



INNO TEK
CORPORATION
INTELLIGENT SOLUTIONS

TEK-KOOL® MANUAL

MODEL 430



TEK-KOOL® MANUAL



- ✓ INSTALLATION GUIDE
- ✓ OPERATION PROCEDURES
- ✓ PARTS BREAKDOWN

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INTRODUCTION:

TEK-KOOL® is a frame mounted hydraulic oil cooler designed specifically for trucking and agricultural applications, including fuels, compressed gases, food grade, crude oil, chemical, vacuum pumps, and air seeders. It's compact designs offers numerous mounting options and not only cools and filters the hydraulic oil, but eliminates the need for large hydraulic reservoirs saving weight and space

- **TEK-KOOL®** has a hydraulic motor driven fan.
- The heat exchanger is brazed plate design for durability in rugged environments.
- It has a three-piece frame design which allows easy access to work on the unit if needed.
- The **TEK-KOOL®** frame and reservoir is constructed of 304 stainless steel for durability and corrosion resistance.
- The reservoir breather has a 3 micron breather and anti-splash device to keep the dirt out and the oil in, and the breather is made of a durable (PA6) synthetic material so it will not rust.
- The **TEK-KOOL®** is designed to keep out debris, such as rocks by having the cooler set back $\frac{3}{4}$ of an inch from the frame to prevent damage to the cooler.
- A major benefit is the forward facing Temperature/Oil Level gauge allowing installation in confined locations without diminishing the ability to monitor temperature and oil levels.
- The **TEK-KOOL®** comes standard with a filter gauge on the front of the unit to see when the filter needs to be changed.
- The directional control valve can be mounted in the unit or remotely. The advantage to this is that the **TEK-KOOL®** can be mounted on either side of the truck and still operated from both sides.
- The **TEK-KOOL®** has a bi-directional control valve to easily change your pump rotation without having to swap hoses.

SAFETY:

When working with systems that operate at high pressures, it's crucial to approach every task with caution and mindfulness of the potential dangers involved. Here are some specific considerations:

1. **⚠️ AWARENESS OF PRESSURE:** Always be mindful of the pressure within the system, even after it has been shut down. Pressure can remain within the system for a period of time after shutdown, so never assume that it is safe to proceed without proper precautions.
2. **⚠️ LEAK DETECTION:** Regularly inspect the system for any signs of leaks, no matter how small. Even a pinhole leak can pose a significant risk due to the high pressure involved. If a leak is detected, take immediate action to address it safely.
3. **⚠️ ROTATING EQUIPMENT:** Keep away from rotating equipment. Do not attempt to perform maintenance on an energized system.
4. **⚠️ PROPER SHUTDOWN PROCEDURES:** Before loosening any fittings or performing maintenance, disengage the PTO, and shutdown the engine.
5. **⚠️ HOT SURFACE WARNING:** System can be hot. Allow components in the system to cool before performing any maintenance.
6. **⚠️ USE OF PROPER TOOLS:** When loosening fittings, use appropriate tools designed for the application. Avoid using tools that are damaged or worn, as they may not provide sufficient grip or leverage and could lead to accidents.
7. **⚠️ SLOW AND CONTROLLED RELEASE:** When releasing pressure from the system, do so slowly and in a controlled manner to minimize the risk of sudden releases or fluid spray. Use valves and other control mechanisms to regulate the release of pressure.
8. **⚠️ PERSONAL PROTECTIVE EQUIPMENT (PPE):** Always wear appropriate PPE, including safety glasses, gloves, and protective clothing, when working with high-pressure systems. This can help protect against potential hazards such as fluid spray or flying debris.
9. **⚠️ TRAINING AND EDUCATION:** Ensure that all personnel working with the system are properly trained in its operation, maintenance, and safety procedures. Provide regular refresher training to reinforce best practices and promote a safety-conscious culture.



DEFINITIONS:

⚠️ WARNING means if the warning is not heeded, it can cause **death or serious injury**

