ENGINEERING
TOMORROW

User Guide

Airflex®
Failsafe Caliper Brake



VICKERS
by Danfoss

Table of Contents

Description 3
Where used 3
Technical Data sheet 4
Basic information 5
Brake Assembly 6
Brake Sub-Assembly 7
Brake Assembly Dimensions 8
Model code 9
Options 9
Revision 10
Notes 11

© Danfoss | Power Solutions | 2026.05

Description

Airflex© failsafe caliper is a spring applied, hydraulically released brake. The Airflex© brake is ideal for emergency stopping or static holding. Loads can be stopped quickly or in a controlled manner and held safely. Variable spring force kits, friction options and disc sizes allow for custom adaptation to any application. Sensors are available for monitoring pad wear and on/off brake status.



Where used

- Oil & Gas
- Mining
- Metal Processing
- Cranes & Hoists
- Marine
- Anywhere dependable, failsafe braking is needed

Technical Data sheet

Size 3								
Clamp force [1]		Brake force [2]	Loss of force per mm	Operating pressure		Balance pressure		
kN (min)	kN (max)	kN	%	Bar	psi	MPa	Bar	psi
20.0	23.0	16.0	5	40	580	2.3	22.7	330
24.8	27.3	19.8	4	45	653	2.8	28.2	409
30.0	33.5	24.0	3	50	725	3.4	34.1	494
40.0	44.0	32.0	4	65	943	4.5	45.5	659
46.0	50.0	36.8	6	75	1088	5.2	52.3	758
50.0	55.0	40.0	6	80	1160	5.7	56.8	824
56.0	60.0	44.8	5	90	1305	6.4	63.6	923
60.0	66.0	48.0	5	95	1378	6.8	68.2	989
70.0	77.0	56.0	4	115	1668	8.0	79.5	1154
80.0	88.0	64.0	6	130	1885	9.1	90.9	1319
85.0	95.0	68.0	7	140	2031	9.7	96.6	1401
90.0	98.5	72.0	11	145	2103	10.2	102.3	1483
100.0	109.0	80.0	11	160	2321	11.4	113.6	1648
110.0	119.0	88.0	9	175	2538	12.5	125.0	1813
120.0	130.0	96.0	8	190	2756	13.6	136.4	1978

1) All figures are based on 1mm air gap
2) Braking force is based on minimum clamping force, nominal coefficient of friction μ = 0.4 and 2 brake surfaces

Brake Torque
Brake torque (T) in Newton-meters, can be calculated from below formula.
T (Nm) = N x F x (D-0.2)/2

