- and high-pressure refrigerants and can be used in liquid lines, compressor injection lines and hot gas lines.

# Great

flexibility with  
MODULAR  
valve concept



# Simplify the design of your system and **save time and costs**

- Real value comes from time and cost savings

In your industry, like everyone else's, time is money. With ICF Flexline™ valve station, it's obvious to see the cost advantages of Danfoss' modular valve station. You'll not just save time on installation and servicing while taking control of your costs, you'll free up your most vital resource, your people, to perform other more valuable tasks. Below we have listed some of the features that give you benefits when working with ICF Flexline™.

## Engineering

- One code number – several valve functions
- Easy selection with Danfoss Coolselector®
- Easy system design with the free 3D symbol drawings from Danfoss
- The ICF Flexline™ valve stations are suitable for all common refrigerants including CO<sub>2</sub>

## Construction

- Just two welds for fast and efficient installation
- Direct weld flange free connections
- Fast welding – disassembly not necessary
- The need for insulation reduced due to the compact design of the ICF Flexline™ valve solution

## Service

- Quick and efficient evacuation saves time and money
- The unique design makes it quick and easy to access the individual function modules during service
- Low internal volume – minimal refrigerant loss during service
- Rust inhibiting protection securing a long product life time

# 50%

**Less service time.  
Quick and efficient  
pump down saves  
time and money.**

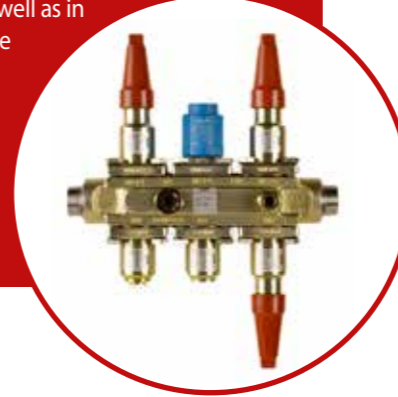


# One stop shop

Whatever your industry, Danfoss Industrial Refrigeration can tailor an industrial refrigeration solution that works best for you. We deliver customer-driven innovations based on deep industrial refrigeration industry knowledge. Apart from the ICF valve stations Danfoss is your one stop shop for all of your industrial refrigeration requirements including industrial automation components, stainless steel valves and spare parts.

## ICF 20-6 & ICF 20-4

The ICF control solution incorporates several functions in one control body. An ICF control solution can substitute a series of conventional mechanical, electro-mechanical and electronically operated valves, thereby providing a number of advantages in the design phase of a refrigeration plant as well as in the installation, service and maintenance. ICF control solutions consist of a valve housing plus a maximum of four or six function modules.



