



FORCE America Inc.

# ULTRAKOOL Operator's Manual

FORCE America UK12-70-HYD-BTC-SS Operator's Manual



# ULTRA KOOL



The High Performance, Compact Cooling System

## Table of Contents

TABLE OF CONTENTS .....	2
UK12-70-HYD-BTC-SS – MODEL CODE BREAKDOWN .....	3
UK12-70-HYD-BTC-SS – EXPLODED PARTS VIEW .....	3
UK12-70-HYD-BTC-SS – BILL OF MATERIAL .....	4
UK12-70-HYD-BTC-SS – DIMENSIONS .....	6
UK12-70-HYD-BTC-SS – TYPICAL PLUMBING LAYOUT .....	7
UK12-70-HYD-BTC-SS – STARTUP PROCEDURE STEPS .....	8
UK12-70-HYD-BTC-SS – MAINTENANCE RECOMMENDATIONS .....	9
UK12-70-HYD-BTC-SS – TROUBLESHOOTING .....	9
UK12-70-HYD-BTC-SS – PRODUCT INFORMATION .....	10
BOLR-400-226740 - HYDRAULIC COOLER SPECIFICATIONS .....	11
CONTACT US .....	12

## Warranty Disclaimer

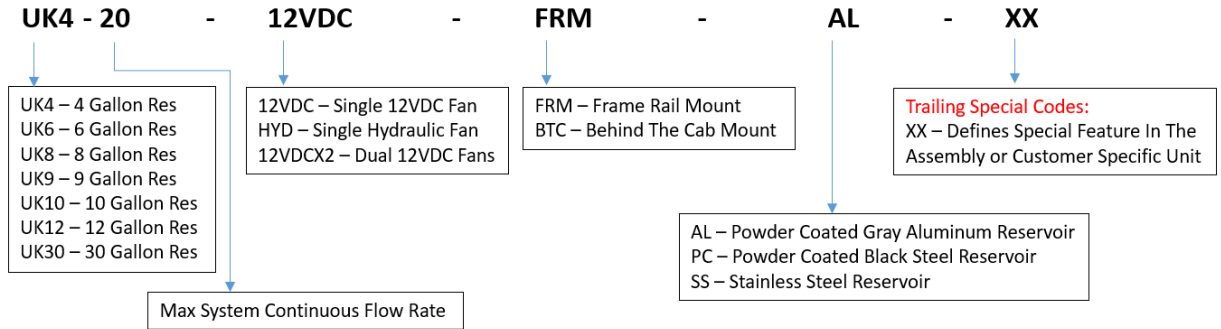
Seller warrants that any goods sold by Seller to Buyer shall be free from defects in material and workmanship for a period of one (1) year from the date of delivery. THIS WARRANTY SHALL BE THE SOLE AND EXCLUSIVE WARRANTY MADE BY SELLER TO BUYER. SELLER HEREBY DISCLAIMS ANY IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