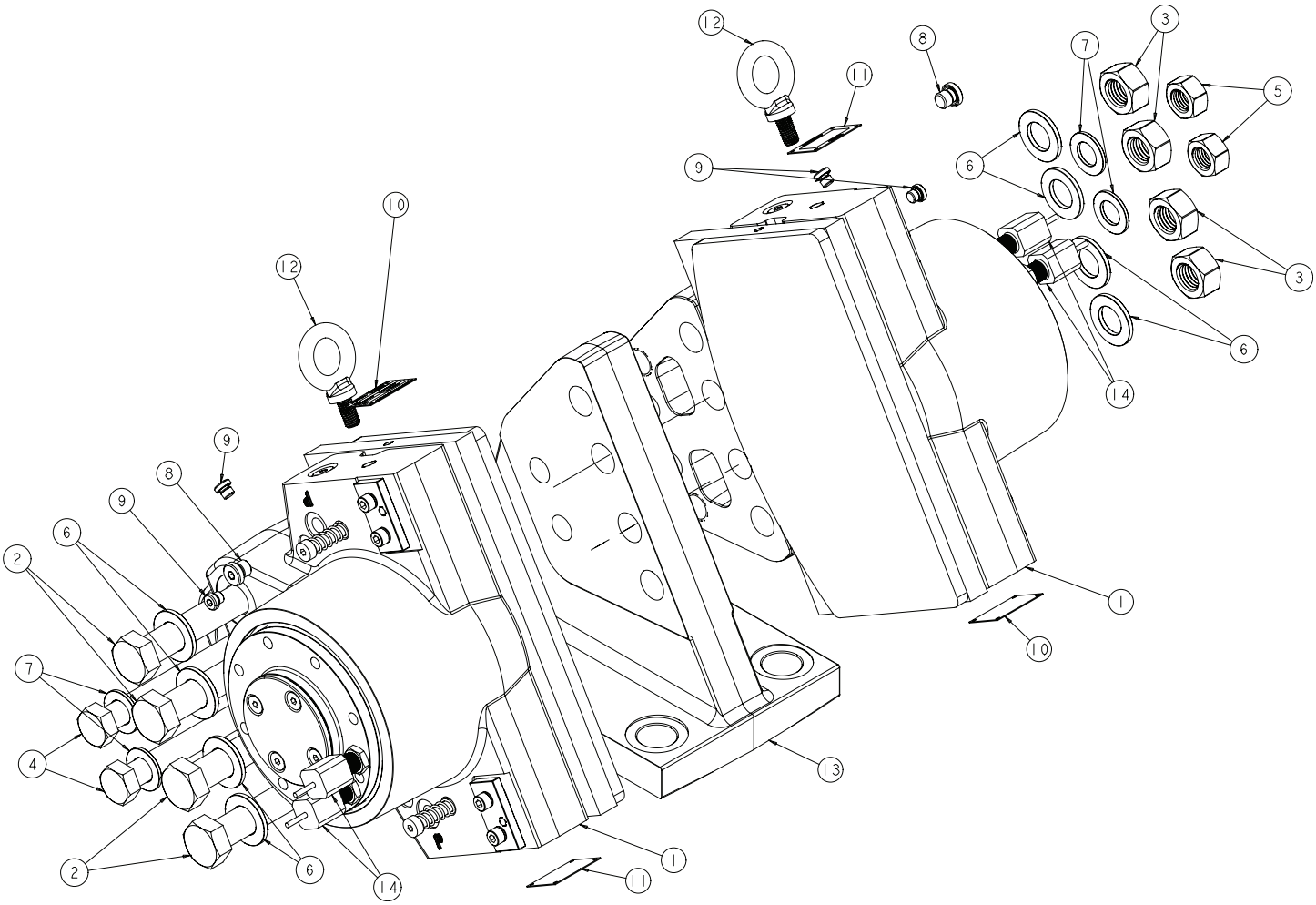
Where:
N = Number of brakes
F = Brake force (in newtons)
D = Disc outer diameter (meters)

© Danfoss | Power Solutions | 2026.05

Basic information

Size 3	
Weight of caliper (without bracket)	150 kg
Pad area (organic)	59534 mm^2
Max. wear of pad (organic)	10 mm
Pad area (sintered)	35948 mm^2
Max. wear of pad (sintered)	10 mm
Nominal air gap	1 mm
Nominal coefficient of friction	0.4
Total piston area each caliper half	88 cm^2
Total piston area each caliper	176 cm^2
Volume for each caliper at 1 mm stroke	17.6 cm^3
Actuating time (approximate)	0.3s
Pressure connection/port	1/4" BSPP
Drain connection/port	1/8" BSPP
Operating temperature range	-20°C to +70°C
Max operating pressure	230 Bar (23MPa)

