

- Grease Duct
- Dishwasher Exhaust

Commercial Kitchen Exhaust

Models SW-NAKS-CK,
DW-NAKS-CK-RC, &
DW-NAKS-CK-ZC

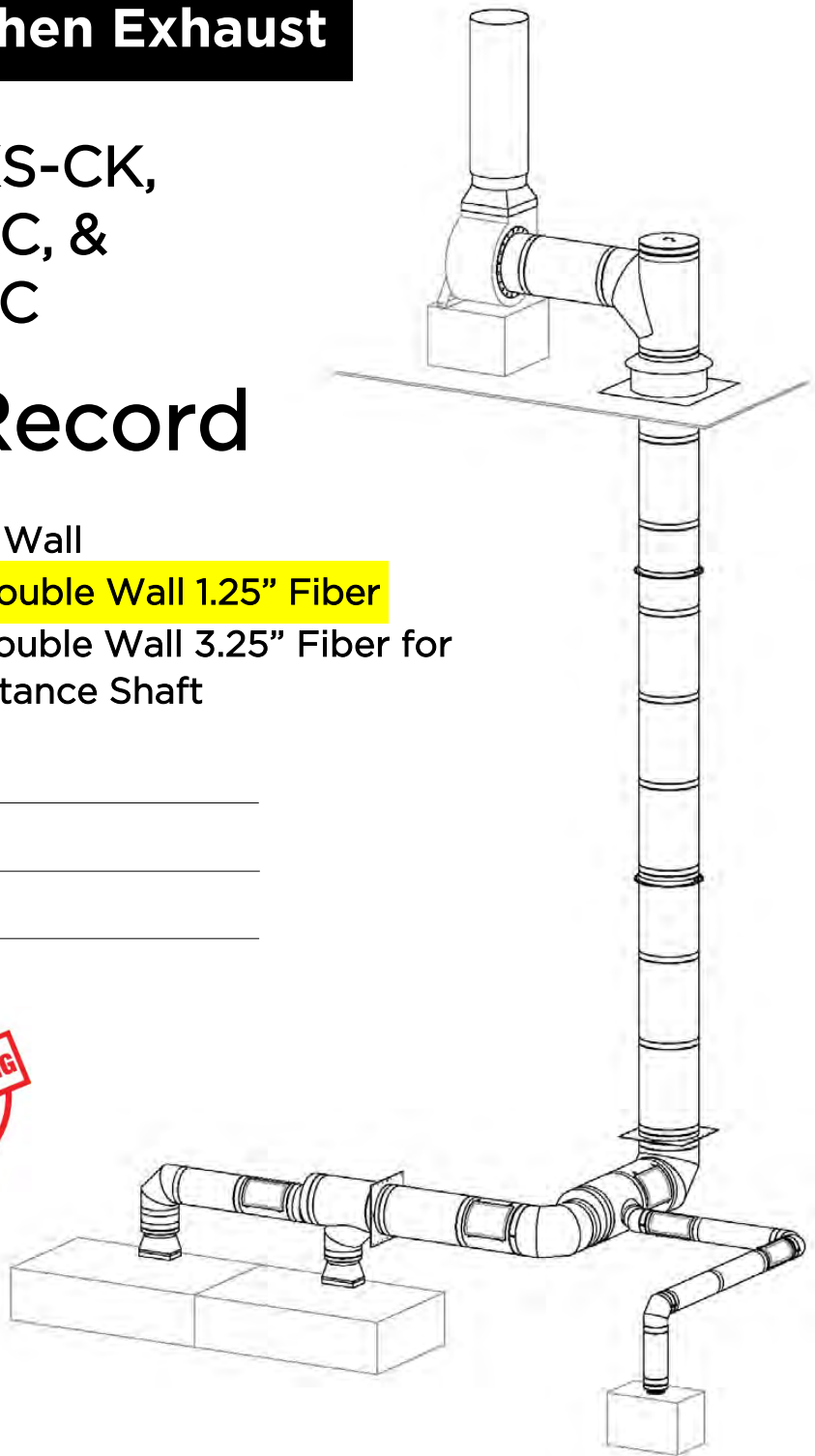
Submittal Record

- SW-NAKS-CK Single Wall
- DW-NAKS-CK-RC Double Wall 1.25" Fiber
- DW-NAKS-CK-ZC Double Wall 3.25" Fiber for UL 2221 2-Hour Fire Resistance Shaft

PROJECT: _____

PREPARED BY: _____

PREPARED FOR: _____



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ITEMS (** indicates Standard Items)

(supports)

APS Anchor Plate Support
HDB Heavy Duty Base
WB Wall Brackets
FR Full Ring
HR Half Ring
**LSB Light Support Band
GWB Guy Wires Band

(pipe and other lengths)

**J-600 600°F Sealant
**LB Locking Band
**CLB Cut Length Locking Band
12L 12" Fixed Pipe Length
**18L 18" Fixed Pipe Length (Ø26-36)
**24L 24" Fixed Pipe Length (Ø6-24)
30L 30" Fixed Pipe Length
**36L 36" Fixed Pipe Length (Ø26-36)
42L 42" Fixed Pipe Length
**48L 48" Fixed Pipe Length (Ø6-24)
UDL Universal Drain Length
TPL Test/Nozzle Port Length
24AL 24" Adjustable Length
48AL 48" Adjustable Length
**IAD Inline Access Door Length

(fittings and accessories)

15EL 15° Elbow
30EL 30° Elbow
45EL 45° Elbow
**45EA 45° Elbow Access
87EL 87° Elbow
**87EA 87° Elbow Access
90EL 90° Elbow
45T 45° Tee
45TØ 45° Reduction Tee
45GT 45° Grease Duct Tee
87T 87° Tee
87TØ 87° Reduction Tee

87GT 87° Grease Duct Tee
90T 90° Tee
90TØ 90° Reduction Tee
90GT 90° Grease Duct Tee
87BT 87° Boot Tee
87BTØ 87° Reduction Boot Tee
87GBT 87° Grease Duct Boot Tee
90GBT 90° Grease Duct Boot Tee
90BT 90° Boot Tee
90BTØ 90° Reduction Boot Tee
**87BHTØ 87° Reduction Bullhead Tee
**87IBTØ 87° Increasing Boot Tee
90WT 90° Wye Tee
90WTØ 90° Reduction Wye Tee
DCB Drain Tee Cap Bottom
DCS Drain Tee Cap Side
TCA Tee Cap Access
GTCA Grease Duct Tee Cap Access
<i>(increasers and reducers)</i>
TEI Tapered Eccentric Increaser
TER Tapered Eccentric Reducer
SI Stepped Increaser
SR Stepped Reducer
<i>(start and end adapters)</i>
**FCS Flange Collar Adapter - Start
FCE Flange Collar Adapter - End
**VB Vee Band
TRS Transition to Round - Start
**NWA No Weld Hood Adapter
**NWHO No Weld Hood Adapter - Oval
**FPE:??x?? Fan Plate Adapter - End
<i>(terminations)</i>
OTS Open Termination w/Screen
SCN Stack Cap
SCS Stack Cap w/Screen
MCS Miter Cut Termination w/Screen
NLWH No-Loss Weather Head
EC Exit Cone
<i>(thimble and flashings)</i>
HTT High Temperature Insulated Thimble
FRF Flat Roof Flashing
PRF Pitched Roof Flashing
VSC Ventilated Storm Collar
FCF Flat Cone Roof Flashing
PCF Pitched Cone Roof Flashing
SCCF Storm Collar for Cone Flashing

INTRODUCTION

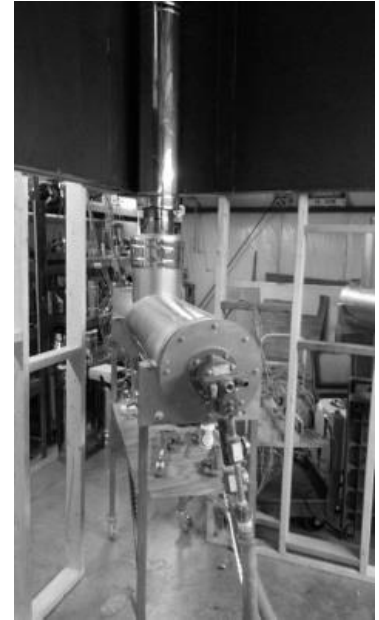
NAKS, Inc. Commercial Kitchen Exhaust Systems

Models SW-NAKS-CK, DW-NAKS-CK-RC and DW-NAKS-CK-ZC are factory built high pressure and high temperature exhaust systems for various type of appliances. Model SW-NAKS-CK is Single Wall. Models DW-NAKS-CK-RC and DW-NAKS-CK-ZC are Double Wall. All Models may be intermixed in the same grease duct or chimney system.

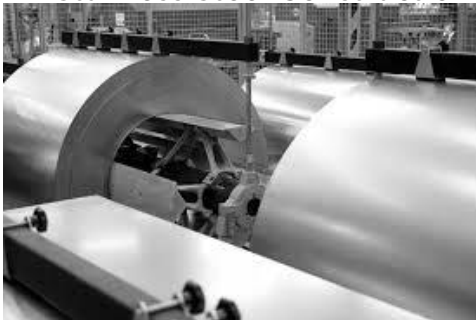
All Models are intended for use in kitchen ventilation such as Grease Ducts and Dishwasher Exhaust.

