



INSTRUMENTATION

Danfoss RT Series

BRAND

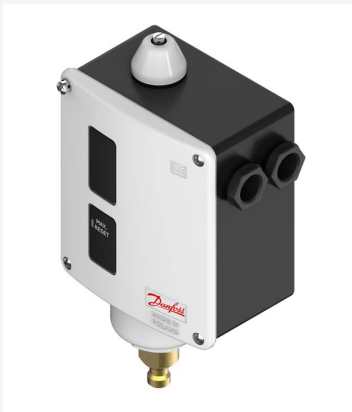
Danfoss

SKU

RC_PROD_001

CATEGORY

Instrumentation



OVERVIEW

The Danfoss RT Series is one of the most trusted lines of electromechanical pressure and temperature controls in industrial refrigeration. The series comprises pressure switches, differential pressure switches, pressure switches with neutral zone regulation, and thermostats with room, duct, and capillary tube sensors — all engineered for demanding industrial and marine environments, including dedicated safety pressure switches for steam boiler plants. RT units incorporate a single-pole changeover (SPDT) switch whose contact position depends on the pressure at the connection port (or sensor temperature, for thermostat variants) relative to the set value. Set cut-out pressure and differential remain constant regardless of ambient temperature changes around the control housing, within the permissible ambient range.

KEY FEATURES

Simple, robust electromechanical design with high accuracy and repeatability

Long operational lifetime proven over decades in industrial service

SPDT snap-action changeover contacts resistant to vibration-induced contact bounce

Safety Integrity Level SIL 2 according to IEC 61508

SPECIFICATIONS

PARAMETER	VALUE
CONTACT FUNCTION	SPDT (single-pole changeover)
REGULATION RANGE (PRESSURE VARIANTS)	Approx. -0.8 to 28 bar depending on model (e.g., RT1A: -0.8–5 bar; RT116: 1–10 bar; RT5: 4–17 bar; RT6S: 10–28 bar)
MAX. WORKING PRESSURE	Up to 22 bar (34 bar for select high-pressure variants)



VALVES & REGULATORS

Danfoss ICLX Series

BRAND

Danfoss

SKU

RC_PROD_002

CATEGORY

Valves & Regulators



OVERVIEW

The Danfoss ICLX is a 2-step servo-operated main valve with pilot solenoid valves, part of the ICV Flexline™ platform. ICLX valves are used in suction lines for opening against high differential pressure — for instance after hot gas defrost in large industrial refrigeration systems running ammonia (R717), fluorinated refrigerants, or CO₂ (R744). The valve opens in two steps: step one opens to approximately 10% of capacity when the pilot solenoid valves are activated; step two opens automatically once the pressure differential across the valve reaches approximately 1 bar. This staged opening prevents pressure shock in the suction line. The standard ICV Flexline™ housing makes the ICLX a plug-and-play solution with easy switching between valve functions (ICS, ICM, ICLX share the housing platform).

KEY FEATURES

2-step differential-pressure opening
ideal for post-defrost suction line duty

ICV Flexline™ modular platform
shared housings across ICS / ICM / ICLX functions

Normally closed design
with manual opening device for service

Broad refrigerant compatibility
ammonia, fluorinated refrigerants, and CO₂; closed-circuit use

SPECIFICATIONS

PARAMETER	VALUE
VALVE TYPE	2-step servo-operated main valve with EVM pilot solenoid valves
MAX. WORKING PRESSURE	52 bar g (754 psig)
MEDIA TEMPERATURE RANGE	-60 to +120 °C (-76 to +248 °F)



VALVES & REGULATORS

Danfoss AVTA Series

BRAND
Danfoss

SKU
RC_PROD_003

CATEGORY
Valves & Regulators



OVERVIEW

Danfoss AVTA valves are self-acting thermostatic water valves used for infinite, proportional regulation of flow quantity based on the valve setting and sensor temperature. Being self-acting, they operate entirely without auxiliary energy — no electricity or compressed air required — making them exceptionally reliable in industrial cooling duties. AVTA cooling water valves open on rising sensor temperature and can be installed in either the cooling water flow line or return line. The pressure-relieved design means the degree of opening is unaffected by differential pressure across the valve, and the force-compensated construction makes the valve actively resistant to dirt.

KEY FEATURES

Fully self-acting operation
needs no power supply, wiring, or air supply

Opening on rising sensor temperature
proportional regulation

Pressure-relieved opening degree
independent of differential pressure (0–10 bar)

Dirt and pressure tolerance
insensitive to dirt and to water pressure fluctuations

SPECIFICATIONS

PARAMETER	VALUE
FUNCTION	Proportional, self-acting temperature regulation of water flow
REGULATION RANGES	Typical ranges incl. 0–30 °C, 10–80 °C, 25–65 °C (charge dependent)
MAX. WORKING PRESSURE	16 bar



VALVES & REGULATORS

Danfoss CPCE Series

BRAND
Danfoss

SKU
RC_PROD_004

CATEGORY
Valves & Regulators



OVERVIEW

The Danfoss CPCE is a hot gas bypass regulator used to adapt compressor capacity to actual evaporator load. When system load falls, the CPCE injects hot discharge gas into the low-pressure side, preventing suction pressure — and therefore evaporating temperature — from dropping too low. The CPCE offers first-class control accuracy with direct connection to the system suction line, so hot gas injection is regulated independent of evaporator pressure drop. Injection should be carried out through a Danfoss LG liquid-gas mixer, which homogeneously mixes the injected hot gas with liquid refrigerant from the expansion valve, preventing high suction superheat.

KEY FEATURES

First-class control accuracy
for capacity adaptation

Direct suction line connection
regulation independent of evaporator pressure drop

Increased evaporator gas velocity
improving oil return to the compressor

Evaporator icing prevention
protects against too-low evaporating temperature

SPECIFICATIONS

PARAMETER	VALUE
FUNCTION	Hot gas bypass / compressor capacity regulation
REGULATION RANGE	0 – 6 bar (0 – 85 psig)
MAX. WORKING PRESSURE	28 bar (406 psig)



VALVES & REGULATORS

Danfoss KVC Series

BRAND

Danfoss

SKU

RC_PROD_005

CATEGORY

Valves & Regulators



OVERVIEW

The Danfoss KVC is a hot gas bypass regulator applied for adapting compressor capacity to the actual evaporator load. Part of the KV family of mechanical regulating valves, the KVC bypasses hot discharge gas to the low-pressure side when suction pressure falls below the set value, maintaining a minimum suction pressure and preventing excessively low evaporating temperatures during part-load operation. Where the CPCE regulates with direct suction-line reference, the KVC provides a simpler, compact bypass solution widely used in commercial refrigeration and smaller industrial plants.

KEY FEATURES

Minimum suction pressure control
maintained under falling load

Evaporator and compressor protection
prevents icing and short-cycling of the compressor

Compact, robust mechanical construction
no electrics required

Simple setpoint adjustment
via setting spindle

SPECIFICATIONS

PARAMETER	VALUE
FUNCTION	Hot gas bypass / capacity regulation
REGULATION RANGE	0.2 – 6 bar (3 – 87 psig)
MAX. WORKING PRESSURE	28 – 31 bar (406 – 450 psig, model dependent)



VALVES & REGULATORS

Danfoss KVP Series

BRAND

Danfoss

SKU

RC_PROD_006

CATEGORY

Valves & Regulators



OVERVIEW

The Danfoss KVP is an evaporator pressure regulator installed in the suction line after the evaporator. It maintains a constant minimum evaporating pressure — and therefore a minimum evaporating temperature — regardless of falling suction pressure elsewhere in the system. This is essential in multi-evaporator installations where different evaporators must run at different temperatures on a common compressor, and in applications where product must be protected against freezing or dehumidification. Rated and extended capacities for KVP valves are calculated with Danfoss's Coolselector®2 engine to ARI standards, giving procurement engineers reliable selection data.

