



Installation, Operation, Inspection and Maintenance Manual



EMERGENCY RESPONSE KIT

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1.0 Introduction

Kelso Emergency Response Kit (ERK) offers performance and reliability with today's Best Available and Safest Technology. The ERK was developed with hazardous material specialists from a Class I railroad company. The Kit delivers a technical superior product which includes features such as; components built using lightweight material, containment cans pressure-tested, color-coded cans to properly select can under emergency conditions, non-slip exterior and Teflon interior coatings applied to the cans, high-strength aluminum bridges, a friction-reduction system that lowers torque required to apply cans.

1.1 Precautions

The ERK has been designed to allow for a quick and easy way of containing leaking valves on tank cars. Use extreme caution when involved with hazardous materials that could cause serious injury or damage.

- 1.1.1 Only personnel which are properly qualified should install, operate and maintain the ERK.
- 1.1.2 It is recommended to familiarize personnel with the contents of the ERK and practice assembling onto tank car protective housing.
- 1.1.3 Only certified parts from Kelso or one of its authorized representatives should be used in the ERK.
- 1.1.4 The ERK may be installed on DOT tank cars that carry hazardous chemicals and may travel under pressure.



Read these instructions prior to performing any work.

1.2 Regulations

Kelso products are used in contact with a variety of products, many of which are hazardous materials. The acceptance and transportation of products are regulated by DOT and AAR in the U.S.A. and in Canada by CTC and Transport Canada. Regulations of other governmental bodies must be complied with. All personnel should be familiar with and follow these regulations. Nothing in these instructions is intended to conflict with or supersede these regulations.

Note: Specifications are subject to change without notice.