Research and Development

NAKS, Inc. employs only Underwriters' Laboratories (UL) for testing, certifications, and listings to all applicable UL and ULC Standards.



All Stainless Steel Construction



The entire construction is stainless steel. Including all accessories such as supports and angle rings.

This means there is no cross contamination in the factory from carbon steel cutting/welding.

The inner pipe and the outer jackets have laser welded seam and all fittings are tig welded. Jeremias cleans all external welds to assure the customer clearly sees the quality standard we are setting.

Best Insulation

NAKS, Inc. DW-NAKS-CK-RC uses 8 PCF ceramic fiber insulation that has neither binder nor lubricant and does not emit any fumes or smell during the first high temperature firing.

We compress this 1½" thick blanket into a 1¼" area delivering better clearances and skin temperatures than other loose-fitting blanket insulated pipes. This compressed insulation also eliminates the need for brackets and spot welding between the inner and outer jacket - this means less weight and no hot spots at the joints. This also eliminates any chance of insulation settling during shipment and storage.

See the installation clearance example using the same pipe I.D. as compared to other manufacturers. For example, Model DW-NAKS-CK-RC is clearly the industry leader in the smallest required footprint.



NAKS, Inc. Model DW-NAKS-CK-ZC uses 10 PCF ceramic fiber insulation of the same quality to fill the ¾" space between the inner and outer jackets.

INTRODUCTION

Largest Joint Connection Surface Area / Easiest Install

NAKS, Inc. Commercial Kitchen exhaust systems utilizes a **Patent Pending** technology which is the absolutely **easiest to install** in the industry.

Installation:

1. Apply silicone to the male side
2. Push the ends together
3. Install the locking band.

The installed joint creates a liquid-tight seal. This easy installation saves an estimated **50% labor savings** over flange to flange assemblies.

The overlapping inner also protects the silicone seal against high-pressure washings in commercial kitchen exhaust. It also self-aligns the inner pipe eliminating a third person on horizontal installations and quicker installs on the vertical. This is industry best connection for **leak-free** installations!

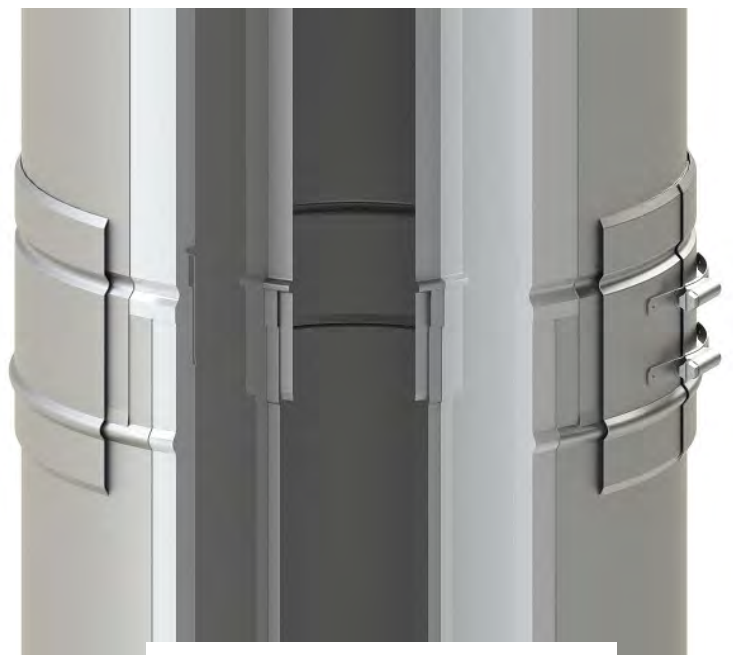
All pipe lengths can be **field cut-to-fit** making this the most installer friendly system available. Since various pipe lengths and adjustable lengths are not required, a twelve (12) part **Standard Items** list can be used to make up any exhaust system.



Double Wall Model DW-NAKS-CK-RC



Single Wall Model SW-NAKS-CK



Double Wall Model DW-NAKS-CK-ZC



TECHNICAL SPECIFICATIONS

Model and Part Identifications

Part numbers include the Model, diameter, item code, and suffix (if applicable)

Example 1: SW-NAKS-CK18-36L for a Model SW-NAKS-CK single wall, 18 inch inner diameter, 36 inch length of pipe.

Example 2: DW-NAKS-CK10-90WT-RC for a Model DW-NAKS-CK-RC double wall, 10 inch inner diameter, 90° Wye Tee.

Material and Thicknesses

Inner Liner:
Stainless Steel, thickness per UL-1978 and UL-2221

Insulation:
SW-NAKS-CK: None
DW-NAKS-CK-RC: 1.5" thick 8 PCF ceramic fiber, compacted to 1.25" (9.6 PCF net effective)
DW-NAKS-CK-ZC: 3.25" thick 10 PCF ceramic fiber

Outer Jacket:
Stainless Steel, thickness per UL-1978 and UL-2221

Supports and All Accessories:
Stainless Steel

Underwriters Laboratories (UL) Listings

United States:

SW-NAKS-CK

1. UL-1978 Standard, Grease Duct

DW-NAKS-CK-RC

1. UL-1978 Standard, Grease Duct

DW-NAKS-CK-ZC

1. UL-1978 Standard, Grease Duct
2. UL-2221 Standard, Tests of Fire Resistive Grease Duct Enclosure Assemblies

Code and Standards

Models SW-NAKS-CK, DW-NAKS-CK-RC, and DW-NAKS-CK-ZC installed per their Installation Instructions are code compliant with:

- CSA-B149

- NFPA 96
- NFPA 211
- NFPA 54
- NFPA 31
- NFPA 37
- IMC
- IFGC
- UMC
- CMC

The following organizations produce one or more of the above references codes and standards or provide important guidelines for installation and use of the SW-NAKS-CK, DW-NAKS-CK+1, and DW-NAKS-CK-ZC exhaust systems:

- ASHRAE (American Society of Heating, Refrigerating and Air Conditioning Engineers)
- CSA (Canadian Standards Association)
- ICC (International Code Congress)
- IAPMO (International Association of Plumbing and Mechanical Officials)
- NFPA (National Fire Protection Association)
- UL (Underwriters Laboratories, Inc.)

Operating Pressures

Models SW-NAKS-CK, DW-NAKS-CK-RC, and DW-NAKS-CK-ZC have been evaluated and Listed by UL for positive internal static pressures up to 20" W.C.

Operating Temperatures and Clearances

Operating Temperatures:

Criteria	Permitted Temperatures
UL-1978 Grease Duct ULC-S662 Grease Duct	500°F (260°C) Continuous 2000°F (1093°C) for 30 Minutes

Minimum Airspace Clearance to Combustibles:

Inside Diameter	SW-NAKS-CK Single Wall Grease Duct	DW-NAKS-CK-RC Double Wall Grease Duct	DW-NAKSCK-ZC Double Wall Grease Duct
3" (76mm) to 6" (152mm)	18" (457.2mm)	2.00" (50.8mm)	0.0" (0.0mm)
7" (102mm) to 14" (456mm)	18" (457.2mm)	2.00" (50.8mm)	0.0" (0.0mm)
16" (406mm) to 34" (863mm)	18" (457.2mm)	3.00" (76.2mm)	0.0" (0.0mm)
36" (914mm)	18" (457.2mm)	4.00" (102mm)	0.0" (0.0mm)
38" (965 mm) to 48" (1219 mm)	18" (457.2mm)	5.00" (127mm)	2.00" (50.8mm)

NAKS, Inc. Model SW-NAKS-CK single wall may be field insulated. Follow NFPA 96 regarding methods of achieving reduced clearances, zero clearances, or fire resistance enclosures for Grease Ducts.

NAKS, Inc. Model DW-NAKS-CK-RC uses 1.5" thick ceramic fiber blanket that is compressed to a 1.25" space for reduced clearances to combustibles. One external layer of field-applied fire-wrap meets the ASTM E2336 requirements.

Do not wrap or place any type of insulation in the required airspace surrounding the Building Heating Appliance Chimney applications in an effort to reduce the clearance to combustibles or to create some sort of fire protective enclosure.

Clearance to non-combustibles:

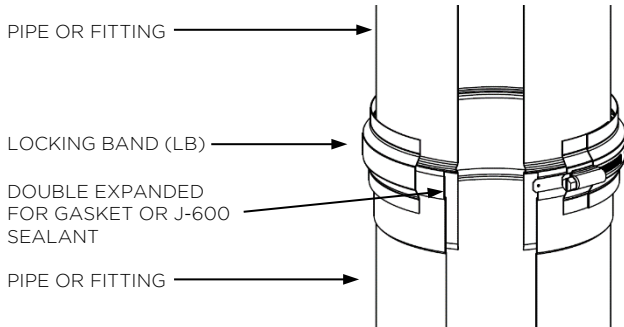
As required for installation, access, inspection, latest NFPA, or per local code.

Joint Details

Model SW-NAKS-CK single wall commercial kitchen exhaust incorporates a male/female overlapping joint and locking band. This Patent Pending connection permits any pipe length to be cut to fit in the field.

NAKS, Inc. supplied J-600 sealant is applied 1.5 inch from the end on the male side, that male end is inserted into the female end, and secured in place by the locking band to create a liquid-tight seal.

