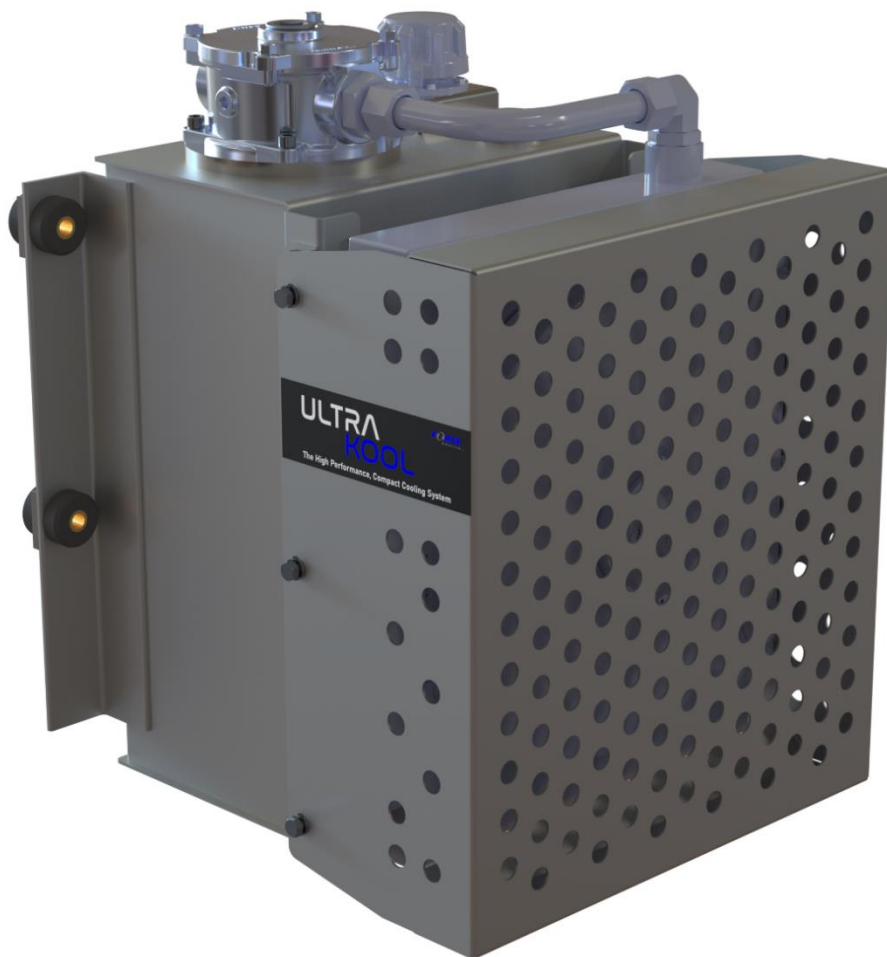




FORCE America Inc.

# ULTRAKOOL Operator's Manual

FORCE America UK12-70-12VDC-FRM-SS Operator's Manual



# ULTRA KOOL



The High Performance, Compact Cooling System

## Table of Contents

TABLE OF CONTENTS .....	2
UK12-70-12VDC-FRM-SS – MODEL CODE BREAKDOWN.....	3
UK12-70-12VDC-FRM-SS – EXPLODED PARTS VIEW .....	3
UK12-70-12VDC-FRM-SS – BILL OF MATERIAL.....	4
UK12-70-12VDC-FRM-SS – DIMENSIONS.....	5
UK12-70-12VDC-FRM-SS – ELECTRICAL START OPTIONS.....	6
UK12-70-12VDC-FRM-SS – TYPICAL PLUMBING LAYOUT .....	10
UK12-70-12VDC-FRM-SS – STARTUP PROCEDURE STEPS .....	11
UK12-70-12VDC-FRM-SS – MAINTENANCE RECOMMENDATIONS .....	12
UK12-70-12VDC-FRM-SS – TROUBLESHOOTING.....	12
UK12-70-12VDC-FRM-SS – PRODUCT INFORMATION .....	13
MA-32-2-4A - HYDRAULIC COOLER SPECIFICATIONS.....	14
CONTACT US.....	15

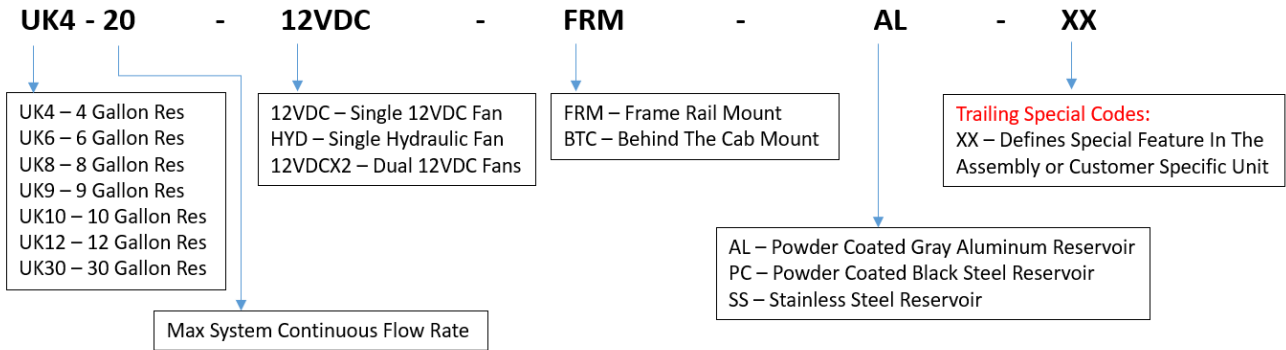
## Warranty Disclaimer

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.