KEY FEATURES

Constant minimum evaporating pressure maintained independent of system suction pressure

Multi-temperature evaporator staging enables multiple evaporators at different temperatures on one compressor

Freezing and frosting protection protects against product freezing and coil frosting

Effective pulsation damping for long service life

SPECIFICATIONS

PARAMETER	VALUE
FUNCTION	Constant evaporating pressure regulation (opens on rising inlet pressure)
SIZING BASIS	Capacities based on liquid temp. ahead of expansion valve $t_l = 25\text{ }^{\circ}\text{C}$; regulator offset = 0.6 bar
GAS VELOCITY LIMIT	Inlet velocity should not exceed 40 m/s



VALVES & REGULATORS

Danfoss KVL Series

BRAND

Danfoss

SKU

RC_PROD_007

CATEGORY

Valves & Regulators



OVERVIEW

The Danfoss KVL is a crankcase pressure regulator fitted in the suction line immediately ahead of the compressor. It opens on pressure fall on its outlet side — i.e., when suction pressure ahead of the compressor drops below the set value — throttling flow to protect the compressor motor from overload at high suction pressures, such as after start-up, hot gas defrost, or long standstill periods. The KVL regulates on outlet pressure only: pressure variations on the inlet side do not affect the degree of opening, because the valve carries an equalization bellows with an effective area matching the valve seat. An integrated damping device protects against the pulsations that normally occur in suction lines near the compressor, ensuring long service life without impairing regulation accuracy.

KEY FEATURES

Compressor motor protection
against overload at high suction pressure

Outlet (compressor-side) pressure regulation
inlet variations have no effect

Equalization bellows design
for accurate, stable regulation

Effective pulsation damping
for long life close to the compressor

SPECIFICATIONS

PARAMETER	VALUE
FUNCTION	Crankcase (suction) pressure limiting — opens on falling outlet pressure
SIZING BASIS	e.g., KVL 12/15/22 deliver ~0.9 TR evaporator capacity at 30 psig max. suction and 4 psi Δp
REFRIGERANT CORRECTION FACTORS	Published for R22, R134a, R404A/R507, R407C at liquid temperatures 50–120 °F



VALVES & REGULATORS

Danfoss T2 / TE2 Series

BRAND

Danfoss

SKU

RC_PROD_008

CATEGORY

Valves & Regulators



OVERVIEW

Danfoss T2 and TE2 thermostatic expansion valves regulate the injection of liquid refrigerant into evaporators, controlled by refrigerant superheat. They are especially suitable for liquid injection in "dry" evaporators where superheat at the evaporator outlet is proportional to evaporator load — the workhorse configuration in food retail and commercial refrigeration. The defining feature is the interchangeable orifice assembly: one valve body accepts the full range of orifice inserts, covering all refrigerants and evaporating temperature ranges. This means easier stocking, easy capacity matching, and better serviceability — a single body plus a set of orifices replaces an inventory of fixed valves. T2 valves have internal pressure equalization; TE2 valves have external equalization (always required on systems with liquid distributors).

KEY FEATURES

Interchangeable orifice assembly
one body, full capacity and refrigerant coverage

Capacity range
approximately 1/6 to 4½ TR (R22 basis)

Equalization configuration
internal (T2) or external (TE2) pressure equalization

Laser-welded stainless steel power element
long diaphragm life, high working pressure tolerance, high corrosion resistance

SPECIFICATIONS

PARAMETER	VALUE
FUNCTION	Superheat-controlled liquid injection into dry evaporators
CAPACITY RANGE	~1/6 to 4½ TR (R22 reference); orifice-number dependent
REFRIGERANTS	R22, R134a, R404A/R507, R407C programs (dedicated R407C program)



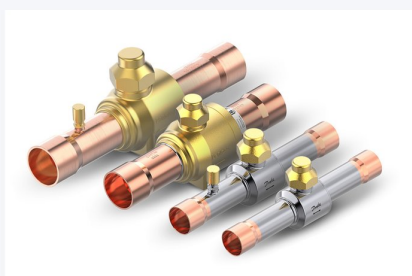
VALVES & REGULATORS

Danfoss GBC Series

BRAND
Danfoss

SKU
RC_PROD_009

CATEGORY
Valves & Regulators



OVERVIEW

Danfoss GBC ball valves are manually operated, bi-directional shut-off valves for refrigeration and air conditioning systems, installed in liquid, suction, and hot gas lines. The laser-welded, custom-made brass construction delivers consistent performance under aggressive operating conditions, including high-pressure duty with R410A. The design guarantees pressure balance with the valve closed, permits flow in both directions, and gives maximum flow (full bore) in the fully open position. Valves are available with or without an external access port, and every valve carries a one-piece wire-sealable cap to prevent unintentional removal or tampering between services.

KEY FEATURES

Bi-directional flow
with full-bore maximum flow when open

Laser-welded brass construction
for aggressive operating conditions

Rupture-proof, internally loaded spindle
safe even at extreme pressures

Double O-ring stem seal
for long life with zero leakage

SPECIFICATIONS

PARAMETER	VALUE
MAX. WORKING PRESSURE	45 bar (650 psig) standard; CO ₂ versions 90 bar (GBC L) / 140 bar (GBCT)
MEDIA TEMPERATURE RANGE	-40 to +100 °C long-term; up to +150 °C short-term
REFRIGERANTS	CFC, HCFC, HFC, CO ₂ ; flammables (R290, R32, R600a, R1234yf/ze etc.) per EN ISO 80079-36 assessment — solder versions, sizes below 25 mm



HEAT EXCHANGERS

Danfoss BPHE / Micro Plate Series

BRAND

Danfoss

SKU

RC_PROD_010

CATEGORY

Heat Exchangers



OVERVIEW

Danfoss brazed plate heat exchangers (BPHE) deliver gasket-free, compact heat transfer for evaporator, condenser, desuperheater, and heat recovery duties. Two plate technologies are offered: the patented Micro Plate™ (MPHE) dimple design, and the legacy Fishbone (chevron) design suited to higher temperatures/pressures and more viscous fluids. The Micro Plate™ dimple pattern creates a nozzle-diffuser channel with stronger turbulence, thinner boundary layers, and less scaling than traditional fishbone channels. The result is significantly improved heat transfer, lower pressure drop on the water side, reduced raw material use, and minimal hold-up volume — meaning smaller refrigerant charge. MPHE units cover chillers, heat pumps, and close-control systems for cooling capacities up to 800 kW / 225 TR.

KEY FEATURES

Patented Micro Plate™ dimple pattern
superior heat transfer with lower pressure drop

Gasket-free brazed construction
copper, CoResist™, or stainless steel brazing options

Reduced refrigerant charge
via minimal hold-up volume

High-pressure variants
up to 140 bar primary side for transcritical CO₂ heat recovery (H48T type)

SPECIFICATIONS

PARAMETER	VALUE
TECHNOLOGIES	Micro Plate™ (MPHE) and Fishbone (legacy)
CAPACITY COVERAGE	Up to 800 kW / 225 TR (MPHE chiller range)
MAX. WORKING PRESSURE (TYPICAL MPHE)	30 bar (e.g., MPHE C118/D118/H118 family)



VALVES & REGULATORS

Danfoss TEA Series

BRAND

Danfoss

SKU

RC_PROD_011

CATEGORY

Valves & Regulators



OVERVIEW

Danfoss TEA thermostatic expansion valves regulate the injection of liquid ammonia (R717) into evaporators, controlled by refrigerant superheat. They are especially suitable for liquid injection in dry evaporators where outlet superheat follows evaporator load proportionally — the standard configuration in industrial ammonia plants. TEA valves feature interchangeable orifice assemblies and interchangeable thermostatic elements, with external pressure equalization as standard. The wide temperature range of -50 to +30 °C covers both freezing and refrigeration duty in one series.

KEY FEATURES

Purpose-built design
for ammonia (R717) industrial duty

Large temperature range
-50 to +30 °C — freezing and refrigeration systems

Interchangeable orifice assemblies
capacity matching without body change

Interchangeable thermostatic elements
simplified service and stocking

SPECIFICATIONS

PARAMETER	VALUE
FUNCTION	Superheat-controlled liquid injection into dry evaporators
TEMPERATURE RANGE	-50 to +30 °C (element range dependent, e.g., -20 to +30 °C on TEA 20-2)
PRESSURE EQUALIZATION	External

Refrigeration Controls

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Specifications per manufacturer data; subject to change without notice.