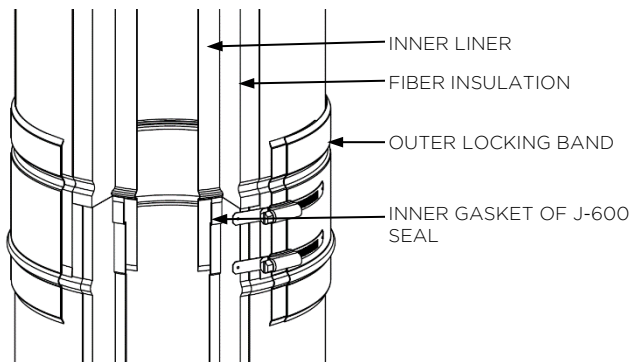
Model SW-NAKS-CK Joint Assembly Detail



Model DW-NAKS-CK-RC & DW-NAKS-CK-ZC double wall incorporates the same overlapping inner of SW-NAKS-CK and has an external locking band. This Patent Pending connection permits any pipe length to be cut to fit in the field.

NAKS, Inc. supplied J-600 sealant is applied on the inner male side, that male end is inserted into the female inner, and secured in place by the locking band to create a liquid-tight seal.

Model DW-NAKS-CK-RC & DW-NAKS-CK-ZC Joint Assembly Detail

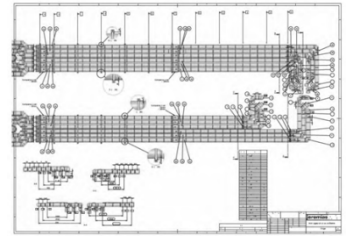


Sizing/Pressure Calculations

NAKS, Inc. engineering uses its own software based upon the "Chimney, Gas Vent, and Fireplace Systems" chapter of the ASHRAE Handbook to assure that the exhaust and chimney system is sized in accordance with the appliance manufacturers' installation instructions.

Submittal and Warranted Designs

NAKS, Inc. also provides CAD layout designs that show all required accessories including drains, supports, access panels, etc., permitting it to be installed in accordance with any specific appliance manufacturers' installation instructions.



Pipe Weight per Foot

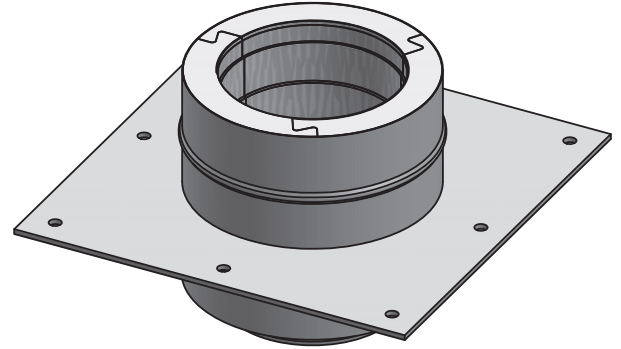
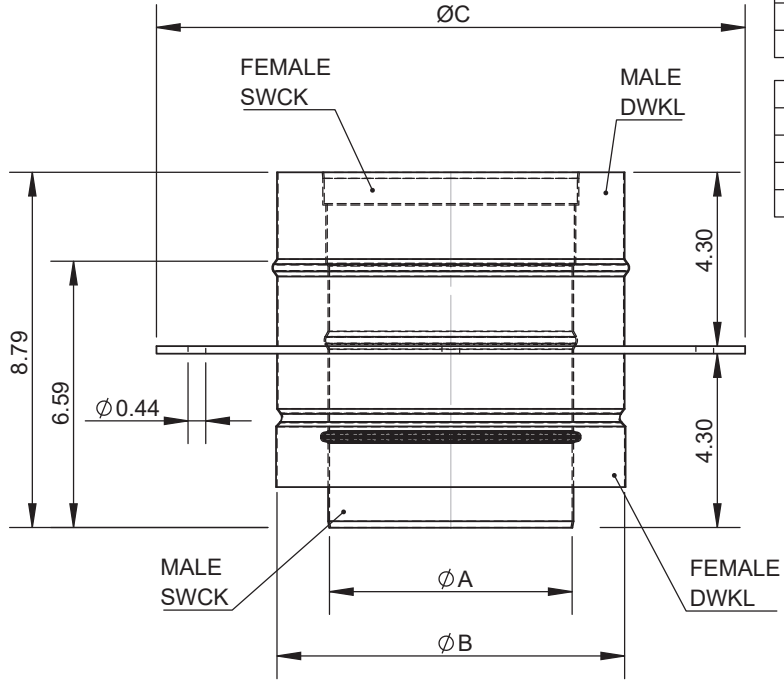
The approximate installed weight of the NAKS, Inc. exhaust systems can be found using this table. This table does not include accessories such as supports and guides, nor shipping packaging or palletizing weight.

Pipe Weight:

Inside Diameter	SW-NAKS-CK lb/ft	DW-NAKS-CK-RC lb/ft	DW-NAKS-CK-ZC lb/ft
6" (152mm)	2.2	6.3	9.3
7" (178 mm)	2.6	7.2	10.7
8" (203mm)	3.0	8.1	12.1
9" (229mm)	3.4	9.1	13.5
10" (254mm)	3.7	10.0	14.9
11" (249mm)	4.1	10.9	16.3
12" (305mm)	4.5	11.9	17.7
13" (330mm)	4.9	12.8	19.1
14" (456mm)	5.2	13.8	20.5
16" (406mm)	6.0	15.6	23.2
18" (457mm)	6.7	17.5	26.0
20" (508mm)	7.5	19.4	28.8
22" (559mm)	8.2	21.3	31.6
24" (610mm)	9.0	23.1	34.4
26" (660mm)	9.7	25.0	37.2
28" 711mm)	10.5	27.0	40.2
30" (610mm)	11.3	28.9	43.0
32" (610mm)	12.0	30.7	45.7
34" (610mm)	12.8	32.8	48.8
36" (610mm)	13.5	34.7	51.6

Ø	6	7	8	9	10	11	12	13	14	16
A	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
C	14.56	15.56	16.56	17.56	18.56	19.56	20.56	21.56	22.56	24.56
lb	14.39	16.06	17.73	19.45	21.16	22.92	24.62	26.42	28.23	31.94

Ø	18	20	22	24	26	28	30	32	34	36
A	18	20	22	24	26	28	30	32	34	36
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5
C	26.56	28.56	30.56	32.56	34.56	36.56	38.56	40.56	42.56	44.56
lb	35.71	39.60	43.54	51.44	55.86	60.41	65.01	69.74	74.51	79.44

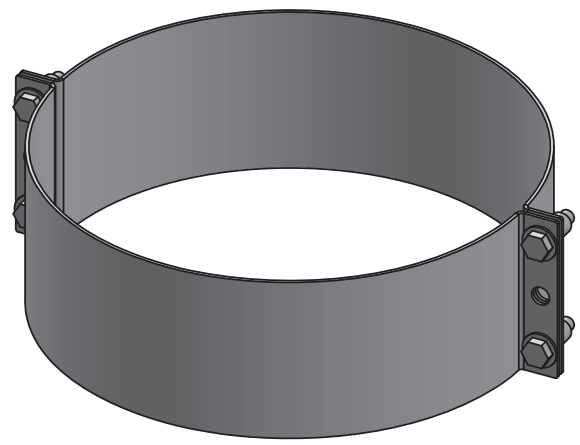
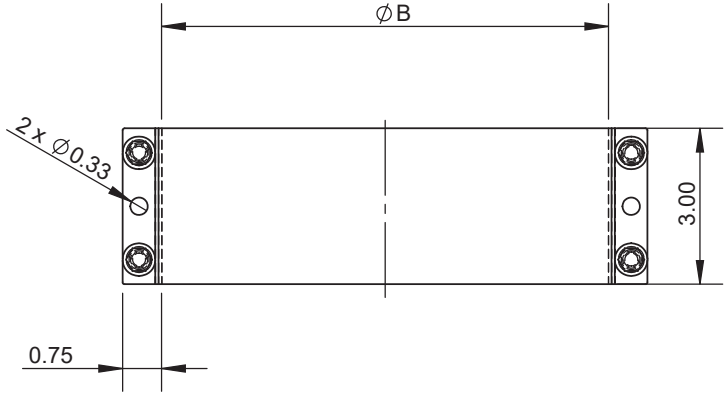


*INCLUDES 1 LOCKING BAND

		drawn by	JJR	model	DW-NAKS-CK-RC	code	APS	description	DW-NAKS-CKØ-APS-RC Anchor Plate Support	
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Ø	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
lb	1.63	1.78	1.94	2.11	2.27	2.42	2.57	2.73	2.90	3.21