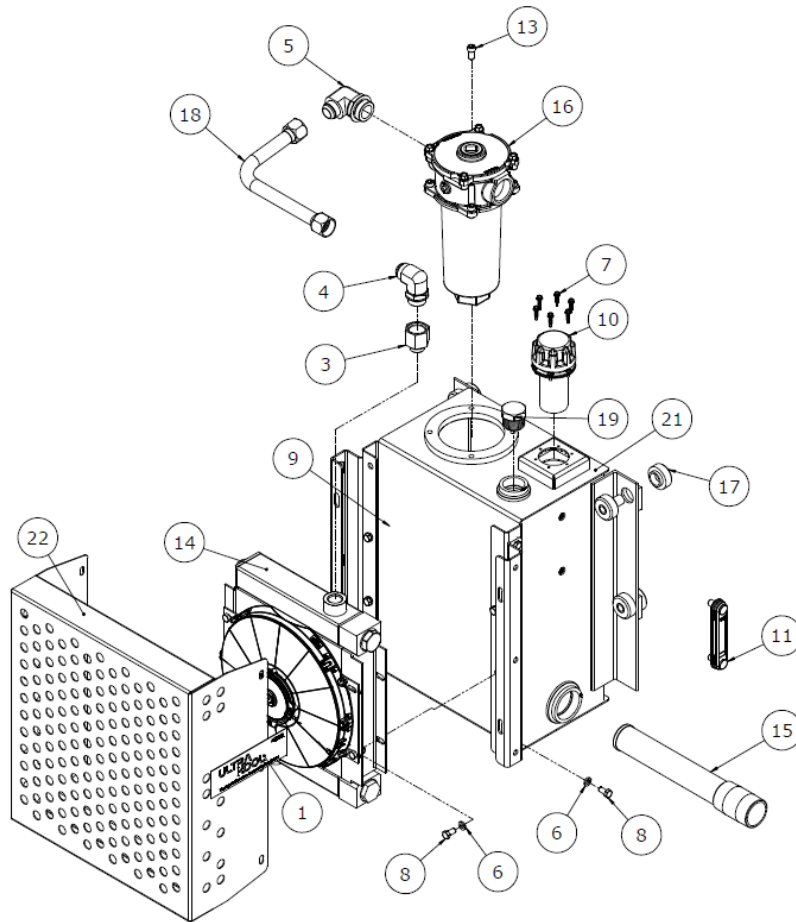
# ULTRA KOOL

The High Performance, Compact Cooling System

## UK12-70-12VDC-FRM-SS – Model Code Breakdown



## UK12-70-12VDC-FRM-SS – Exploded Parts View



# ULTRA KOOL



The High Performance, Compact Cooling System

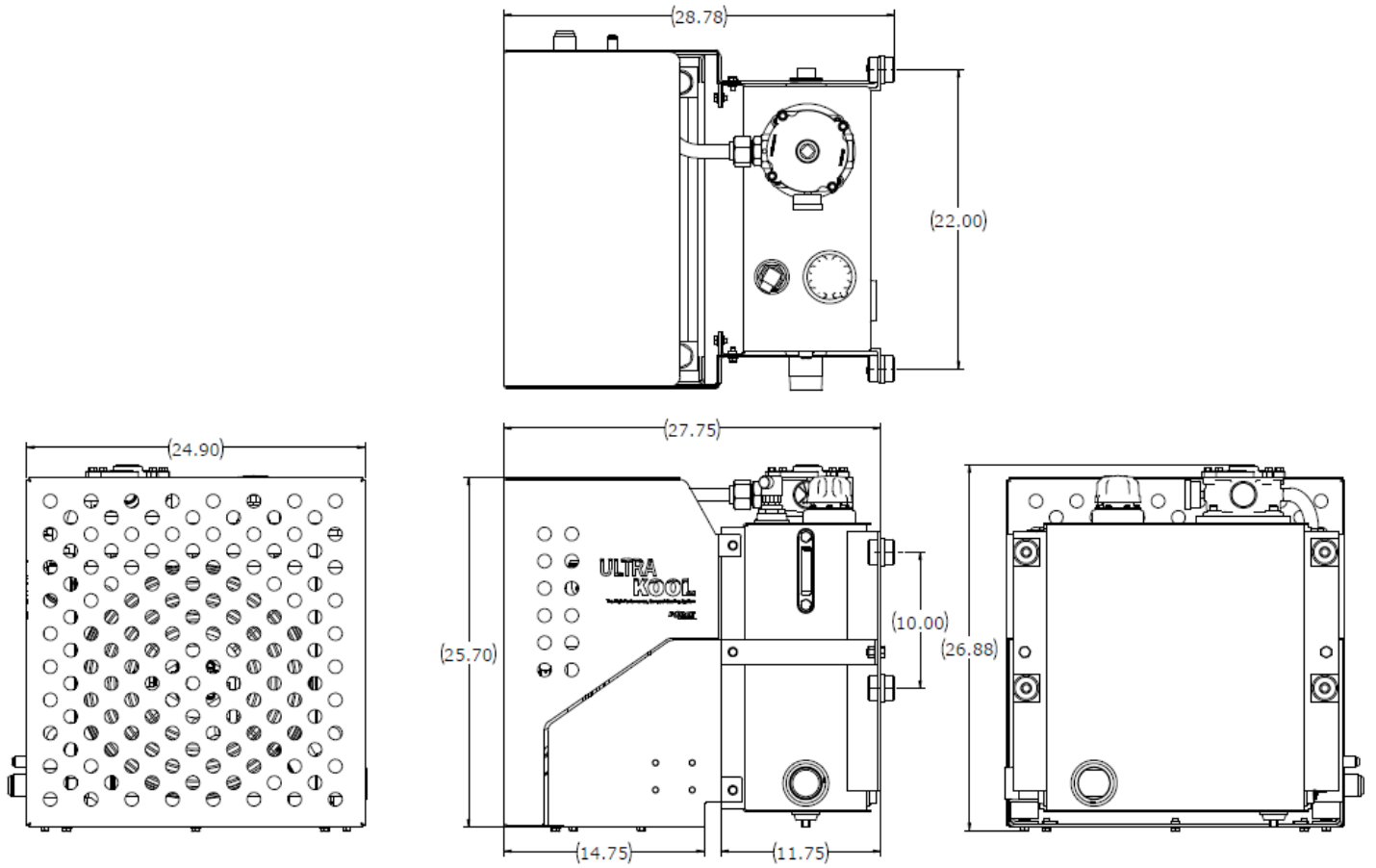
## UK12-70-12VDC-FRM-SS – Bill of Material