Brake Assembly

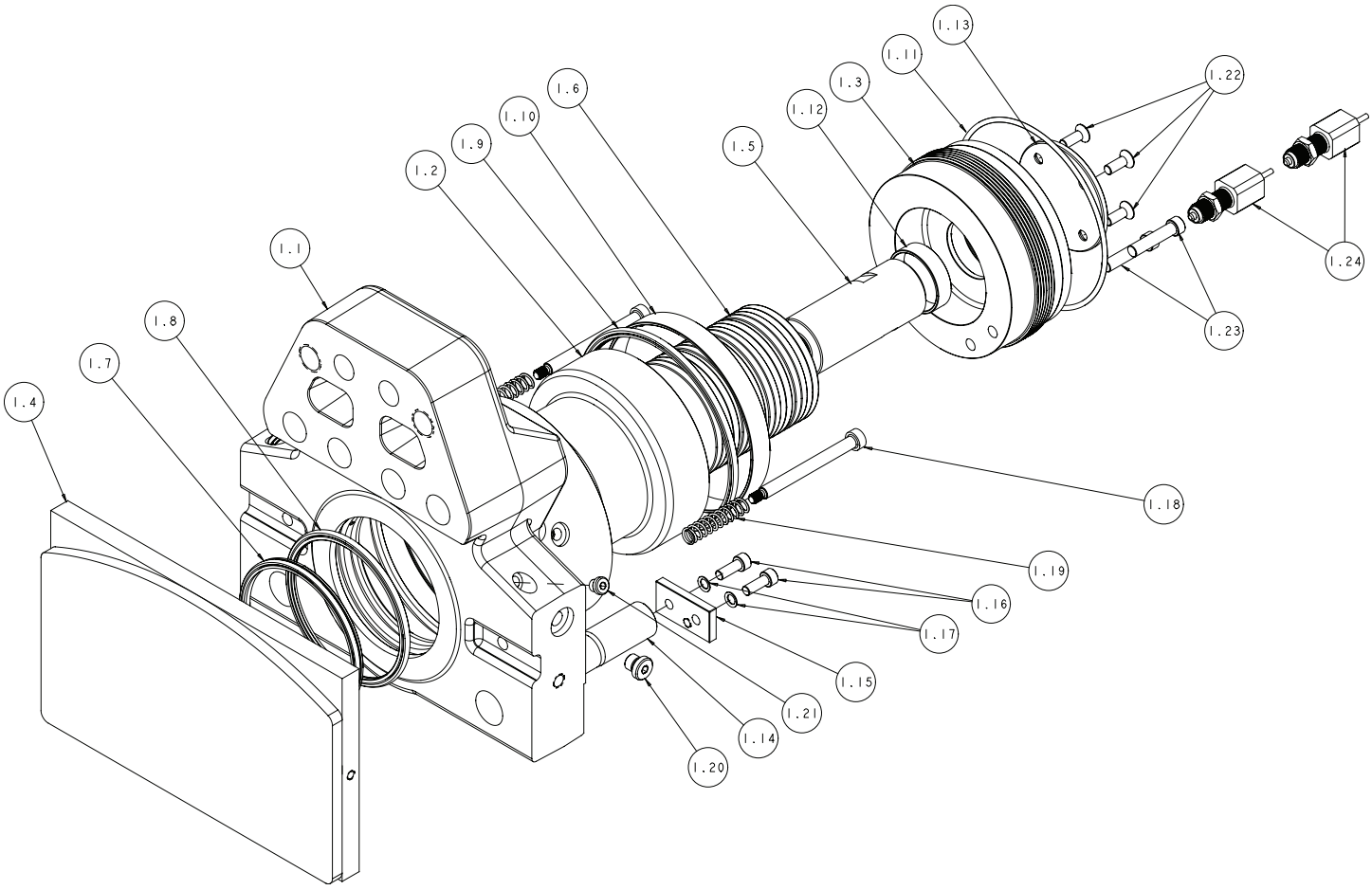


ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	BRAKE SUB ASSEMBLY	8	1/4" BSPP PLUG
2	M24 MOUNTING BOLT*	9	1/8" BSPP PLUG
3	M24 MOUNTING NUT*	10	NAME PLATE
4	M20 MOUNTING BOLT*	11	WARNING PLATE
5	M20 MOUNTING NUT*	12	EYE BOLT
6	M24 WASHERS*	13	BRACKET*
7	M20 WASHERS*	14	SENSOR*