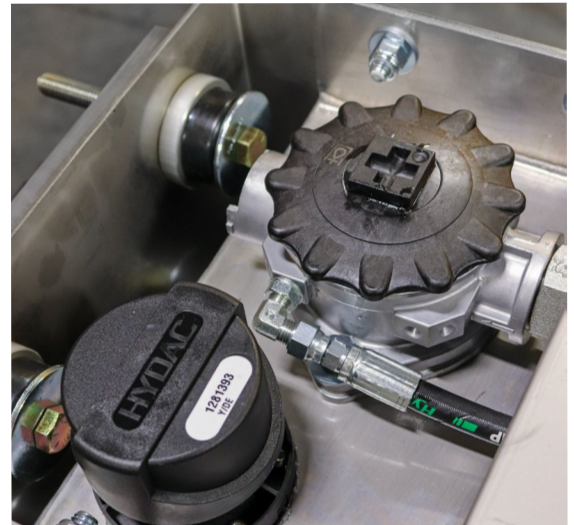
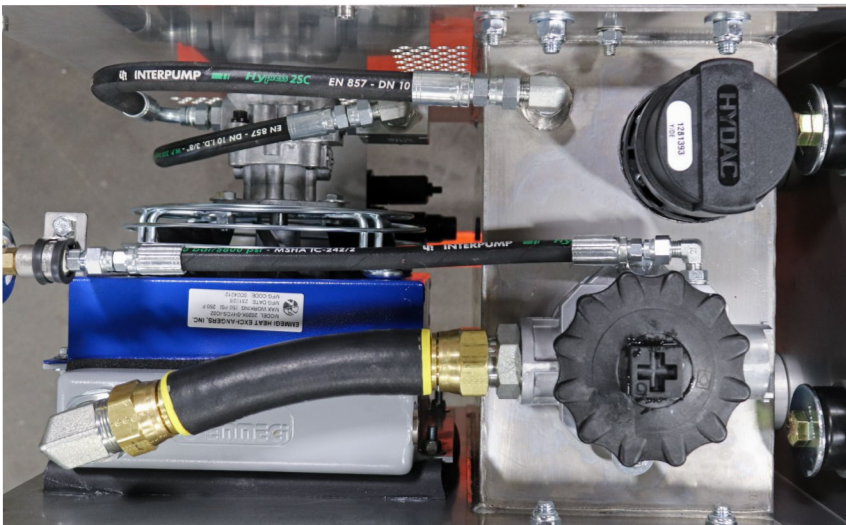
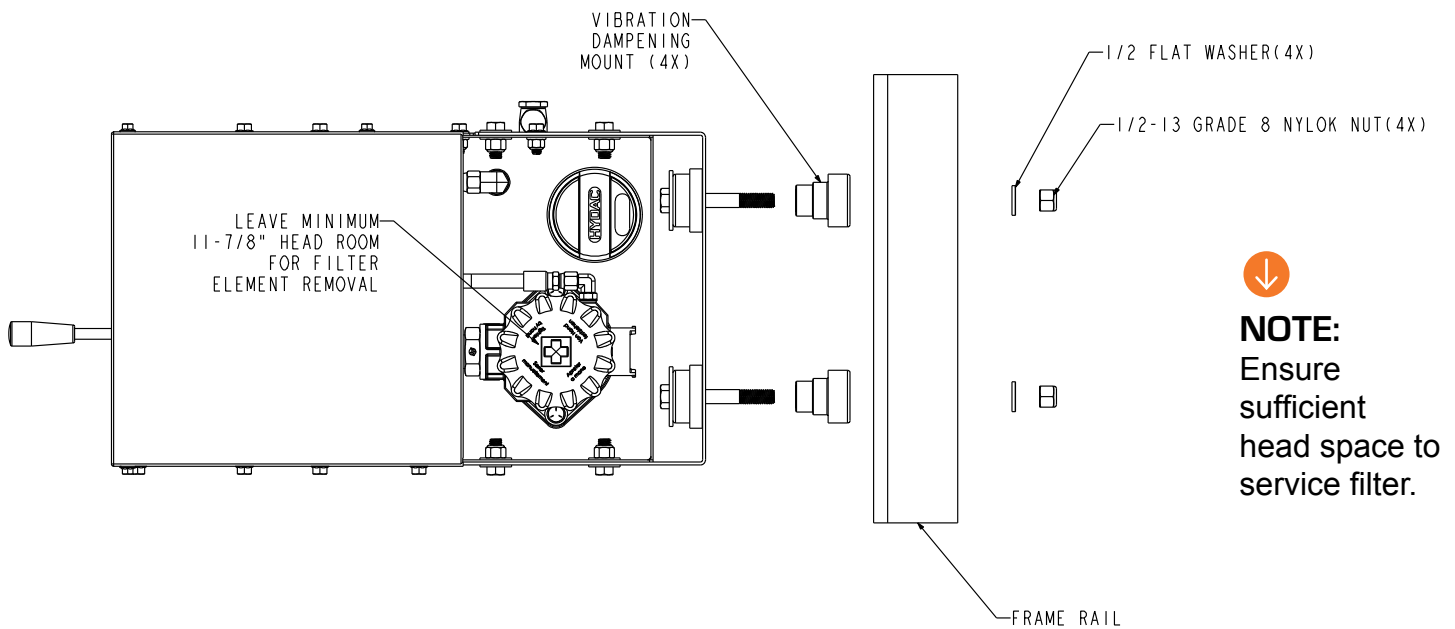
⚠️ CAUTION means If the precaution is not taken, it may cause **minor or moderate injury**

MOUNTING:

The **TEK-KOOL®** 430 standard setup accommodates for mounting to the frame rail on either the driver or passenger side of the truck.

Refer to **FIGURE 1** for proper mounting fastener sequence. Failure to properly assemble and torque mounts and fasteners can result in increased shock and vibrations.

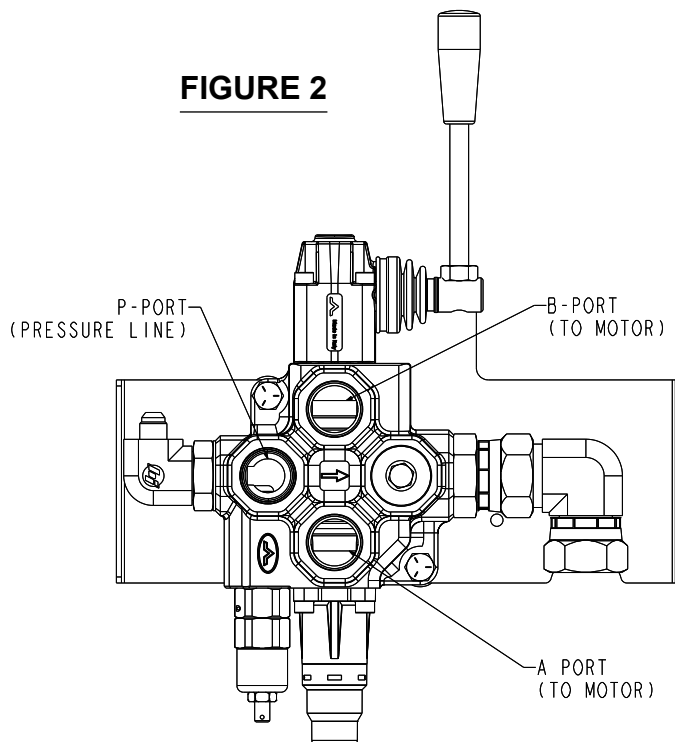
FIGURE 1



PLUMBING:

MODEL TK-SS-4G-H-DV: plumb per **FIGURE 2** and **FIGURE 3**.