# ULTRA KOOL

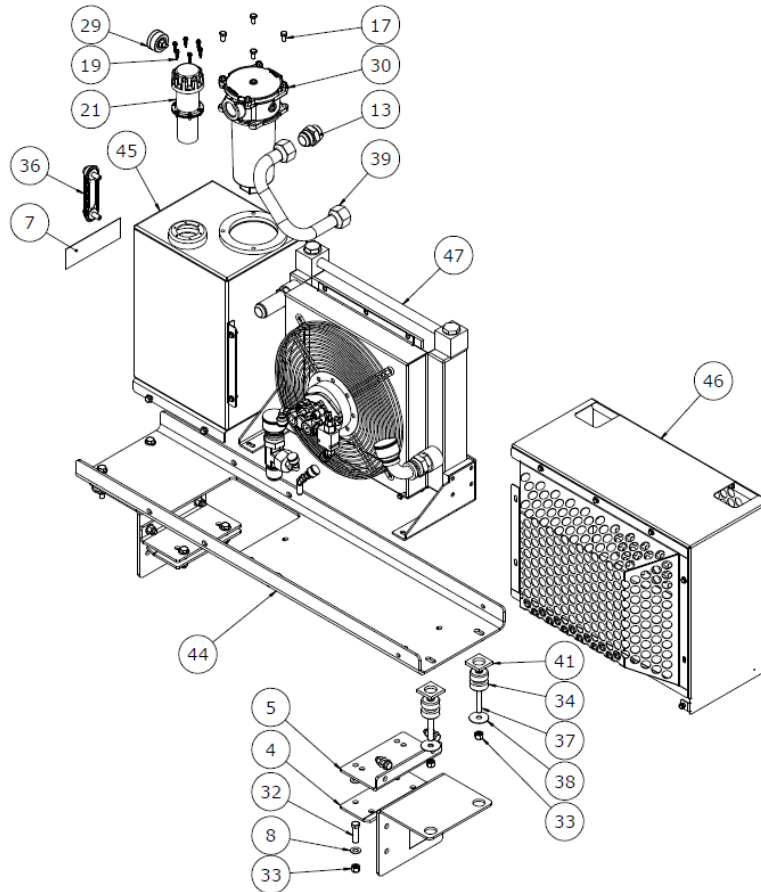


The High Performance, Compact Cooling System

## UK12-70-HYD-BTC-SS – Model Code Breakdown



## UK12-70-HYD-BTC-SS – Exploded Parts View



# ULTRA KOOL



The High Performance, Compact Cooling System

## UK12-70-HYD-BTC-SS – Bill of Material

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	1010557	1/4"-20 X 3/4" HHCS, 18-8 STAINLESS	16
2	1010558	3/8"-16 X 1-1/4" HHCS, 18-8 STAINLESS	4
3	1010560	3/8"-16 NYLON-INSERT HEX LOCK NUT, 18-8 STAINLESS	4
4	1010689	BRACKET, FRAME CLAMP	2
5	1010690	ANGLE, FRAME CLAMP	2
6	1010799	3/8" STAINLESS STEEL WASHER	8
7	1011613	ULTRAKOOL LOGO DECAL	1
8	1011765	1/2" SCREW SIZE FLAT WASHER, STEEL	20
9	1013459	FITTING -20 MJIC X -20 MJIC X -20 MJIC BULKHEAD UNION TEE	1
10	1013510	BULKHEAD NUT -6	1
11	1013516	BULKHEAD NUT -20	1
12	1013931	FITTING STRAIGHT -6 MJIC X -8 MORB	1
13	1013967	FITTING STRAIGHT -20 MJIC / -20 MORB	2
14	1013983	FITTING STRAIGHT LONG -20 MJIC X -20 MORB	1
15	1014034	FITTING UNION ADJ MORB -8	1
16	1014540	WELDMENT, FRAME MOUNT BRACKET	2
17	1015084	3/8"-16 X 3/4" HHCS, 18-8 STAINLESS	4
18	1015103	3/8" SCREW SIZE SPLIT LOCK WASHER, 0.68" OD, 18-8 STAINLESS	4
19	1015115	#12-14 X 1" SELF DRILLING SCREW, HEX WASHER HEAD, ZINC	6
20	1025287	HYDRAULIC MOTOR	1
21	1028135	RAISED FILLER BREATHER	1
22	1046260	2-WAY BODY, SAE -8 PORTS - ALUMINUM	1
23	1053040	06 FEMALE JIC SWIVEL STRAIGHT FOR 3/8" HOSE	2
24	1068870	1/4 FLAT WASHER S/S (5/8 OD X .050 THK) FWSS 025	16
25	1070683	08 FEMALE JIC 90 ELBOW FOR 3/8" HOSE	1
26	1071758	20 FEMALE JIC SWIVEL STRAIGHT FOR 1-1/4" HOSE	1
27	1072449	06 FEMALE JIC 90 ELBOW FOR 3/8" HOSE	1
28	1075566	FITTING -20 FJIC X -08 MJIC REDUCER/EXPANDER	1
29	1086823	0-60 PSI BYPASS GAUGE - 1/8 NPT	1
30	1090446	TANK MOUNTED FILTER W/ELEMENT ENDURAGUARD	1
31	1096207	1/2"-13 X 1-1/2" HHCS, GR8, ZINC	4