*Mounting bolts, sensors and bracket are optional

© Danfoss | Power Solutions | 2026.05

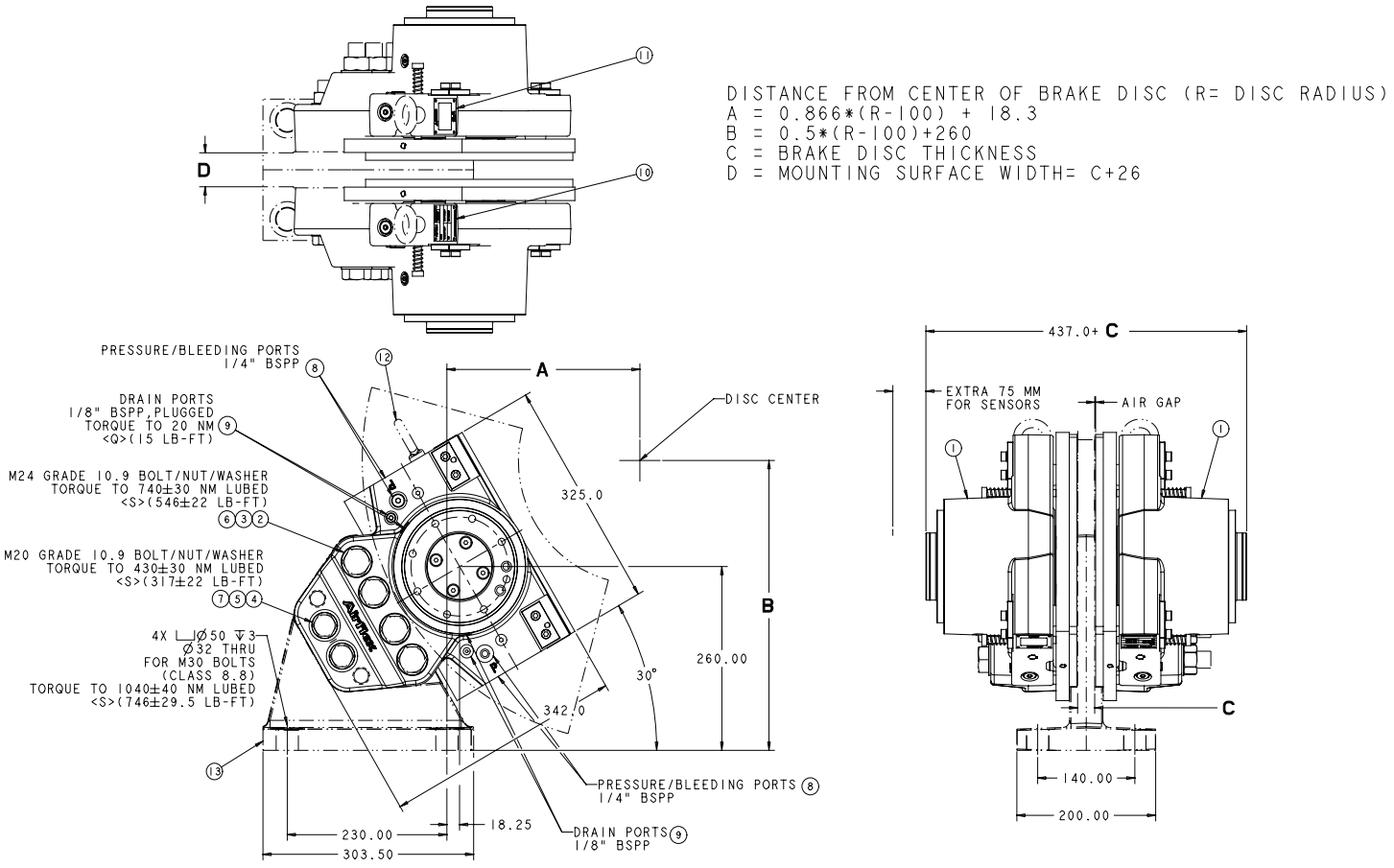
Brake Sub Assembly



ITEM	DESCRIPTION	ITEM	DESCRIPTION
1.1	BODY	1.13	TOP COVER
1.2	PISTON	1.14	SHEAR PIN
1.3	END CAP	1.15	KEEPER PLATE
1.4	FRICTION SUB ASSEMBLY	1.16	M8 BOLT
1.5	CENTER ROD	1.17	LOCK WASHER
1.6	DISC SPRING KIT	1.18	SHOULDER BOLT
1.7	WIPER SEAL	1.19	RETURN SPRING
1.8	ROD SEAL 1	1.20	1/4" BSPP PLUG
1.9	ROD SEAL 2	1.21	1/8" BSPP PLUG
1.10	BEARING RING 1	1.22	M8 FLAT HEAD SCREW
1.11	O-RING	1.23	SENSOR PIN*
1.12	BEARING RING 2	1.24	SENSOR*

*Sensors are optional

Brake Assembly Dimensions



ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	BRAKE SUB ASSEMBLY	8	1/4" BSPP PLUG
2	M24 MOUNTING BOLT*	9	1/8" BSPP PLUG
3	M24 MOUNTING NUT*	10	NAME PLATE
4	M20 MOUNTING BOLT*	11	WARNING PLATE
5	M20 MOUNTING NUT*	12	EYE BOLT
6	M24 WASHERS*	13	BRACKET*
7	M20 WASHERS*	14	SENSOR*