RC_PROD_011



VALVES & REGULATORS

Danfoss TEAT Series

BRAND
Danfoss

SKU
RC_PROD_012

CATEGORY
Valves & Regulators



OVERVIEW

Danfoss TEAT valves are thermostatic injection valves for ammonia (R717) systems, principally used as desuperheating valves: they inject liquid ammonia into hot discharge gas to control its temperature — for example, cooling compressor discharge gas ahead of oil separators, heat exchangers, or two-stage intercooling duty. The valve is controlled by a thermostatic element responding to the temperature at its sensor location. The TEAT shares the ammonia parts platform with the TEA family — orifice assemblies are interchangeable across TEAQ / TEA / TEVA / TEAT within a frame size — simplifying stocking and service for industrial ammonia plants.

KEY FEATURES

Thermostatic liquid injection
for temperature control of ammonia discharge gas

High-temperature elements
available (e.g., 90–130 °C range for desuperheating duty)

Shared orifice platform
with TEA/TEVA/TEAQ (per frame size) — reduced spares inventory

Robust industrial construction
with flange connections

SPECIFICATIONS

PARAMETER	VALUE
FUNCTION	Thermostatic injection / desuperheating — opens on rising sensor temperature
ELEMENT RANGES	e.g., 90 – 130 °C for desuperheating elements (TEAT 20 / TEAT 85)
FRAMES	TEAT 20 (smaller capacities), TEAT 85 (larger capacities)



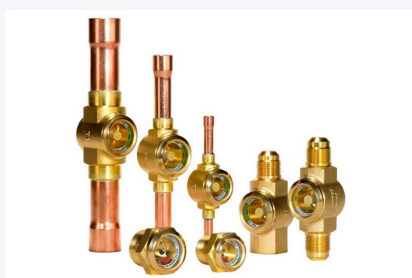
INSTRUMENTATION

Danfoss SGI / SGN Series

BRAND
Danfoss

SKU
RC_PROD_013

CATEGORY
Instrumentation



OVERVIEW

Danfoss sight glasses (SG, SGI, SGN and the SGR/SGRI/SGRN variants) are standard liquid-line fittings that give fast visual indication of two critical system conditions: refrigerant charge state (bubbles in the liquid line indicate flash gas from undercharge or restriction) and moisture content via a colour-indicating element. The moisture indicator changes colour when moisture in the refrigerant exceeds safe limits — a yellow indication signals that the filter drier must be replaced. Mounted after the filter drier and ahead of the expansion valve, the sight glass is the simplest diagnostic window into system health, and standard practice pairs it with a DML/DCL filter drier.

KEY FEATURES

Instant visual liquid-line check
bubbles indicate flash gas

Colour-change moisture indicator
green (dry) → yellow (wet, replace drier)

Model connection options
SGI: flare connection versions; SGN: solder versions; SGR family with replaceable indicator variants

Flammable hydrocarbon (HC) refrigerants
special versions available under Danfoss special delivery terms

SPECIFICATIONS

PARAMETER	VALUE
FUNCTION	Liquid line inspection + moisture indication
TYPES	SG (plain), SGI/SGN (with indicator), SGR/SGRI/SGRN variants
CONNECTIONS	Flare (int. × ext., ext. × ext.) and solder ODF versions across common line sizes



INSTRUMENTATION

Danfoss KPS Series (KPS 31 – KPS 47)

BRAND

Danfoss

SKU

RC_PROD_014

CATEGORY

Instrumentation



OVERVIEW

The Danfoss KPS series is a range of heavy-duty pressure-controlled switches engineered for demanding indoor and outdoor duty. Special attention has been given to a high level of enclosure (IP67 including IPX6 to EN 60529), robust and compact construction, and resistance to shock and vibration — making KPS the standard choice for alarm and regulation systems in factories, diesel plants, compressors, power stations, and on board ships. Contact position depends on the pressure at the inlet connection relative to the set scale value. The enamelled pressure die-cast aluminium housing (GD-ALSi 12) carries a four-screw anchored cover that can be wire-sealed.

KEY FEATURES

Pressure range
spanning 0 to 60 bar across the series

IP67 enclosure (including IPX6)
to EN 60529 — sturdy and seawater resistant

Vibration stability
2–30 Hz at 1.1 mm amplitude; 30–300 Hz at 4 g

Gold-plated contact systems
available for signal-level switching

SPECIFICATIONS

PARAMETER	VALUE
REGULATION RANGES	e.g., KPS 33: 0 – 3.5 bar · KPS 45: 4 – 40 bar · KPS 47: 6 – 60 bar
DIFFERENTIAL	Fixed (e.g., 0.2 bar on KPS 33) or adjustable (e.g., 3.5 – 17 bar on KPS 47)
ENCLOSURE	IP67 (incl. IPX6) to EN 60529



INSTRUMENTATION

Danfoss KPS Series (KPS 76 – KPS 83)

BRAND

Danfoss

SKU

RC_PROD_015

CATEGORY

Instrumentation



OVERVIEW

KPS thermostats are the temperature-controlled members of the Danfoss heavy-duty KPS switch family. Contact position depends on the temperature at the sensor relative to the set scale value. Like the KPS pressure switches, they are built for a high level of enclosure, robust compact construction, and resistance to shock and vibration — suited to alarm and regulation systems in factories, diesel plants, power stations, and marine installations. Thermostats with bulb sensors are self-supporting from the sensor pocket, and a range of brass and stainless steel pockets is available to match the medium.

KEY FEATURES

Heavy-duty temperature switching
for industrial and marine environments

IP67 enclosure rating
to EN 60529 / IEC 60529

Die-cast aluminium housing
enamelled (GD-AISI 12); wire-sealable, anchored 4-screw
cover

Vibration stability
2–30 Hz at 1.1 mm amplitude; 30–300 Hz at 4 g

SPECIFICATIONS

PARAMETER	VALUE
FUNCTION	Temperature-controlled switch — contacts change over at set sensor temperature
EXAMPLE RANGE	KPS 80: 70 – 120 °C (other models cover adjacent ranges across the 76–83 series)
ENCLOSURE	IP67 to EN 60529 / IEC 60529



FILTER DRIERS

Danfoss DML Series

BRAND

Danfoss

SKU

RC_PROD_016

CATEGORY

Filter Driers



OVERVIEW

Danfoss DML hermetic filter driers protect refrigeration and air-conditioning systems from moisture, acids, and solid particles. With these contaminants eliminated, systems are protected from harmful chemical reactions (acid formation by hydrolysis) and abrasive damage to the compressor, expansion device, and solenoid valves. The DML uses a 100% molecular sieve solid core, giving high drying capacity. The bonded solid-core grains cannot move against each other, eliminating powder formation, and the relatively large drier diameter keeps liquid flow velocity suitably low. As a reference point from Danfoss documentation, a DML 53 can reduce moisture in 8.5 kg of R134a from 1050 ppm to 75 ppm at 24 °C. (The companion DCL series uses an 80/20 molecular sieve/activated alumina blend for acid adsorption in high-condensing-temperature systems.)

KEY FEATURES

100% molecular sieve core
maximum drying capacity, minimized acid formation risk

HFC and HCFC compatibility
recommended; will not deplete oil additives

Broad refrigerant compatibility
R134a, R404A, R32, R410A, R407C, R290, R600a,
R1234yf/ze, R448A/449A/450A/452A and more

Connection versions
solder (Cu-plated steel) and flare connection versions

SPECIFICATIONS

PARAMETER	VALUE
CORE	100% molecular sieve (DML); solid bonded core
FUNCTION	Moisture adsorption + particle filtration in liquid line
CONNECTIONS	Flare and solder (Cu-plated steel / copper), common line sizes



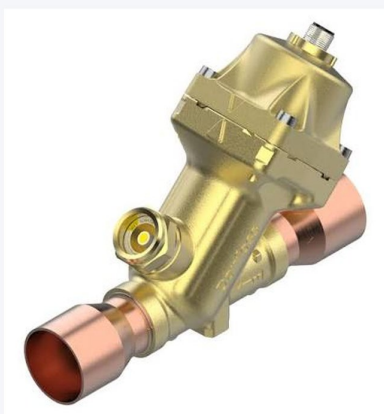
VALVES & REGULATORS

Danfoss ETS Series

BRAND
Danfoss

SKU
RC_PROD_017

CATEGORY
Valves & Regulators



OVERVIEW

Danfoss ETS electric expansion valves provide precise liquid injection into evaporators under electronic control. The valve is driven by a 2-phase bi-polar stepper motor that holds position without power; power pulses from a driver rotate the spindle, whose rotation is transformed into linear piston motion. Matched with a Danfoss superheat controller and pressure/temperature sensors, ETS valves deliver the precision that mechanical TXVs cannot — tighter superheat, better part-load efficiency, and wider operating envelopes. The piston design is pressure balanced, giving true bi-flow capability with near-identical performance in both directions, plus solenoid-tight shut-off in both flow directions — often eliminating separate solenoid valves from the circuit.