Ø	18	20	22	24	26	28	30	32	34	36
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5
lb	3.52	3.85	4.16	4.49	4.80	5.13	5.43	5.74	6.07	6.38



		drawn by	JJR	model	DW-NAKS-CK-RC	code	LSB	description	DW-NAKS-CKØ-LSB-RC Light Support Band	
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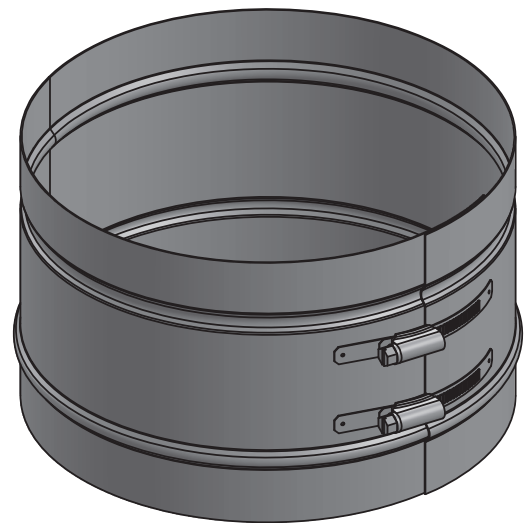
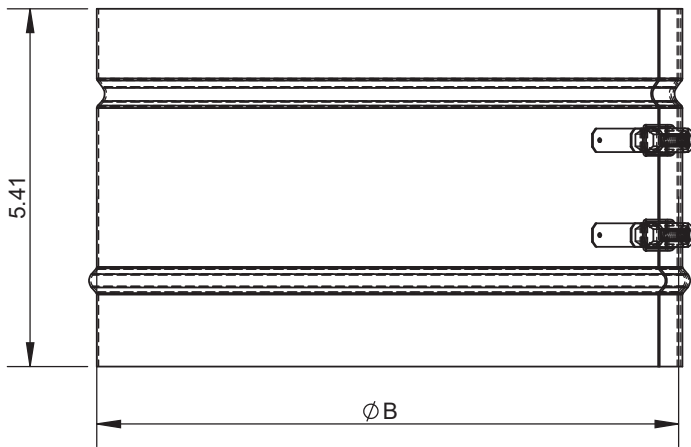


Vent Diameter	Number of Joints Per 10 oz. Tube
3" - 6"	6.7
8" - 10"	6
11" - 12"	5.3
13" - 16"	4.7
18" - 20"	4
22" - 24"	3.3
26" - 28"	2.7
30" - 32"	2
34" - 36"	1.3
38" - 48"	0.7

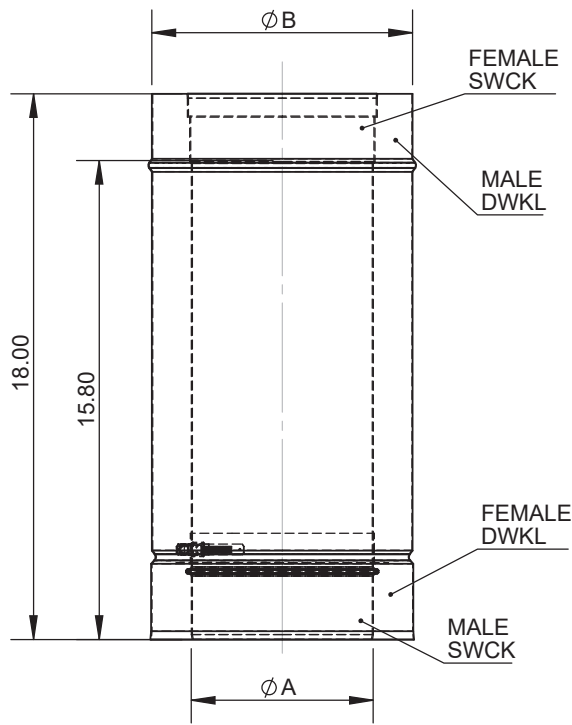
	drawn by	model	code	description
	JJR	ALL	J-600	J-600 Sealant

Ø	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
lb	1.25	1.39	1.52	1.65	1.76	1.89	2.00	2.16	2.27	2.53

Ø	18	20	22	24	26	28	30	32	34	36
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5
lb	2.77	3.04	3.26	3.54	3.76	4.05	4.27	4.55	4.77	5.04



	drawn by	model	code	description
	JJR	DW-NAKS-CK-RC	LB	DW-NAKS-CKØ-LB-RC Locking Band



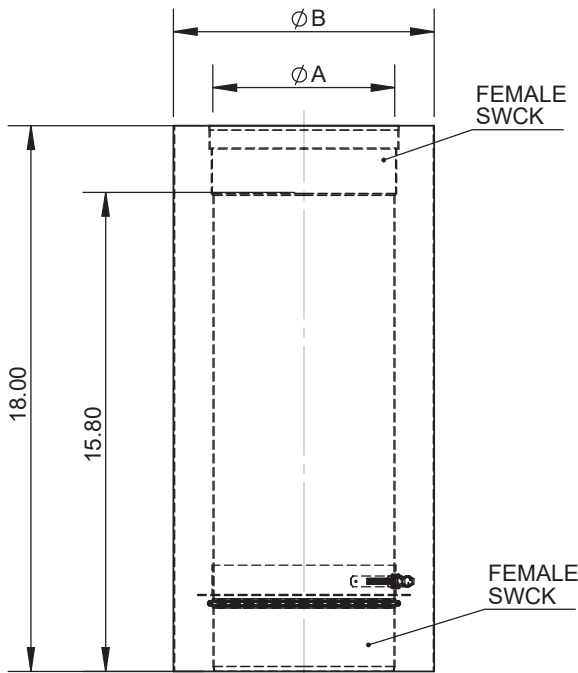
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A	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
lb	9.64	10.91	12.17	13.44	14.72	15.99	17.25	18.52	19.49	23.12

Ø	18	20	22	24	26	28	30	32	34	36
A	18	20	22	24	26	28	30	32	34	36
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5
lb	25.76	28.40	31.02	41.91	45.19	48.47	51.74	55.04	58.32	61.60



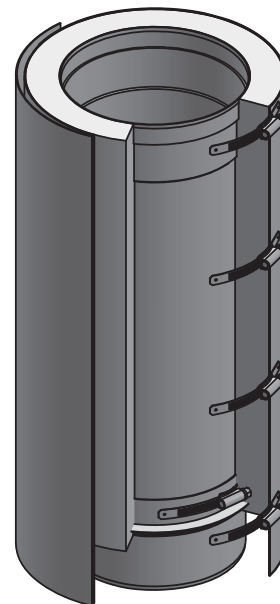
*FLANGE SUPPORT BANDS INCLUDED FOR 14" AND ABOVE
 *INCLUDES 1 LOCKING BAND

		drawn by	model	code	description
		JJR	DW-NAKS-CK-RC	18L	DW-NAKS-CKØ-18L-RC 18" Fixed Length



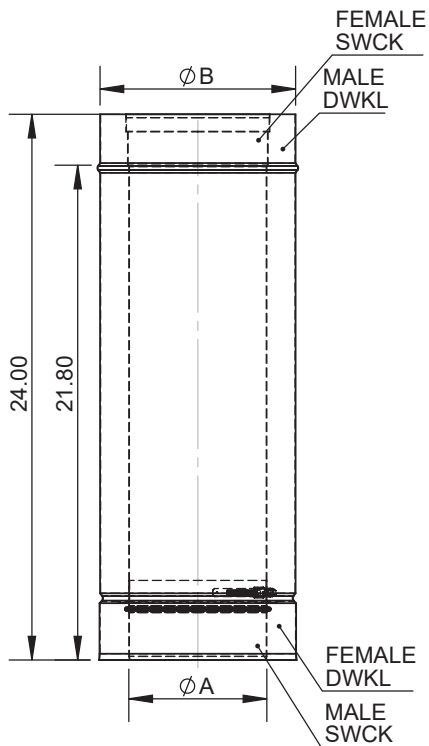
Ø	6	7	8	9	10	11	12	13	14	16
A	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
lb	9.64	10.91	12.17	13.44	14.72	15.99	17.25	18.52	19.49	23.12

Ø	18	20	22	24	26	28	30	32	34	36
A	18	20	22	24	26	28	30	32	34	36
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5
lb	25.76	28.40	31.02	41.91	45.19	48.47	51.74	55.04	58.32	61.60



*FLANGE SUPPORT BAND INCLUDED FOR SIZES 14" AND ABOVE
 *INCLUDES 1 CUT LENGTH LOCKING BAND

		drawn by	model	code	description
		JJR	DW-NAKS-CK-RC	18CL	DW-NAKS-CKØ-18CL-RC 18" Cut Pipe Length



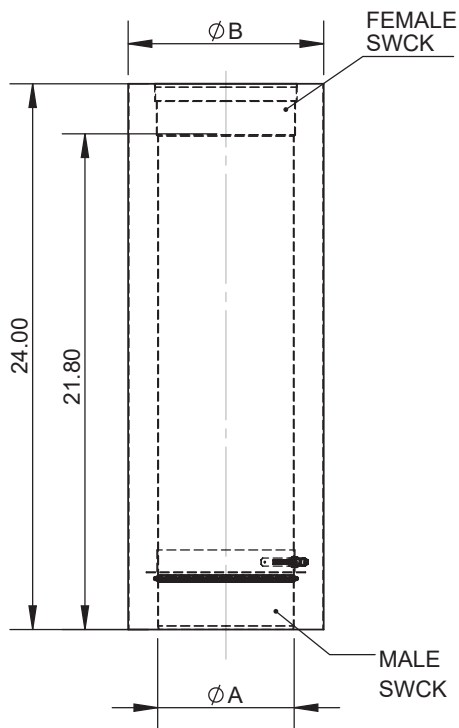
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A	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
lb	12.52	14.21	15.86	17.53	19.18	20.88	22.53	24.20	25.85	29.19