# ULTRA KOOL



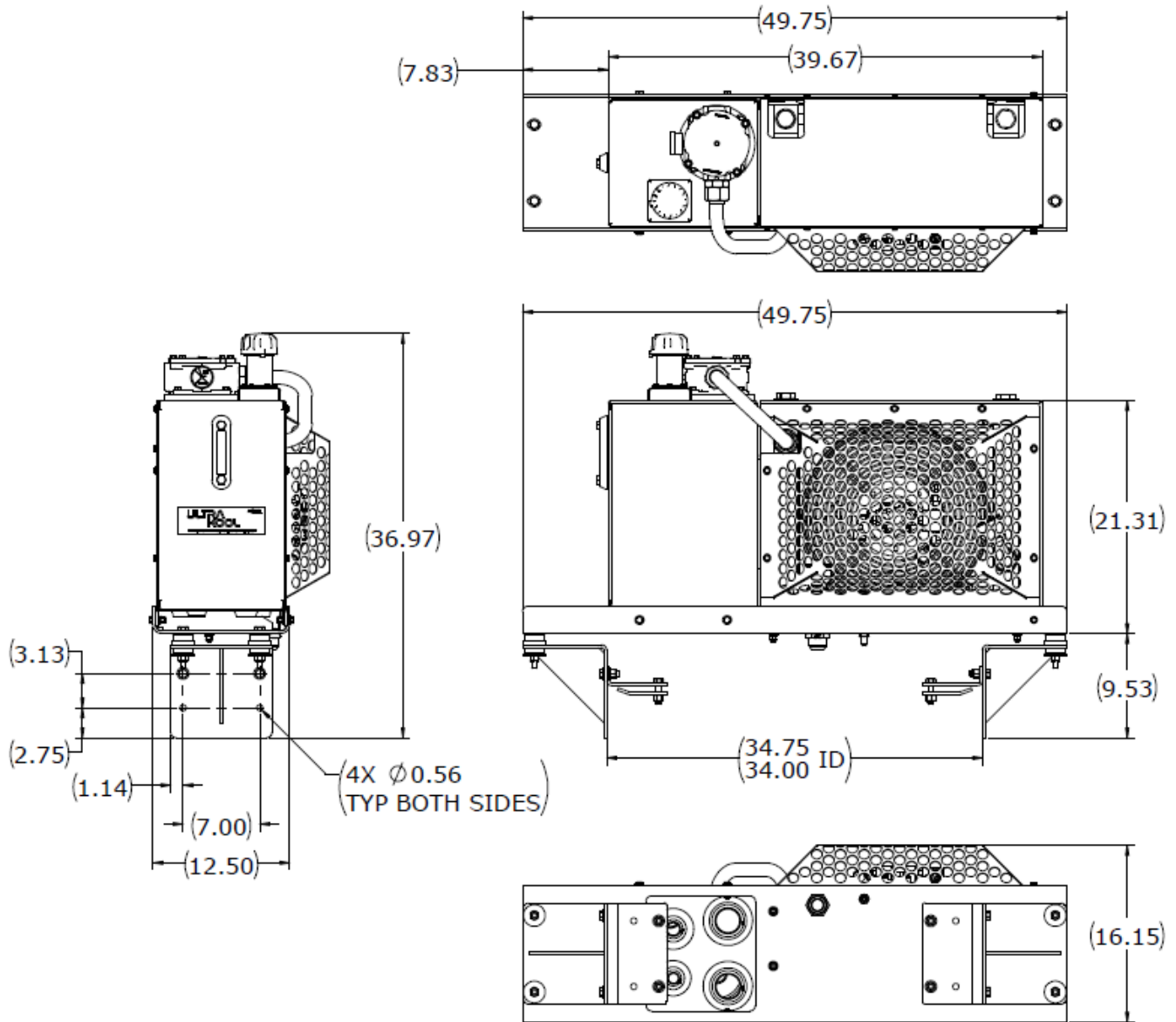
## The High Performance, Compact Cooling System

