



FORCE America Inc.

ULTRAKOOL Operator's Manual

FORCE America UK8-40-12VDC-FRM-AL Operator's Manual



ULTRA KOOL



The High Performance, Compact Cooling System

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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.

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UK8-40-12VDC-FRM-AL – Model Code Breakdown

UK4 - 20

12VDC

FRM

AL

XX

UK4 – 4 Gallon Res
UK6 – 6 Gallon Res
UK8 – 8 Gallon Res
UK9 – 9 Gallon Res
UK10 – 10 Gallon Res
UK12 – 12 Gallon Res
UK30 – 30 Gallon Res

12VDC – Single 12VDC Fan
HYD – Single Hydraulic Fan
12VDCX2 – Dual 12VDC Fans

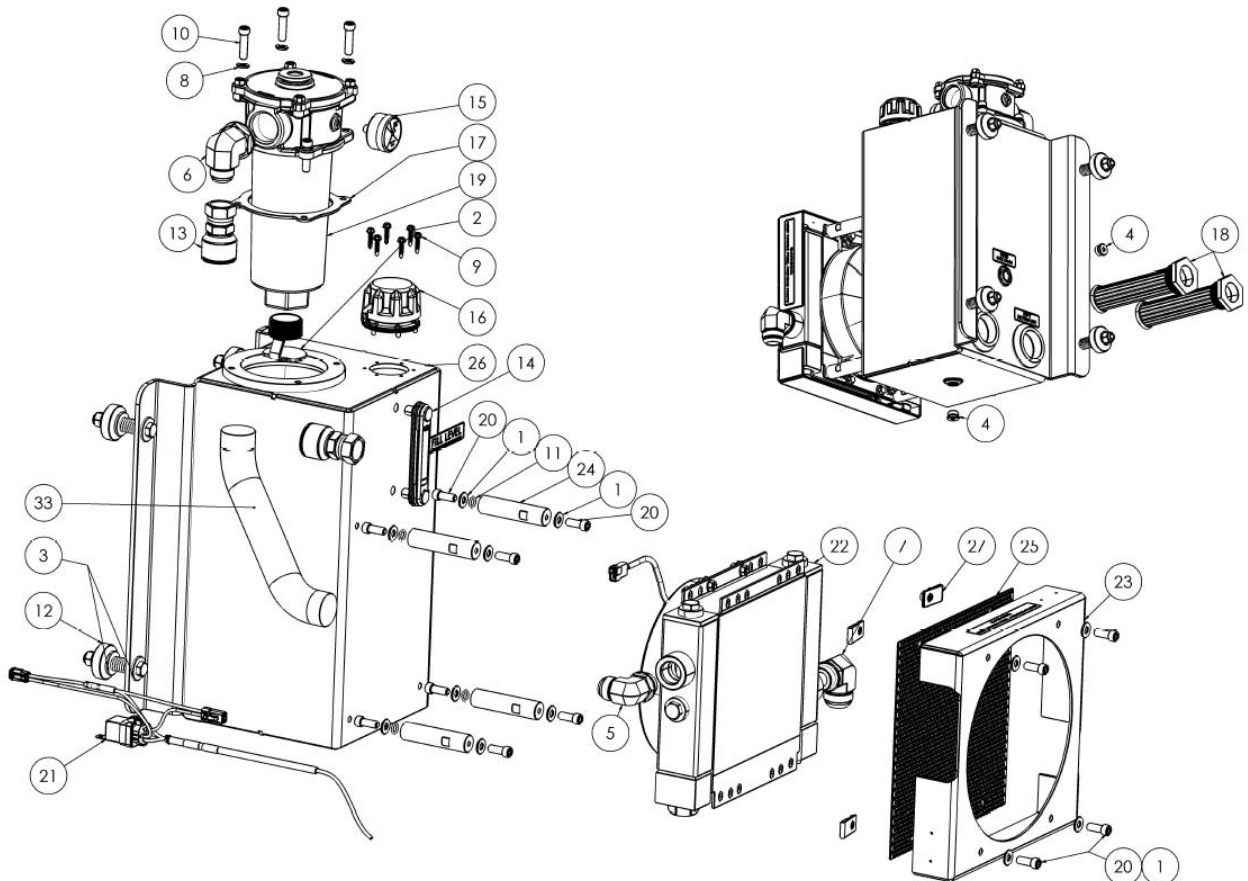
FRM – Frame Rail Mount
BTC – Behind The Cab Mount

Trailing Special Codes:
XX – Defines Special Feature In The
Assembly or Customer Specific Unit

