



# *CBA Debubbler Owner's Manual*



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Manual Part #18200-LM-0095





Dear valued customer,

Thank you for purchasing a White Knight CBA debubbler.

Our dedicated team designs products to meet your exacting specifications with the highest commitment to quality.

White Knight provides the highest quality fluid handling products through controlled, consistent in-house engineering and manufacturing. Our safe, reliable products offer superior performance, optimized efficiency, and simplified maintenance. We continue to lead the industry with new technologies and products.

Our patented designs offer a variety of size and material options to meet stringent requirements of high-pressure chemical delivery systems; high-temperature re-circulation processes; chemical reclaim and bulk transport applications; as well as slurry systems.

White Knight has received many prestigious awards for innovation and manufacturing programs. We rigorously manage our quality assurance processes to ensure consistency and reliability. Our quality controls include strict cleanliness procedures and consistent manufacturing processes. For example, product assembly and testing is done in a temperature and humidity-controlled cleanroom.

Please peruse this manual before installing your White Knight product. It details installation requirements and setup instructions, and provides additional information and accessories to enhance the product's functionality.

Our team has gone to great lengths to ensure our products serve your needs and meet your requirements.

Further, we provide the highest quality products at the best value, and we back them up with excellent warranties and world class support.

Sincerely,

Brian Callahan, CEO  
White Knight Fluid Handling



# 1. Product Information

## 1.1 Overview

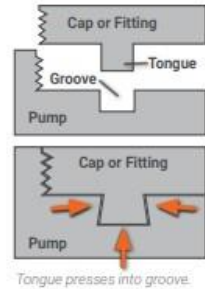
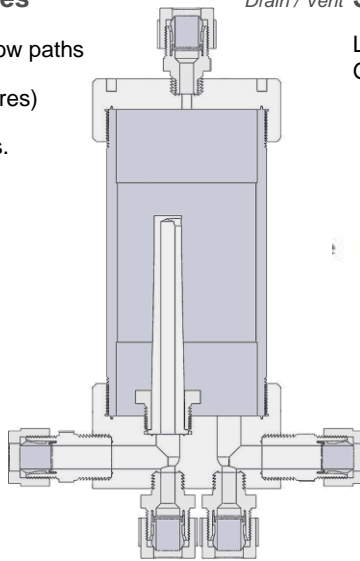
The CBA debubbler reduces bubbles from high-purity chemical delivery and wafer process systems. They redirect flow to the surface so that bubbles rise out of the fluid.

### Advanced Technologies

- Process-safe PTFE, PFA flow paths
- Up to 7 Bar (100 psi pressures)
- Up to 100°C (212° F) temps.
- Extruded PFA pipe with threaded connections
- Capacity up to 6 liters
- Liquid level sensor

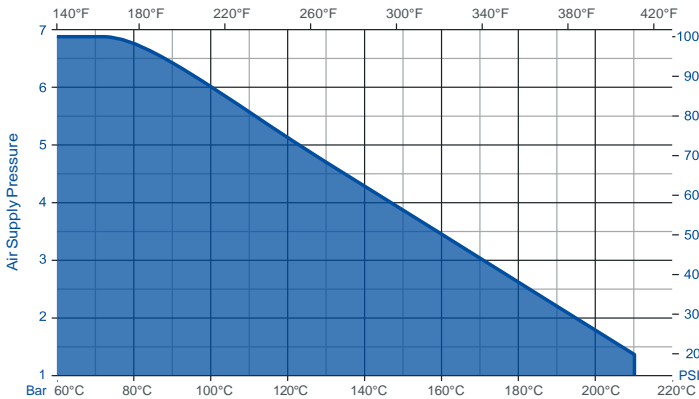
### Sealing Technology

Leak-Free Tongue-&-Groove sealing technology

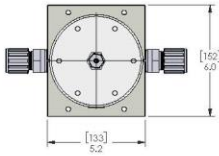


Drain / Vent

## 1.2 Temperature Limits

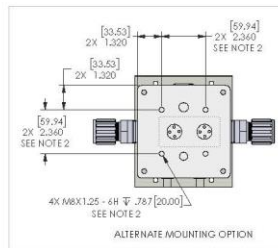
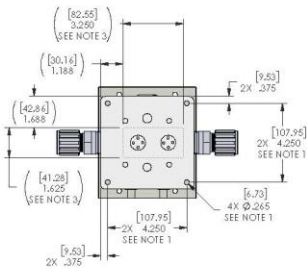
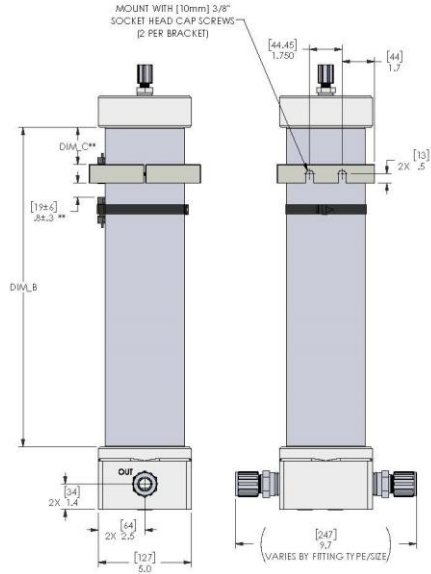
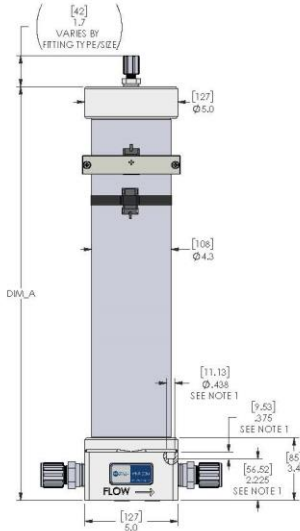