FIGURE 2



Inlet line: 1-½ suction hose

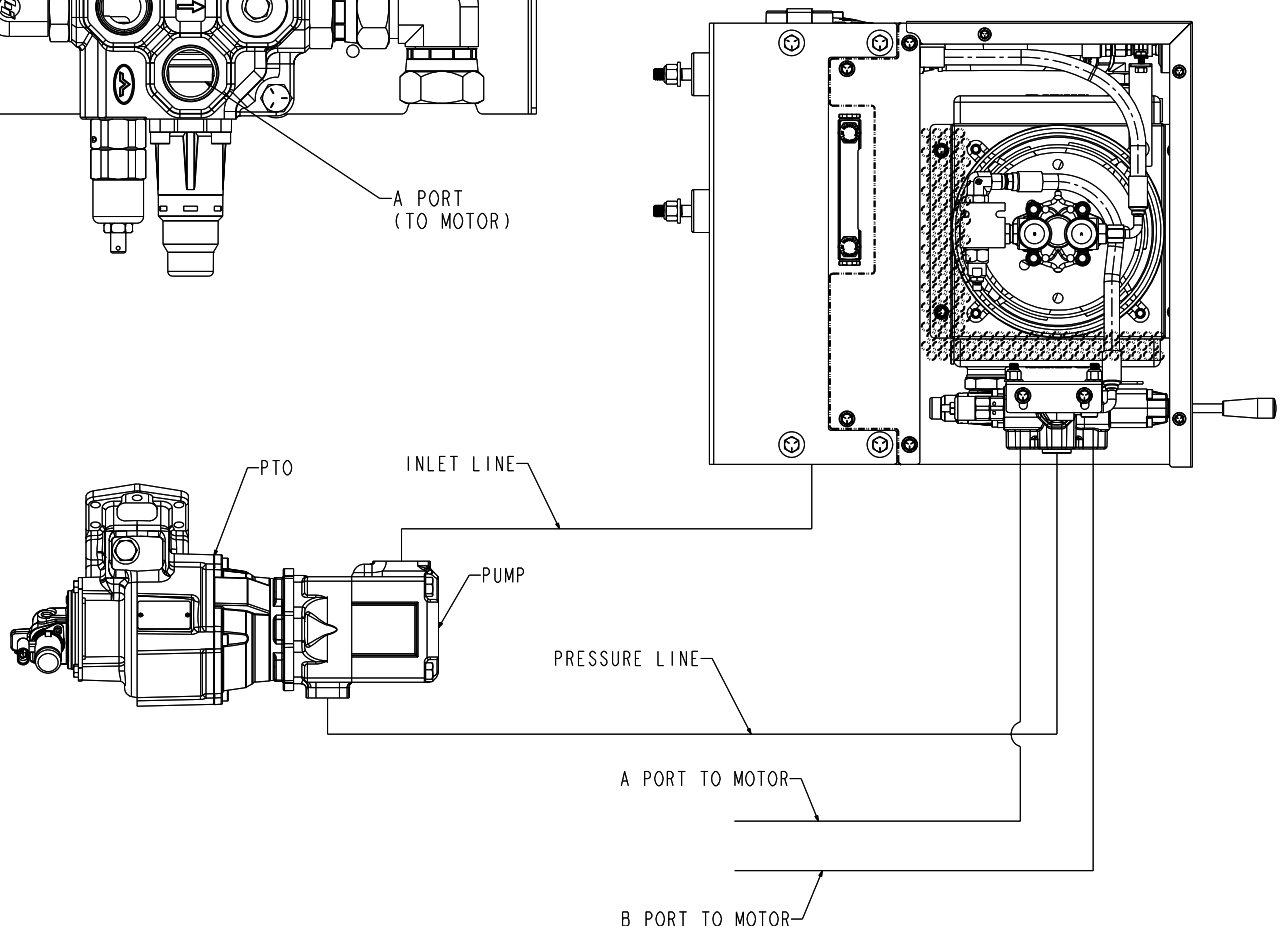
Pressure/motor lines: 1" hose

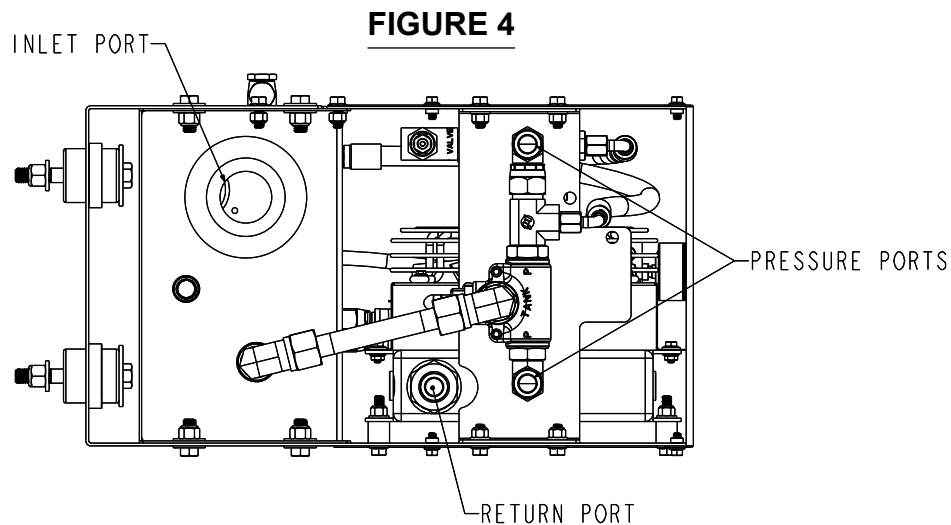


NOTE:

Use best practices to ensure inlet line and valving is supported. Unsupported line may damage cooler