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	1011613	ULTRAKOOL LOGO DECAL	1
2	1011760	WELDMENT, DIFFUSER, 1-1/2 NPT THREAD	1
3	1014140	12 MALE SAE TO 16 FEMALE SAE	1
4	1014330	FITTING 90 DEG -16 MJIC / -16 MORB	1
5	1014331	FITTING 90 DEG -16 MJIC / -20 MORB	1
6	1014971	3/8" SCREW SIZE LOCK WASHER, MEDIUM SPLIT, ZINC	10
7	1015115	#12-14 X 1" SELF DRILLING SCREW, HEX WASHER HEAD, ZINC	6
8	1015139	3/8"-16 X 3/4" HHCS, GR5, ZINC	10
9	1030867	2" NPT SQUARE-HEAD PLUG	1
10	1067914	FILLER/BREATHER, 40 MICRON, SS MESH	1
11	1067943	5" LEVEL/BLUE TEMP GAUGE, M12 BOLTS	1
12	1067982	PLUG, MAGNETIC SQUARE HEAD, 3/4"-14 NPTF, STL	1
13	1068876	3/8"-16 X 3/4" SHCS 18-8 STAINLESS	4
14	1087057	MOBILE MA SERIES COOLER WITH 12 VDC FAN & -12 ORB PORTS	1
15	1090430	STRAINER, 2" NPTF MALE THREAD, 2" NPTF OUTLET PORT	1
16	1090443	SUCTION / RETURN LINE TANK TOP FILTER	1
17	1097650	ISOLATOR, BONDED BUSHING & SNUBBER	4
18	1129581	PP, TUBE, ULTRAKOOL SERIES, SS	1
19	1130377	1-1/4 NPT HEX HEAD PLUG STAINLESS STEEL	1
20	1171016	PP, UK12 COOLER BRACKET, MA-32, STL	1
21	1190027	WELDMENT, UK12-70-12VDC, SS	1
22	1190040	WELDMENT, UK12 SHROUD, MA-32 COOLER, SS	1
23	1190041	WELDMENT, UK12 COOLER BRACKET, MA-32, SS	1