### 1.3 Dimensions



MODEL SIZE	DIM. A [mm] INCHES	DIM. B [mm] INCHES	DIM. C** [mm] INCHES
CBA-4A-1	[290] 11.4	[149] 6.2	[9] 0 - [20] .8
CBA-4A-2	[427] 16.8	[297] 11.7	[9] 0 - [25] 1.0
CBA-4A-3	[566] 22.3	[437] 17.2	[5] 1 2.0 - [76] 3.0
CBA-4A-4*	[790] 31.1	[640] 26.0	[5] 1 2.0 - [165] 6.5
CBA-4A-5*	[930] 36.6	[800] 31.5	[5] 1 2.0 - [201] 7.9
CBA-4A-6*	[1067] 42.0	[937] 36.9	[12] 9.0 [20] 8.0 [9.2]

\*HAS A COUPLER JOINT IN THE MIDDLE  
 \*\*RECOMMENDED DISTANCE FOR LEVEL SENSOR, SEE NOTE 4



STANDARD MOUNTING OPTION  
 WITH CLEARANCE FOR DRAIN FITTINGS

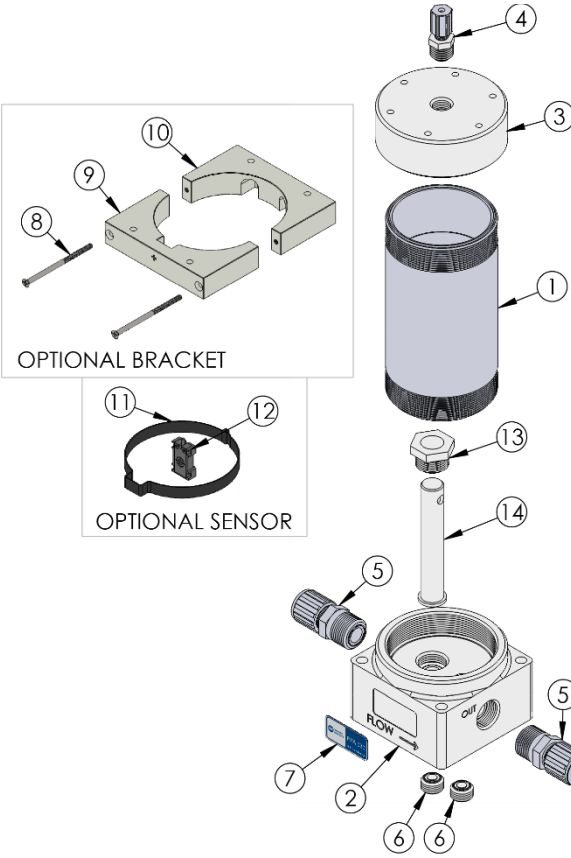
ALTERNATE MOUNTING OPTION

**NOTES:**

1. PRIMARY MOUNTING OPTION: USE [6mm] 1/4" SOCKET HEAD CAP SCREWS. RECOMMENDED MINIMUM LENGTH [55mm] 2.25" PLUS MOUNTING PLATE THICKNESS AND NUT IF REQUIRED.
2. SECONDARY MOUNTING OPTION: RECOMMENDED BOLT LENGTH [15mm] .425" PLUS MOUNTING PLATE THICKNESS.
3. OPENING NEEDED IN MOUNTING SURFACE IF USING OPTIONAL DRAIN FITTINGS.
4. SENSORS ARE OPTIONAL ADJUST POSITION AS NEEDED FOR PROCESS. SENSORS ARE MOUNTABLE WITH OPTIONAL BRACKETS OR ZIP TIES.

### 1.4 Bill of Materials

#### CBA-4A-1

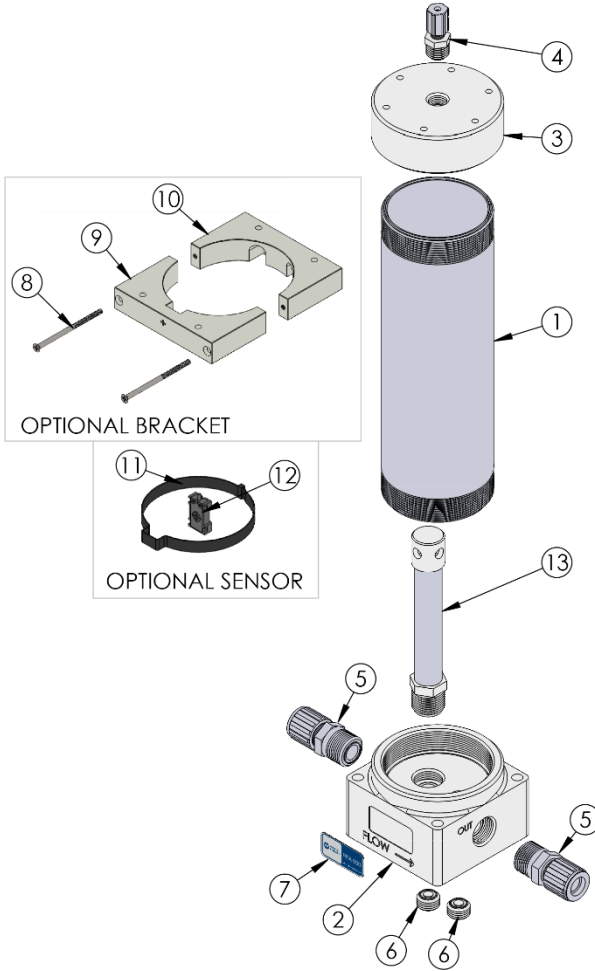


Item	Part Number	Description	Qty
1	1125-PF-0004	1 Liter Body	1
2	2160-TE-0013	Side Port Cap	1
3	2160-TE-0012	Single Port Cap	1
4	14510-PF-0016	1/4\" Flaretek Fitting Assembly	1
5	14510-PF-0005	3/4\" Flaretek Fitting Assembly	2
6	7130-TE-0001	Fluid Port Plug-5gpm	2
7	19100-PP-0008	Product Label	1
8	10010-SS-0034	Screw, Mounting, 10-24 X 3.5 Fh	2
9	1146-NP-0027	Sensor Holder Front Mount Clamp	1
10	1146-NP-0028	Clamp, Rear Mount	1
11	10010-XX-0003	Cable Tie Rel Poly Wr Blk 20.1\"	1
12	8600-XX-0047	Capacitive Sensor	1
13	7020-TE-0001	Synchro Elbow Stem Nut (AT)	1
14	7120-TE-0002	PTFE Dip Tube, .625 ID x .875 OD	1