FIGURE 3





PLUMBING: *Continued*

MODEL TK-SS-4G-H-RV: plumb per **FIGURE 4** and **FIGURE 5**

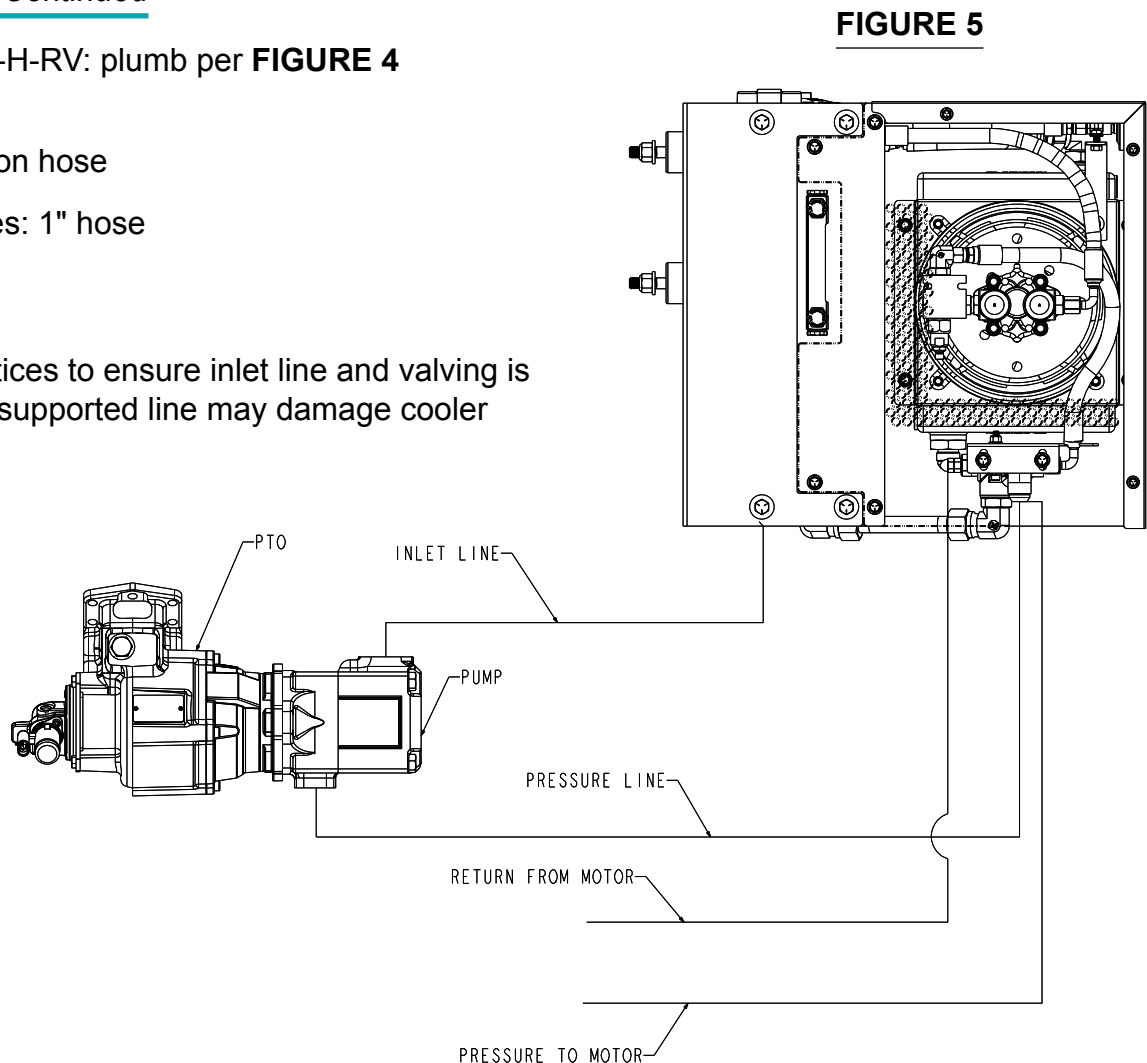
Inlet line: 1-½ suction hose

Pressure/motor lines: 1" hose



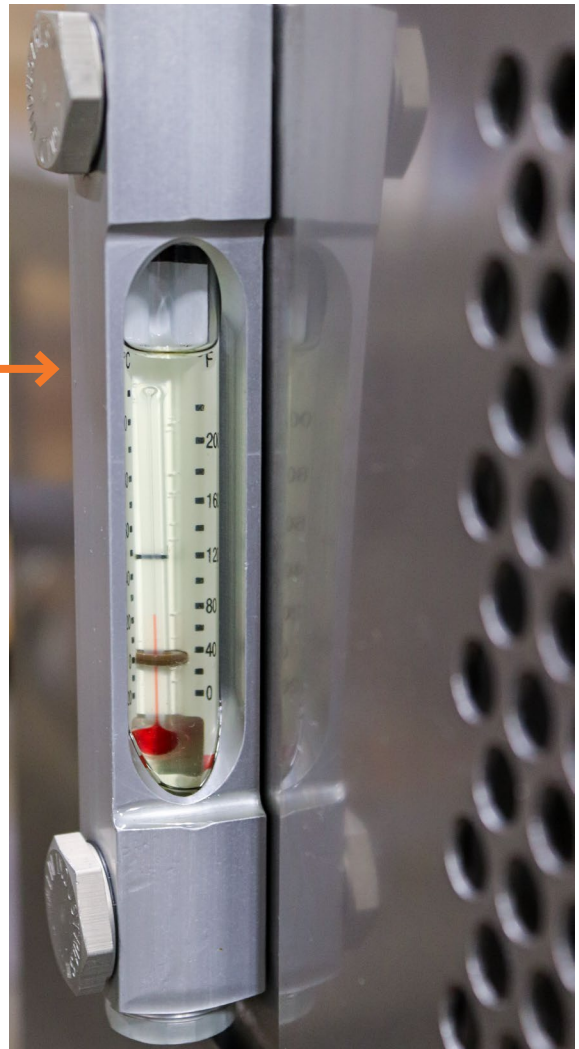
NOTE:

Use best practices to ensure inlet line and valving is supported. Unsupported line may damage cooler



FINAL ASSEMBLY

- 1) Finalize hydraulic plumbing. Ensure all connections are tight.
- 2) Reservoir to be filled until oil reaches black line at top of sight level gauge.
 - ☑ Loose inlet connections may cause damage to the pump.
 - ☑ Recommended oil is: Mobil DTE10-32.
 - ☑ Check oil level after initial startup and any time a new trailer is hooked up. A new system will require additional oil.