Ø	18	20	22	24	26	28	30	32	34	36
A	18	20	22	24	26	28	30	32	34	36
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5
lb	32.52	35.86	39.18	53.48	57.66	61.89	66.04	70.27	74.45	78.67



*FLANGE SUPPORT BAND INCLUDED
ON SIZED 14" AND ABOVE
*INCLUDES 1 LOCKING BAND

		drawn by DAR	model DW-NAKS-CK-RC	code 24L	description DW-NAKS-CKØ-24L-RC 24" Fixed Length
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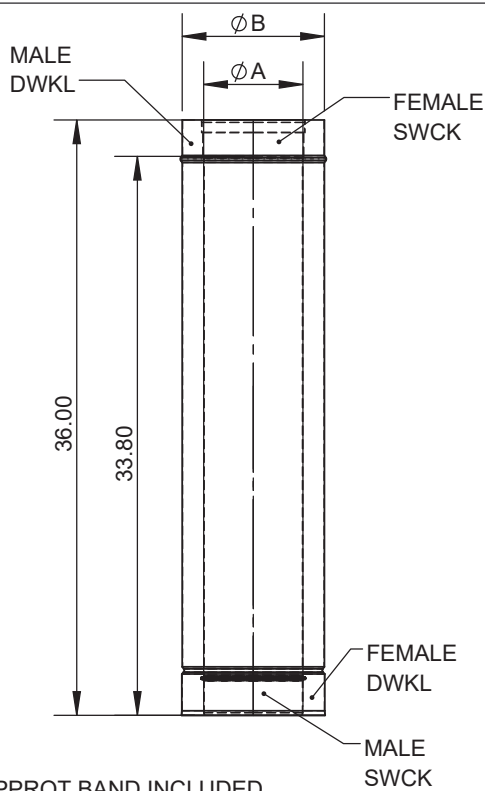
Ø	6	7	8	9	10	11	12	13	14	16
A	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
lb	16.76	18.94	21.08	23.25	25.41	27.57	29.72	31.88	34.03	38.37

Ø	18	20	22	24	26	28	30	32	34	36
A	18	20	22	24	26	28	30	32	34	36
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5
lb	42.66	46.99	51.28	72.31	77.88	83.53	89.10	94.75	100.32	105.97



*FLANGE SUPPORT BAND INCLUDED
ON SIZES 14" AND ABOVE
*INCLUDES 1 CUT LENGTH LOCKING BAND

		drawn by JJR	model DW-NAKS-CK-RC	code 24CL	description DW-NAKS-CKØ-24CL-RC 24" Cut Pipe Length
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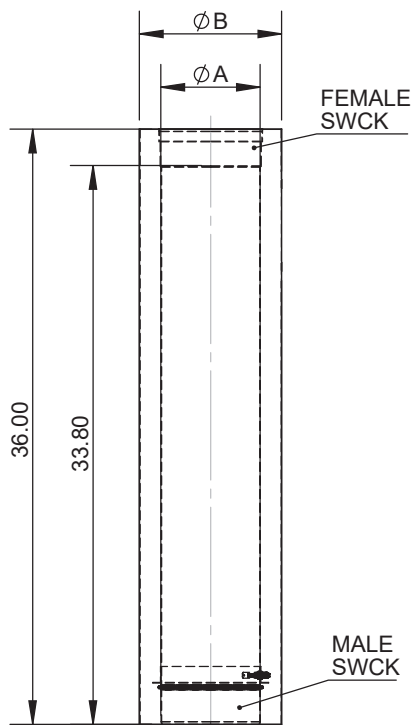
Ø	6	7	8	9	10	11	12	13	14	16
A	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
lb	18.30	20.77	23.21	25.67	28.12	30.58	33.02	35.49	37.93	42.86

Ø	18	20	22	24	26	28	30	32	34	36
A	18	20	22	24	26	28	30	32	34	36
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5
lb	47.76	52.69	57.57	78.87	85.05	91.28	97.46	103.71	109.87	116.12



*FLANGE SUPPORT BAND INCLUDED ON SIZES 14" AND ABOVE
*INCLUDES 1 LOCKING BAND

		drawn by	model	code	description
		JJR	DW-NAKS-CK-RC	36L	DW-NAKS-CKØ-36L-RC 36" Fixed Length



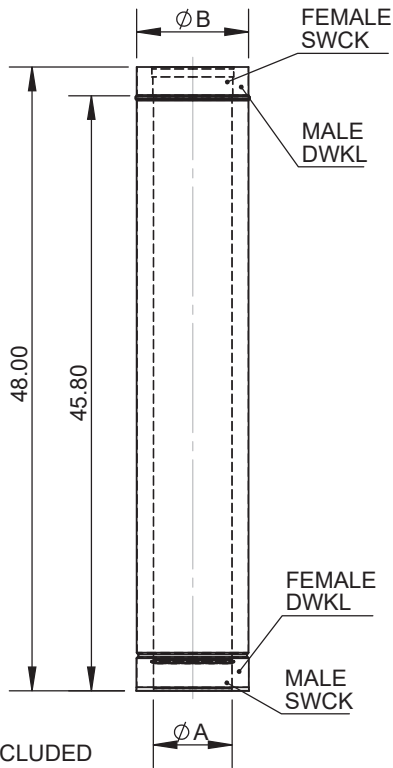
Ø	6	7	8	9	10	11	12	13	14	16
A	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
lb	18.30	20.77	23.21	25.67	28.12	30.58	33.02	35.49	37.93	42.86

Ø	18	20	22	24	26	28	30	32	34	36
A	18	20	22	24	26	28	30	32	34	36
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5
lb	47.76	52.69	57.57	78.87	85.05	91.28	97.46	103.71	109.87	116.12



*FLANGE SUPPORT BAND INCLUDED ON SIZES 14" AND ABOVE
*INCLUDES 1 CUT LENGTH LOCKING BAND

		drawn by	model	code	description
		JJR	DW-NAKS-CK-RC	36CL	DW-NAKS-CKØ-36CL-RC 36" Cut Pipe Length



Ø	6	7	8	9	10	11	12
A	6	7	8	9	10	11	12
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5
lb	24.05	27.30	30.54	33.79	37.03	40.28	43.52

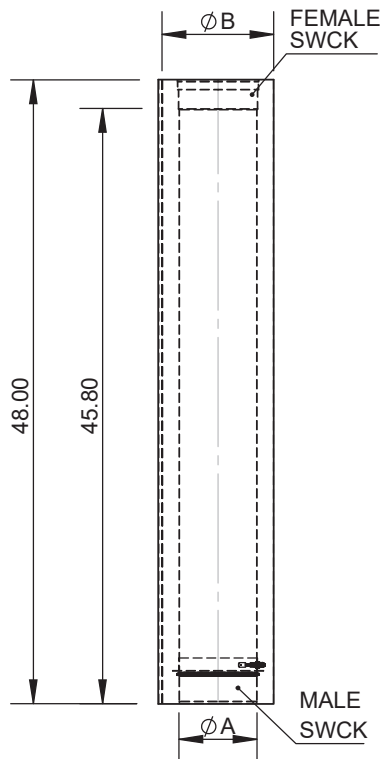
Ø	13	14	16	18	20	22	24
A	13	14	16	18	20	22	24
B	15.5	16.5	18.5	20.5	22.5	24.5	26.5
lb	46.77	49.35	56.83	63.32	69.81	76.27	104.54



*FLANGE SUPPORT BAND INCLUDED ON SIZES 14" AND ABOVE

*INCLUDES 1 LOCKING BAND

	drawn by	CLS	model	DW-NAKS-CK-RC	code	48L	description	DW-NAKS-CKØ-48L-RC 48" Fixed Length
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Ø	6	7	8	9	10	11	12
A	6	7	8	9	10	11	12
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5
lb	33.52	37.88	42.16	46.50	50.82	55.14	59.44

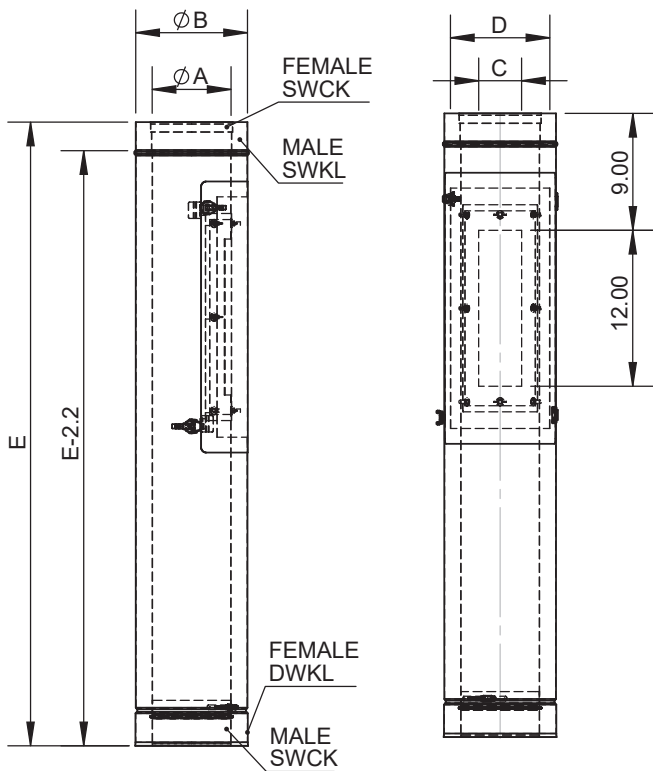
Ø	13	14	16	18	20	22	24
A	13	14	16	18	20	22	24
B	15.5	16.5	18.5	20.5	22.5	24.5	26.5
lb	63.76	68.06	76.74	85.32	93.98	102.56	144.62