# ULTRA KOOL

The High Performance, Compact Cooling System

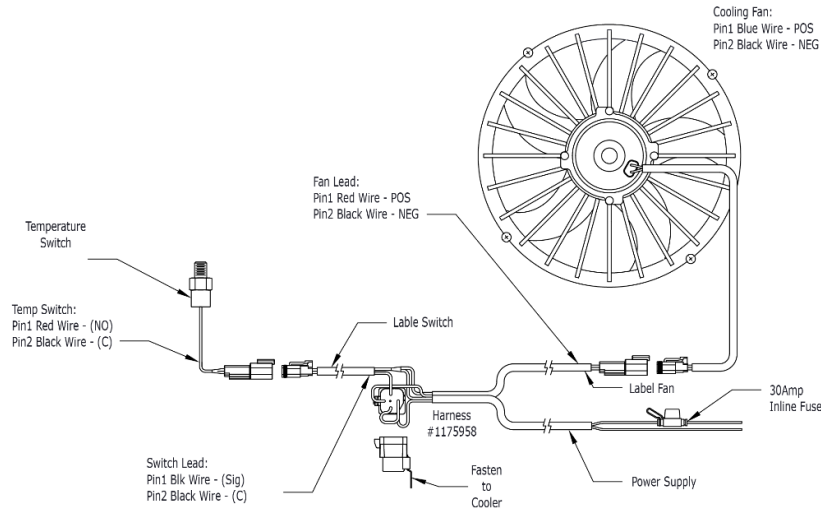
## UK12-70-12VDC-FRM-SS – Dimensions



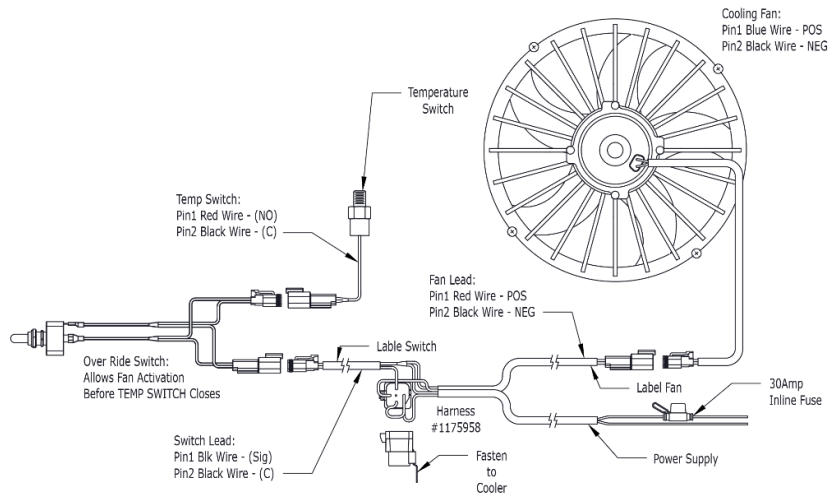
# ULTRA KOOL

The High Performance, Compact Cooling System

## UK12-70-12VDC-FRM-SS – Electrical Start Options



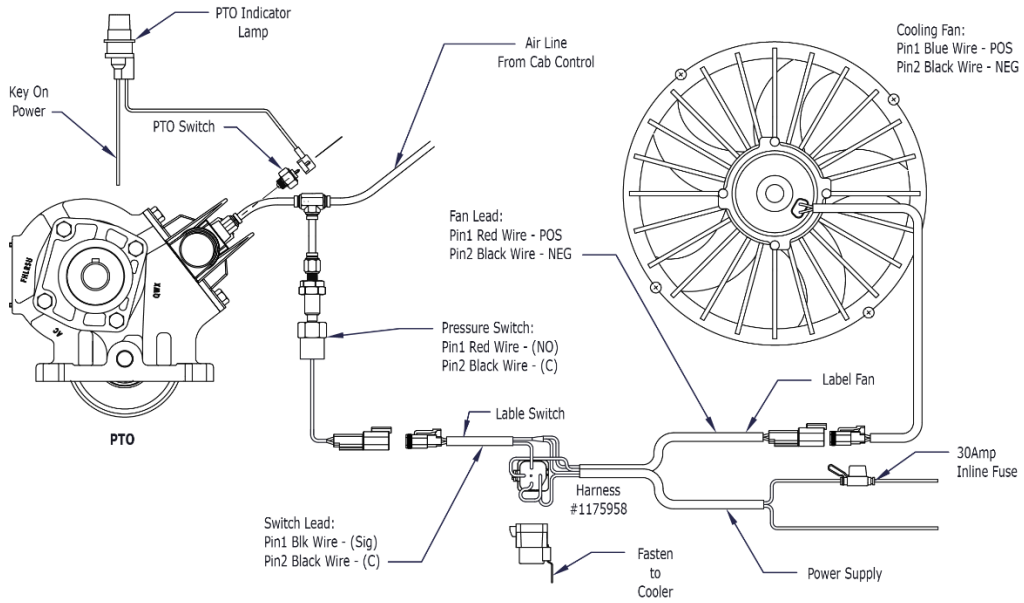
**Temperature Switch Fan Activation**



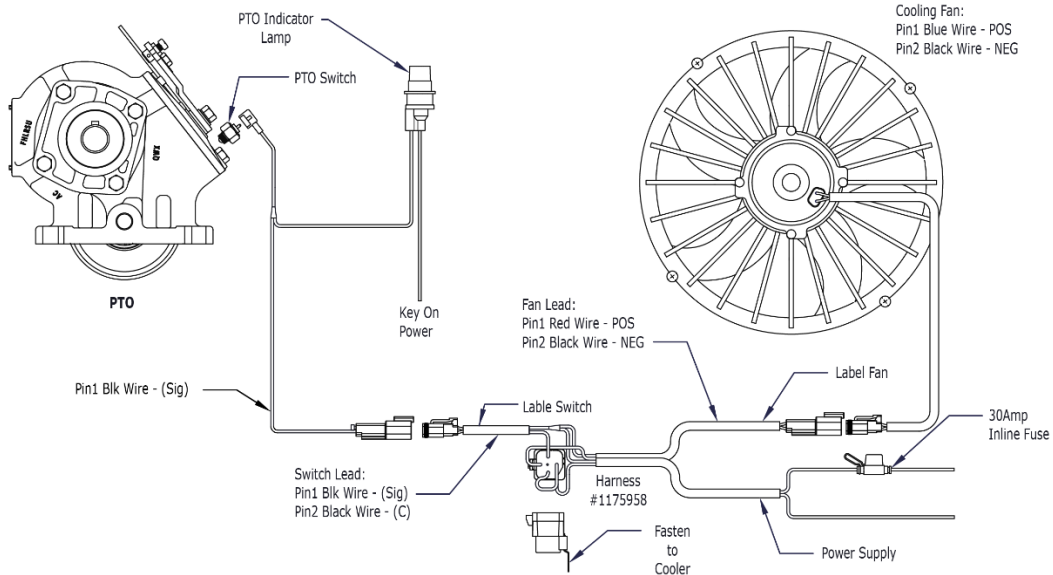
**Temperature Switch Fan Activation W/Override**