Fittings (Type, Size, Option)	Assemblies	Body Inlet Only (Nut not included)
Flaretek Compatible	1/2 in. F08	14510-PF-0004
	3/4 in. F12	14510-PF-0005
	1 in. F16	14510-PF-0006
	1-1/4 in. F20	14510-PF-0007
Tube Out	1/2 in. T08	7120-PF-0004
	3/4 in. T12	7120-PF-0005
	1 in. T16	7120-PF-0006
	1-1/4 in. T20	7120-PF-0011
Weldable	3/4 in. W12	7300-PF-0003
	1 in. W16	7300-PF-0004
Pillar S-300	3/8 in. P06	14530-PF-0028
	1/2 in. P08	14530-PF-0003
	3/4 in. P12	14530-PF-0004
	1 in. P16	14530-PF-0005
	1-1/4 in. P20	14530-PF-0009
FNPT	1/2 in. N08	7100-TE-0006
	3/4 in. N12	7100-TE-0004
	1 in. N16	7100-TE-0008
Synchro-Flare	1/2 in. S08	14520-TE-0003
	3/4 in. S12	14520-TE-0004
	1 in. S16	14520-TE-0006
PrimeLock	1/2 in. L08	14570-PF-0003
	3/4 in. L12	14570-PF-0004
	1 in. L16	14570-PF-0005
	1-1/4 in. L20	14570-PF-0012
Plugged	B00	7130-TE-0003



**CBA-4A-2**



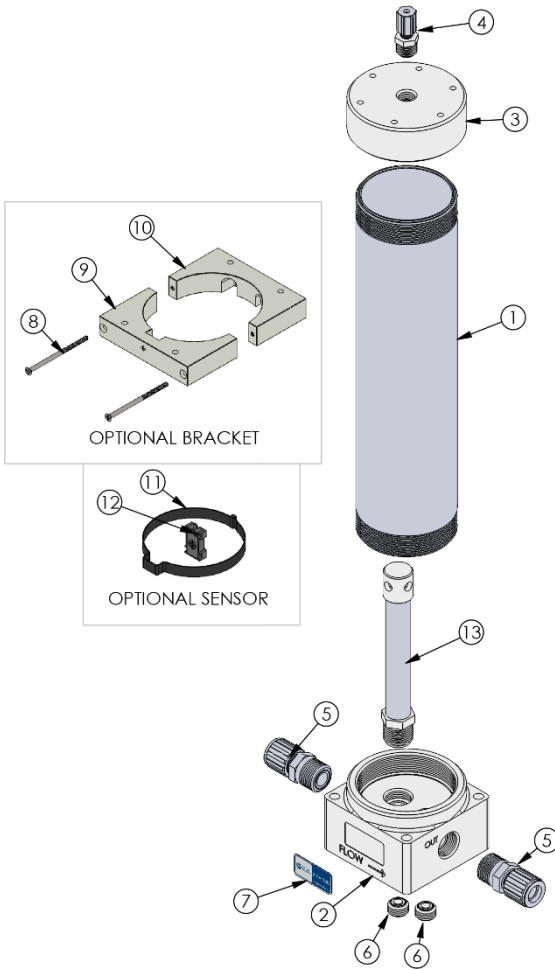
Item	Part Number	Description	Qty
1	1125-PF-0005	2-Liter Body	1
2	2160-TE-0013	Side Port Cap	1
3	2160-TE-0012	Single Port Cap	1
4	14510-PF-0016	1/4" Flaretek Fitting Assembly	1
5	14510-PF-0005	3/4" Flaretek Fitting Assembly	2
6	7130-TE-0001	Fluid Port Plug-5gpm	2
7	19100-PP-0008	Product Label	1
8	10010-SS-0034	Screw, Mounting, 10-24 X 3.5 Fh	2
9	1146-NP-0027	Sensor Holder Front Mount Clamp	1
10	1146-NP-0028	Clamp, Rear Mount	1
11	10010-XX-0003	Cable Tie Rel Poly Wr Blk 20.1"	1
12	8600-XX-0047	Capacitive Sensor	1
13	14550-PF-0016	2-Liter Debubbler Tube Assembly	1

Fittings (Type, Size, Option)			Assemblies		Body Inlet Only (Nut not included)
Flaretek Compatible	1/2 in.	F08	14510-PF-0004	7200-PF-0005	
	3/4 in.	F12	14510-PF-0005	7200-PF-0006	
	1 in.	F16	14510-PF-0006	7200-PF-0007	
Tube Out	1-1/4 in.	F20	14510-PF-0007	7200-PF-0008	
	1/2 in.	T08		7120-PF-0004	
	3/4 in.	T12		7120-PF-0005	
	1 in.	T16		7120-PF-0006	
Weldable	1-1/4 in.	T20		7120-PF-0011	
	3/4 in.	W12		7300-PF-0003	
Pillar S-300	1 in.	W16		7300-PF-0004	
	3/8 in.	P06	14530-PF-0028	7400-TE-0036	
FNPT	1/2 in.	P08	14530-PF-0003	7400-TE-0003	
	3/4 in.	P12	14530-PF-0004	7400-TE-0004	
	1 in.	P16	14530-PF-0005	7400-TE-0005	
	1-1/4 in.	P20	14530-PF-0009	7400-TE-0012	
Synchro-Flare	1/2 in.	N08		7100-TE-0006	
	3/4 in.	N12		7100-TE-0004	
	1 in.	N16		7100-TE-0008	
PrimeLock	1/2 in.	S08	14520-TE-0003	7010-TE-0005	
	3/4 in.	S12	14520-TE-0004	7010-TE-0004	
	1 in.	S16	14520-TE-0006	7010-TE-0006	
Plugged	1/2 in.	L08	14570-PF-0003	7800-TE-0003	
	3/4 in.	L12	14570-PF-0004	7800-TE-0004	
	1 in.	L16	14570-PF-0005	7800-TE-0005	
	1-1/4 in.	L20	14570-PF-0012	7800-TE-0012	