KEY FEATURES

Bi-polar stepper motor drive
precise positioning, holds position unpowered

Fully pressure-balanced piston
bi-flow operation and solenoid-tight shut-off both ways

Wide operating range
for all common refrigerants and capacities

Built-in sight glass
on ETS 50 – ETS 400

SPECIFICATIONS

PARAMETER	VALUE
MAX. WORKING PRESSURE	ETS 12.5/25/50/100: 45.5 bar (660 psig) · ETS 250/400: 34 bar (493 psig)
MOTOR	2-phase bi-polar permanent magnet stepper; gearing 8.5:1
DRIVE	Constant voltage: 150 steps/s · Chopper current: 0–300 steps/s (300 recommended)



VALVES & REGULATORS

Danfoss ICS Series

BRAND

Danfoss

SKU

RC_PROD_018

CATEGORY

Valves & Regulators



OVERVIEW

Danfoss ICS valves are pilot-operated servo valves from the ICV Flexline™ platform, built around three components: valve body, function module, and top cover. By fitting different pilot valves (screwed directly into the valve head or installed in an external pilot line), one ICS valve platform delivers pressure regulation, temperature regulation, or on/off operation — on the high- and low-pressure sides, in wet and dry suction lines, and in liquid lines without phase change. The modular concept is a genuine inventory advantage for industrial plants: all standard pilots fit all ICS sizes, function modules and top covers combine freely across bodies, and the servo function can be exchanged for an ICM motor module on the same housing. The special regulating cone V-port design allows higher temperature setpoints and better COP, contributing to energy savings.

KEY FEATURES

Modular ICV Flexline™ concept
body + function module + top cover

One control platform
for pressure, temperature, and on/off control via
interchangeable pilots

Broad application coverage
usable on high and low pressure sides; wet/dry suction lines;
liquid lines without phase change

V-port regulating cone
for improved setpoint control and COP

SPECIFICATIONS

PARAMETER	VALUE
MAX. WORKING PRESSURE	52 bar (industrial standard range); design/tested ratings up to 65 bar (943 psi) per current family documentation
MEDIA TEMPERATURE RANGE	-60 to +120 °C (-76 to +248 °F)
REFRIGERANTS	R717 (ammonia), R744 (CO ₂), HCFC/HFC groups



VALVES & REGULATORS

Emerson TER Series

BRAND

Emerson

SKU

RC_PROD_019

CATEGORY

Valves & Regulators



OVERVIEW

The Emerson TER is the entry frame of the T-Series large-capacity, balanced-port, take-apart thermostatic expansion valves — covering nominally 22 to 45 tons on R-22 (13–25 tons R-12; 14–27 tons R-404A/R-507). The T-Series take-apart architecture is the defining feature: the valve is assembled from three interchangeable, field-replaceable components — cage kit, body flange, and power assembly — so a failed valve is serviced in-line by swapping the affected component rather than cutting the whole valve out. Balanced-port construction keeps superheat control stable across wide operating pressure ranges, and all large-capacity R-frames (TER, TIR, THR, TMR) are inherently externally equalized. External superheat adjustment and bi-directional capability round out a platform built for serviceability on big systems.

KEY FEATURES

Take-apart construction

cage, flange, and power assembly replaceable in the field

Balanced port design

for stable, accurate superheat control (22–100 ton family)

External equalization standard

on all R-frame large-capacity valves

External superheat

adjustment

SPECIFICATIONS

PARAMETER	VALUE
MAX. WORKING PRESSURE	450 psig (31 bar)
TORQUE BOLTS	300 in-lbs
NOMINAL CAPACITY (R-22)	22 / 26 / 35 / 45 tons per cage kit



VALVES & REGULATORS

Emerson TIR Series

BRAND

Emerson

SKU

RC_PROD_020

CATEGORY

Valves & Regulators

OVERVIEW

The Emerson TIR is the mid frame of the T-Series large-capacity, balanced-port, take-apart expansion valve family — the step between the TER (22–45 tons R-22) and the THR (55–85 tons). The TIR cage kit delivers a nominal 55 tons on R-22 (35 tons R-12, 45 tons R-134a, 37 tons R-404A/R-507), sharing the same take-apart architecture: interchangeable cage, body flange, and power assembly, each field-replaceable without removing the valve body from the line. Like all R-frame T-Series valves, the TIR is balanced-port and externally equalized as standard, with external superheat adjustment and bi-directional capability. For plants running mixed T-Series frames, power assemblies (XC-726 series) are shared across TER/TIR/THR/TMR — one spare head covers the whole large-capacity installed base.

KEY FEATURES

Take-apart construction
in-line service by component swap

Balanced port design
for stable superheat control under varying pressure drops

Externally equalized standard
external superheat adjustment

Bi-directional
capability

SPECIFICATIONS

PARAMETER	VALUE
MAX. WORKING PRESSURE	450 psig (31 bar)
TORQUE BOLTS	300 in-lbs
NOMINAL CAPACITY	R-22 / R-407C: 55 tons · R-134a: 45 tons · R-404A/R-507: 37 tons · R-12: 35 tons



VALVES & REGULATORS

Emerson THR Series

BRAND

Emerson

SKU

RC_PROD_021

CATEGORY

Valves & Regulators



OVERVIEW

The Emerson THR is the top standard frame of the T-Series large-capacity, balanced-port, take-apart expansion valve family, spanning nominally 55 to 85 tons R-22 by cage selection, with complete-valve configurations rated to 100 tons (THR 100HC / THR 100HW100). Above it sits only the TMR variant frame (to 100 tons R-22/R-407C). This is the valve for the largest direct-expansion circuits where a fixed, non-serviceable valve would be a liability. The T-Series proposition scales with tonnage: at 75–100 tons, cutting out and re-brazing a failed valve means crane time, refrigerant recovery, and plant downtime. The THR's take-apart construction converts that into a bolt-off component swap — cage kit, flange, or power assembly — with the body staying in the line. Balanced-port construction and standard external equalization hold superheat stable across the wide pressure differentials these systems see.

KEY FEATURES

Highest-capacity standard frame
of the T-Series (55–100 tons R-22)

Take-apart construction
component-level service on the largest valves, in-line

Balanced port design
for stable superheat control at high pressure differentials

Externally equalized standard
external superheat adjustment

SPECIFICATIONS

PARAMETER	VALUE
MAX. WORKING PRESSURE	450 psig (31 bar)
TORQUE BOLTS	300 in-lbs
CAGE CAPACITIES (R-22 / R-407C)	55 / 75* / 85 tons (*70 tons R-407C)



REFRIGERATION OILS

Suniso SL-68S

BRAND

Suniso

SKU

RC_PROD_022

CATEGORY

Refrigeration Oils



OVERVIEW

Suniso SL-68S is a fully synthetic polyolester (POE) refrigeration oil from the Suniso SL series — formulated with select polyolester base stocks and additives for excellent miscibility with HFC refrigerants in compressors for refrigerators, freezers, air conditioners, chillers, and industrial refrigeration systems. The VG 68 grade is the mid-viscosity workhorse specified widely for reciprocating and screw compressors in commercial refrigeration. The Suniso name has set the standard in refrigeration lubrication since 1933; the SL series carries that pedigree into the HFC era with the low-temperature miscibility data (published per refrigerant, below) that lets an engineer verify oil return at design conditions rather than hope for it.