# ULTRA KOOL

## The High Performance, Compact Cooling System



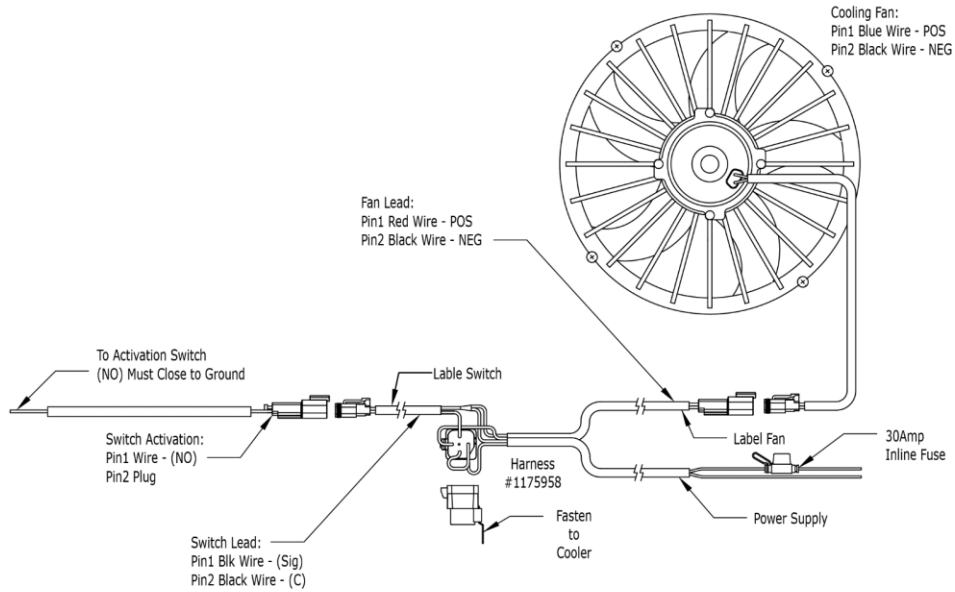
### Air Shift PTO Fan Activation



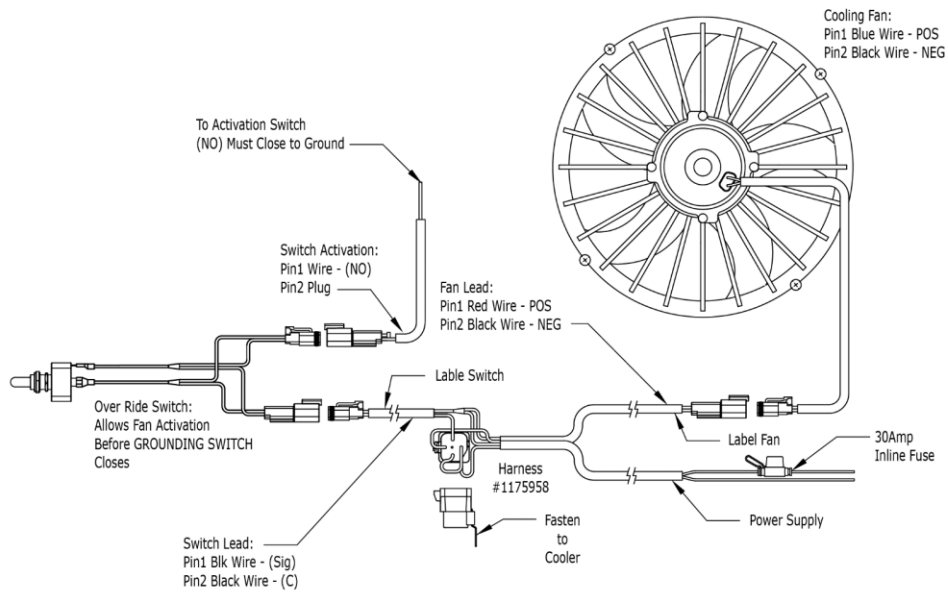
### Cable Shift PTO Fan Activation

# ULTRA KOOL

## The High Performance, Compact Cooling System



### Grounding Switch Fan Activation

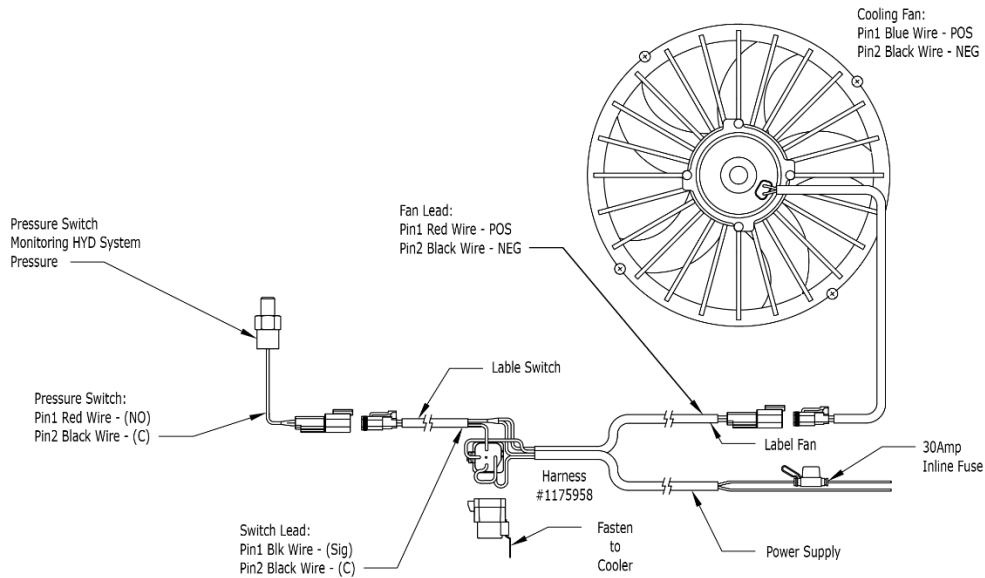


### Grounding Switch Fan Activation W/Override

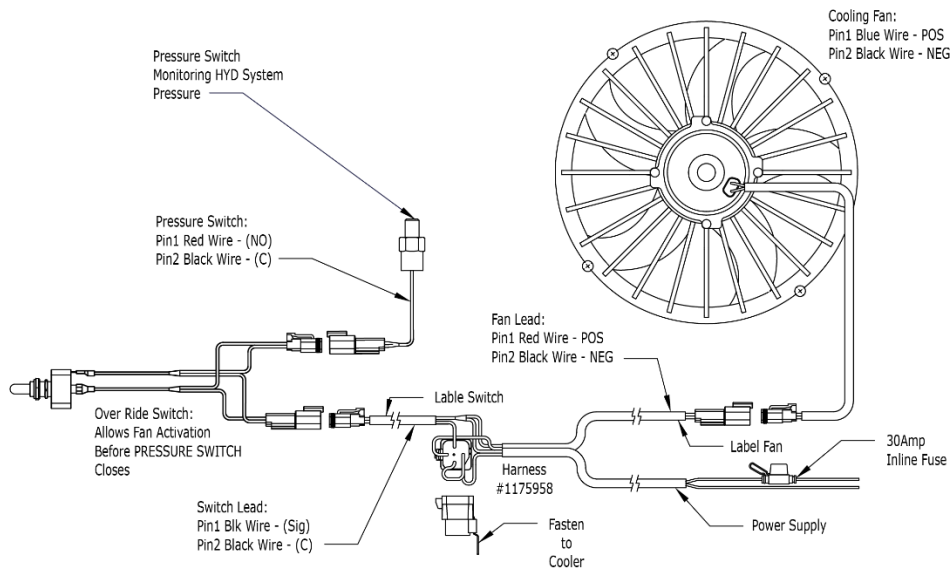


# ULTRA KOOL

## The High Performance, Compact Cooling System



### Pressure Switch Fan Activation

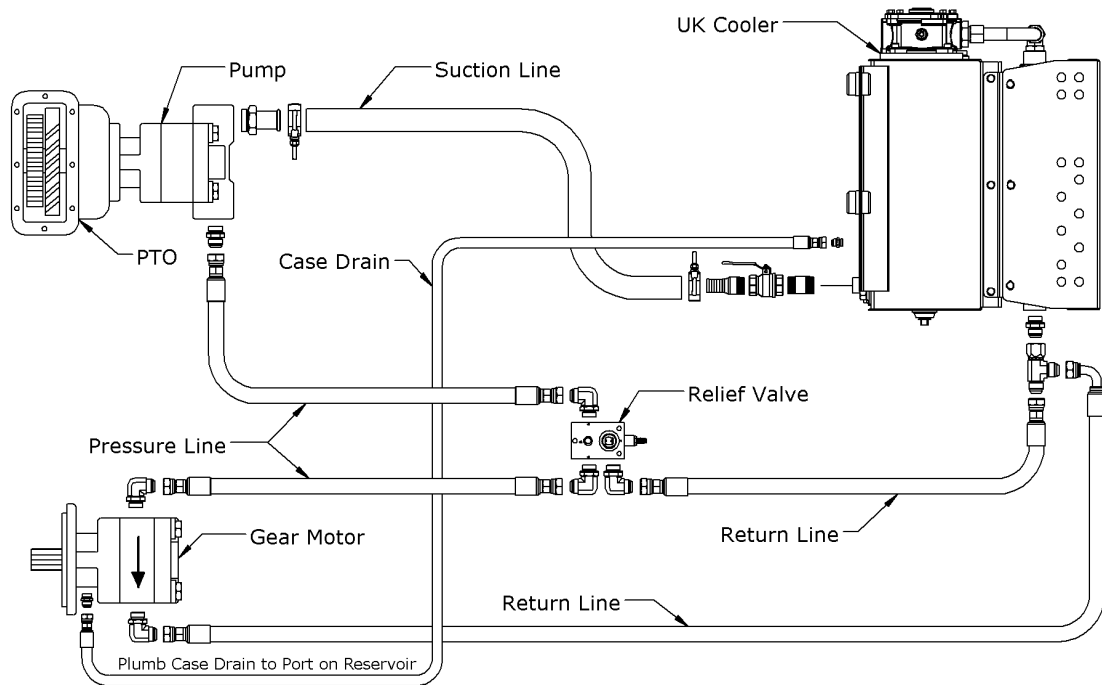


### Pressure Switch Fan Activation W/Override

# ULTRA KOOL

The High Performance, Compact Cooling System

## UK12-70-12VDC-FRM-SS – Typical Plumbing Layout



# ULTRA KOOL



The High Performance, Compact Cooling System

