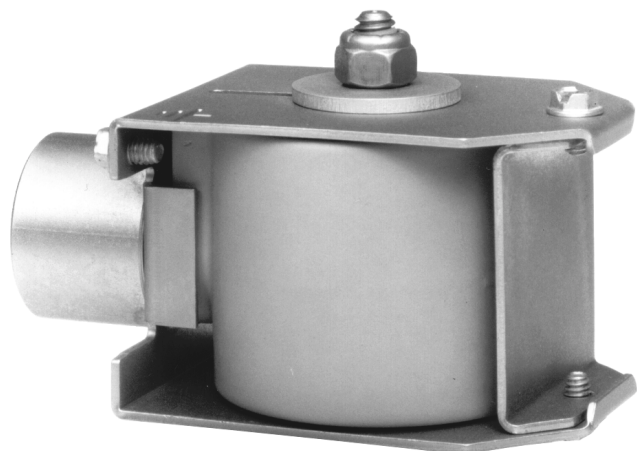


## HANSEN TECHNOLOGIES CORPORATION



**Standard Coil with 1/2" Fitting**

Specifications, Applications,  
Service Instructions & Parts

STANDARD ELECTRICAL  
SOLENOID COILS

With 1/2" Fitting,  
DIN Plug or Junction Box

### KEY FEATURES

- One coil fits all valve sizes
- Low wattage
- Molded, watertight design
- Very compact size
- Operates on standard voltages
- Combination 50/60Hz coil
- Replaces Danfoss coils

### INTRODUCTION

All Hansen solenoid valves use one size, molded, watertight coil. These coils are quite strong but efficient, requiring only 16 watts of power. All common voltages and frequencies are available. Coils are designed to operate from 85% to 110% of rated voltage. Pilot light assemblies are an available option.

### APPLICATIONS

The standard coil connection is a 1/2" female straight pipe fitting (NPSM) for conduit, with two 18" long, insulated 18 AWG wire leads. Coils with a DIN plug for Hirschmann-connector (or equal) are available for Europe, or for where codes permit. An optional coil with a plated steel, integral junction box and 18" long leads is also available.

All coils have a standard zinc plated, steel, coil housing which meets NEMA 3R (rainproof) and NEMA 4 (splashproof) requirements. This sealed construction can withstand direct contact with splashing or hose-directed water, wind blown dust or rain, and remain undamaged by the formation of ice.

### ORDERING INFORMATION, ELECTRICAL SOLENOID COIL KITS

CONNECTION STYLE	VOLTAGE	PART NO.
1/2" FITTING	115V 50/60Hz	70-1057
	208/230V 50/60Hz	70-1056
	24V 50/60Hz	70-1058
DIN PLUG	115V 50/60Hz	70-1054
	230V 50/60Hz	70-1055
	24V 50/60Hz	70-1053
JUNCTION BOX	115V 50/60Hz	70-1064
	208/230V 50/60Hz	70-1063
	24V 50/60Hz	70-1065
Any of Above	Other	FACTORY

Above parts include bare coil plus coil housing and retaining hardware for both the Hansen and Danfoss solenoid tubes. See page 4 for bare coil part numbers. The DIN plug coil does not include DIN socket (77-0316) with gasket (77-0264).

**TO ORDER:** Specify part number, voltage, and connection style. Contact factory for ordering information on other voltage coils.

## MATERIAL SPECIFICATIONS

Coil: Molded, Class "F" construction

Coil Housing: Steel, zinc plated

Power: 115V 50/60Hz

208/230V 50/60Hz

24V 50/60Hz

Other voltages available

Operating Range: 85% to 110% of rated voltage

Connections: 1/2" fitting (NPSM), standard;

DIN 43650 plug for socket, optional;

Junction box with two 7/8" knockouts for

1/2" conduit fitting, optional

## ADVANTAGES

Hansen solenoid valves were formerly supplied with coils in a can with a small junction box. These were made by Danfoss for the North American market. The present watertight Hansen coils are completely interchangeable with the formerly supplied Danfoss coils provided the proper coil top fastener is used (the bare coil, however, is not interchangeable). See Hansen/Danfoss coil interchangeability drawings on next page.

The present Hansen solenoid tube and plunger are also interchangeable with the Danfoss tubes formerly supplied. The Hansen tube is threaded on top while the Danfoss tube has a curved groove top with no threads.

The present Hansen coils and solenoid tube and plunger assemblies are made entirely by Hansen in the U.S.A. These have proven very reliable for the anticipated broad ranges of temperatures, pressures, and refrigerants. All Hansen coils are facto-

ry pre-tested to assure reliable operation in the field.