KEY FEATURES

Fully synthetic POE base stock
engineered HFC miscibility for reliable oil return

Outstanding lubricity
with chemical and thermal stability for long compressor life

Very low total acid number
0.01 mg KOH/g, with controlled moisture at fill

Published oil-separation temperatures per refrigerant
verifiable low-temp performance

SPECIFICATIONS

PARAMETER	VALUE
BASE STOCK	Polyolester (POE), fully synthetic
ISO VISCOSITY GRADE	VG 68
KINEMATIC VISCOSITY @ 40 °C	65.1 mm ² /s



REFRIGERATION OILS

Suniso SL-32S

BRAND
Suniso

SKU
RC_PROD_023

CATEGORY
Refrigeration Oils



OVERVIEW

Suniso SL-32S is a fully synthetic polyolester (POE) refrigeration oil from the Suniso SL series — formulated with select polyolester base stocks and additives for excellent miscibility with HFC refrigerants in compressors for refrigerators, freezers, air conditioners, chillers, and industrial refrigeration systems. The VG 32 grade serves the scroll and small reciprocating compressor class that dominates commercial AC and refrigeration. The Suniso name has set the standard in refrigeration lubrication since 1933; the SL series carries that pedigree into the HFC era with the low-temperature miscibility data (published per refrigerant, below) that lets an engineer verify oil return at design conditions rather than hope for it.

KEY FEATURES

Fully synthetic POE base stock
engineered HFC miscibility for reliable oil return

Outstanding lubricity
with chemical and thermal stability for long compressor life

Very low total acid number
0.01 mg KOH/g, with controlled moisture at fill

Published oil-separation temperatures per refrigerant
verifiable low-temp performance

SPECIFICATIONS

PARAMETER	VALUE
BASE STOCK	Polyolester (POE), fully synthetic
ISO VISCOSITY GRADE	VG 32
KINEMATIC VISCOSITY @ 40 °C	33.0 mm ² /s



REFRIGERATION OILS

Suniso SL-220S

BRAND
SunisoSKU
RC_PROD_024CATEGORY
Refrigeration Oils

OVERVIEW

Suniso SL-220S is a fully synthetic polyolester (POE) refrigeration oil from the Suniso SL series — formulated with select polyolester base stocks and additives for excellent miscibility with HFC refrigerants in compressors for refrigerators, freezers, air conditioners, chillers, and industrial refrigeration systems. The VG 220 heavy grade serves screw compressors and high-load bearings requiring maximum film strength — with remarkably deep miscibility on R-134a and R-410A. The Suniso name has set the standard in refrigeration lubrication since 1933; the SL series carries that pedigree into the HFC era with the low-temperature miscibility data (published per refrigerant, below) that lets an engineer verify oil return at design conditions rather than hope for it.

KEY FEATURES

Fully synthetic POE base stock
engineered HFC miscibility for reliable oil return

Outstanding lubricity
with chemical and thermal stability for long compressor life

Very low total acid number
0.01 mg KOH/g, with controlled moisture at fill

Published oil-separation temperatures per refrigerant
verifiable low-temp performance

SPECIFICATIONS

PARAMETER	VALUE
BASE STOCK	Polyolester (POE), fully synthetic
ISO VISCOSITY GRADE	VG 220
KINEMATIC VISCOSITY @ 40 °C	211 mm ² /s



REFRIGERATION OILS

Emkarate RL 32H

BRAND

Emkarate

SKU

RC_PROD_025

CATEGORY

Refrigeration Oils

OVERVIEW

Emkarate RL 32H is an ISO VG 32 synthetic polyolester (POE) lubricant formulated specifically for refrigeration and air-conditioning compressors using HFC refrigerants. The VG 32 grade is the approval leader for scroll and small reciprocating compressors — including the Danfoss Maneurop SZ/MTZ class widely installed across India. The Emkarate RL family is the most OEM-approved, most recognized POE line in the market — more than one billion compressors worldwide have been factory-filled with Emkarate RL. It provides effective wear protection for steel and aluminium surfaces, is suitable for both initial fill and service fill, and its combination of low-temperature characteristics with chemical and thermal stability supports a wide operating temperature range.



KEY FEATURES

ISO VG 32 POE

engineered for HFC compressor duty
(HCFC/HFO/hydrocarbon compatible per CPI guidance)

Industry-leading OEM approvals

32H-class approvals include Danfoss/Maneurop scroll & reciprocating, Bitzer reciprocating, Thermo King, Daikin

Flash and pour point

high flash point (258 °C COC) and low pour point (-46 °C) —
margins mineral oil cannot match

Effective anti-wear protection

for steel and aluminium surfaces

SPECIFICATIONS

PARAMETER	VALUE
BASE STOCK	Polyolester (POE), fully synthetic
ISO VISCOSITY GRADE	VG 32
KINEMATIC VISCOSITY @ 40 °C	32.5 cSt (ASTM D445)



REFRIGERATION OILS

Emkarate RL 68H

BRAND

Emkarate

SKU

RC_PROD_026

CATEGORY

Refrigeration Oils



OVERVIEW

Emkarate RL 68H is an ISO VG 68 synthetic polyolester (POE) lubricant formulated specifically for refrigeration and air-conditioning compressors using HFC refrigerants. The VG 68 grade carries the broadest mid-viscosity approval set across reciprocating and screw platforms — the default service POE for commercial plant. The Emkarate RL family is the most OEM-approved, most recognized POE line in the market — more than one billion compressors worldwide have been factory-filled with Emkarate RL. It provides effective wear protection for steel and aluminium surfaces, is suitable for both initial fill and service fill, and its combination of low-temperature characteristics with chemical and thermal stability supports a wide operating temperature range.

KEY FEATURES

ISO VG 68 POE

engineered for HFC compressor duty
(HCFC/HFO/hydrocarbon compatible per CPI guidance)

Industry-leading OEM approvals

68H-class approvals include Bitzer reciprocating, Trane screw,
Carrier Carlyle reciprocating, Daikin McQuay screw

Flash and pour point

high flash point (270 °C COC) and low pour point (-39 °C) —
margins mineral oil cannot match

Effective anti-wear protection

for steel and aluminium surfaces

SPECIFICATIONS

PARAMETER	VALUE
BASE STOCK	Polyolester (POE), fully synthetic
ISO VISCOSITY GRADE	VG 68
KINEMATIC VISCOSITY @ 40 °C	66.6 cSt (ASTM D445)



REFRIGERATION OILS

Emkarate RL 170H

BRAND

Emkarate

SKU

RC_PROD_027

CATEGORY

Refrigeration Oils



OVERVIEW

Emkarate RL 170H is an ISO VG 170 synthetic polyolester (POE) lubricant formulated specifically for refrigeration and air-conditioning compressors using HFC refrigerants. The VG 170 heavy grade is the screw-compressor specialist of the H-series — with the highest flash point in the range at 290 °C. The Emkarate RL family is the most OEM-approved, most recognized POE line in the market — more than one billion compressors worldwide have been factory-filled with Emkarate RL. It provides effective wear protection for steel and aluminium surfaces, is suitable for both initial fill and service fill, and its combination of low-temperature characteristics with chemical and thermal stability supports a wide operating temperature range.

KEY FEATURES

ISO VG 170 POE

engineered for HFC compressor duty
(HCFC/HFO/hydrocarbon compatible per CPI guidance)

Industry-leading OEM approvals

170H-class approvals include Bitzer screw, Dalian Bingshan screw platforms

Flash and pour point

high flash point (290 °C COC) and low pour point (-25 °C) — margins mineral oil cannot match

Effective anti-wear protection

for steel and aluminium surfaces

SPECIFICATIONS

PARAMETER	VALUE
BASE STOCK	Polyolester (POE), fully synthetic
ISO VISCOSITY GRADE	VG 170
KINEMATIC VISCOSITY @ 40 °C	170 cSt (ASTM D445)



REFRIGERATION OILS

Emkarate RL 100H

BRAND

Emkarate

SKU

RC_PROD_028

CATEGORY

Refrigeration Oils



OVERVIEW

Emkarate RL 100H is an ISO VG 100 synthetic polyolester (POE) lubricant formulated specifically for refrigeration and air-conditioning compressors using HFC refrigerants. The VG 100 grade serves screw and heavy reciprocating duty where bearing loads demand more film than VG 68 provides. The Emkarate RL family is the most OEM-approved, most recognized POE line in the market — more than one billion compressors worldwide have been factory-filled with Emkarate RL. It provides effective wear protection for steel and aluminium surfaces, is suitable for both initial fill and service fill, and its combination of low-temperature characteristics with chemical and thermal stability supports a wide operating temperature range.