## UK12-70-12VDC-FRM-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.

## UK12-70-12VDC-FRM-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.

## UK12-70-12VDC-FRM-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

## UK12-70-12VDC-FRM-SS – Product Information

### Technical Specifications:

Height ..... 26.88 inches  
Depth ..... 27.75 inches  
Width ..... 24.90 inches  
Oil capacity ..... 12 gallons  
Fan speed ..... 3600 rpm

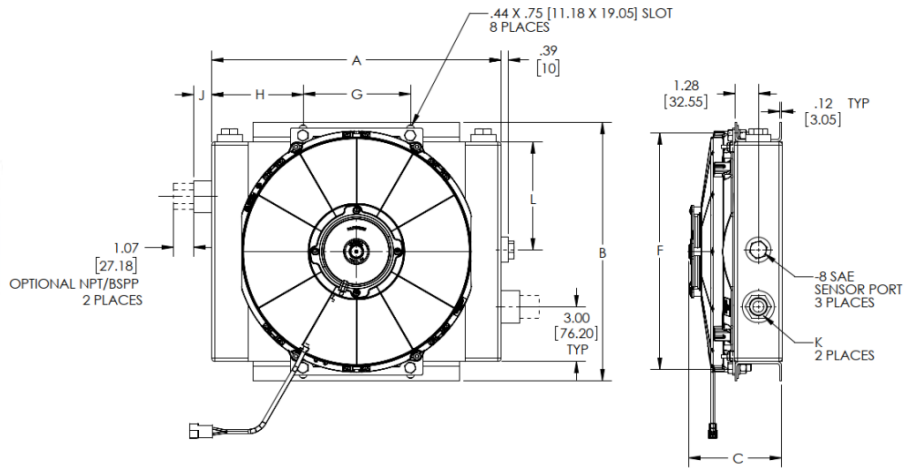


# ULTRA KOOL



The High Performance, Compact Cooling System

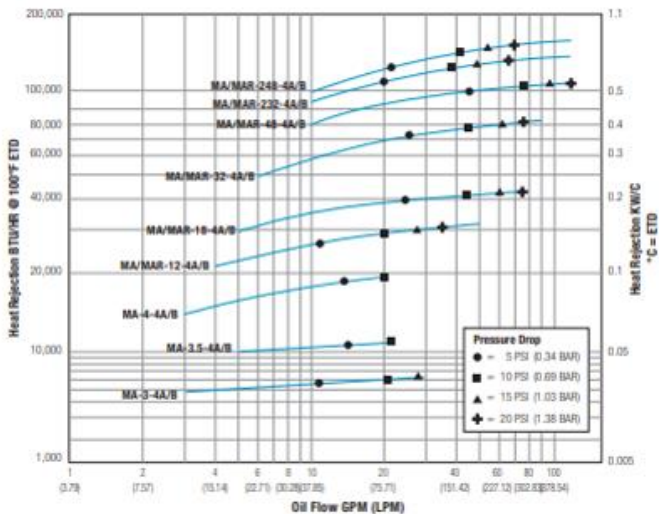
## MA-32-2-4A - Hydraulic Cooler Specifications



Model	A	B	C		F		G	H	J	K		
			Standard	Brushless	Without Bypass Valve	With Bypass Valve				SAE	NPT & BSPP	L