*FLANGE SUPPORT BAND INCLUDED ON SIZES 14" AND ABOVE

*INCLUDES 1 CUT LENGTH LOCKING BAND

	drawn by	JJR	model	DW-NAKS-CK-RC	code	48CL	description	DW-NAKS-CKØ-48CL-RC 48" Cut Pipe Length
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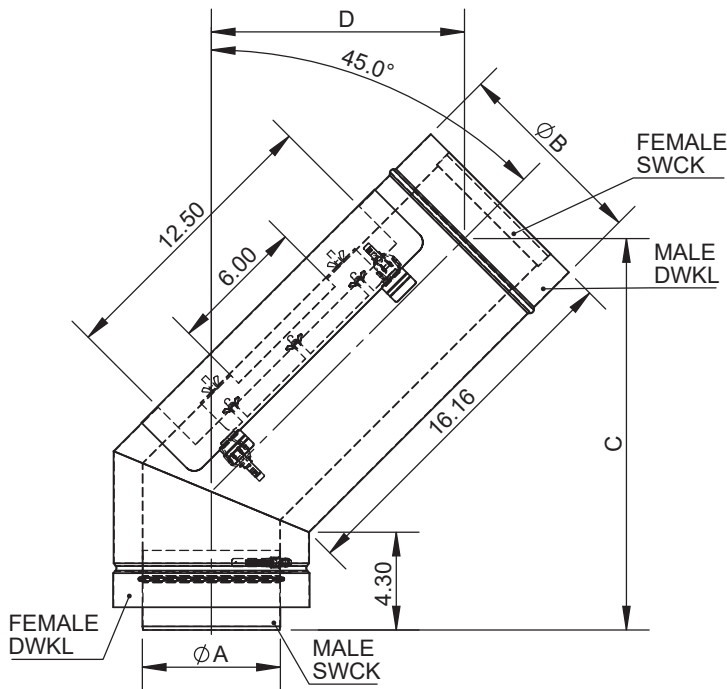
ϕ	6	7	8	9	10	11	12	13	14	16
A	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
C	3.3	3.3	3.4	3.4	5.5	5.5	5.5	5.5	5.7	5.7
D	7.65	7.99	8.24	8.43	10.22	10.45	10.7	10.85	10.98	11.19
E	48									
lb	25.41	28.64	31.90	35.13	38.48	41.73	44.92	48.20	51.44	57.95

ϕ	18	20	22	24	26	28	30	32	34	36
A	18	20	22	24	26	28	30	32	34	36
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5
C	5.8	8.7	8.8	8.8	10.7	10.8	10.8	13.7	13.8	13.8
D	11.34	13.92	14.09	14.22	15.86	16.08	17.46	19.3	19.42	20.13
E	48					36				
lb	64.42	71.06	77.53	80.94	87.27	93.50	99.70	106.11	112.29	118.54



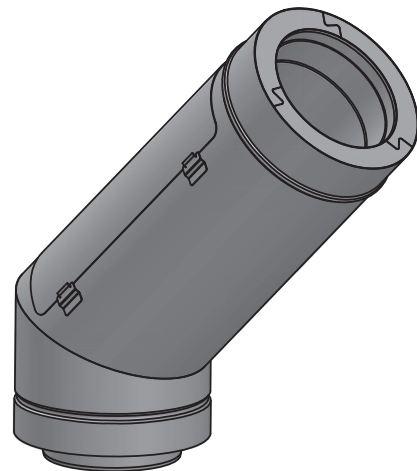
*FLANGE SUPPORT BAND INCLUDED
ON SIZES 14" AND ABOVE
*INCLUDES 1 LOCKING BAND

	drawn by	CLS	model	DW-NAKS-CK-RC	code	IAD	description	DW-NAKS-CK ϕ -IAD-RC Inline Access Door Length		
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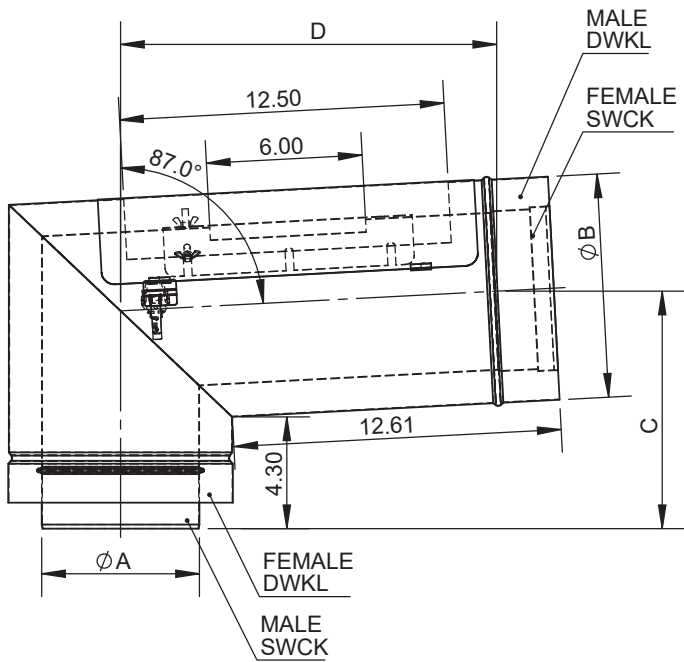
ϕ	6	7	8	9	10	11	12	13	14	16
A	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
C	17.21	17.57	17.92	18.27	18.63	18.98	19.33	19.69	20.04	20.75
D	11.13	11.28	11.43	11.57	11.72	11.86	12.01	12.16	12.3	12.6
lb	13.20	15.09	17.01	18.99	21.10	23.21	25.34	27.54	29.79	43.41

ϕ	18	20	22	24	26	28	30	32	34	36
A	18	20	22	24	26	28	30	32	34	36
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5
C	21.46	22.17	22.87	23.58	24.29	24.99	25.7	26.41	27.12	27.82
D	12.89	13.18	13.48	13.77	14.06	14.36	14.65	14.94	15.23	15.53
lb	49.57	56.21	62.90	69.94	77.29	84.88	92.71	101.00	109.36	118.10



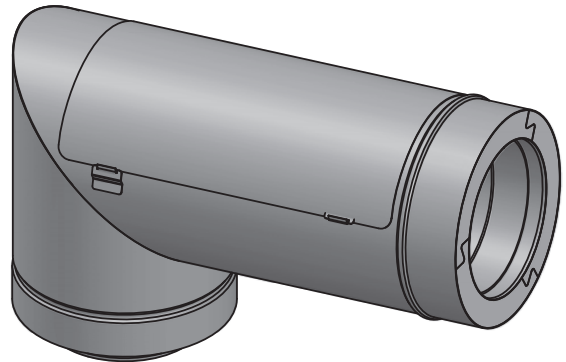
*FLANGE SUPPORT BAND INCLUDED
ON SIZES 14" AND ABOVE
*INCLUDES 1 LOCKING BAND

	drawn by	CLS	model	DW-NAKS-CK-RC	code	45EA	description	DW-NAKS-CK ϕ -45EA-RC 45 Elbow Access		
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Ø	6	7	8	9	10	11	12	13	14	16
A	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
C	9.14	9.64	10.14	10.64	11.14	11.64	12.13	12.63	13.13	14.14
D	14.47	14.95	15.42	15.89	16.37	16.84	17.32	17.79	18.26	19.22
lb	13.71	15.95	18.30	20.79	23.47	26.22	29.06	32.05	35.16	52.69

Ø	18	20	22	24	26	28	30	32	34	36
A	18	20	22	24	26	28	30	32	34	36
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5
C	15.14	16.13	17.13	18.13	19.13	20.13	21.13	22.13	23.12	24.12
D	20.16	21.11	22.06	23.01	23.95	24.9	25.85	26.8	27.74	28.69
lb	61.64	71.43	81.66	92.58	104.17	116.34	129.12	142.74	156.75	172.33