**CBA-4A-3**

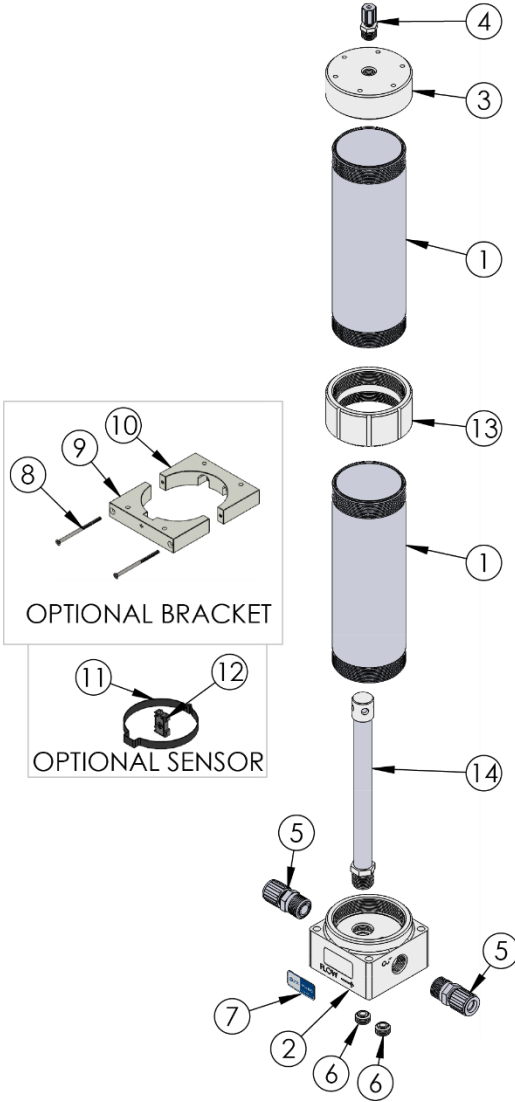


Item	Part Number	Description	Qty
1	1125-PF-0006	3-Liter Body	1
2	2160-TE-0013	Side Port Cap	1
3	2160-TE-0012	Single Port Cap	1
4	14510-PF-0016	1/4" Flaretek Fitting Assembly	1
5	14510-PF-0005	3/4" Flaretek Fitting Assembly	2
6	7130-TE-0001	Fluid Port Plug-5gpm	2
7	19100-PP-0008	Product Label	1
8	10010-SS-0034	Screw, Mounting, 10-24 X 3.5 Fh	2
9	1146-NP-0027	Sensor Holder Front Mount Clamp	1
10	1146-NP-0028	Clamp, Rear Mount	1
11	10010-XX-0003	Cable Tie Rel Poly Wr Blk 20.1"	1
12	8600-XX-0047	Capacitive Sensor	1
13	14550-PF-0015	3-Liter Debubbler Tube Assembly	1

Fittings (Type, Size, Option)	Assemblies	Body Inlet Only (Not included)
Flaretek Compatible	1/2 in. F08	14510-PF-0004 7200-PF-0005
	3/4 in. F12	14510-PF-0005 7200-PF-0006
	1 in. F16	14510-PF-0006 7200-PF-0007
	1-1/4 in. F20	14510-PF-0007 7200-PF-0008
Tube Out	1/2 in. T08	7120-PF-0004
	3/4 in. T12	7120-PF-0005
	1 in. T16	7120-PF-0006
	1-1/4 in. T20	7120-PF-0011
Weldable	3/4 in. W12	7300-PF-0003
	1 in. W16	7300-PF-0004
Pillar S-300	3/8 in. P06	14530-PF-0028 7400-TE-0036
	1/2 in. P08	14530-PF-0003 7400-TE-0003
	3/4 in. P12	14530-PF-0004 7400-TE-0004
	1 in. P16	14530-PF-0005 7400-TE-0005
	1-1/4 in. P20	14530-PF-0009 7400-TE-0012
FNPT	1/2 in. N08	7100-TE-0006
	3/4 in. N12	7100-TE-0004
	1 in. N16	7100-TE-0008
Synchro-Flare	1/2 in. S08	14520-TE-0003 7010-TE-0005
	3/4 in. S12	14520-TE-0004 7010-TE-0004
	1 in. S16	14520-TE-0006 7010-TE-0006
PrimeLock	1/2 in. L08	14570-PF-0003 7800-TE-0003
	3/4 in. L12	14570-PF-0004 7800-TE-0004
	1 in. L16	14570-PF-0005 7800-TE-0005
	1-1/4 in. L20	14570-PF-0012 7800-TE-0012
Plugged	B00	7130-TE-0003