START UP:

- 1) With engine at idle speed, engage PTO.
- 2) Check hydraulic oil level, add fluid if necessary.
- 3) Check hydraulic connections. Ensure there are no leaks.
- 4) Ensure fan is running.
- 5) Set engine speed to attain proper product pump speed.
- 6) Run the hydraulic system until oil temp stabilizes(5-10 minutes).
- 7) Check hydraulic connections for leaks again once system is warmed.
- 8) Set engine speed back to idle and disengage the PTO.



MAINTENANCE:

Filter change required when indicator points to the red 'service filter' region.

- Filter element part #: Innotek # **1019363**
- Hydraulic fluid should be replaced **every 6 months**
- For best performance, replace with **Mobil DTE10-32**



Replacement parts can be ordered from Innotek Corporation: ✉ sales@innotek-ep.com, ☎ 763-488-9910

MAINTENANCE LOG

DATE	MILEAGE	SERVICE/DESCRIPTION

TROUBLESHOOTING:

By approaching tasks with mindfulness, following proper procedures, and prioritizing safety at all times, the risks associated with working with high-pressure fluid systems can be minimized, ensuring the well-being of everyone involved.

1. LOSS OF HYDRAULIC POWER:

- **Check hydraulic fluid level:** Low fluid level can cause loss of power. Refill if necessary.
- **Inspect for leaks:** Leaks in hydraulic lines, fittings, or seals can lead to loss of pressure.
- **Check hydraulic pump:** A malfunctioning pump can result in inadequate pressure.
- **Check hydraulic filters:** Clogged filters can restrict flow, replace clogged filters.

2. SLOW OR SLUGGISH OPERATION:

- **Check hydraulic fluid viscosity:** Incorrect viscosity can lead to slow operation.
- **Inspect for air in the system:** Air bubbles can cause sluggish operation.
- **Check hydraulic pump:** A worn or damaged pump can result in reduced flow rate.
- **Inspect valves:** Faulty valves can restrict flow, causing slow operation. Check for valve malfunctions and replace if needed.

3. OVERHEATING:

- **Check hydraulic fluid level and quality:** Low fluid level or degraded fluid can lead to overheating. Refill or replace fluid as necessary.
- **Check hydraulic filters:** Clogged filters can restrict flow, leading to overheating. Replace filters if clogged.
- **Inspect cooling system:** Ensure the hydraulic system's cooling components (coolers, fans) are functioning properly and are not obstructed. Note: On models with the Directional control valve, the fan will not turn when the valve is in the neutral position.

4. JERKY OR ERRATIC OPERATION:

- **Check hydraulic fluid level and condition:** Low or contaminated fluid can cause erratic operation. Refill or replace fluid as necessary.
- **Inspect for air in the system:** Air bubbles can lead to uneven operation. Bleed air from the system.
- **Check for loose connections:** Loose fittings or hoses can cause intermittent flow, resulting in jerky operation.

5. UNUSUAL NOISES:

- **Inspect hydraulic fluid level:** Low fluid level can cause cavitation, leading to unusual noises. Refill fluid to the proper level.
- **Check for air in the system:** Air bubbles can cause noisy operation. Bleed air from the system to eliminate noise.
- **Inspect hydraulic pump:** Worn or damaged pump components can create noise. Replace pump if necessary.
- **Check for loose components:** Loose fittings, hoses, or mounting brackets can vibrate and create noise. Tighten or secure loose components.
- **Ensure inlet ball valve is open** and free from obstructions.
- **Check inlet line** for any sharp bends or kinks, these could cause severe flow restrictions

Always refer to the specific manufacturer's guidelines and maintenance manual for troubleshooting procedures tailored to your hydraulic system. If you're unsure about any troubleshooting steps or encounter issues beyond your expertise, bring unit to an authorized service center for further inspection.