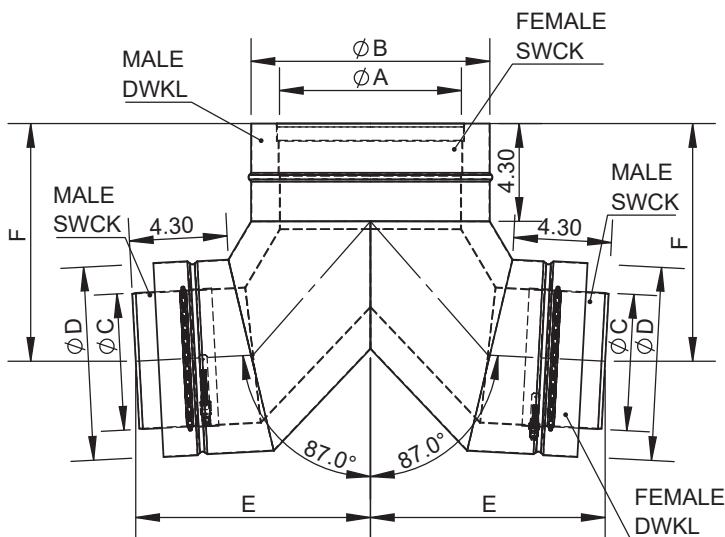


*FLANGE SUPPORT BAND INCLUDED
ON SIZES 14" AND ABOVE
*INCLUDES 1 LOCKING BAND

description
DW-NAKS-CKØ-87EA-RC 87 Elbow Access

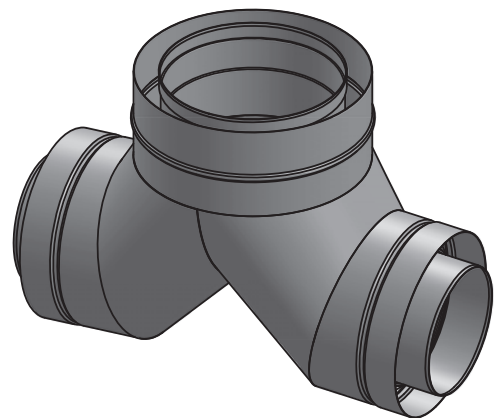
drawn by CLS model DW-NAKS-CK-RC code 87EA

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Ø	6	7	8	9	10	11	12	13	14	16
A	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
C	Customer Dimension									
D	Customer Dimension									
E	Customer Dimension									
F	Customer Dimension									

Ø	18	20	22	24	26	28	30	32	34	36
A	18	20	22	24	26	28	30	32	34	36
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5
C	Customer Dimension									
D	Customer Dimension									
E	Customer Dimension									
F	Customer Dimension									

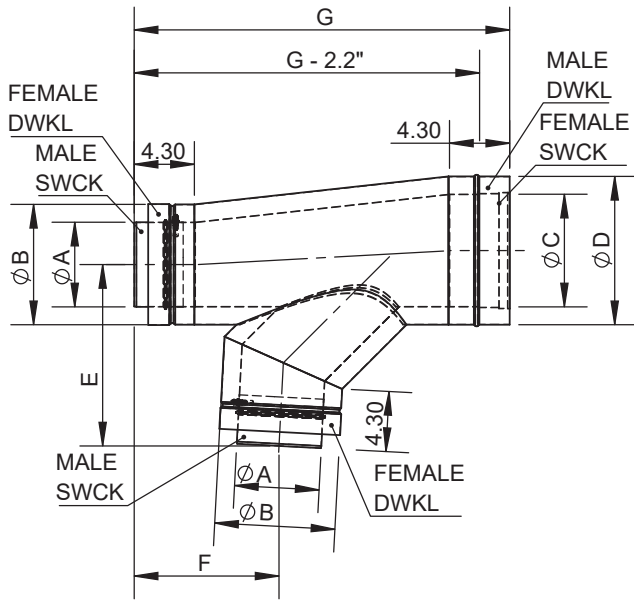


*FLANGE SUPPORT BANDS INCLUDED
ON 14" AND ABOVE
*INCLUDES 2 LOCKING BANDS

description
DW-NAKS-CKØ-87BHT-RC 87 Degree Bull Head Tee

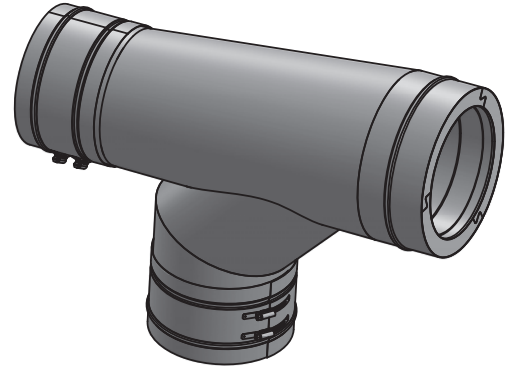
drawn by CLS model DW-NAKS-CK-RC code 87BHT

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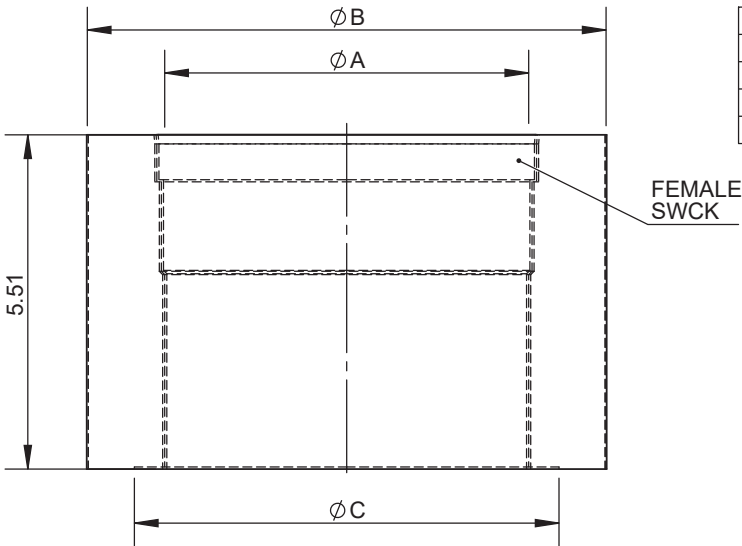
Ø	6	7	8	9	10	11	12	13	14	16
A	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
C	Customer Dimension									
D	Customer Dimension									
E	Customer Dimension									
F	Customer Dimension									
G	Customer Dimension									

Ø	18	20	22	24	26	28	30	32	34	36
A	18	20	22	24	26	28	30	32	34	36
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5
C	Customer Dimension									
D	Customer Dimension									
E	Customer Dimension									
F	Customer Dimension									
G	Customer Dimension									



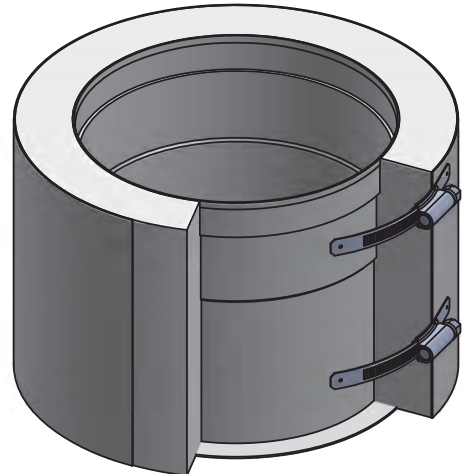
*FLANGE SUPPORT BANDS INCLUDED
ON SIZES 14" AND ABOVE
*INCLUDES 2 LOCKING BANDS

drawn by	CLS	model	DW-NAKS-CK-RC	code	87IBT	description	DW-NAKS-CKØ-87IBTØ-RC 87 Increasing Boot Tee			
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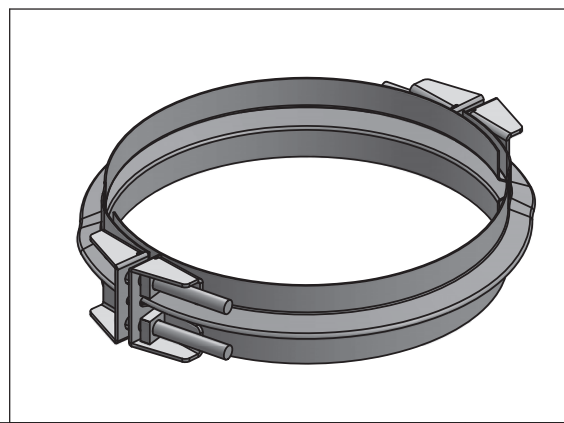
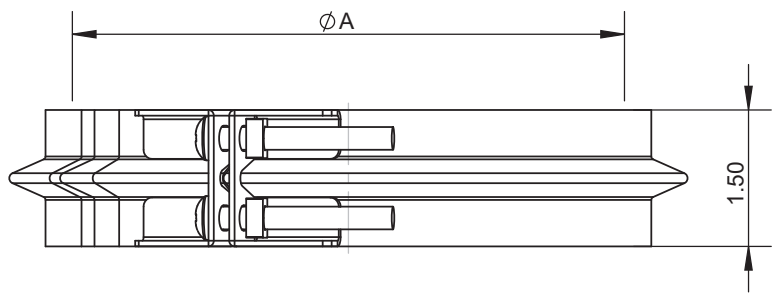
Ø	6	7	8	9	10	11	12	13	14	16
A	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
C	7.07	8.07	9.07	10.07	11.07	12.07	13.07	14.07	15.07	17.07
lb	2.79	3.17	3.54	3.92	4.29	4.66	5.04	5.41	5.76	6.51

Ø	18	20	22	24	26	28	30	32	34	36
A	18	20	22	24	26	28	30	32	34	36
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5
C	19.07	21.07	23.07	25.07	27.07	29.07	31.07	33.07	35.07	37.07
lb	7.26	8.01	8.76	10.80	11.66	12.52	13.38	14.23	15.07	15.93