**CBA-4A-4**



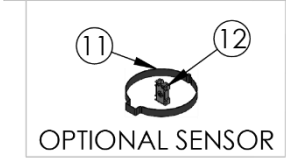
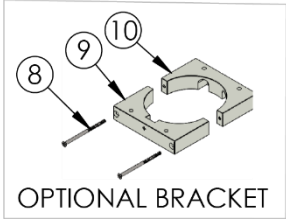
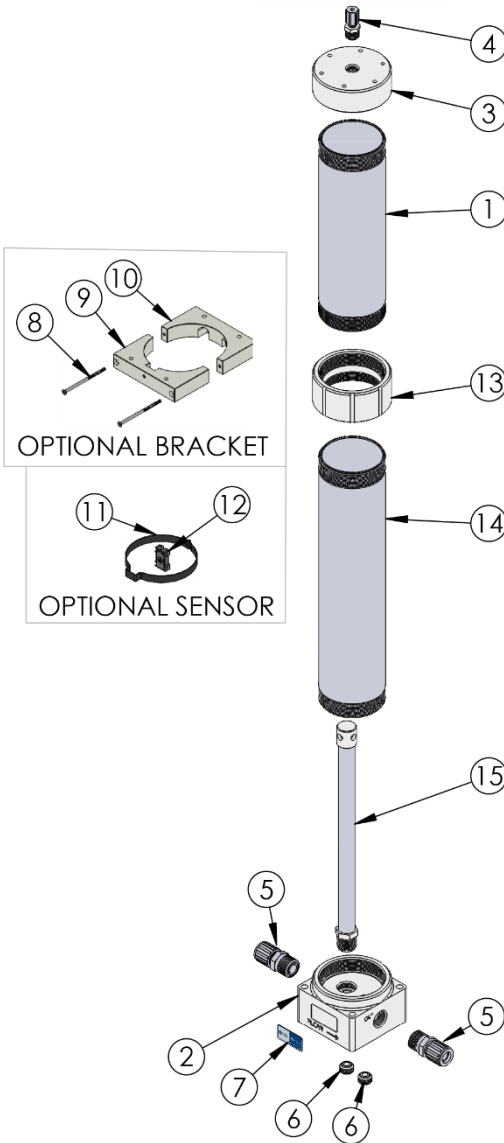
Item	Part Number	Description	Qty
1	1125-PF-0005	2-Liter Body	2
2	2160-TE-0013	Side Port Cap	1
3	2160-TE-0012	Single Port Cap	1
4	14510-PF-0016	1/4" Flaretek Fitting Assembly	1
5	14510-PF-0005	3/4" Flaretek Fitting Assembly	2
6	7130-TE-0001	Fluid Port Plug-5gpm	2
7	19100-PP-0008	Product Label	1
8	10010-SS-0034	Screw, Mounting, 10-24 X 3.5 Fh	2
9	1146-NP-0027	Sensor Holder Front Mount Clamp	1
10	1146-NP-0028	Clamp, Rear Mount	1
11	10010-XX-0003	Cable Tie Rel Poly Wr Blk 20.1"	1
12	8600-XX-0047	Capacitive Sensor	1
13	2160-TE-0008	Coupler	1
14	14550-PF-0014	4-Liter Debubbler Tube Assembly	1

Fittings (Type, Size, Option)		Assemblies	Body Inlet Only (Nut not included)
Flaretek Compatible	1/2 in. F08	14510-PF-0004	7200-PF-0005
	3/4 in. F12	14510-PF-0005	7200-PF-0006
	1 in. F16	14510-PF-0006	7200-PF-0007
	1-1/4 in. F20	14510-PF-0007	7200-PF-0008
Tube Out	1/2 in. T08	7120-PF-0004	
	3/4 in. T12	7120-PF-0005	
	1 in. T16	7120-PF-0006	
	1-1/4 in. T20	7120-PF-0011	
Weldable	3/4 in. W12	7300-PF-0003	
	1 in. W16	7300-PF-0004	
Pillar S-300	3/8 in. P06	14530-PF-0028	7400-TE-0036
	1/2 in. P08	14530-PF-0003	7400-TE-0003
	3/4 in. P12	14530-PF-0004	7400-TE-0004
	1 in. P16	14530-PF-0005	7400-TE-0005
FNPT	1-1/4 in. P20	14530-PF-0009 7400-TE-0012	
	1/2 in. N08	7100-TE-0006	
	3/4 in. N12	7100-TE-0004	
Synchro-Flare	1 in. N16	7100-TE-0008	
	1/2 in. S08	14520-TE-0003	7010-TE-0005
	3/4 in. S12	14520-TE-0004	7010-TE-0004
PrimeLock	1 in. S16	14520-TE-0006	7010-TE-0006
	1/2 in. L08	14570-PF-0003	7800-TE-0003
	3/4 in. L12	14570-PF-0004	7800-TE-0004
	1 in. L16	14570-PF-0005	7800-TE-0005
Plugged	1-1/4 in. L20	14570-PF-0012	7800-TE-0012
	B00	7130-TE-0003	