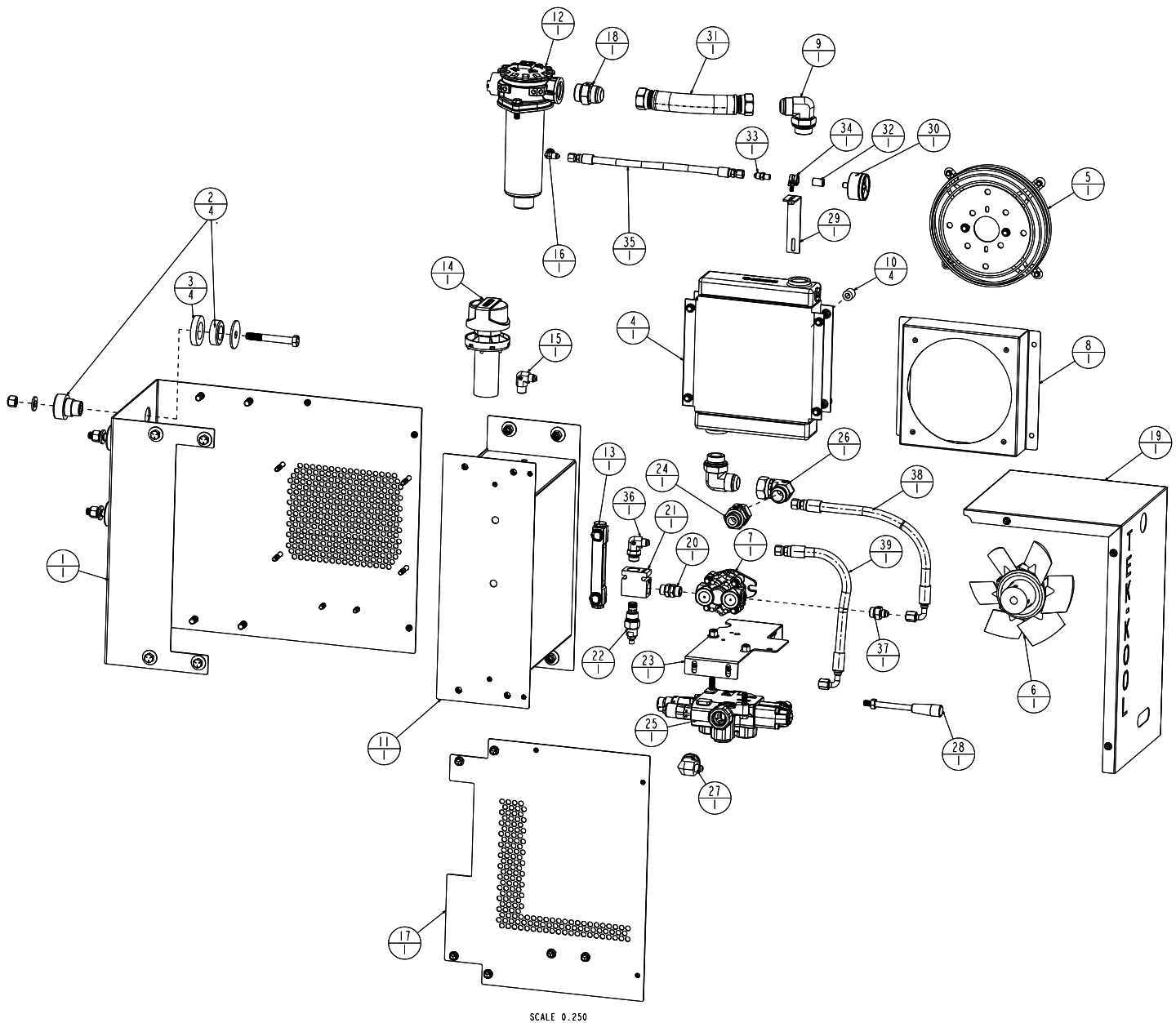
SPECIFICATIONS:

Dimensions:	13" wide (frame is 12" wide with 1" sight gauge) X 20" tall X 22" deep
Flow Rate:	32 GPM
Pressure:	Adjustable 1800-3000 PSI
Reservoir:	4.5 gallons
Weight (Dry):	100 LBS
Suction Port:	SAE-24
P & T Ports:	SAE -12
Heat Rejection:	8 HP @ Rated Flow
Warranty:	2 Years



PARTS BREAKDOWN:

Parts available for **MODEL TK-SS-4G-H-DV**

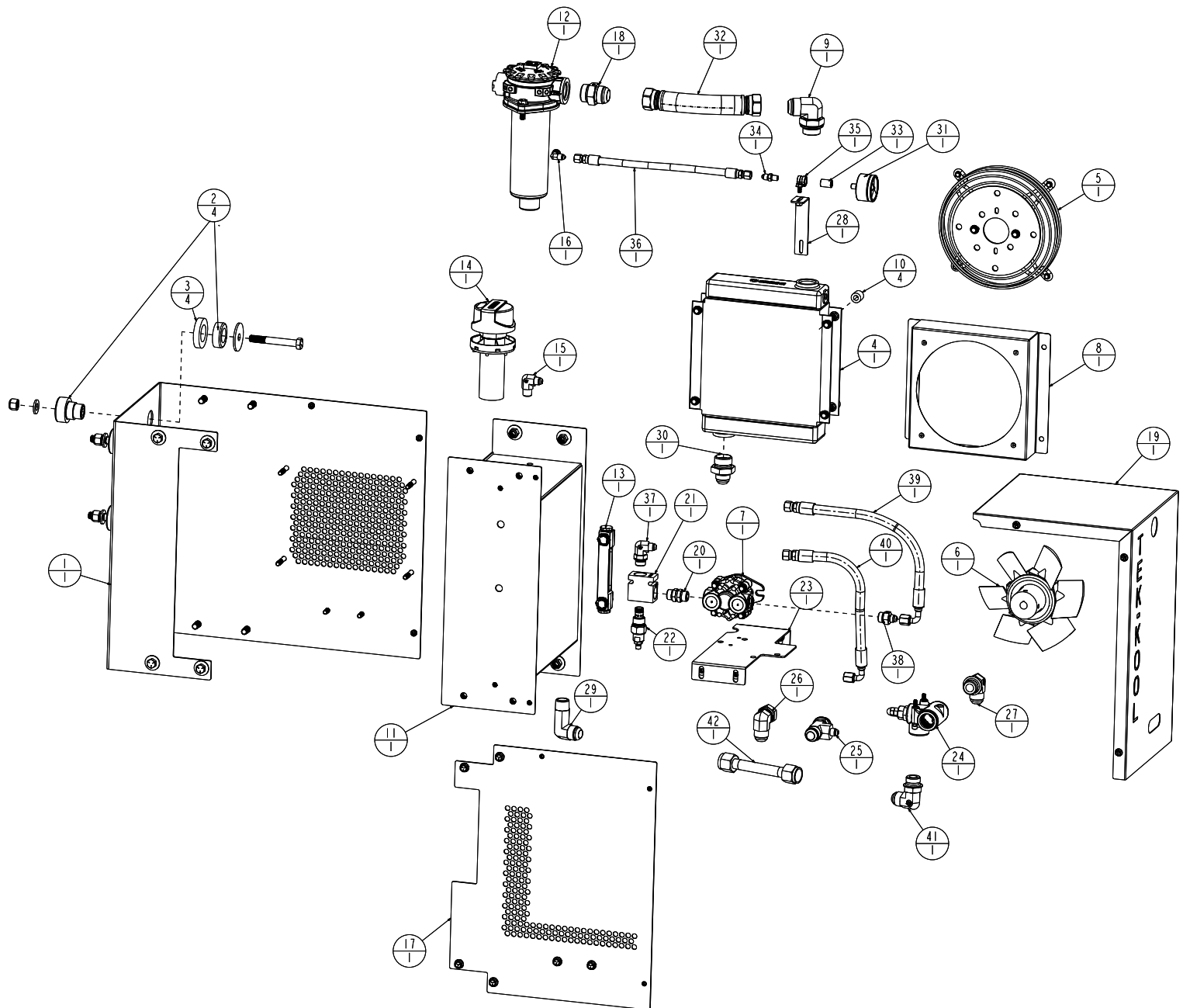


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ITEM	MANUFACTURER	MODEL CODE	DESCRIPTION	QTY
1	INNOTEK	21913006*	MAIN BRACKET	1
2	INNOTEK	1013750	VIBRATION DAMPENING MOUNT	4
3	INNOTEK	21913012*	MOUNTING SPACER	4
4	INNOTEK	1014887	COOLER	1
5	INNOTEK	1014890	FAN GUARD	1
6	INNOTEK	1014889	FAN BLADE	1
7	INNOTEK	1018845	FAN MOTOR	1
8	INNOTEK	1014888	2020 SHROUD	1
9	INNOTEK	1014892	FITTING BSPP X JIC-90	2
10	INNOTEK	21913014*	COOLER SPACER	4
11	INNOTEK	21913003*	RESERVOIR	1
12	INNOTEK	1007544	RETURN FILTER ASSEMBLY	1
13	INNOTEK	21913028	SIGHT GAUGE	1
14	INNOTEK	JA37099	FILLER BREATHER	1
15	INNOTEK	2501-06-06	FITTING MJIC X MP-90	1
16	INNOTEK	7202-04-02	FITTING MJIC X MORB-90	1
17	INNOTEK	21913009*	REAR COVER	1
18	INNOTEK	6400-16-16	FITTING MJIC X MORB	1
19	INNOTEK	21913007*	COVER	1
➔ NOTE: IF COVER SHOWN DOES NOT MATCH YOUR COVER, CONTACT FACTORY FOR REPLACEMENT PART #				
20	INNOTEK	3474-08-08	FITTING AORB X MORB STR	1
21	INNOTEK	JR23140	LINE BODY	1
22	INNOTEK	1014648	FLOW REGULATOR	1
23	INNOTEK	21913011*	VALVE BRACKET	1
24	INNOTEK	6402-12-16	FITTING MAORB X FJICS	1
25	INNOTEK	219130-2	DIRECTIONAL CONTROL VALVE	1
26	INNOTEK	6500-16-16	FITTING MJIC X FJICS-90	1
27	INNOTEK	6801-06-12	FITTING MORB X MAORB-90	1
28	INNOTEK	WV50100	VALVE ACTUATION HANDLE	1
29	INNOTEK	21913013*	FILTER GAUGE BRACKET	1
30	INNOTEK	1008970	FILTER INDICATOR	1
31	INNOTEK	21913031*	COOLER RETURN HOSE ASSEMBLY	1
32	INNOTEK	1013137	P COUPLING 1/8, 304SS	1
33	INNOTEK	24040-4-2	FITTING MJIC X MP	1
34	INNOTEK	1013333	LOOP CLAMP	1
35	INNOTEK	21913032*	INDICATOR HOSE ASSEMBLY	1
36	INNOTEK	6801-06-08	FITTING MJIC X MAORB-90	1
37	INNOTEK	6400-06-08	FITTING MJIC X MORB	1
38	INNOTEK	21913030*	FAN MOTOR OUTLET HOSE ASSEMBLY	1
39	INNOTEK	21913029*	FAN MOTOR INLET HOSE ASSEMBLY	1

PARTS BREAKDOWN:


Parts available for **MODEL TK-SS-4G-H-RV**



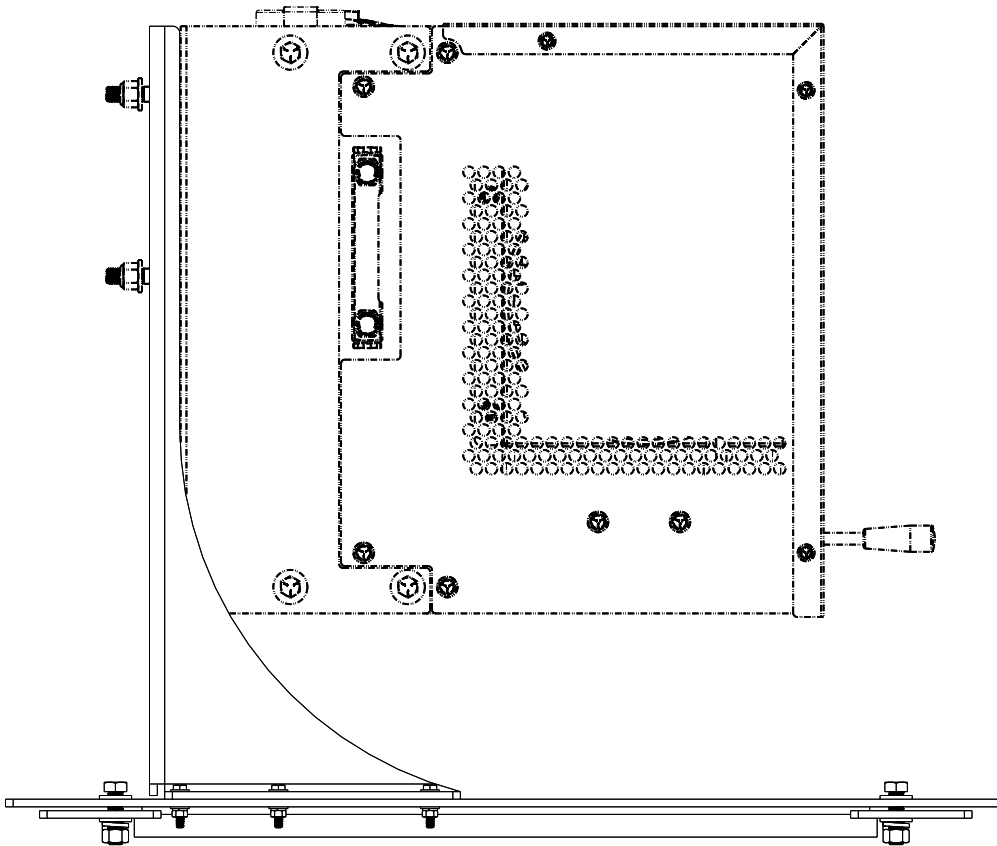
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6	INNOTEK	1014889	FAN BLADE	1
7	INNOTEK	1018845	FAN MOTOR	1
8	INNOTEK	1014888	2020 SHROUD	1
9	INNOTEK	1014892	FITTING BSPP X JIC-90	1
10	INNOTEK	21913014*	COOLER SPACER	4
11	INNOTEK	21913003*	RESERVOIR	1
12	INNOTEK	1007544	RETURN FILTER ASSEMBLY	1
13	INNOTEK	21913028	SIGHT GAUGE	1
14	INNOTEK	JA37099	FILLER BREATHER	1
15	INNOTEK	2501-06-06	FITTING MJIC X MP-90	1
16	INNOTEK	7202-04-02	FITTING MJIC X MORB-90	1
17	INNOTEK	21913009*	REAR COVER	1
18	INNOTEK	6400-16-16	FITTING MJIC X MORB	1
19	INNOTEK	21913007*	COVER	1
 NOTE: IF COVER SHOWN DOES NOT MATCH YOUR COVER, CONTACT FACTORY FOR REPLACEMENT PART #				
20	INNOTEK	3474-08-08	FITTING AORB-MORB STR	1
21	INNOTEK	JR23140	LINE BODY	1
22	INNOTEK	1014648	FLOW REGULATOR	1
23	INNOTEK	21913011*	VALVE BRACKET	1
24	INNOTEK	1014147	RELIEF VALVE	1
25	INNOTEK	6804-12-12-06	FITTING TEE MJ-MAORB-MJ	1
26	INNOTEK	6500-12-12	FITTING MJIC X FJIC-90	1
27	INNOTEK	6801-12-12	FITTING MJ-MAORB 90°	1
28	INNOTEK	21913013*	FILTER GAUGE BRACKET	1
29	INNOTEK	2501-L-12-12	FITTING MJIC X MNPTL -90	1
30	INNOTEK	7002-12-16	FITTING MJ-MBSPP STR	1
31	INNOTEK	1008970	FILTER INDICATOR	1
32	INNOTEK	21913031*	COOLER RETURN HOSE ASSEMBLY	1
33	INNOTEK	1013137	P COUPLING 1/8, 304SS	1
34	INNOTEK	2404-4-2	FITTING MJIC-MP	1
35	INNOTEK	1013333	LOOP CLAMP	1
36	INNOTEK	21913032*	INDICATOR HOSE ASSEMBLY	1
37	INNOTEK	6801-06-08	FITTING MJIC X MAORB-90	1
38	INNOTEK	6400-06-08	FITTING MJIC X MORB	1
39	INNOTEK	21913030*	FAN MOTOR OUTLET HOSE ASSEMBLY	1
40	INNOTEK	21913029*	FAN MOTOR INLET HOSE ASSEMBLY	1
41	INNOTEK	6801-12-12	FITTING MJ-MAORB 90°	1
42	INNOTEK	22010304*	RV DRAIN TUBE ASSEMBLY	1

ACCESSORIES (Mounting Options):



NOTE:

Top mount (behind the cab) optional mounting kit



WARRANTY POLICY:

TEK-KOOL® WARRANTY

The **TEK-KOOL®** product series is a hydraulic cooler and warranted against defects in material and or workmanship at the time of sale by the Innotek Corporation given the use and installation defined in company literature and or engineering specifications.

TEK-KOOL® is warranted for a period of TWO (2) years from the date of installation. If during this warranty period the unit fails to operate to Innotek's specifications due to a defect in any component, material and or workmanship the defective part (s) will be repaired and or replaced at Innotek's sole discretion at no charge. Warranty is contingent upon all parts returned to Innotek with transportation prepaid.

Product warranty will be canceled /terminated if any alterations or repairs are made to the unit other than an authorized dealer or if the unit was removed from the original installation and reused.

INNOTEK'S **TEK-KOOL®** WARRANTIES ARE IN LIEU OF ALL OTHER OBLIGATIONS AND LIABILITIES, INCLUDING NEGLIGENCE EITHER EXPRESSED OR IMPLIED AND STATE INNOTEK'S ENTIRE AND EXCLUSIVE LIABILITY AND BUYERS EXCLUSIVE REMEDY FOR ANY CLAIM OF DAMAGES IN CONNECTION WITH SALE, REPAIR OR REPLACEMENT OF THIS PRODUCT INCLUDING INNOTEK'S DESIGN, INSTALLATION OR OPERATION.

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