*Mounting bolts, sensors and bracket are optional

© Danfoss | Power Solutions | 2026.05

Model code

ACB - F - D - 3 - 060 - V - 2 - D - 1 - A - A - O - A

1-3 | 4 | 5 | 6 | 7-9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17

1, 2, 3 - Prefix	
ACB	Airflex Caliper Brake
4 - Brake Type	
F	Failsafe
5 - Configuration	
D	Dual
6 - Brake Size	
3	20 KN – 120 KN
7, 8, 9 - Clamp Force (KN)	
020	20 KN Clamp force (size-3)
024	24.8 KN Clamp force (size-3)
030	30 KN Clamp force (size-3)
040	40 KN Clamp force (size-3)
046	20 KN Clamp force (size-3)
050	50 KN Clamp force (size-3)
056	26 KN Clamp force (size-3)
060	60 KN Clamp force (size-3)
085	85 KN Clamp force (size-3)
090	90 KN Clamp force (size-3)
100	100 KN Clamp force (size-3)
110	110 KN Clamp force (size-3)
120	120 KN Clamp force (size-3)

10 - Mounting	
D	Danfoss mount
V	V - mount
11 - Friction	
1	Organic friction
2	Sintered Friction
12 - Sensor	
A	None
B	Brake ON/OFF sensor
C	Wear Sensor
D	Brake ON/OFF and wear sensor
13 - Hydraulic Port Thread	
1	Inlet port – 1/4" BSPP thread
14 - Wear Compensation	
A	Manual
15 - Environment	
A	Standard
16 - Special Feature	
O	None
17 - Paint	
A	Standard

Options

- Sensors- Wear, On/Off
- Mounting Bracket
- Discs

Notes

© Danfoss | Power Solutions | 2026.05

ENGINEERING
TOMORROW

Products we offer:

- Cartridge valves
- DCV directional control valves
- Electric converters
- Electric machines
- Electric motors
- Gear motors
- Gear pumps
- Hydraulic integrated circuits (HICs)
- Hydrostatic motors
- Hydrostatic pumps
- Orbital motors
- PLUS+1 controllers
- PLUS+1 displays
- PLUS+1 joysticks and pedals
- PLUS+1 operator interfaces
- PLUS+1 sensors
- PLUS+1 software
- PLUS+1 software services, support and training
- Position controls and sensors
- PVG proportional valves
- Steering components and systems
- Telematics

Hydro-Gear
www.hydro-gear.com
Daikin-Sauer-Danfoss
www.daikin-sauer-danfoss.com

Danfoss Power Solutions is a global manufacturer and supplier of high-quality hydraulic and electric components. We specialize in providing state-of-the-art technology and solutions that excel in the harsh operating conditions of the mobile off-highway market as well as the marine sector. Building on our extensive applications expertise, we work closely with you to ensure exceptional performance for a broad range of applications. We help you and other customers around the world speed up system development, reduce costs and bring vehicles and vessels to market faster.

Danfoss Power Solutions – your strongest partner in mobile hydraulics and mobile

Go to www.danfoss.com for further product information.

We offer you expert worldwide support for ensuring the best possible solutions for outstanding performance. And with an extensive network of Global Service Partners, we also provide you with comprehensive global service for all of our components.

Local address:

Danfoss Power Solutions (US) Company
2800 East 13th Street
Ames, IA 50010, USA
Phone: +1 515-239-6000

Danfoss Power Solutions GmbH & Co.OHG
Krokamp 35
D-2439 Neumünster, Germany
Phone: +49 4321 871 0

Danfoss Power Solutions ApS
Nordborgveg 81
DK-6430 Nordborg, Denmark
Phone: +45 7488 2222

Danfoss Power Solutions Trade (Shanghai) Co. Ltd.
Building #22, No 1000 Jin Hai Rd
Jin Qiao, Pudong New District
Shanghai, China 201206
Phone: +86 21 2080 6201

Danfoss can accept no responsibility for possible errors in catalogs, brochures, and other printed material. Danfoss reserves the right to alter its products without notice. This also applies to products already on order provided that such alterations can be made without subsequent changes being necessary in specifications already agreed. All trademarks in this material are the property of the respective companies. Danfoss and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.

© Danfoss | Power Solutions | 2026.05