**CBA-4A-5**

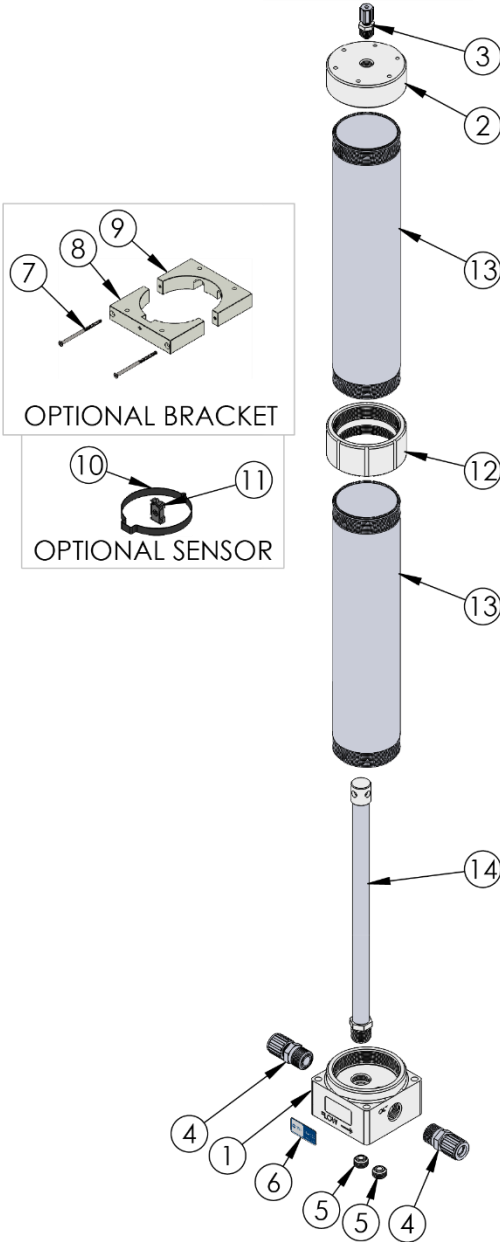


Item	Part Number	Description	Qty
1	1125-PF-0005	2-Liter Body	1
2	2160-TE-0013	Side Ports Cap	1
3	2160-TE-0012	Single Port Cap	1
4	14510-PF-0016	1/4" Flaretek Fitting Assembly	1
5	14510-PF-0005	3/4" Flaretek Fitting Assembly	2
6	7130-TE-0001	Fluid Port Plug-5gpm	2
7	19100-PP-0008	Product Label	1
8	10010-SS-0034	Screw, Mounting, 10-24 X 3.5 Fh	2
9	1146-NP-0027	Sensor Holder Front Mount Clamp	1
10	1146-NP-0028	Clamp, Rear Mount	1
11	10010-XX-0003	Cable Tie Rel Poly Wr Blk 20.1"	1
12	8600-XX-0047	Capacitive Sensor	1
13	2160-TE-0008	Coupler	1
14	1125-PF-0006	3-Liter Body	1
15	14550-PF-0013	5-Liter Debubbler Tube Assembly	1

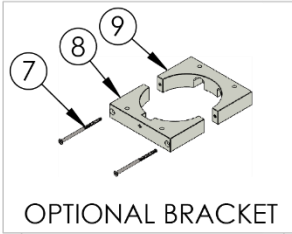
	Fittings (Type, Size, Option)		Assemblies	Body Inlet Only (Nut not included)
Flaretek Compatible 	1/2 in.	F08	14510-PF-0004	7200-PF-0005
	3/4 in.	F12	14510-PF-0005	7200-PF-0006
	1 in.	F16	14510-PF-0006	7200-PF-0007
	1-1/4 in.	F20	14510-PF-0007	7200-PF-0008
Tube Out 	1/2 in.	T08	7120-PF-0004	
	3/4 in.	T12	7120-PF-0005	
	1 in.	T16	7120-PF-0006	
	1-1/4 in.	T20	7120-PF-0011	
Weldable 	3/4 in.	W12	7300-PF-0003	
	1 in.	W16	7300-PF-0004	
Pillar S-300 	3/8 in.	P06	14530-PF-0028	7400-TE-0036
	1/2 in.	P08	14530-PF-0003	7400-TE-0003
	3/4 in.	P12	14530-PF-0004	7400-TE-0004
	1 in.	P16	14530-PF-0005	7400-TE-0005
	1-1/4 in.	P20	14530-PF-0009	7400-TE-0012
FNPT 	1/2 in.	N08	7100-TE-0006	
	3/4 in.	N12	7100-TE-0004	
	1 in.	N16	7100-TE-0008	
Synchro-Flare 	1/2 in.	S08	14520-TE-0003	7010-TE-0005
	3/4 in.	S12	14520-TE-0004	7010-TE-0004
	1 in.	S16	14520-TE-0006	7010-TE-0006
PrimeLock 	1/2 in.	L08	14570-PF-0003	7800-TE-0003
	3/4 in.	L12	14570-PF-0004	7800-TE-0004
	1 in.	L16	14570-PF-0005	7800-TE-0005
	1-1/4 in.	L20	14570-PF-0012	7800-TE-0012
Plugged		B00	7130-TE-0003	



**CBA-4A-6**



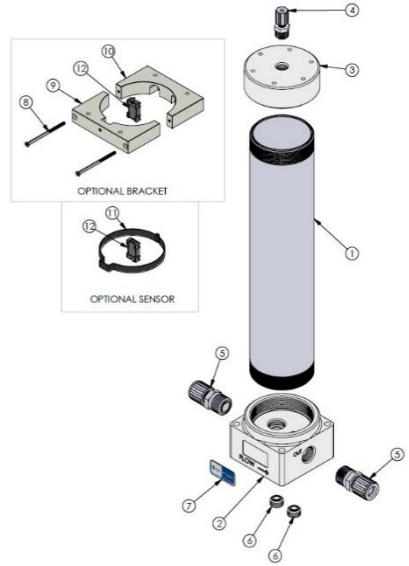
Item	Part Number	Description	Qty
1	2160-TE-0013	Side Port Cap	1
2	2160-TE-0012	Single Port Cap	1
3	14510-PF-0016	1/4" Flaretek Fitting Assembly	1
4	14510-PF-0005	3/4" Flaretek Fitting Assembly	2
5	7130-TE-0001	Fluid Port Plug-5gpm	2
6	19100-PP-0008	Product Label	1
7	10010-SS-0034	10-24 X 3.5 Fh Mounting Screw	2
8	1146-NP-0027	Sensor Holder Front Mount Clamp	1
9	1146-NP-0028	Rear Mount Clamp	1
10	10010-XX-0003	Cable Tie Rel Poly Wr Blk 20.1"	1
11	8600-XX-0047	Capacitive Sensor	1
12	2160-TE-0008	Coupler	1
13	1125-PF-0006	3-Liter Body	2
14	14550-PF-0012	6-Liter Debubbler Tube Assembly	1