AL – Powder Coated Gray Aluminum Reservoir
PC – Powder Coated Black Steel Reservoir
SS – Stainless Steel Reservoir

Max System Continuous Flow Rate

UK8-40-12VDC-FRM-AL – Exploded Parts View



UK8-40-12VDC-FRM-AL – Bill of Materials

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	1010799	3/8" FLAT WASHER, GENERAL PURPOSE, 18-8 STAINLESS	12
2	1011760	WELDMENT, DIFFUSER, 1-1/2 NPT THREAD	1
3	1011765	1/2" FLAT WASHER, USS, ZINC	8
4	1014114	SOCKET HEAD PLUG 3/4 X 16 MALE ORB STEEL	2
5	1014330	ELBOW 1-5/16 X 12 MALE JIC X 1-5/16 X 12 MALE ORB STEEL	1
6	1014331	ELBOW 1-5/16 X 12 MALE JIC X 1-5/8 X 12 MALE ORB STEEL	1
7	1014334	ELBOW 1-5/8 X 12 MALE JIC X 1-5/16 X 12 MALE ORB STEEL	1
8	1015103	3/8" SCREW SIZE SPLIT LOCK WASHER, 0.68" OD, 18-8 STAINLESS	4
9	1015115	#12-14 X 1" SELF DRILLING SCREW, HEX WASHER HEAD, ZINC	6
10	1015229	3/8"-16 X 1-1/2" SHCS 18-8 STAINLESS	4
11	1023935	O-RING 70 DURO	4
12	1031121	MOUNTING KIT FOR UPRIGHT RESERVOIR	1
13	1056189	H03631616-16Z-616-616-17.5" CUT	1
14	1067943	5" SIGHT GAUGE/BLUE THERMOMETER - M-12 MOUNTING BOLTS	1
15	1087964	GAUGE, FILTER INDICATOR, 0-60 PSI	1
16	1090203	RESERVOIR FILLER BREATHER	1
17	1090319	RG11, GASKET, TR/TS FILTER, REPLACES O-RING	1
18	1090428	2" MALE X 1-1/4" FEMALE NPT - 100 MESH - 3 PSI BYPASS	2
19	1090448	71GPM RETURN-24 GPM SUCTION-100PSI MAX-13.28"LENGTH	1
20	1096203	3/8"-16 X 1" SHCS STAINLESS	12
21	1175958	HARNESS, MAIN, COOLER, DEUTSCH, W/ RELAY, 144"	1
22	1200178	MA-12 COOLER, DEUTSCH CONNECTOR, 12VDC FAN	1
23	1205987	WLDMT, UK FAN COVER, ALUM, PC	1
24	1205988	FFP, UK 12VDC STANDOFF, AL	4
25	1206079	PERFORATED SHEET, PC BLUE	1
26	1206407	WELDMENT, UK8-40-12VDC, AL, PC	1
27	1206918	NO-SLIP CLIP-ON BARREL NUT 3/8 X 16	4
28	1207215	UK DECAL SHEET - NPT SUCTION DECAL	2
29	1207215	UK DECAL SHEET - DANGER DECAL	2
31	1207215	UK DECAL SHEET - CASE DRAIN DECAL	1