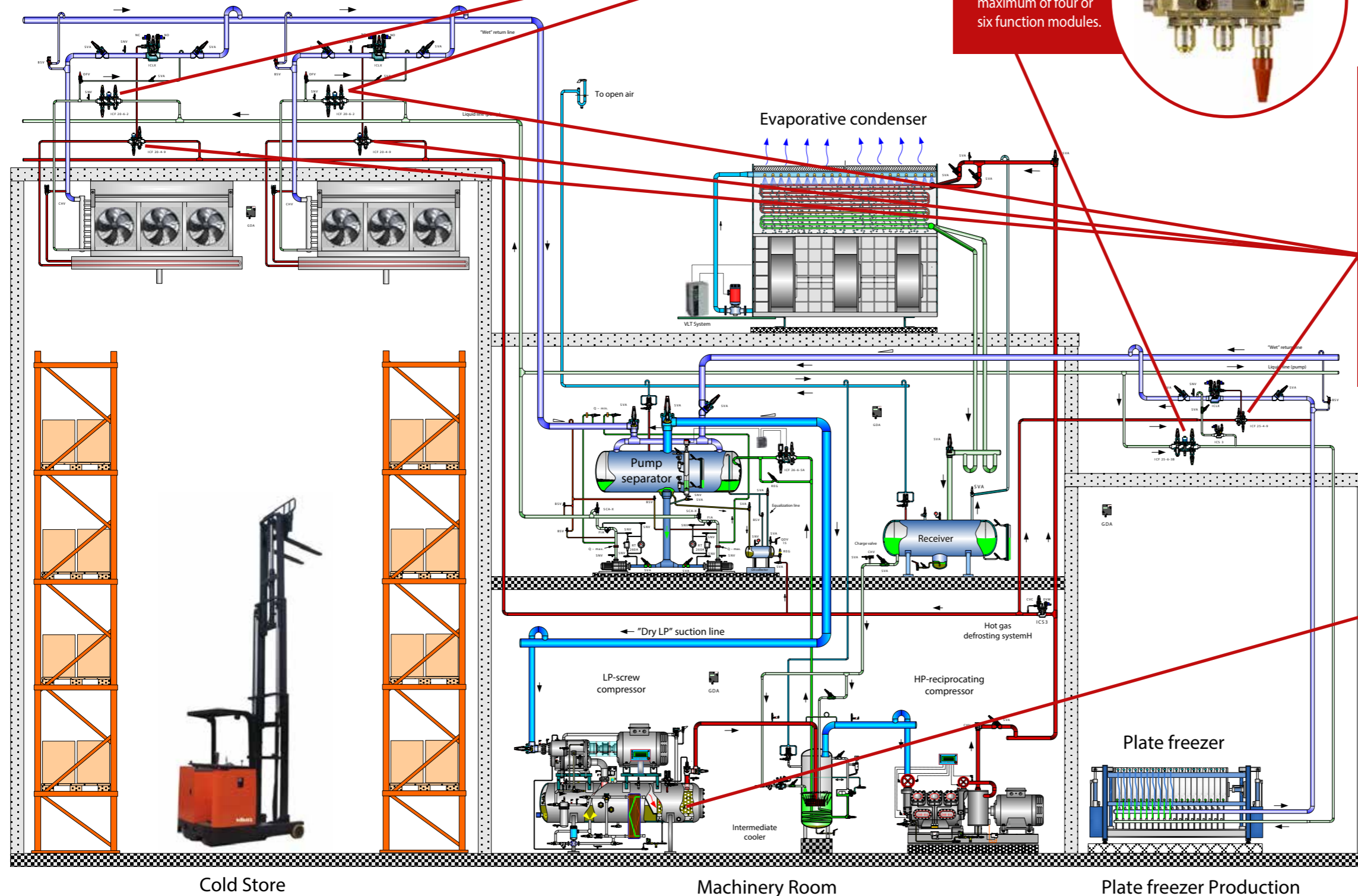
## Save Valuable Time with the Unique ICF Control Solution

With the unique ICF Control Solution you save valuable time in the selection and ordering phase, the installation phase and during service. Instead of having up to twelve weldings on a conventional valve train, the ICF Control Solution cuts it down to only two welds and provides you with better functionality with lower pressure drop.



## ICF 15-4

ICF 15-4 It's small, it's modular, and it gives you all the same benefits as the larger ICF Flexline™ valve stations. Freedom in the design and layout of your installation, less space and therefore less need for insulation, and the possibility of using high pressure refrigerants.



Cold Store

Machinery Room

Plate freezer Production

# ICF Your Modular Valve Train Solution

ICF control solutions consist of a valve housing plus a maximum of four or six function modules. Thanks to the modular concept you can tailor the functions you need for your application into the one valve, saving space and welding time. By shifting resources to more value adding activities elsewhere in the construction process. The result? You will shorten installation and start up time significantly.

With the combination of different sizes and four or six function modules, you will be guaranteed with a custom- designed solution for every refrigeration project.

## Extending the ICF Flexline™ portfolio

The new, smaller ICF 15-4 version joins the well-known ICF Flexline™ valve station range, which has more than 25,000 installations worldwide. The ICF 15-4 is available with connection sizes of DIN 15 and DIN 20 and with different connection types.

With built-in stop valve and strainer and two flexible valve ports, the ICF 15-4 gives you the option of six different configurations, all in one easy-to-install valve station and without the drawbacks of increased pressure drop.