Fittings (Type, Size, Option)		Assemblies		Body Inlet Only (Nut not included)
Flaretek Compatible	1/2 in. F08	14510-PF-0004	7200-PF-0005	
	3/4 in. F12	14510-PF-0005	7200-PF-0006	
	1 in. F16	14510-PF-0006	7200-PF-0007	
Tube Out	1-1/4 in. F20	14510-PF-0007	7200-PF-0008	
	1/2 in. T08		7120-PF-0004	
	3/4 in. T12		7120-PF-0005	
	1 in. T16		7120-PF-0006	
Weldable	1-1/4 in. T20		7120-PF-0011	
	3/4 in. W12		7300-PF-0003	
	1 in. W16		7300-PF-0004	
Pillar S-300	3/8 in. P06	14530-PF-0028	7400-TE-0036	
	1/2 in. P08	14530-PF-0003	7400-TE-0003	
	3/4 in. P12	14530-PF-0004	7400-TE-0004	
	1 in. P16	14530-PF-0005	7400-TE-0005	
	1-1/4 in. P20	14530-PF-0009	7400-TE-0012	
FNPT	1/2 in. N08		7100-TE-0006	
	3/4 in. N12		7100-TE-0004	
	1 in. N16		7100-TE-0008	
Synchro-Flare	1/2 in. S08	14520-TE-0003	7010-TE-0005	
	3/4 in. S12	14520-TE-0004	7010-TE-0004	
	1 in. S16	14520-TE-0006	7010-TE-0006	
PrimeLock	1/2 in. L08	14570-PF-0003	7800-TE-0003	
	3/4 in. L12	14570-PF-0004	7800-TE-0004	
	1 in. L16	14570-PF-0005	7800-TE-0005	
	1-1/4 in. L20	14570-PF-0012	7800-TE-0012	
Plugged	B00		7130-TE-0003	

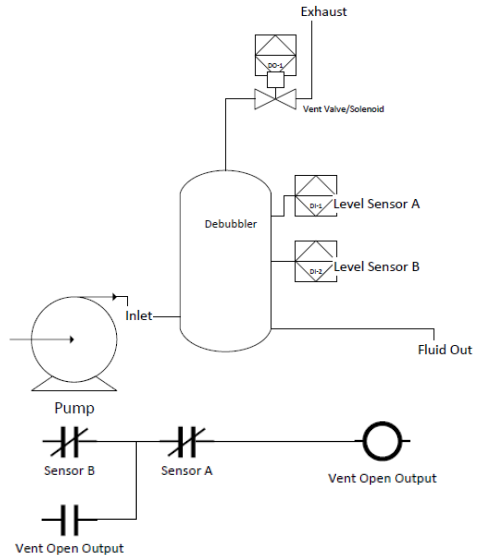
## 2. Installation Instruction

1. Prepare the cabinet wall or other mounting panel by installing inserts for 1/4"-UNC (6mm) socket head cap screws into the dimensions specified on the accompanying page. The CBA-4A may only be mounted with the base on the bottom. Approximate weights of the debubbler are 10-26 lbs. (not including liquid). Choose your mounting material accordingly.
2. Install the debubbler housing (2) by using four 1/4"-UNC (6mm) stainless-steel socket head cap screws (Notes 1 and 2 on dimensional).
3. Hook up inlet and outlet tubing (5) and vent lines (4) as desired. If inlet and outlet tubing connectors are not of the type desired, do not attempt to modify or attempt to screw male NPT tubing connectors into the debubbler housing. Irreparable damage will occur! If a female NPT connection is desired, adapters are available from White Knight. Please contact White Knight if a different type of connection is needed.
4. Optional drain ports (6) on bottom of base (Note 3 on dimensional).
5. Optional sensors (12) can be positioned as desired and attached with optional bracket (9 and 10) or zip ties (Note 4 dimensional).



## 3. Setup Instructions

1. Gas bubbles in the process fluid rise and accumulate at the top of the Debubbler.
2. Fluid level drops as gas accumulate to below level sensor B (lower sensor).
3. Once fluid level is below level sensor B, vent valve should be opened.
4. While vent valve is open, fluid level rises to level sensor A (upper sensor).
5. Once fluid is above level sensor A, vent valve should be closed.



### Sample Wiring:

When both sensors show empty, open vent and latch until sensor A shows fluid present



### 4. Ordering Instructions

#### Configuration

### CBA - 4A - 1 - F12 F12 F04 - B00 B00 - S0 0

0	1.	2.	3.	4	5	6	7	8	9
Model	Diameter	Volume	Liquid Inlet	Liquid Outlet	Vent	Tube Drain	Main Drain	Sensors	Brackets

#### Instructions

A selection is required for each option.  
Contact support for revision or copy exact information.

Standard options are highlighted

0. Model	
Standard debubbler	CBA

1. Diameter	
4 inch	4A

2. Volume	
1 liter	1
2 liter	2
3 liter	3
4 liter *	4
5 liter *	5
6 liter *	6

\* Two coupled tubes.

Liquid Fittings		3. Inlet	4. Outlet
Plugged		B00	B00
Flaretek Compatible	1/2 in.	F08	F08
	3/4 in.	F12	F12
	1 in.	F16	F16
Pillar S-300	1-1/4 in.	F20	F20
	1/2 in.	P08	P08
	3/4 in.	P12	P12
FNPT	1 in.	P16	P16
	1/2 in.	N08	N08
	3/4 in.	N12	N12
Weldable	1 in.	N16	N16
	1/2 in.	W08	W08
	3/4 in.	W12	W12
	1 in.	W16	W16

Vent & Drain Fittings		5. Vent	6. Tube Drain	7. Main Drain
Plugged		B00	B00	B00
Flaretek Compatible	1/4 in.	F04	F04	F04
	3/8 in.	F06	F06	F06
Pillar S-300	1/8 in.	P02	P02	P02
	1/4 in.	P04	P04	P04
	3/8 in.	P06	P06	P06
FNPT	1/4 in.	N04	N04	N04
	3/8 in.	N06	N06	N06



8. Liquid Level Sensors	
No Sensors	S0
One Sensor	S1
Two Sensors	S2
Three Sensors	S3
Four Sensors	S4

9. Mounting Brackets	
No Brackets	0
One Bracket	1
Two Brackets	2
Three Brackets	3
Four Brackets	4





## 5. Warranty

White Knight follows strict manufacturing, assembly and testing procedures to ensure consistency and reliability.

White Knight warrants CBA debubblers and components are free from defects in materials and workmanship for one year from our shipment date or your installation date if provided within 90 days of shipment from our facility.