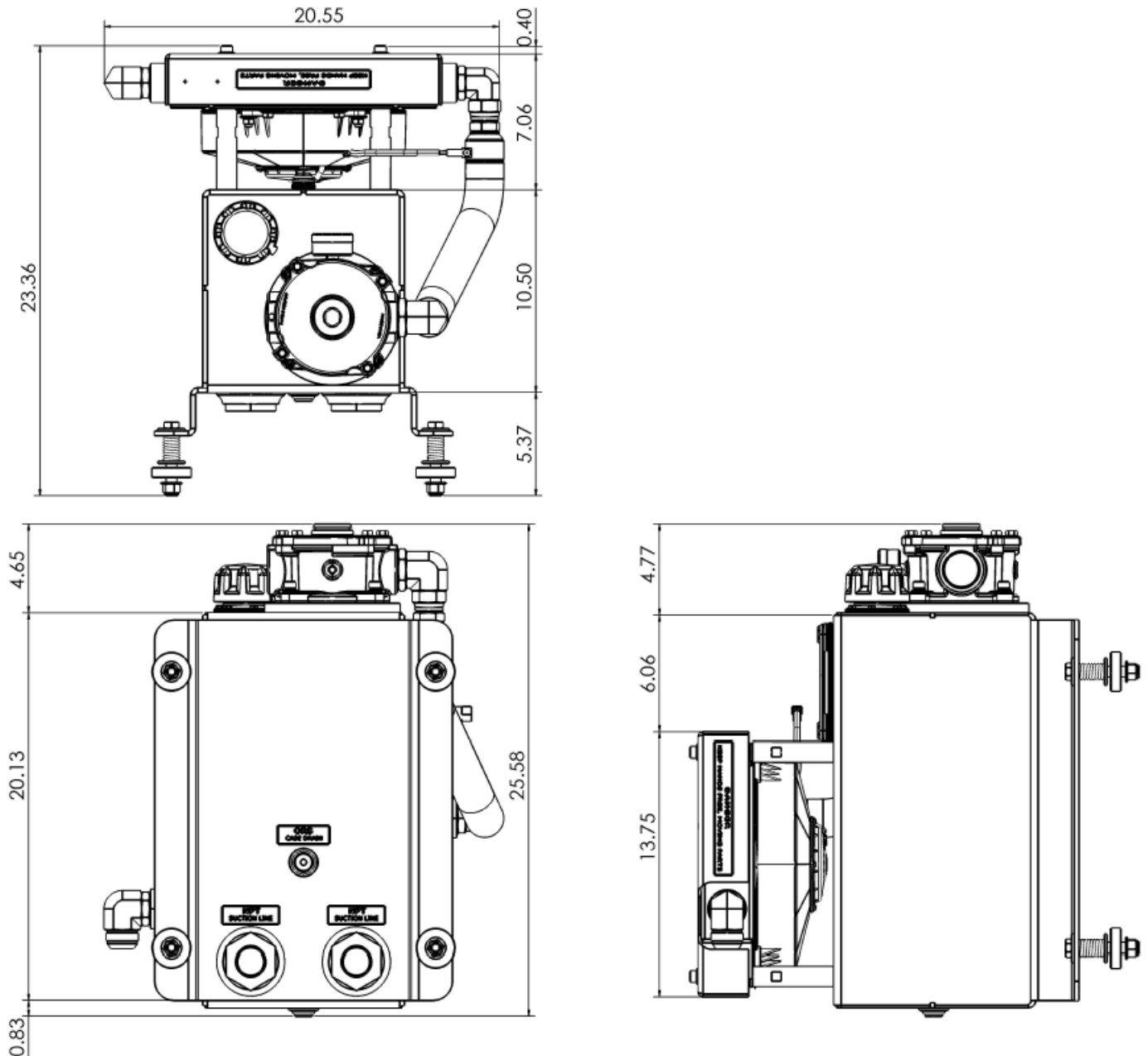
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UK8-40-12VDC-FRM-AL – Dimensions



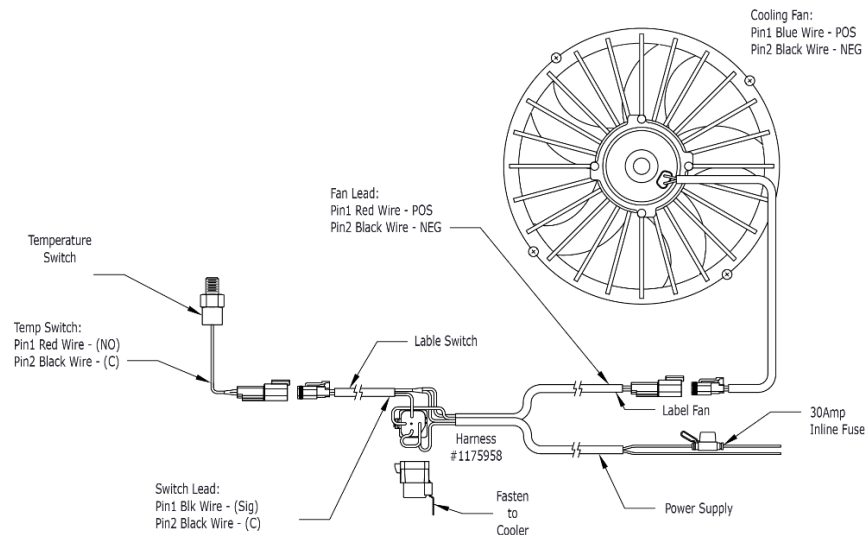
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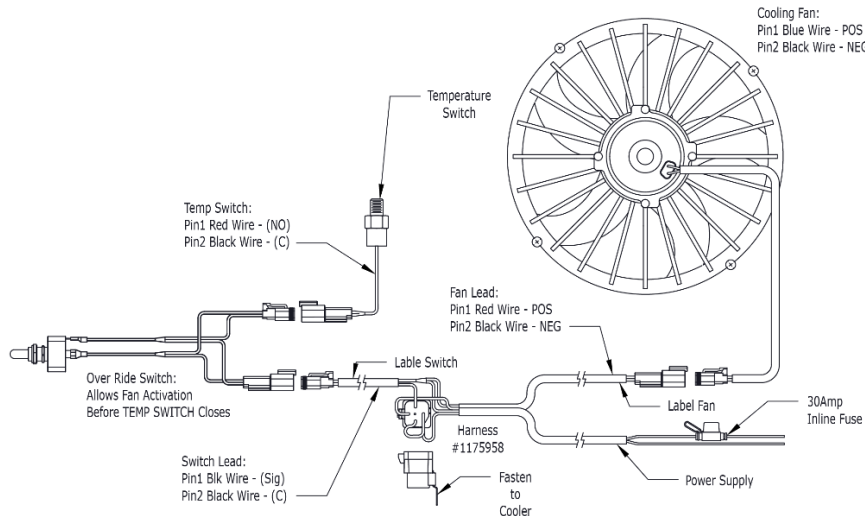
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UK8-40-12VDC-FRM-AL – Electrical Start Options