KEY FEATURES

ISO VG 100 POE

engineered for HFC compressor duty
(HCFC/HFO/hydrocarbon compatible per CPI guidance)

Industry-leading OEM approvals

100H-class approvals include Bock reciprocating, Daikin
McQuay screw platforms

Flash and pour point

high flash point (260 °C COC) and low pour point (-28 °C) —
margins mineral oil cannot match

Effective anti-wear protection

for steel and aluminium surfaces

SPECIFICATIONS

PARAMETER	VALUE
BASE STOCK	Polyolester (POE), fully synthetic
ISO VISCOSITY GRADE	VG 100
KINEMATIC VISCOSITY @ 40 °C	96.5 cSt (ASTM D445)

Refrigeration Controls

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Specifications per manufacturer data; subject to change without notice.



REFRIGERATION OILS

Solest 120

BRAND

Solest

SKU

RC_PROD_029

CATEGORY

Refrigeration Oils



OVERVIEW

Solest 120 is a high-performance synthetic polyolester (POE) lubricant from CPI Fluid Engineering, formulated for commercial and industrial refrigeration and air-conditioning compressors — with a field track record exceeding 25 years. Its ISO VG 120 viscosity sits in the extended-viscosity band that standard grades skip, serving specialized applications — **particularly screw compressors** — where OEMs specify this intermediate film strength. Solest lubricants are designed for standard factory fill and OEM retrofitting operations, developed through CPI laboratory studies and OEM compressor bench tests. Against mineral oil, the POE chemistry delivers improved viscosity index, flash and fire points, and pour point — and, critically, the controlled HFC miscibility that ensures oil returns to the compressor instead of logging in the evaporator.

KEY FEATURES

ISO VG 120

the extended-viscosity specialty grade for screw compressor duty

25+ years field history

CPI OEM bench-test development pedigree

Controlled HFC miscibility

with R-134a, R-404A, R-407C, R-410A; HCFC and HFO compatible per CPI guidance

Excellent thermal stability

ASHRAE 97 sealed-tube verified by CPI; no adverse effect on metals and materials of construction

SPECIFICATIONS

PARAMETER	VALUE
BASE STOCK	Polyolester (POE), fully synthetic
ISO VISCOSITY GRADE	VG 120
KINEMATIC VISCOSITY @ 40 °C	127.7 cSt (ASTM D445)

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RC_PROD_029



REFRIGERANT GASES & PIPING

Mafron R-22

BRAND

Mafron

SKU

RC_PROD_030

CATEGORY

Refrigerant Gases & Piping



OVERVIEW

Mafron R-22 is the HCFC refrigerant (chlorodifluoromethane) that powered a generation of Indian air conditioning and refrigeration — and an enormous installed base of R-22 plant is still running today. That is precisely the commercial reality this product serves: **maintenance and service of existing legacy installations**. Cold rooms, ducted AC plants, process chillers, and packaged units built around R-22 need genuine, full-specification gas to keep running until their planned end of life — not grey-market cylinders of uncertain composition that destroy compressors. As an HCFC, R-22 is under phase-out in India per the Montreal Protocol schedule (servicing tail permitted). Mafron R-22 from NFIL — India's original refrigerant manufacturer since 1967 — is supplied strictly for servicing existing equipment, with AHRI 700 purity and certificates of analysis available. For new installations, we guide buyers to R-407C (closest R-22 service pressures) or R-410A equipment.

KEY FEATURES

ASHRAE Safety Class A1

non-flammable, lowest toxicity classification

Service refrigerant standard

for India's large installed R-22 base

AHRI 700 guaranteed purity

protects legacy compressors worth lakhs

Mineral oil and alkylbenzene compatibility

no oil changeout needed on service top-ups

SPECIFICATIONS

PARAMETER	VALUE
ASHRAE DESIGNATION	R-22
CHEMICAL NAME / FORMULA	Chlorodifluoromethane / CHClF_2
GUARANTEED PURITY	$\geq 99.5\%$ by weight



REFRIGERANT GASES & PIPING

Mafron R-407C

BRAND

Mafron

SKU

RC_PROD_031

CATEGORY

Refrigerant Gases & Piping



OVERVIEW

Mafron R-407C is a zeotropic HFC blend of R-32 (23%), R-125 (25%), and R-134a (52%), engineered to match R-22 operating pressures closely — making it the established retrofit path for existing R-22 air conditioning and refrigeration equipment where full replacement isn't economical. Zero ODP, non-flammable, ASHRAE Class A1. The engineering caveat that separates a professional supplier from a cylinder shop: R-407C is a **zeotropic blend with real temperature glide (~5 K)**. It must be charged as liquid, fractionates on leakage (top-up practice matters), and requires a POE oil changeout when retrofitting from mineral-oil R-22 systems. Every Mafron R-407C quotation from Refrigeration Controls comes with retrofit guidance and matched POE oils from our range.

KEY FEATURES

ASHRAE Safety Class A1
zero ODP

Closest HFC match to R-22
retrofit without changing the compressor class

AHRI 700 guaranteed purity
certified purity sheets directly from Navin Fluorine (NFIL)

Blend of proven components
R-32 / R-125 / R-134a (23/25/52 wt%)

SPECIFICATIONS

PARAMETER	VALUE
ASHRAE DESIGNATION	R-407C
COMPOSITION (WT%)	R-32 / R-125 / R-134a — 23 / 25 / 52 (± component tolerances per AHRI 700)
GUARANTEED PURITY	≥ 99.5% by weight (blend total)



REFRIGERANT GASES & PIPING

Mafron R-410A

BRAND

Mafron

SKU

RC_PROD_032

CATEGORY

Refrigerant Gases & Piping



OVERVIEW

Mafron R-410A is the 50/50 near-azeotropic blend of R-32 and R-125 that became the world standard for modern residential and light-commercial air conditioning. With negligible temperature glide (<0.2 K) it behaves like a single-component fluid in service, and its high volumetric capacity enabled the compact, efficient AC equipment now installed across India in vast numbers — all of which needs genuine service gas. The critical service fact: R-410A operates at roughly **50–60% higher pressures than R-22**. It is exclusively for equipment designed for it — never a retrofit gas for R-22 systems — and demands R-410A-rated gauges, hoses, and recovery equipment. POE lubricant only.

KEY FEATURES

ASHRAE Safety Class A1

zero ODP; negligible glide (<0.2 K)

Installed-base service standard

for modern split, VRF, and packaged AC

AHRI 700 guaranteed purity

certified purity sheets directly from Navin Fluorine (NFIL)

High volumetric capacity

high pressure requires R-410A-rated equipment

SPECIFICATIONS

PARAMETER	VALUE
ASHRAE DESIGNATION	R-410A
COMPOSITION (WT%)	R-32 / R-125 — 50 / 50 ($\pm$ component tolerances per AHRI 700)
GUARANTEED PURITY	$\geq 99.5\%$ by weight (blend total)

Refrigeration Controls

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RC_PROD_032



REFRIGERANT GASES & PIPING

Mafron R-404A

BRAND

Mafron

SKU

RC_PROD_033

CATEGORY

Refrigerant Gases & Piping



OVERVIEW

Mafron R-404A is the HFC blend of R-125 (44%), R-143a (52%), and R-134a (4%) that became the global workhorse of low- and medium-temperature commercial refrigeration — supermarket racks, cold storage, freezer rooms, ice machines, and refrigerated transport. Near-azeotropic behaviour (glide ~ 0.7 K) keeps service practice straightforward, and Class A1 classification keeps it non-flammable and low-toxicity across the cold chain. Per NFIL's own positioning, R-404A serves supermarkets, refrigerated vans, cold storages, and commercial refrigeration — exactly Refrigeration Controls' core customer base. The honest caveat: at GWP 3922 it is the highest-GWP mainstream refrigerant, first in line under HFC phase-down economics. We supply genuine gas for the installed base while advising operators on leak-tightness (the cheapest compliance strategy) and transition planning.