32	1096208	1/2"-13 X 2" HHCS, GR8, ZINC	4
33	1096210	1/2"-13 NYLON-INSERT HEX LOCK NUT, GR8, ZINC	12
34	1097650	ISOLATOR, BONDED BUSHING & SNUBBER, 250LBS/IN SPRING RATE	4
35	1102603	FITTING, 45 DEG -06 MJIC X -08 MORB	1
36	1102641	5" SIGHT/TEMP GAUGE, M12X1.75, PLASTIC GUARD	1
37	1112688	1/2"-13 X 3-1/2" HHCS, GR8, ZINC	4
38	1121158	1/2" SCREW SIZE FENDER WASHER, 1.50" OD, 0.125" THICK, ZINC	4
39	1121608	ASSEMBLY, TUBE, UK9-HYD-SS	1
40	1122268	20 FEMALE JIC 90 ELBOW FOR 1-1/4" HOSE	1
41	1122300	PP, PLATE, SPACER, STL	4
42	1169068	CART, PRESSURE COMP FLOW REGULATOR	1
43	1181922	ADAPTER 45 DEG, ELBOW BULKHEAD, MJIC X MJIC, STEEL	1
44	1190010	CRADLE, ULTRAKOOL, PC	1
45	1190011	WELDMENT, RES12, ULTRAKOOL, PC	1
46	1190031	KIT, COOLER GUARD, ULTRAKOOL, HYD FAN, PC	1
47	1177936	HEAT EXCHANGER, BOLR-400-226740	1

# ULTRA KOOL

The High Performance, Compact Cooling System

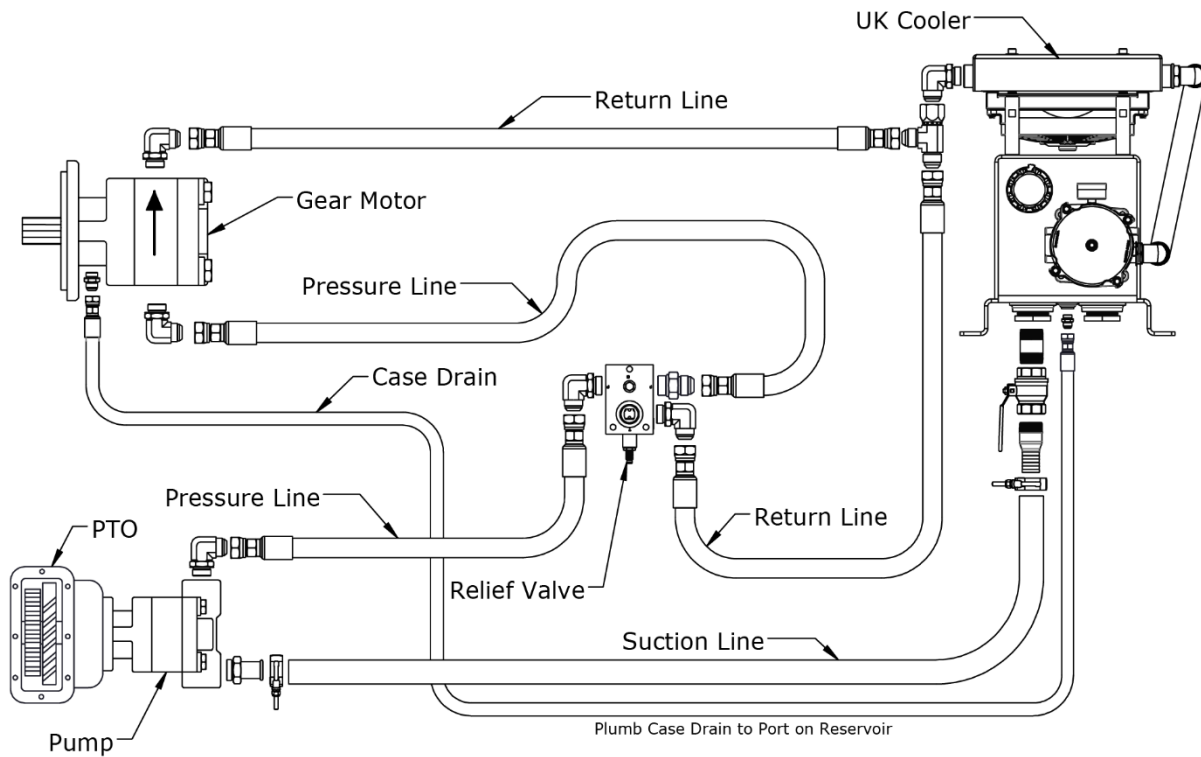
## UK12-70-HYD-BTC-SS – Dimensions



# ULTRA KOOL

The High Performance, Compact Cooling System

## UK12-70-HYD-BTC-SS – Typical Plumbing Layout



# ULTRA KOOL



The High Performance, Compact Cooling System

## UK12-70-HYD-BTC-SS – Startup Procedure Steps

1. Mount unit to truck chassis.
2. Plumb all hydraulic lines per plumbing diagrams and application diagrams.
3. Fill Reservoir to the high end of the sight gauge.
4. Engage PTO at low RPM levels.
5. Continually add oil to make sure oil level stays visible within the sight gauge.
6. After oil level stays steady check for leaks and repair before continuing.
7. Verify fan operation for either hydraulic or electric fans.
8. Slowly increase PTO speed to get desired pump RPMs.
9. Run system until oil gets to temp (electric) and verify oil is being cooled (both fan types).