Temperature Switch Fan Activation



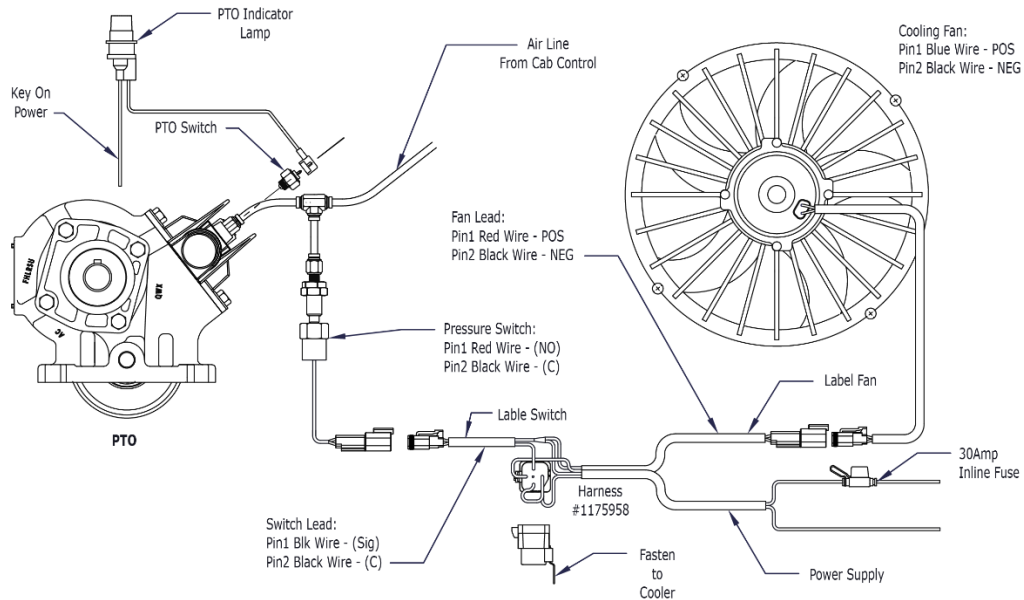
Temperature Switch Fan Activation W/Override

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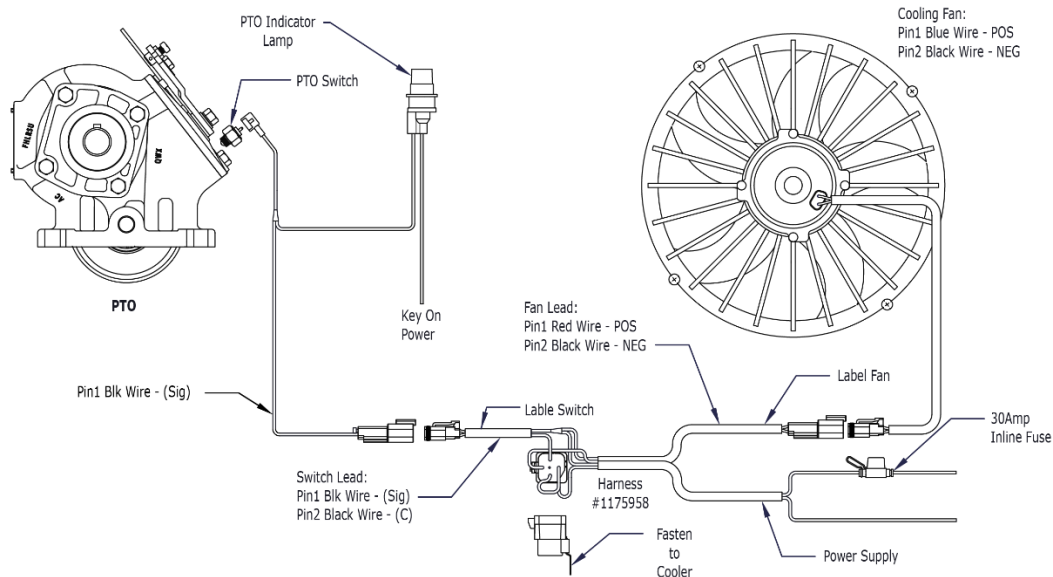
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Air Shift PTO Fan Activation