KEY FEATURES

ASHRAE Safety Class A1

zero ODP; near-azeotropic (~ 0.7 K glide)

Installed-base standard

for low/medium-temp commercial refrigeration

AHRI 700 guaranteed purity

certified purity sheets directly from Navin Fluorine (NFIL)

Excellent low-temperature capacity

for -45 to -15 °C evaporating duty

SPECIFICATIONS

PARAMETER	VALUE
ASHRAE DESIGNATION	R-404A
COMPOSITION (WT%)	R-125 / R-143a / R-134a — 44 / 52 / 4 ($\pm$ tolerances per AHRI 700)
GUARANTEED PURITY	$\geq 99.5\%$ by weight (blend total)

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RC_PROD_033



REFRIGERANT GASES & PIPING

Mafron R-134a

BRAND

Mafron

SKU

RC_PROD_034

CATEGORY

Refrigerant Gases & Piping



OVERVIEW

Mafron R-134a is a single-component HFC refrigerant (1,1,1,2-tetrafluoroethane) — the global workhorse for medium- and high-temperature cooling and the proven replacement for R-12. Colourless, non-flammable, and low in toxicity, it carries ASHRAE safety classification A1 (lowest toxicity, no flame propagation) with zero ozone depletion potential. The Mafron® brand belongs to Navin Fluorine International Ltd. (NFIL), the company that introduced refrigerant manufacturing to India in 1967 at Surat, Gujarat. NFIL is backward-integrated into hydrofluoric and sulfuric acid — the critical precursors — giving Mafron gases consistent, domestically manufactured quality with OEM approvals. For buyers burned by grey-market refrigerant of uncertain origin, that pedigree is the point: every Mafron cylinder supplied by Refrigeration Controls is genuine, traceable, and meets the guaranteed specification below.

KEY FEATURES

ASHRAE Safety Class A1

non-flammable, lowest toxicity classification

Zero ODP

stable, well-characterized thermodynamics

AHRI 700 guaranteed purity

specification (see matrix)

Manufactured in India by NFIL

OEM-approved, backward-integrated production

SPECIFICATIONS

PARAMETER	VALUE
ASHRAE DESIGNATION	R-134a
CHEMICAL NAME / FORMULA	1,1,1,2-Tetrafluoroethane / $\text{CH}_2\text{F}-\text{CF}_3$
GUARANTEED PURITY	$\geq 99.5\%$ by weight



REFRIGERANT GASES & PIPING

Henry V-Series / VS-Series

BRAND

Henry

SKU

RC_PROD_035

CATEGORY

Refrigerant Gases & Piping



OVERVIEW

Henry V-Series vibration eliminators absorb compressor-induced vibration in the suction and discharge lines of refrigeration and air-conditioning systems, protecting pipework, joints, and system components from fatigue failure. Construction is a deep-pitch corrugated stainless steel hose within a stainless steel braid, terminated in copper tube ends brazed with high-temperature alloy and reinforced with stainless ferrules — brazing directly into copper line sets without adapters. The VS-Series builds on the proven V-Series design in all-stainless, TIG-welded construction: no wet-ragging needed during installation, and higher maximum working pressures. For any plant where a compressor transmits vibration into rigid pipe — which is every plant — an eliminator per line is the cheapest insurance against cracked joints and refrigerant loss.

KEY FEATURES

Corrugated stainless hose + braid
flexibility with pressure containment

Copper tube ends (V-Series)
for direct brazing into copper lines; SS ferrule reinforced

VS-Series construction
all-stainless, TIG-welded — no wet-rag installation, higher
MWP

Broad refrigerant compatibility
HCFC, HFC, HFO, HC, A2L, CO₂ (with material compatibility
check)

SPECIFICATIONS

PARAMETER	VALUE
OPERATING TEMPERATURE	-40 to +120 °C (-40 to +248 °F)
OVERALL LENGTH	Size-dependent — per Henry dimensional datasheet (state line OD at RFQ)
CONSTRUCTION	SS corrugated hose + SS braid; copper ends (V) / all-SS TIG (VS)

Refrigeration Controls

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RC_PROD_035



VALVES & REGULATORS

Sporlan HVE Series

BRAND
Sporlan

SKU
RC_PROD_036

CATEGORY
Valves & Regulators



OVERVIEW

The Sporlan HVE is a Type H body thermostatic expansion valve for R-22 duty with external equalization — decoded per Sporlan nomenclature as **H** (body type) + **V** (refrigerant code for R-22 family, green colour code) + **E** (external equalizer). The Type H is one of Sporlan's classic large-capacity flanged valve bodies, re-rated to ARI Standard 750 and in continuous industrial service for decades — which is precisely why HVE valves remain a staple of the Indian replacement market for R-22 cold storage and process plants. Sporlan TEVs regulate liquid refrigerant injection into the evaporator, controlled by superheat. Core Sporlan engineering carries across the range: a large flat diaphragm for precise valve control, field-replaceable thermostatic elements, precise pin-and-port alignment for tight seating, and external superheat adjustment on all standard valves.

KEY FEATURES

Classic Type H large-capacity flanged body
proven across decades of industrial duty

Field-replaceable thermostatic element
internal parts kits available across current and discontinued types

Large flat diaphragm for precise control
externally adjustable superheat

External equalizer
mandatory with refrigerant distributors and recommended for A/C charges

SPECIFICATIONS

PARAMETER	VALUE
BODY TYPE	Type H, flanged connections
REFRIGERANT CODE	V — R-22 (also applied to R-407A/C/F and R-422D with capacity correction)
EQUALIZATION	External (E)

Refrigeration Controls

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Specifications per manufacturer data; subject to change without notice.

RC_PROD_036



VALVES & REGULATORS

Sporlan MVE Series

BRAND
Sporlan

SKU
RC_PROD_037

CATEGORY
Valves & Regulators



OVERVIEW

The Sporlan MVE is a Type M body thermostatic expansion valve for R-22 with external equalization — **M** (body type) + **V** (R-22 refrigerant code, green) + **E** (external equalizer). The Type M sits in the medium-to-large capacity band of Sporlan's classic valve line-up, bridging the compact bodies and the large flanged H/V/W types, and remains widely specified in the replacement market for R-22 commercial and industrial plants. As across the Sporlan TEV range, the MVE regulates liquid injection by evaporator superheat, with the signature Sporlan construction: large flat diaphragm, field-replaceable element, tight pin-and-port seating, and external superheat adjustment.

KEY FEATURES

Type M body
medium/large capacity class of the classic Sporlan line

Field-replaceable thermostatic element
for in-line servicing

Large flat diaphragm
for precise, stable superheat control

Externally adjustable superheat
on all standard valves

SPECIFICATIONS

PARAMETER	VALUE
BODY TYPE	Type M
REFRIGERANT CODE	V — R-22 (R-407A/C/F and R-422D applications with correction factors)
EQUALIZATION	External (E)



VALVES & REGULATORS

Sporlan VVE Series

BRAND
Sporlan

SKU
RC_PROD_038

CATEGORY
Valves & Regulators



OVERVIEW

The Sporlan VVE is a Type V body thermostatic expansion valve for R-22 with external equalization — **V** (body type) + **V** (R-22 refrigerant code) + **E** (external equalizer). The Type V (together with the Type W) is Sporlan's classic **double-ported** large-capacity design: two seating discs operating on a common shaft double the effective port area, delivering the highest capacities of the traditional flanged line for major industrial evaporators. One engineering consequence procurement teams should know: because either of the two ports can be held partially open by debris, double-ported valves are more sensitive to system contamination than single-port designs. Sporlan explicitly directs that an adequately sized Catch-All® filter-drier be installed ahead of the TEV — pair every VVE with the matching Catch-All (see RC_PROD_040).

KEY FEATURES

Double-ported Type V construction
top-of-range capacity in the classic flanged line

Field-replaceable thermostatic element
parts kits available; note early Type V models excluded

Large flat diaphragm
externally adjustable superheat

External equalizer
for distributor-fed industrial evaporators

SPECIFICATIONS

PARAMETER	VALUE
BODY TYPE	Type V, double-ported, flanged
REFRIGERANT CODE	V — R-22 (R-407 group / R-422D with correction)
EQUALIZATION	External (E)



VALVES & REGULATORS

Sporlan FBVE Series

BRAND

Sporlan

SKU

RC_PROD_039

CATEGORY

Valves & Regulators

OVERVIEW

The Sporlan FBVE is a Type FB body thermostatic expansion valve for R-22 with external equalization — **FB** (body type) + **V** (R-22 refrigerant code) + **E** (external equalizer). The Type FB is one of Sporlan's legacy body designs: per Sporlan Bulletin 210-60, Type FB sits among the older families (alongside Types BI, I, and X) for which replacement valves are sourced through the OEM, Sporlan wholesalers, or Sporlan directly. This makes the FBVE fundamentally a **replacement-market product** — and that is exactly where a 35-year distributor earns its keep. Plants across India still run FB-bodied valves; when one fails, the operator needs either the exact legacy valve or a correctly cross-referenced modern equivalent (typically from the F/EF or S families per current Bulletin 10-10). Refrigeration Controls supports both paths.