Should take roughly 5-10 minutes to verify.

10. Operate all functions of the system to verify the system is properly bled of air.
11. Disengage PTO.
12. System is functional and ready for full operation.



## UK12-70-HYD-BTC-SS – Maintenance Recommendations

**General** – Look over your Ultra-Kool system before each use to make sure there are no leaks, and all components are good working order.

**Oil** – Replace every 12 months or sooner depending on operational conditions. Only oil based hydraulic fluids should be used in this system. Please contact FORCE America if you have any questions related to the fluid you'd like to use in your system.

**Filters** – Replace as indicated by the gauge on the return filter housing. Replacement filter part number can be obtained from the parts breakdown diagram.

**Hoses** – Replace hoses due to any leaks or a visual inspection revealing abrasions or cracking.

**Cooler** – Rinse every 3-6 months with low pressure water (under 200 PSI). When used in dirty environments, it is recommended to rinse the cooler more frequently for optimal performance.

## UK12-70-HYD-BTC-SS – Troubleshooting

**Cooling** – If system is not cooling properly check the following items.

- Clean or rinse the cooler to remove debris
- Check to make sure the fan is engaging and functioning properly
- Check for additional heat coming from relief valves not functioning properly
- Check to make sure you don't have pump cavitation in your system

**Noise** – If the system is making excessive noise check the following items.

- Fan is engaging and functioning correctly
- Check oil level is in the center of your sight gauge
- Make sure all bolts are securely fastened on the unit

# ULTRA KOOL



The High Performance, Compact Cooling System

## UK12-70-HYD-BTC-SS – Product Information

### Technical Specifications:

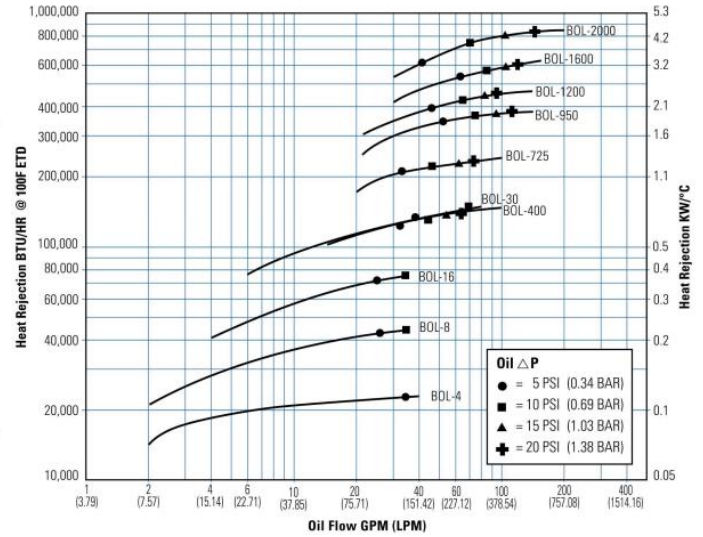
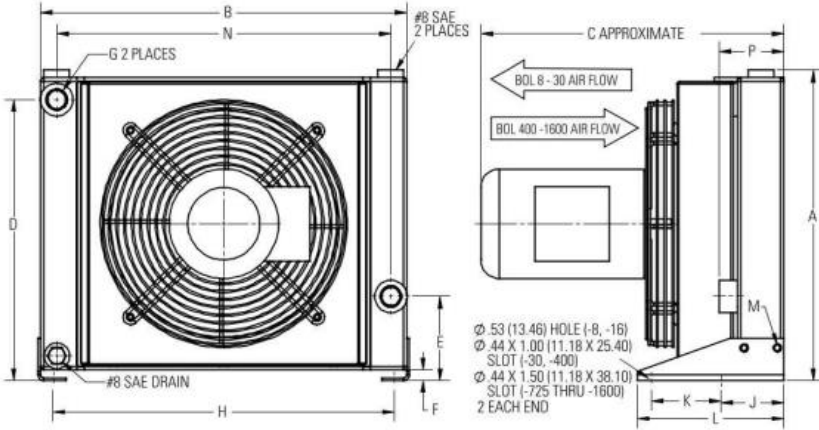
- Dry Weight ..... 65 lbs.
- Height ..... 19 inches
- Depth ..... 20.5 inches
- Width ..... 16 inches
- Oil capacity ..... 4 gallons
- Fan speed ..... 3600 rpm