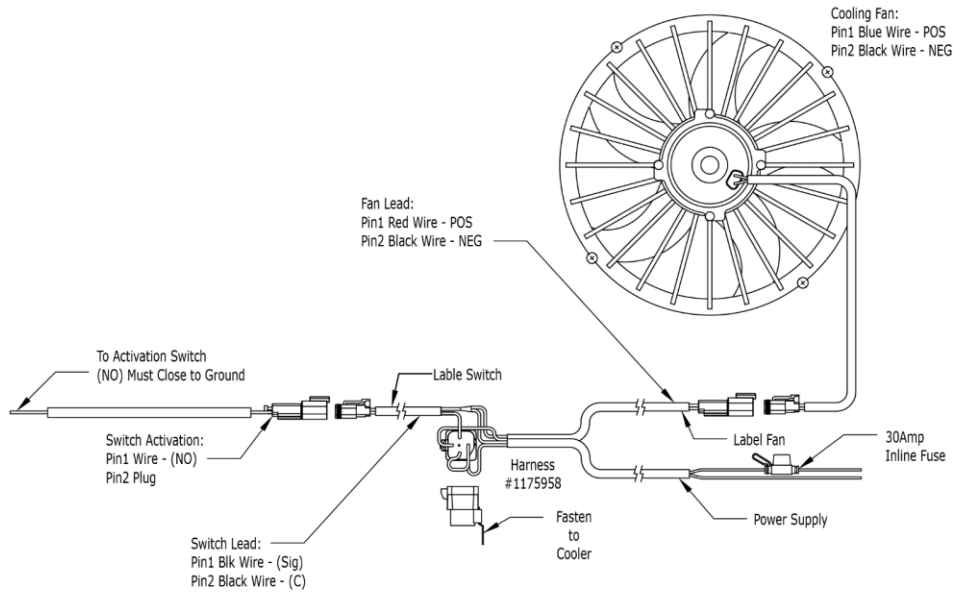
Cable Shift PTO Fan Activation

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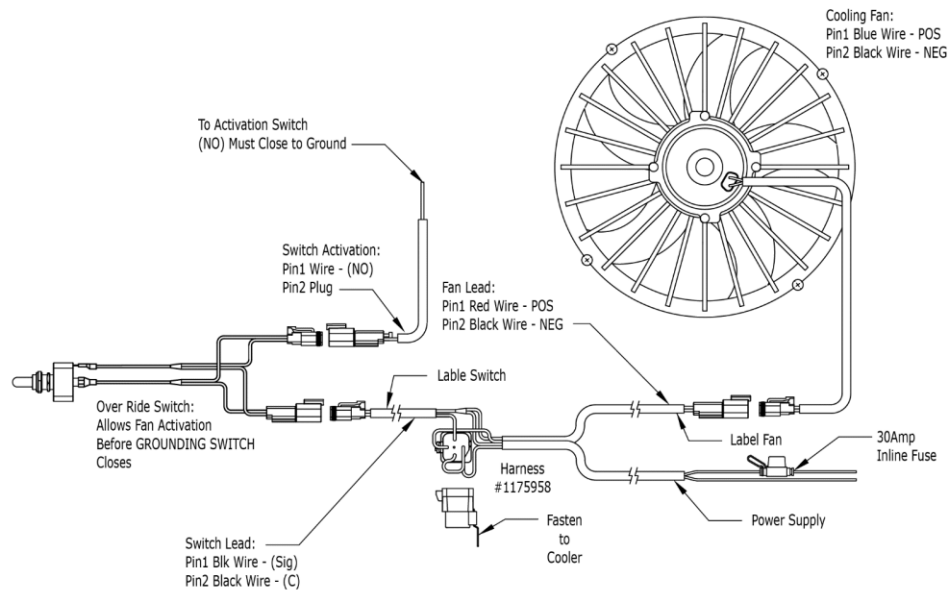
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Grounding Switch Fan Activation