Failures due to normal wear, misuse, abuse or unauthorized disassembly nullify this warranty.

White Knight does not guarantee the suitability of products for specific applications. White Knight is not liable for any damage or expense resulting from use or misuse of its products in any application. Responsibility is limited solely to repair or replacement of defective products or components.

Prior written, faxed or emailed approval must be obtained from White Knight before returning any product or component for warranty consideration. All determinations regarding cause of failure are made by White Knight, and all decisions regarding warranty fulfillment or nullification are made by White Knight.

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING ANY GUARANTEE OF SUITABILITY FOR ANY PURPOSE. NO VARIATIONS OF THIS WARRANTY SHALL BE HONORED NOR CONSIDERED LEGALLY BINDING, EXCEPT WRITTEN AGREEMENTS SIGNED BY THE CEO OF WHITE KNIGHT FLUID HANDLING.

Brian Callahan, CEO  
White Knight Fluid Handling





## 6. Service

Follow decontamination instructions when returning a product for service.

**DO NOT REMOVE PAGE FROM MANUAL.**

Copy page from manual or download at <https://wkfluidhandling.com/support/rma/>.

## Decontamination Instructions

**PRINT COMPLETED DECONTAMINATION CERTIFICATION. IT MUST BE INCLUDED IN YOUR RMA SHIPMENT.**

White Knight products are designed for use with caustic and otherwise dangerous liquids. Handle every product as if it contains dangerous chemicals whether or not it actually does.

- Only those with adequate safety training should attempt to handle used products.
- Wear adequate safety gear appropriate for chemicals that have been in the product.
- Review relevant Material Safety Data Sheets (MSDS) before handling the product.
- Review emergency numbers for use in event of an accident.
- Prepare Ph papers, showers, antidotes, clean-up equipment, neutralizers, and other safety devices used to detect, neutralize or minimize effects of chemicals described in appropriate MSDS documents.

### Rinse with DI Water

Circulate DI water through product for twenty minutes before disassembly and/or double bagging for shipment. If product is nonfunctional, force DI water from inlet through outlet for 40 minutes before shipment preparations.

### Remove Product from Station:

1. Disconnect liquid tubing connectors from front of product (opposite shuttle valve).
2. Plug NPT fittings with PTFE plug, Flare fittings with flare nose cover and cap, or other plug or cap as recommended by connector supplier.
3. Disconnect air supply tubing from face of shuttle valve.
4. Loosen mount screw from base plate. (Note: do not remove screw from base plate).
5. Remove base plate using proper tool for the fastening devices (e.g. Allen wrench or screw driver).  
Note: Base plate may stay if needed for replacement product to be used.
6. Return all removed parts to the product.

### Return Product to White Knight:

1. Rinse product with DI water as described above after removing it from its station.
2. Drain remaining DI water from the product inlet and outlet liquid tubing connectors.
3. Plug liquid outlets as described in the Remove Product from Station section above.
4. Dry the product, double bag it, and seal it in thick polyethylene bags.
5. Return the product to its original packaging.
6. Include MSDS for the chemical that the product was handling in the box with the product.
7. Obtain RMA number from White Knight and write it on the outside of the box.
8. Ship to White Knight following all rules, regulations and laws regarding shipment of dangerous materials. Ship freight pre-paid. No collect shipments will be accepted. Unauthorized use of White Knight shipping accounts will result in the adding of freight to the bill in addition to a service charge.

### Include All Components:

Products returned to White Knight for evaluation, service or repair must be complete with all components, including but not limited to base plate, mount screws, tubing connectors, tubing connector caps, flare noses, shuttle valves, mufflers, and tubing. Missing parts will be added to the product and charged to the customer.





**DO NOT REMOVE PAGE FROM MANUAL.**

Copy page from manual or download at <https://wkfluidhandling.com/support/rma/>.

# Decontamination Certification

**COMPLETE AND PRINT THIS FORM. IT MUST BE INCLUDED IN YOUR RMA SHIPMENT.**

I, the undersigned employee of \_\_\_\_\_, certify that all decontamination and safety procedures described in Decontamination Instructions section have been followed for return of product below.

**RMA#:** \_\_\_\_\_

*(We cannot process returns without an RMA number.)*

**Serial#:** \_\_\_\_\_

*(We cannot process returns without a product serial number.)*

## **Metal Exposure:**

*(Check all that apply. Write in other metals if necessary.)*

Product was used in a Metal Process.     Yes     No

Product was used in a Copper Metal Process.     Yes     No

Product was used with:

- Aluminum     Cobalt     Gold     Lead     Nickel     Platinum     Silver     Tin     Titanium
- Tungsten     Zinc     Other: \_\_\_\_\_

## **Chemical Exposure:**

*(Check all that apply. Write in other chemicals if necessary.)*

Product was NOT used in chemicals (DI Water only).

Product was used in chemicals.

- Ammonia     Ammonium Hydroxide     Hydrochloric Acid     Hydrofluoric Acid     Hydrogen Peroxide     IPA
- Nitric Acid     Phosphoric Acid     Sulfuric Acid     Other: \_\_\_\_\_

## **Shipping Information:**

Please indicate metal processes to which the product has been exposed by clearly and conspicuously labeling the outside of the return package with the metal.

**Products exposed to Metal Processes must be sent to the following address:**

White Knight Fluid Handling  
187 East 670 South, Suite B  
Kamas, UT 84036

**Products NOT exposed to Metal Processes must be sent to the following address:**

White Knight Fluid Handling  
187 East 670 South, Suite C  
Kamas, UT 84036

Print Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_





**WHITE  
KNIGHT®**

..... *engineer approved™*

**White Knight Support**

187 E. 670 S.  
Kamas, UT 84036

Phone: 435.783.6040  
Toll Free: 888.796.2476  
Fax: 435.783.6128

[support@wkfluidhandling.com](mailto:support@wkfluidhandling.com)

<https://wkfluidhandling.com/support/>