## INSTALLATION

To avoid bending the solenoid tube, remove coil from valve before connecting junction box, conduit, or cable to coil housing. Make all electrical connections per local and national electrical codes. Place coil onto solenoid tube. Coil may be rotated 360° to facilitate wiring.

To fasten coil to Hansen solenoid tube (threaded top), place the supplied, aluminum coil washer and then the stainless steel coil nut on the threaded top of the solenoid tube and tighten until snug. When a Danfoss coil is used, bend or remove the small metal tab on top of Danfoss coil housing.

To fasten coil to Danfoss solenoid tube (curved groove top), use the Hansen supplied retainer clip. Place retainer clip, tab facing up, over top of solenoid tube and press on center of retainer clip while pushing sideways until it snaps into place. Install by hand to avoid damaging solenoid tube. Retainer clip can be removed with pliers. Do not use Danfoss retaining parts (coil cap, O-ring, and split threaded retainer)

with Hansen coils because they will not tighten properly.

## ELECTRICAL

The coil will draw 16 watts and properly operate between 85% and 110% of rated voltage (the 24 Volt coil will draw 19 watts). Typical power consumption for the standard coils is listed in the table below. In the table, the term "INRUSH AMPS" refers to the high momentary current surge occur-

VOLTAGE	FREQUENCY (HERTZ)	INRUSH AMPS	HOLDING AMPS
115V	60	0.73	0.24
	50	0.93	0.31
208/230V	60 (208V)	0.32	0.11
	60 (240V)	0.41	0.14
	50 (230V)	0.47	0.16
24V	60	3.42	1.14
	50	4.56	1.52

ring when the coil is energized. The "HOLDING AMPS" (sometimes called running amps) refers to the continuous current draw following the inrush.

These coils can be continuously energized without overheating or failure. When coil has been energized for a long period, the surface will become hot to the touch; this is normal. Coil should only be energized while on solenoid tube; otherwise immediate coil burnout may occur.