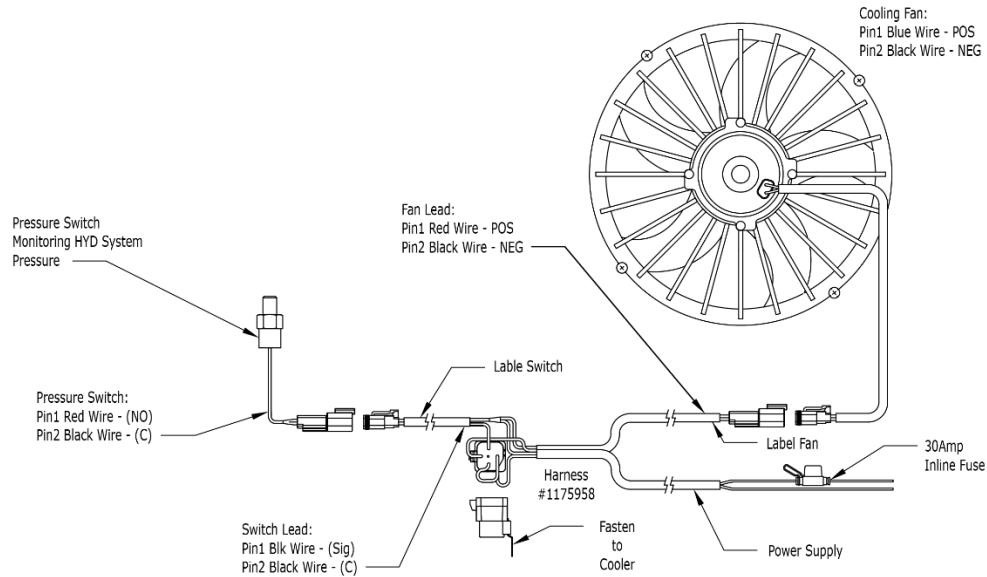
Grounding Switch Fan Activation W/Override

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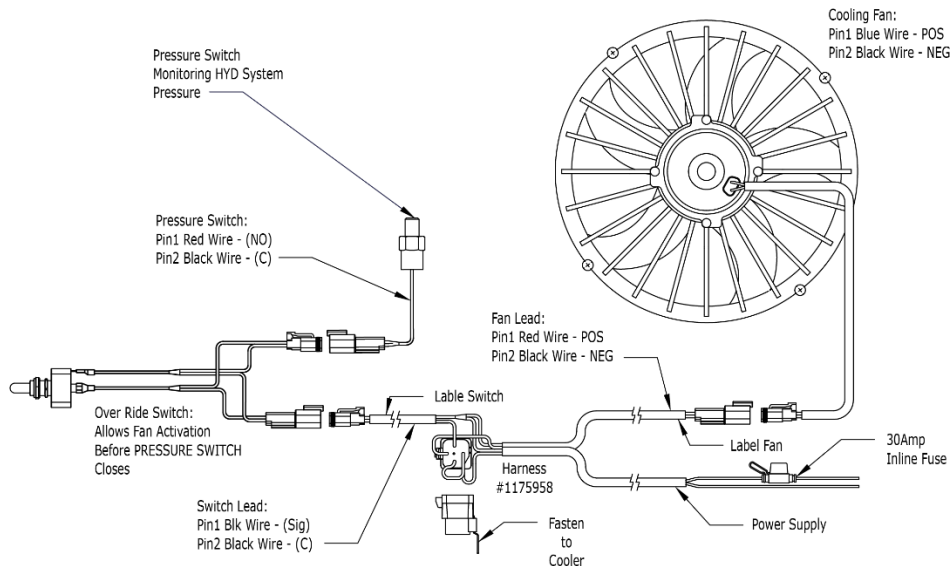
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Pressure Switch Fan Activation