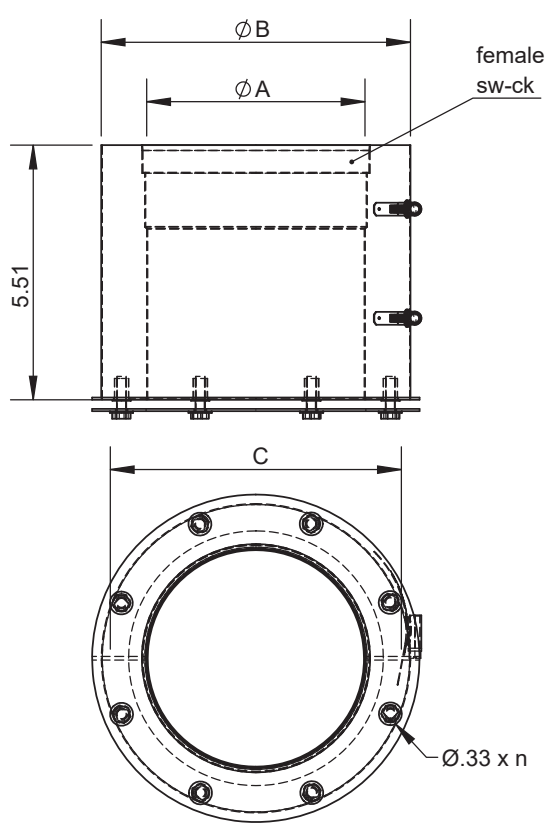


drawn by	JJR	model	DW-NAKS-CK-RC	code	FCS	description	DW-NAKS-CKØ- FCS-RC Flange Collar Adapter - Start			
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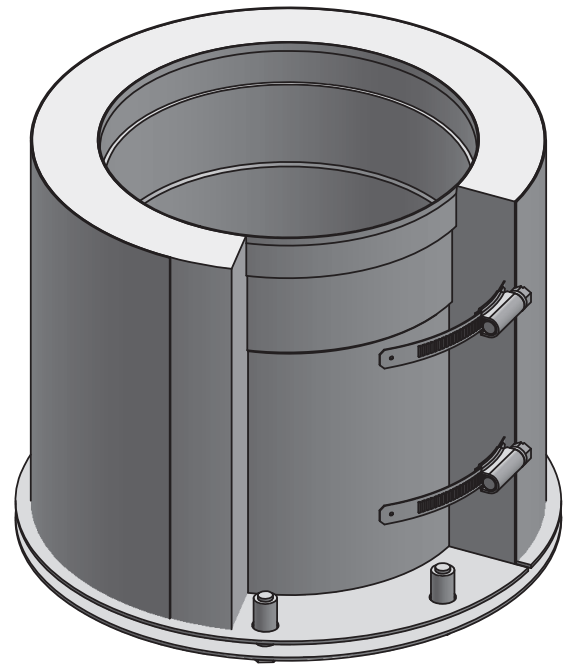
Ø	5	6	7	8	9	10	11	12	13	14	
A	5	6	7	8	9	10	11	12	13	14	
lb	0.36	0.41	0.47	0.52	0.57	0.62	0.67	0.72	0.77	0.82	
Ø	16	18	20	22	24	26	28	30	32	34	36
A	16	18	20	22	24	26	28	30	32	34	36
lb	0.92	1.02	1.13	1.23	1.33	1.43	1.53	1.63	1.73	1.84	1.94



		drawn by	model	code	description
		JJR	ALL	VB	SWFLØ-VB Vee-Band

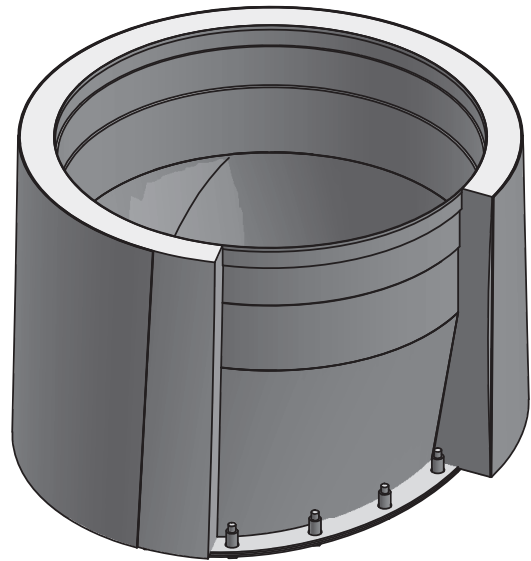
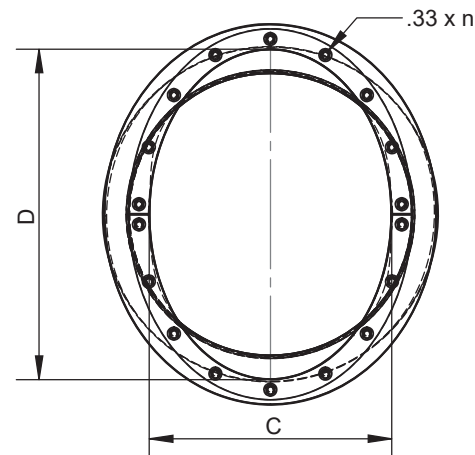
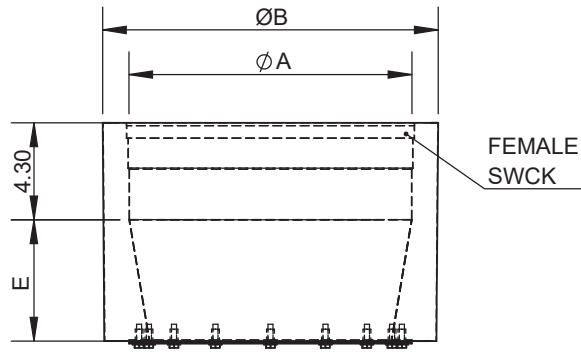


Ø	6	7	8	9	10	11	12				
A	6	7	8	9	10	11	12				
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5				
C	8.07	9.07	10.07	11.07	12.07	13.07	14.07				
n	8			10	10	12	12				
lb	4.97	5.61	6.23	6.93	7.57	8.25	8.89				



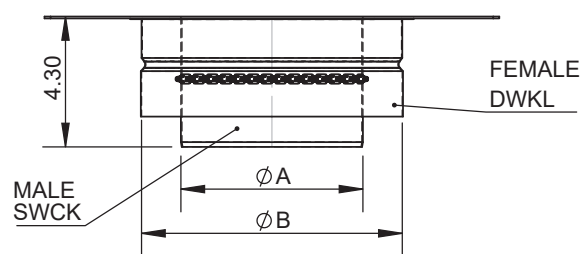
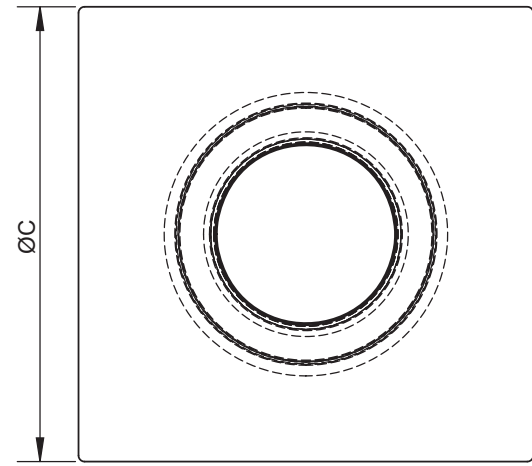
*INCLUDES 1 FINISHING BAND

		drawn by	model	code	description
		JJR	DW-NAKS-CK-RC	NWHA	DW-NAKS-CKØ-NWHA-RC No Weld Hood Adapter - Start



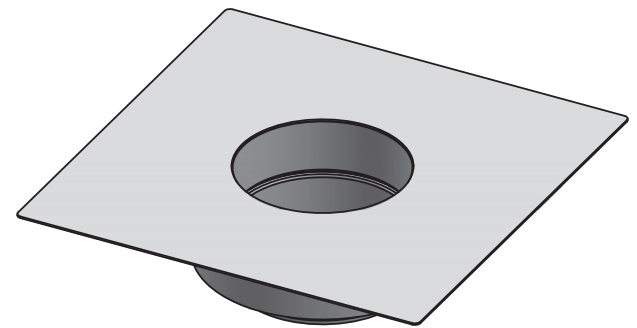
Ø	14	16	18	20
A	14	16	18	20
B	16.5	18.5	20.5	22.5
C	12			
D	16.35	21.3	26.25	31.2
E	7	10	13	16
n	18	18	22	22
lb	17.16	24.29	32.65	41.98

drawn by	JJR	model	DW-NAKS-CK-RC	code	NWHO	description	DW-NAKS-CKØ-NWHO-RC No Weld Hood Adapter Oval - Start
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Ø	6	7	8	9	10	11	12	13	14	16
A	6	7	8	9	10	11	12	13	14	16
B	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	18.5
C	29									
lb	17.29	17.47	17.60	17.73	17.82	17.89	17.91	17.93	17.89	17.78

Ø	18	20	22	24	26	28	30	32	34	36	
A	18	20	22	24	26	28	30	32	34	36	
B	20.5	22.5	24.5	26.5	28.5	30.5	32.5	34.5	36.5	38.5	
C	36			42				48			
lb	25.56	25.23	24.75	26.09	33.81	33.18	32.41	41.12	40.11	39.05	



*INCLUDES 1 LOCKING BAND

drawn by	JJR	model	DW-NAKS-CK-RC	code	FPE	description	DW-NAKS-CKØ-FPE-RC Fan Plate Adapter - End
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