KEY FEATURES

Type FB legacy body

direct replacements sourced via the Sporlan wholesale channel

Cross-reference support

to current Sporlan families where direct replacement is preferred

Standard Sporlan construction principles

flat diaphragm, tight pin/port seating, external superheat adjustment

External equalizer

for distributor-fed evaporators

SPECIFICATIONS

PARAMETER	VALUE
BODY TYPE	Type FB (legacy family)
REFRIGERANT CODE	V — R-22
EQUALIZATION	External (E)



FILTER DRIERS

Sporlan Catch-All Core Series

BRAND
Sporlan

SKU
RC_PROD_040

CATEGORY
Filter Driers



OVERVIEW

Sporlan Catch-All® replaceable cores provide contaminant control in HVAC&R systems: moisture, acids, and solid debris are captured to protect system life, efficiency, and capacity. Each core is a solid filter block molded from desiccant granules bonded in block form, fitting into flanged steel Catch-All shells (C-480 through C-19200 series and larger) and Replaceable Suction Filter (RSF) shells. The flagship RC-4864 standard activated core carries 48 cubic inches of desiccant with 64 square inches of filter area in a 5.5-inch length — the industry-standard core suitable for most liquid or suction line installations. The replaceable-core architecture is what makes Catch-All the service engineer's choice: after a burnout or during commissioning clean-up, cores are swapped in minutes without cutting the shell out of the line.

KEY FEATURES

Multi-contaminant removal
removes moisture, acids, dirt, and solid contaminants in one element

Replaceable in-line core
no brazing needed to change a core at service

RC-4864-HH activated charcoal core
for wax removal on low-temp systems and hermetic burnout clean-up

RPE-48-BD pleated filter element
for lowest pressure drop in RSF suction duty after clean-up

SPECIFICATIONS

PARAMETER	VALUE
STANDARD CORE	RC-4864: 48 in³ desiccant, 64 in² filter area, 5.5 in length
HIGH-ACID/CHARCOAL CORE	RC-4864-HH: activated charcoal — wax removal, burnout clean-up
FILTER ELEMENT	RPE-48-BD pleated element — minimum Δp suction duty



VALVES & REGULATORS

Sporlan Type 180

BRAND
Sporlan

SKU
RC_PROD_041

CATEGORY
Valves & Regulators



OVERVIEW

The Sporlan Type 180 Solenoid Pilot Control is a supplementary device for Sporlan thermostatic expansion valves, used **in place of large-capacity liquid line solenoid valves** for positive shut-off of liquid lines. The economics are the point: since only one size of Type 180 is required regardless of system tonnage, it costs less than a large line-size solenoid and is cheaper to install. The Type 180 does not close the liquid line directly. Installed in the TEV's external equalizer line with a third 1/4" connection to the liquid line, it creates a pressure under the expansion valve diaphragm higher than bulb pressure — forcing the TEV itself closed. Two ports in the body (one high pressure, one low pressure) switch this pilot pressure. Because the TEV becomes the shut-off element, Sporlan requires Catch-All® filter-drier protection; a C-032-F Catch-All is included with the device.

KEY FEATURES

Compact pilot device
replaces large, expensive line-size liquid solenoids

One size, all capacities
simplified stocking and installation

Acts through the TEV
positive liquid shut-off using the expansion valve seat

Two-port body
high pressure / low pressure, with three 1/4" connections

SPECIFICATIONS

PARAMETER	VALUE
FUNCTION	Solenoid pilot control — closes the TEV for liquid line shut-off
MAX. RATED PRESSURE	500 psi
CONNECTIONS	Three × 1/4" (high-pressure liquid, suction, common to TEV external equalizer)



INSTRUMENTATION

Honeywell WFS-6000

BRAND

Honeywell

SKU

RC_PROD_042

CATEGORY

Instrumentation



OVERVIEW

The Honeywell WFS-6000 is a paddle-type water flow switch that detects when liquid flow in a line exceeds or drops below an adjusted rate. A segmented paddle inserted in the flow stream actuates an SPDT contact system: wire it to close one circuit and open a second as flow crosses the setpoint — the classic interlock proving chilled-water flow before a chiller starts, protecting pumps against dry running, or raising a no-flow alarm. Designed for water and fluids harmless to brass and phosphor bronze (not for hazardous fluids or lines below 0 °C), the WFS-6000 covers pipe diameters from 1" to 6" with trimmable paddle segments, giving one SKU an enormous application range across HVAC and industrial water circuits — including high salt/chlorine content water.

KEY FEATURES

SPDT snap-action contact system
one switch, two circuits (prove + alarm)

Single model coverage
covers 1" to 6" pipe via segmented, field-trimmed paddles

Adjustable setpoint
flow control range 15 – 1125 LPM across pipe sizes

Rugged construction
brass/phosphor bronze wetted parts

SPECIFICATIONS

PARAMETER	VALUE
PIPE CONNECTION	1" BSP(T) threaded, in-line tee mounting
PIPE DIAMETER COVERAGE	1" – 6" via paddle segments (trim to size)
CONTACT SYSTEM	SPDT snap-action microswitch (rating per Honeywell datasheet/label)



INSTRUMENTATION

Wika Model A52

BRAND

Wika

SKU

RC_PROD_043

CATEGORY

Instrumentation

OVERVIEW

The Wika A52 is a bimetallic dial thermometer built to EN 13190 — the cost-effective standard for temperature indication in HVAC systems, machine building, equipment manufacturing, and building services. Despite its entry-level positioning, it carries a robust stainless steel case and **accuracy class 1** for nominal sizes from 60 mm — genuine German-engineered measurement at a working-plant price. The A52 is the axial (back mount) version; its sibling R52 provides radial (lower mount) connection for panel and pipe orientations where the stem must enter from below. The maintenance-free bimetal measuring system needs no power, no capillary, and no calibration routine in normal duty — the wide selection of stem lengths and nominal sizes adapts it to ventilation ducts, hydraulic power packs, chilled and hot water lines, and test benches alike.

KEY FEATURES

EN 13190 manufacture
accuracy class 1 for nominal sizes ≥ 60 mm

Robust stainless steel case
in the entry-level class

Connection orientation
axial (A52) or radial (R52 variant) — flexible mounting

Maintenance-free bimetal measuring system
no power supply required

SPECIFICATIONS

PARAMETER	VALUE
DIAL SIZE (NOMINAL SIZE)	63 / 80 / 100 mm classes per datasheet TM 52.01
ACCURACY	Class 1 (EN 13190) for NS ≥ 60 mm
SCALE RANGES	Typical HVAC selections from -30...+50 °C through 0...+120 °C and 0...+200 °C (full range list per TM 52.01)



INSTRUMENTATION

Wika Model 213.53

BRAND

Wika

SKU

RC_PROD_044

CATEGORY

Instrumentation



OVERVIEW

The Wika 213.53 is the industry-standard industrial bourdon tube pressure gauge for vibration and pulsation duty. Its stainless steel case protects the movement in harsh environments, and the glycerine case filling dampens needle flutter, lubricates the movement, and prevents internal condensation — which is why a filled 213.53 survives for years bolted to a reciprocating compressor that destroys dry gauges in months. A distinctive engineering detail: the O-ring seal around the connection makes the gauge **field-fillable** — the case can be topped up or filled on site for high-vibration applications. The companion model 212.53 is the identical gauge in dry (unfilled) form where damping isn't needed.

KEY FEATURES

Glycerine filling

vibration damping + movement lubrication + condensation prevention

Stainless steel case

for harsh plant environments; weather-tight construction class

Field-fillable O-ring connection

service-friendly on site

Copper alloy wetted parts

bourdon tube measuring element

SPECIFICATIONS

PARAMETER	VALUE
DIAL SIZE	63 mm (2.5") and 100 mm (4")
SCALE RANGES	From 0...0.6 bar up to 0...1000 bar classes (dual scale bar/psi standard); vacuum and compound ranges available
ACCURACY	Per EN 837-1 class for size (NS 63 / NS 100) — see datasheet PM 02.12

Refrigeration Controls

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Specifications per manufacturer data; subject to change without notice.

RC_PROD_044