Pressure Switch Fan Activation W/Override

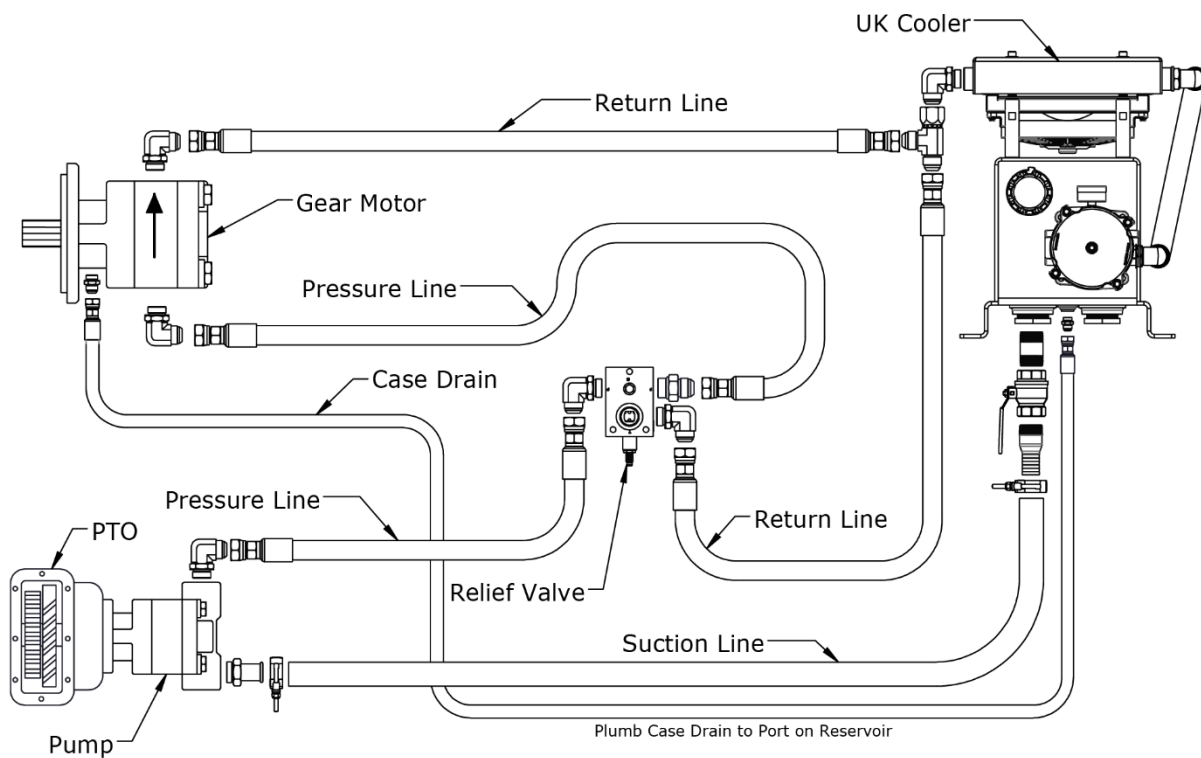
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UK8-40-12VDC-FRM-AL – Typical Plumbing Layout



UK8-40-12VDC-FRM-AL – 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.

UK8-40-12VDC-FRM-AL – 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.

UK8-40-12VDC-FRM-AL – 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

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UK8-40-12VDC-FRM-AL – Product Information

Technical Specifications:

Dry Weight 70 lbs
Height 24.58 inches
Depth 20.5 inches
Width 20.55 inches
Oil capacity 8 gallons
Fan speed 3600 rpm



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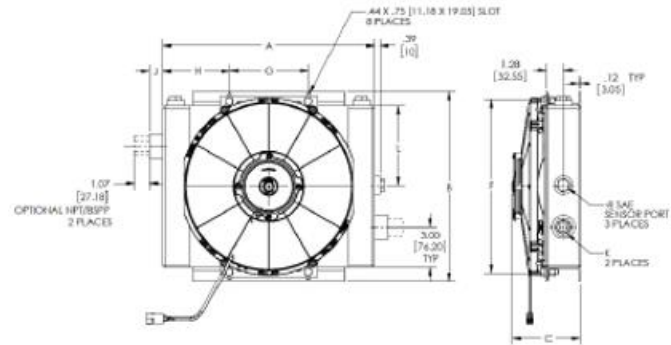
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MA-12 – Hydraulic Cooler Specifications

MA-12, MA-18, MA-32

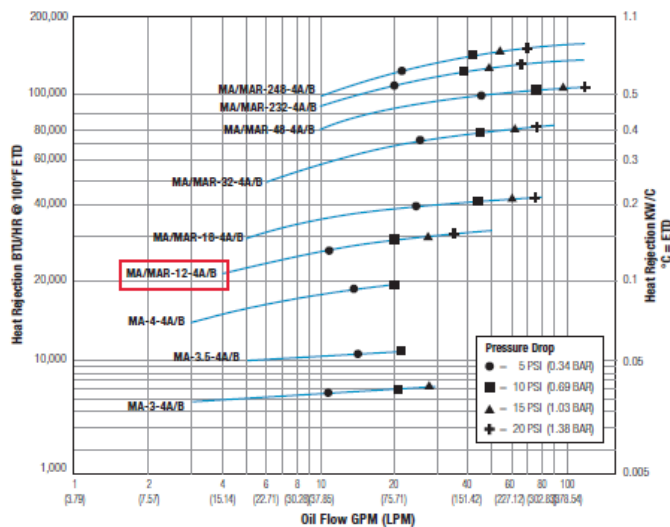


Brushless fan option has different dimensions. Consult factory.