MA-12	13.82 (351)	11.97 (304)	6.36 (162)	6.06 (154)	10.98 (279)	11.86 (301)	5.71 (145)	4.06 (103)	1.00 (25)	#12 SAE	3/4"	4.88 (124)
MA-18	15.84 (402)	14.14 (359)	5.12 (130)	6.2 (157)	12.96 (329)	13.4 (341)	5.87 (149)	4.99 (127)	1.00 (25)	#12 SAE	3/4"	5.91 (150)
MA-32	19.69 (500)	18.46 (469)	6.15 (156)	6.28 (160)	17.30 (439)	17.9 (454)	12.00 (305)	3.84 (98)	1.10 (28)	#16 SAE	1"	8.07 (205)

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

### MA Models - DC Fan Assemblies



Model	DC Amp Draw		Approx. Shipping Weight LBS (KG)
	12V	24V	
MA-3	5.7	3.6	6 (2.72)
MA-3.5	12.5	6.3	9 (4.08)
MA-4	12.5	6.3	16 (7.26)
MA-12	12.5	6.3	19 (8.62)
MA-18	10.6	5.3	23 (10.43)
MA-32	22.2	11.1	28 (12.70)
MA-48	22.2	11.1	45 (20.40)
MA-232	19.3*	9.7*	65 (29.48)
MA-248	19.3*	9.7*	90 (40.80)

\*AMP draw listed as per FAN.