### One valve station for all refrigeration systems

The ICF 15-4 valve station is designed for both low and high pressure refrigerants and can be used in liquid lines, compressor injection lines and hot gas lines. It is ideal for use with CO<sub>2</sub>, NH<sub>3</sub> and HFC/HCFC refrigerants. It allows for a high working pressure of 52 bar (754 PSI) as well as high temperatures.

### Installation made easy

With its welded connections and compact, space saving dimensions, the ICF 15-4 valve station is easy and safe to install and start up. The modular, noflange concept means that servicing is fast and upgrades or replacements are really simple to handle, decreasing the overall lifetime cost of your installation.

### Shared spare parts program

Danfoss has engineered the ICF 15-4 to share spare parts with the rest of the Flexline™ program. For you this means direct and measurable benefits in the amount of spare parts you need to stock – and fewer parts mean better economy.

## More information?

Please visit our website: [www.danfoss.com/ICF](http://www.danfoss.com/ICF) for detailed technical literature including product manuals.



ICF 15-4



ICF 20-4



ICF 20-6



ICF 25-4



ICF 25-6

# Well known, **tried and tested** Danfoss components

Every module in both standard and custom ICF Flexline™ configurations is a tried and tested Danfoss component. You'll be familiar with their functions and confident in their performance – in fact, it is very likely that you have been using the same Danfoss line components in your systems for years.

At Danfoss we believe strongly in innovation – but only when it directly benefits our customers. We just think of smarter ways of helping our customers fulfill their daily challenges of producing higher quality solutions at ever more competitive costs.

That's precisely why we developed the ICF Flexline™ valve train.

#### ICF Flexline™ fact box:

Application:	Industrial Refrigeration
Refrigerants:	All common non-flammable refrigerants including R717, R744 (CO <sub>2</sub> ) and non-corrosive gases/liquids dependent on sealing material compatibility.
Specification: pressure	Temperature range –60°C to +120°C (-76/+248°F) and a maximum working pressure of 52 bar g (754 PSI).
Dimensions:	DN 15 to DN 40
Housing:	A maximum of four or six function modules
Function modules:	Stop valve module, Manual regulating valve module, Filter module, Solenoid valve module, Electronic expansion valve module, Manual opening module, Check valve module, Stop/check valve module, Motor valve module, External welding connection module or Blank top cover.
Optional side ports:	Sight glass, Temperature or pressure sensor, Pressure gauge, Side exit for drain or bypass.





# Danfoss Industrial Refrigeration

## A world of expertise at the click of a button

Turn to Danfoss if you want to combine quality components with expert knowhow and support. Try out these free tools, designed to make your work much easier.



### Coolselector® 2 – New calculation software for Industrial Refrigeration

Coolselector®2 is your brand new Danfoss calculation and selection software designed to make selection processes for all industrial refrigeration projects easier and less time consuming. Coolselector® 2 is a unique calculation and support tool for contractors and system designers, offering complete pressure drop calculations, analysis of pipe and valve design and the ability to generate performance reports. It replaces the well-known DIRcalc™ software and offers several new functionalities.



### Danfoss IR app

The free IR App gives you a spare parts tool, which makes it easy for you to find the spare part number for a given Danfoss industrial refrigeration valve. It also presents all the products and benefits of the SVL Flexline™ range – with a fun game thrown in as well.



### Download 3D CAD symbols

From our online product catalogue on our website, you can download 3D CAD symbols and illustrations to help you when designing refrigeration plants.



### IR application tool

With this interactive PowerPoint slideshow, you can explore all the details of a two-stage ammonia plant. You will find detailed cut-away drawings and information on the valves in the installation along with links to videos, literature and product animations.



### Application handbook

The Application Handbook is designed to help you every step of the way when working with industrial refrigeration systems. Among many other things, it contains examples of how to select control methods for different refrigeration systems, their design and which components to choose.

Visit [www.danfoss.com/IR-tools](http://www.danfoss.com/IR-tools) and find all the tools you need.