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)	#16 SAE	3/4"	4.88 (124)
MA-18	15.84 (402)	14.14 (359)	5.12 (130)	6.2 (157)	12.06 (309)	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 (206)

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.

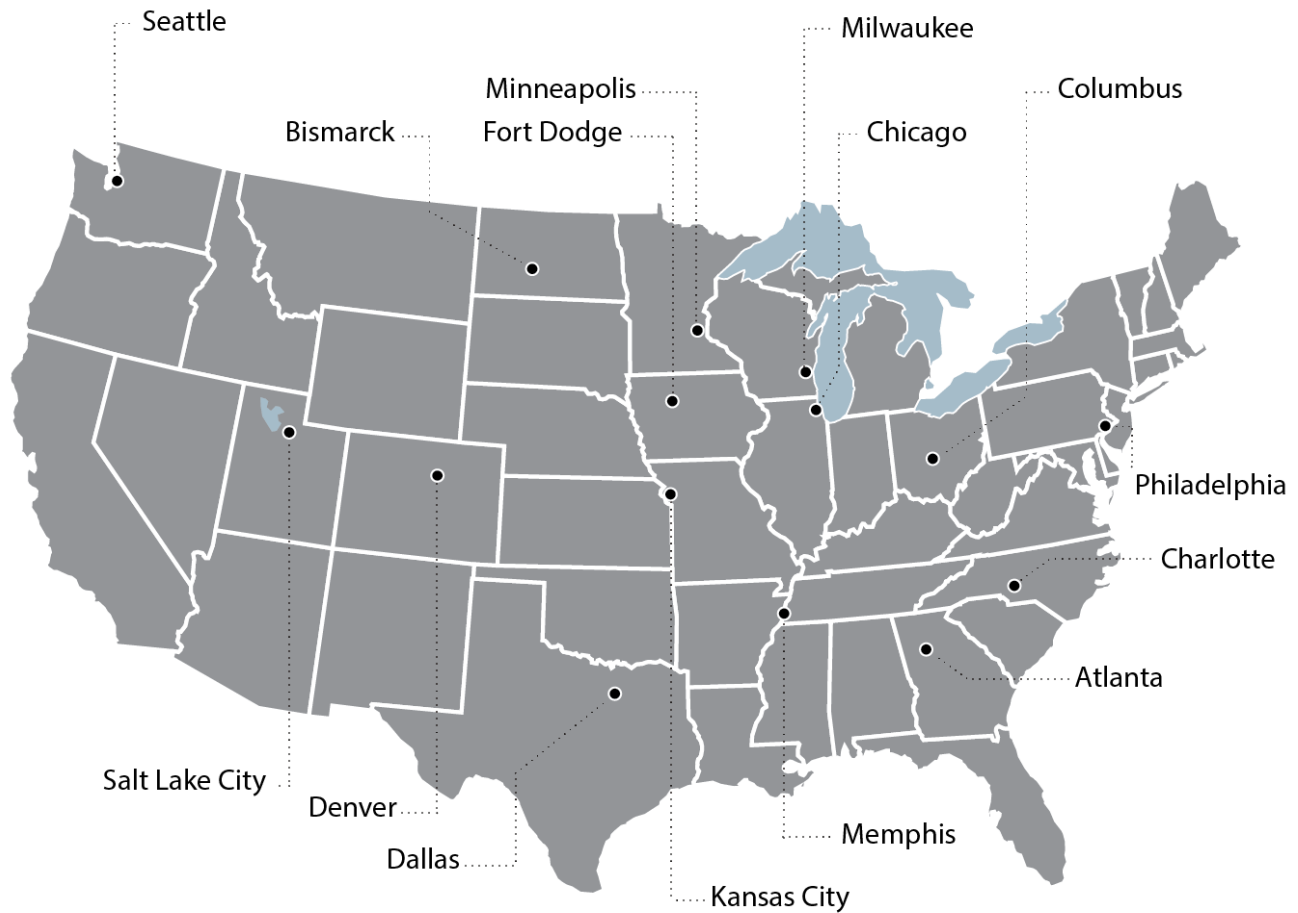
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Contact Us



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