RATED VOLTAGE	MINIMUM VOLTAGE (85%)	MAXIMUM VOLTAGE (110%)
115V	98V	126V
208/230V	177V	253V
24V	20.4V	26.4V

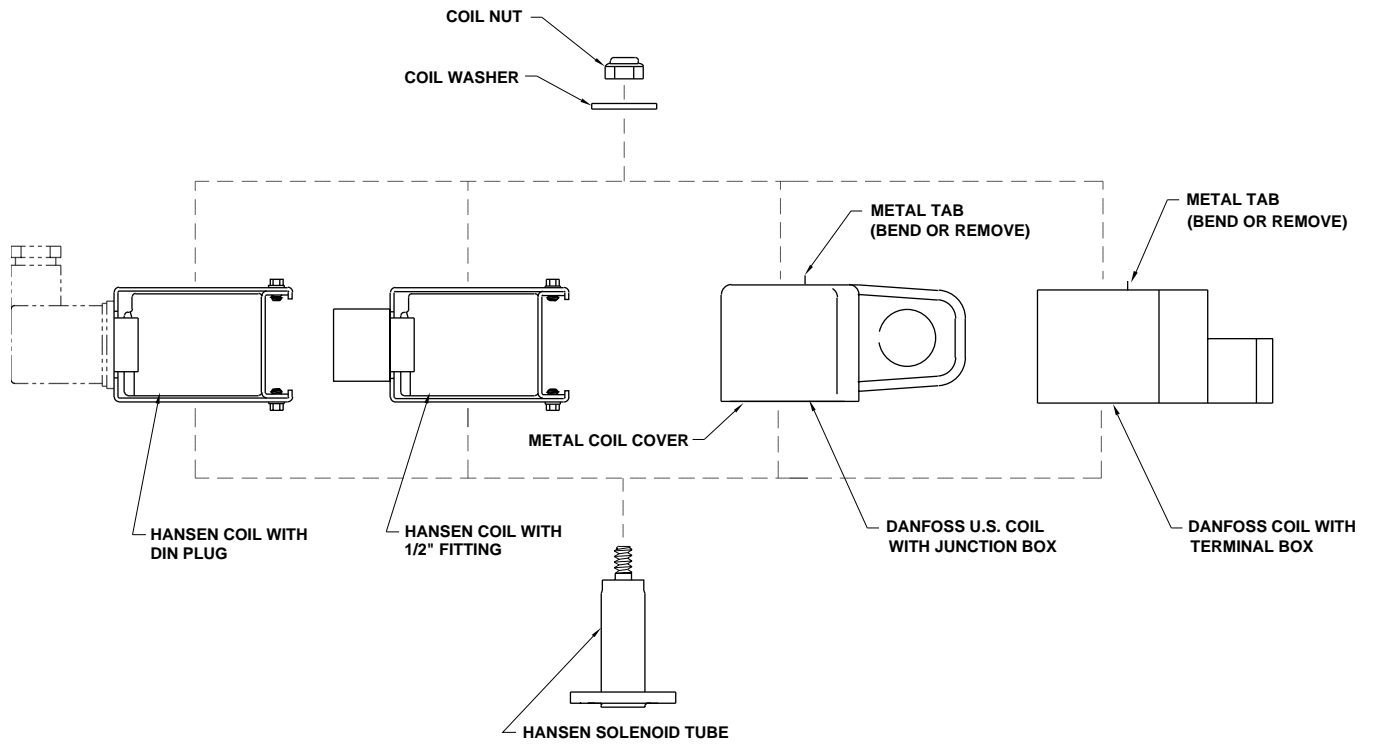
## SERVICE AND MAINTENANCE

If coil is suspected of not working, first check fuses, circuit breakers, control relays and switches leading to coil to be sure they are working properly and that power is reaching the coil. Be sure line voltage is within 85% to 110% of marked coil rated voltage, see table below.

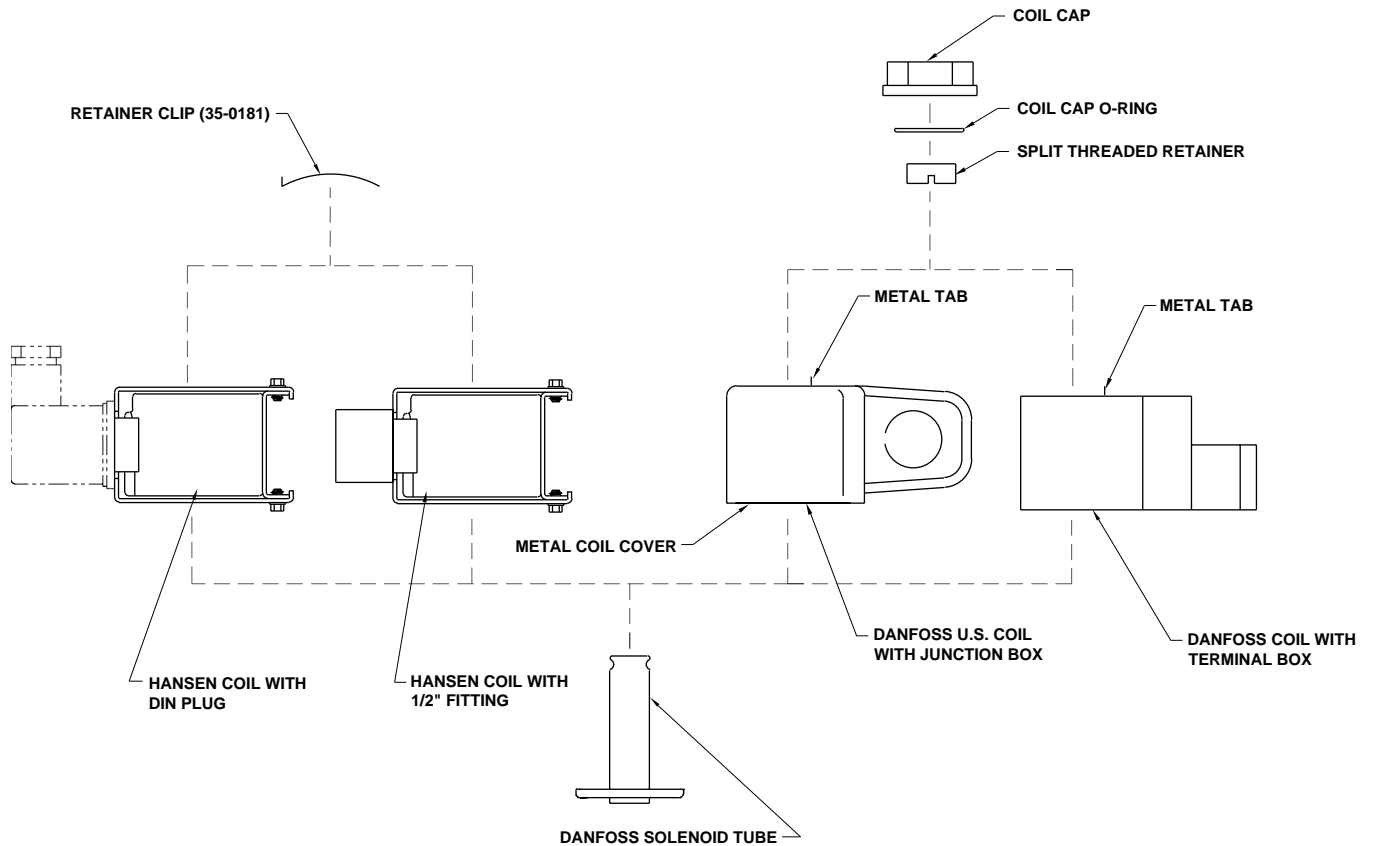
Energize the coil; a single metallic "click" signifies the coil is working. If the "click" is not heard, hold a small screwdriver against solenoid tube top while coil is energized, a slight magnetic pull should be detected. If not, check coil winding continuity. Disconnect electrical power and isolate coil from field wiring. Use an Ohm meter, or other continu-