# ULTRA KOOL

The High Performance, Compact Cooling System

## BOLR-400-226740 - Hydraulic Cooler Specifications



strate heat rejection values 15% if using 50Hz motors.

Model	A	B	C	D	E	F	G		H	J	K	L	M	N	P	Approx. Ship Wt. lbs (kg)
							SAE	NPT & BSPP								
BOL-4	See diagram above						#12 SAE	3/4"	See diagram above						18 (8.16)	
BOL-8	12.56 (319)	15.81 (402)	15.94 (405)	11.34 (288)	4.51 (115)	0.57 (14)	#12 SAE	3/4"	14.44 (361)	3.36 (85)	3.74 (95)	7.87 (200)	M8 BOLT (2PL)	13.99 (355)	3.63 (92)	45 (20.4)
BOL-16	16.33 (415)	19.69 (500)	16.43 (417)	15.06 (383)	4.57 (116)	0.57 (14)	#12 SAE	3/4"	18.31 (465)	3.35 (85)	3.74 (95)	7.87 (200)	M8 BOLT (2PL)	17.95 (456)	3.63 (92)	55 (24.94)
BOL-30	20.13 (511)	26.38 (670)	17.88 (454)	19.49 (495)	5.26 (134)	1.32 (340)	#20 SAE	1 1/4"	24.74 (628)	4.15 (105)	5.00 (127)	9.9 (251)	M8 BOLT (4PL)	24.34 (618)	5.00 (127)	125 (56.70)
BOL-400	18.90 (480)	22.38 (568)	18.6 (472)	17.31 (440)	6.50 (165)	2.00 (51)	#20 SAE	1 1/4"	22.31 (567)	4.15 (105)	5.00 (127)	9.9 (251)	M8 BOLT (4PL)	20.07 (510)	5.00 (127)	148 (67.13)
BOL-725	23.40 (594)	30.25 (768)	17.56 (446)	21.62 (549)	6.50 (165)	2.00 (51)	#20 SAE	1 1/4"	30.11 (765)	4.15 (105)	5.00 (127)	9.9 (251)	M10 BOLT (4PL)	27.95 (710)	5.00 (127)	170 (77.11)
BOL-950	27.70 (705)	37.01 (940)	22.68 (576)	24.55 (624)	9.50 (241)	2.00 (51)	2" SAE 4 BOLT FLANGE	2"	35.87 (911)	6.05 (154)	9.20 (234)	16 (406)	M10 BOLT (4PL)	34.26 (9870)	7.00 (178)	300 (136.08)
BOL-1200	28.38 (721)	40.98 (1041)	24.05 (611)	24.55 (624)	5.50 (140)	2.00 (51)		2"	40.29 (1023)	6.05 (154)	9.20 (234)	16 (406)	M10 BOLT (4PL)	38.18 (970)	8.75 (222)	430 (195.04)
BOL-1600	36.50 (927)	40.98 (1041)	25.43 (646)	32.80 (833)	9.50 (241)	2.00 (51)		2"	40.29 (1023)	6.05 (154)	9.20 (234)	16 (406)	M10 BOLT (4PL)	38.18 (970)	8.75 (222)	515 (233.60)
BOL-2000	See diagram above						2"	2"	See diagram above						582 (264.00)	