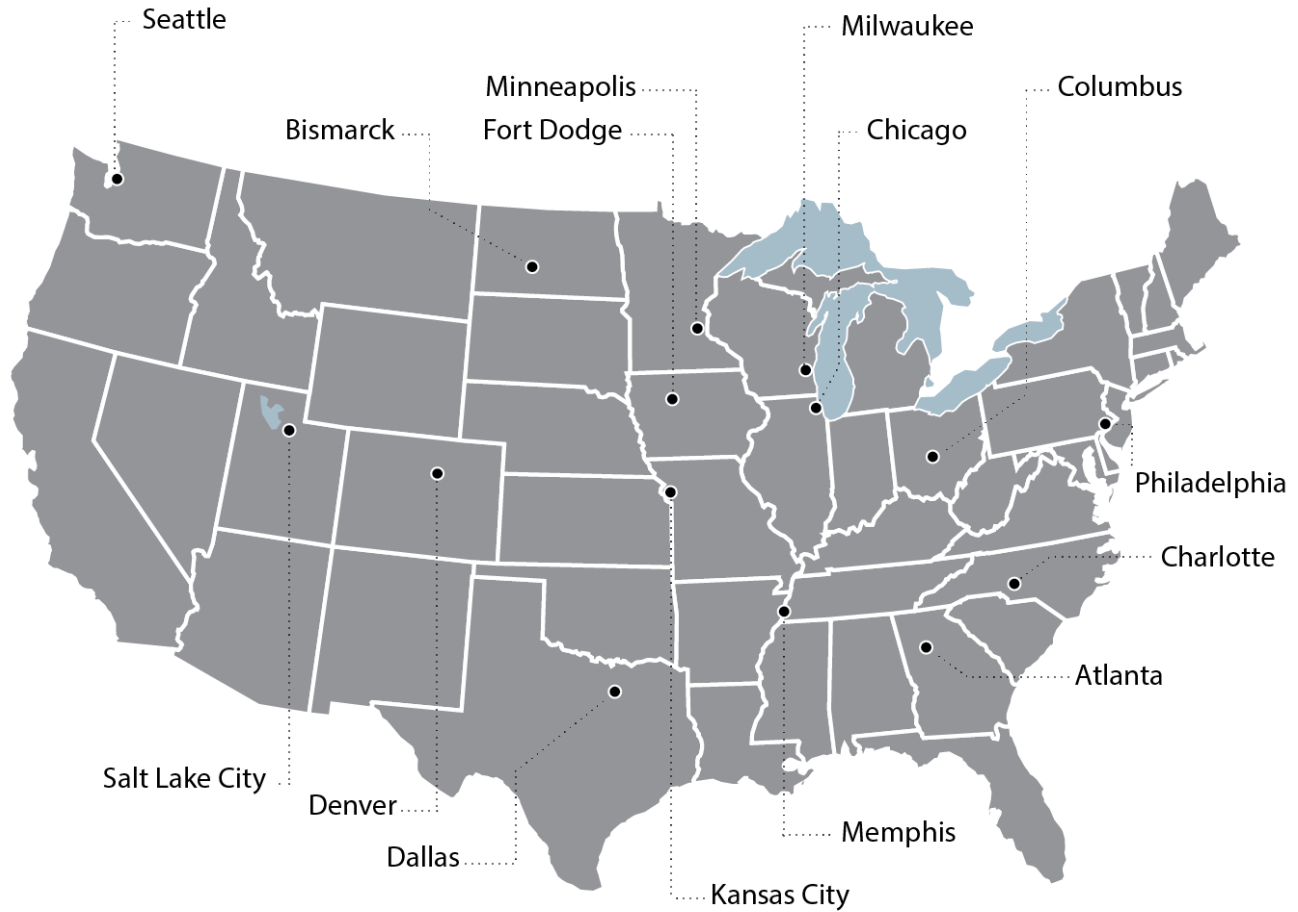
FORCE America Inc.  
8633 Eagle Creek Pkwy  
Savage, MN 55378  
Tel: (888) 99FORCE  
www.forceamerica.com

# ULTRA KOOL



The High Performance, Compact Cooling System

## Contact Us



Atlanta, Georgia 888-293-2325  
Bismarck, North Dakota 800-624-7568  
Charlotte, North Carolina 800-788-8598  
Chicago, Illinois 800-433-5765  
Columbus, Ohio 888-449-0356  
Dallas, Texas 800-893-7225  
Denver, Colorado 888-833-7711  
Fort Dodge, Iowa 800-362-2994

Kansas City, Missouri 800-383-4724  
Memphis, Tennessee 888-845-5876  
Milwaukee, Wisconsin 800-722-5844  
Minneapolis, Minnesota 800-328-2732  
Philadelphia, Pennsylvania 800-492-6621  
Salt Lake City, Utah 877-230-0505  
Seattle, Washington 800-354-9028

**FORCE America Inc.**  
8633 Eagle Creek Pkwy  
Savage, MN 55378  
Tel: (888) 99FORCE  
[www.forceamerica.com](http://www.forceamerica.com)