# HANSEN/DANFOSS COIL INTERCHANGEABILITY

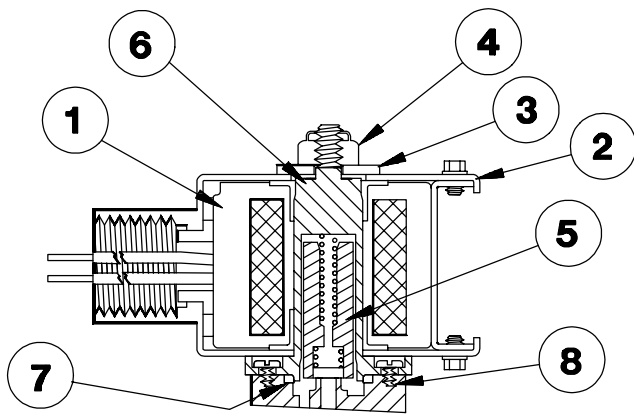
## WITH HANSEN SOLENOID TUBE



## WITH DANFOSS SOLENOID TUBE



## PARTS LIST



ITEM	DESCRIPTION	QTY	PART NO
1a	Bare Coil, 115V 50/60Hz, wire leads	1	70-0271
1b	Bare Coil, 208/230V 50/60Hz, wire leads	1	70-0286
1c	Bare Coil, 24V 50/60Hz, wire leads	1	70-0284
1d	Bare Coil, 115V 50/60Hz, DIN plug	1	70-0270
1e	Bare Coil, 230V 50/60Hz, DIN plug	1	70-0285
1f	Bare Coil, 24V 50/60Hz, DIN plug	1	70-0283
1g	Other Voltage Coils	1	FACTORY
2a	Coil Housing Assembly Kit with 1/2" fitting	1	70-1060
2b	Coil Housing Assembly Kit for DIN plug	1	70-1061
2c	Coil Housing Assembly Kit with junction box	1	70-1062
	<b>Solenoid Tube/Plunger Kit</b>		<b>70-1059</b>
	Above Kit Consists of:		
3	Coil Washer	1	70-0289
4	Coil Nut	1	70-0281
5	Plunger	1	70-0295
6	Solenoid Tube	1	70-0298
7	Solenoid Tube Gasket	1	70-0301
8	Tube Screws	4	70-0297

Above Coil Housing Assembly Kits include: (2) coil housing pieces with (2) housing screws, grounding screw, watertight grommet, and (2) coil sleeves.

## PRINCIPLES OF OPERATION

When energized, the flow of electricity through the coil winding creates a magnetic field. Inside this field is the solenoid tube and plunger. The pull of the magnetic field is strong enough to lift the plunger off the pilot seat orifice (typical of a normally closed solenoid tube and plunger). When de-energized, the magnetic field is broken and the plunger returns to cover the pilot seat orifice.

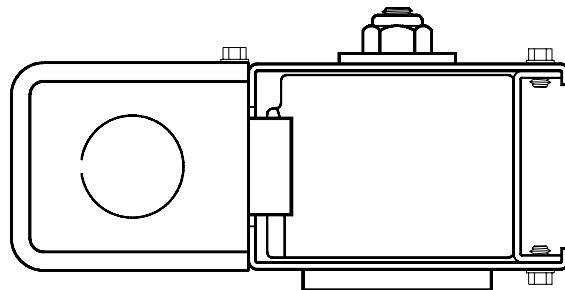
## CAUTION

These coils have been designed specifically for use with Hansen valves on refrigeration systems. They can also replace the same size Danfoss coils. These instructions and related safety precautions must be completely read and understood before selecting, using or servicing these coils. Only knowledgeable, trained refrigeration mechanics should install, operate or service these coils. Stated temperature and pressure limits should not be exceeded. Do not remove solenoid tube from valve unless system has been evacuated to zero pressure. See also Safety Precautions in current List

Price Bulletin and Safety Precaution Sheet supplied with product.

## WARRANTY

Hansen electrical and electronic parts are guaranteed against defective materials or workmanship for 90 days F.O.B. factory. All other components are guaranteed for one year F.O.B. factory. No consequential damages or field labor is included.



Coil Housing with Junction Box

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