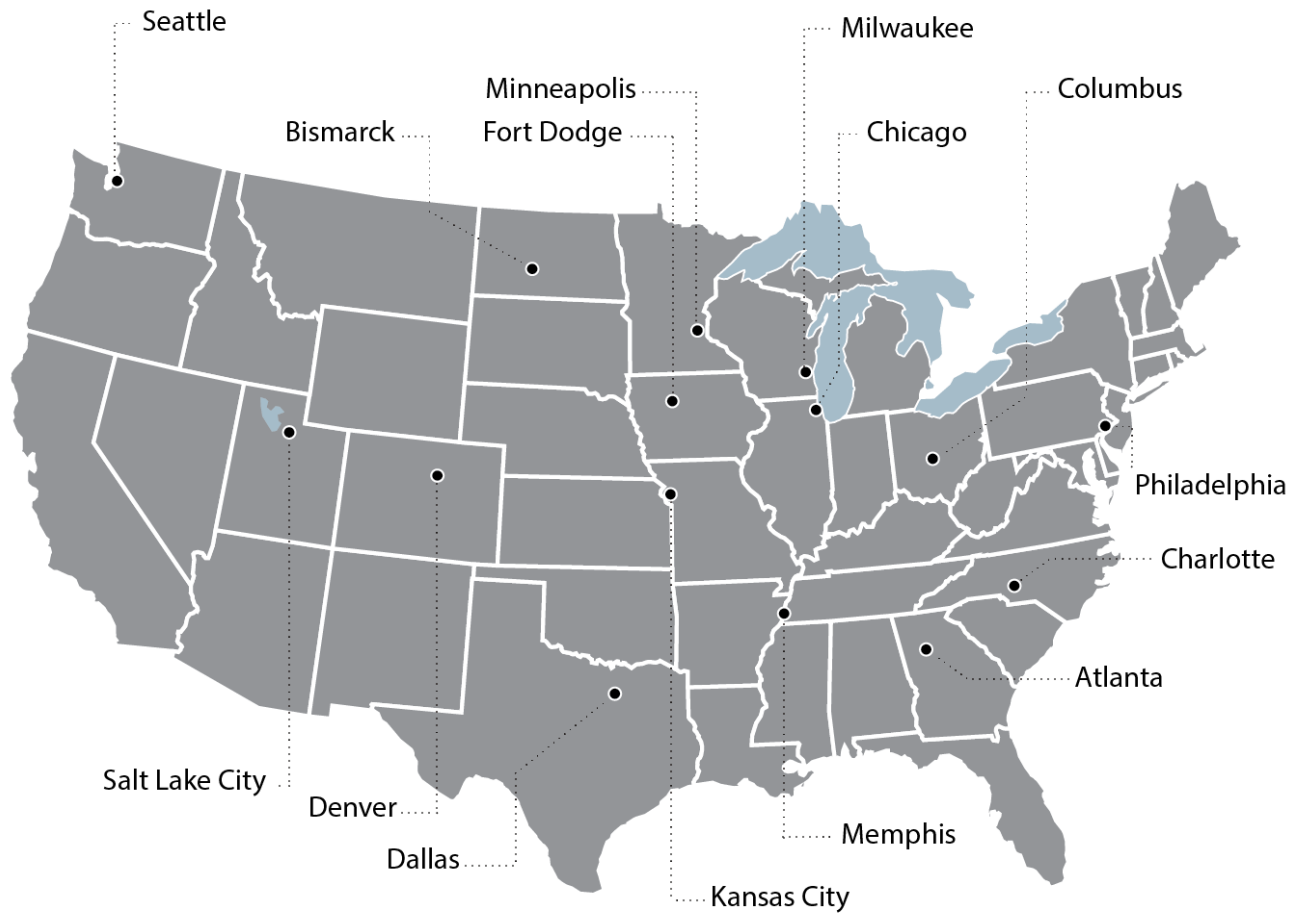
Note: We reserve the right to make reasonable design changes without notice. All dimensions are in inches (millimeters) unless noted otherwise.

# ULTRA KOOL



The High Performance, Compact Cooling System

## Contact Us



Atlanta, Georgia	888-293-2325	Kansas City, Missouri	800-383-4724
Bismarck, North Dakota	800-624-7568	Memphis, Tennessee	888-845-5876
Charlotte, North Carolina	800-788-8598	Milwaukee, Wisconsin	800-722-5844
Chicago, Illinois	800-433-5765	Minneapolis, Minnesota	800-328-2732
Columbus, Ohio	888-449-0356	Philadelphia, Pennsylvania	800-492-6621
Dallas, Texas	800-893-7225	Salt Lake City, Utah	877-230-0505
Denver, Colorado	888-833-7711	Seattle, Washington	800-354-9028
Fort Dodge, Iowa	800-362-2994		