1.3 Technical Specifications

1.3.1 Major Components

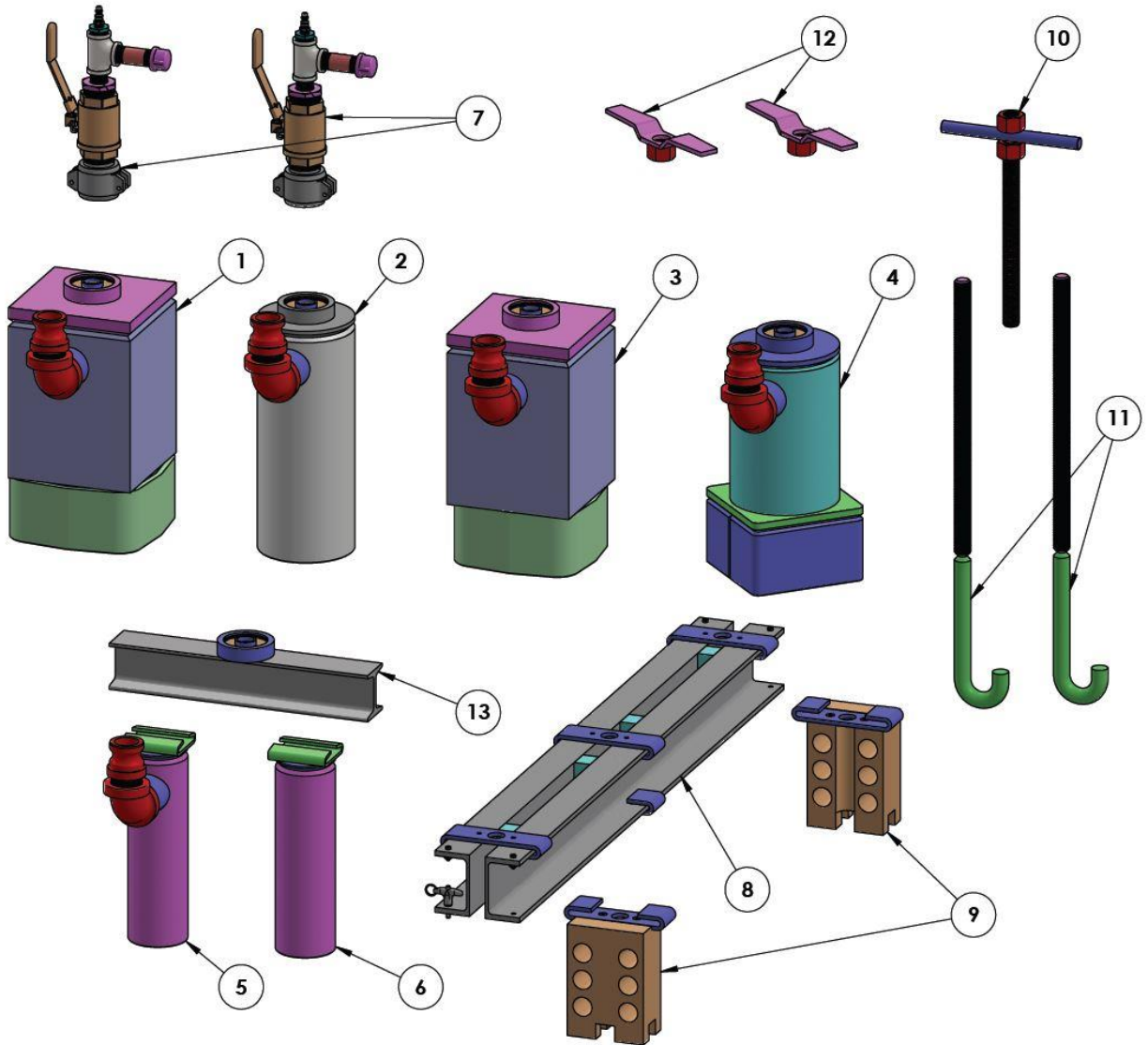


Figure 1.3.1

ITEM NO.	QTY.	DESCRIPTION
1	1	#1 CAN - LSV CONTAINMENT CAN ASSEMBLY
2	1	#2 CAN - GD/AV CONTAINMENT CAN ASSEMBLY
3	1	#3 CAN - AV CONTAINMENT CAN ASSEMBLY
4	1	#4 CAN - GD CONTAINMENT CAN ASSEMBLY
5	1	#5A CAN - SV CONTAINMENT CAN A ASSEMBLY
6	1	#5B CAN - SV CONTAINMENT CAN B ASSEMBLY
7	2	ERK GAUGE CONNECTION
8	1	ERK BRIDGE RAIL ASSEMBLY
9	2	ERK BRIDGE SUPPORT ASSEMBLY
10	1	BRIDGE JACK SCREW ASSEMBLY
11	2	ERK J-HOOK
12	2	BRIDGE J-HOOK NUT ASSEMBLY
13	1	ERK MINI BRIDGE ASSEMBLY

Table 1.3.1

1.3.2 Pressure Gauges

QTY.	DESCRIPTION
1	0-100 PSI GAUGE WITH FEMALE QUICK CONNECT
1	0-300 PSI GAUGE WITH FEMALE QUICIK CONNECT
1	0-600 PSI GAUGE WITH FEMALE QUICK CONNECT

Table 1.3.2

1.3.3 Gaskets

QTY.	DESCRIPTION
1	EPDM - CAN GASKET SET
1	VITON A - CAN GASKET SET
1	TRAINING - CAN GASKET SET
2	EPDM - CAM LOCK GASKET
2	VITON A - CAM LOCK GASKET
2	TRAINING - CAM LOCK GASKET

Table 1.3.3

1.4 Hand Tools

QTY.	DESCRIPTION
2	PLASTIC WEDGE - ORANGE
6	COMPOSITE WEDGE/SHIM
1	15" ADJUSTABLE WRENCH
1	14" BOLT CUTTER
1	CABLE CUTTER
1	GASKET SCRAPER
1	WIRE BRUSH
2	TEFLON PIPE TAPE - YELLOW
1	14" PIPE WRENCH
2	RATCHET STRAP
1	TORQUE MULTIPLIER
1	TORQUE MULTIPLIER SOCKET 1" X 1-5/8"
1	GORILLA SUPER GLUE
1	SAFETY ROPE 20 FT 2 SNAP LINKS
1	TOOL BAG
1	CRADLE CHAIN

Table 1.4

2.0 Installation and Operation

2.1 Components

The Emergency Response Kit is comprised of a protective container holding all the necessary components of the kit. A component called the bridge assembly will be strapped to the top of the container with two ratchet straps.



Figure 2.1



Note: Use care not to damage the Teflon protective lined containment cans when removing or replacing parts.

2.2 Procedure

1. Using the appropriate seal that is supplied by the kit, install the seal onto the bottom of the containment can, that is being used for your specific application.



Figure 2.2.1

2. If necessary, used the supplied scraper and wire brush around the area that will be making contact with the seal.



Figure 2.2.2

3. Place the containment can over the valve to be contained.



Figure 2.2.3

4. Use a wedge supplied with the kit to assist in holding open the inspection port.



Figure 2.2.4

5. Slide the bridge support onto the bottom rail of the bridge, then engage t-handle push pin. From the bottom, slide the J-Hook thru the support and bridge. Thread the J-Hook nut onto the threaded portion of the J-Hook. Repeat assembly for the other end of the bridge.



Figure 2.2.5.1



Figure 2.2.5.2



Figure 2.2.5.3

6. Arrange the support blocks and J-Hooks on the ends of the bridge.



Figure 2.2.6

7. Adjust the J-Hooks by sliding along the bridge as needed before going into housing.



Figure 2.2.7

8. Lower the bridge assembly down with the J-Hooks into the housing.



Figure 2.2.8

- Slide the J-Hooks outward. Tighten the wing nuts down removing play. Make sure when the J-Hooks are securely fastened through the inspection ports.



Figure 2.2.9

- The containment cans in the kit are equipped with reduced friction bearings. Make the sure that the center of the handle screw is centered inside the center of the bearing before tightening with jack screw.

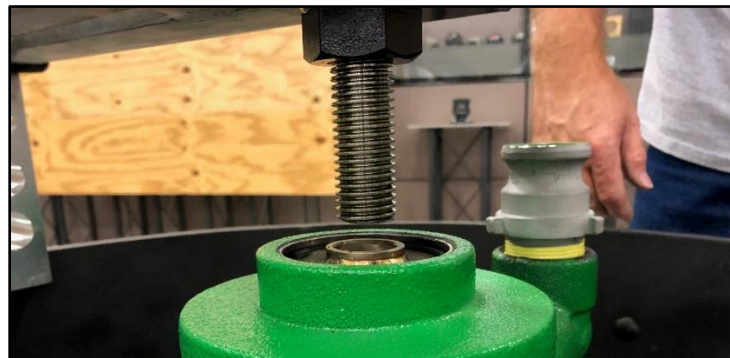


Figure 2.2.10.1



Figure 2.2.10.2



Figure 2.2.10.3



Included in the ERK container is a torque multiplier tool set and a socket to be used during the installation of the jack screw (T-Bolt) to assist in applying pressure/force to seat the can with its appropriate gasket against the sealing surface. The torque multiplier can be used for cans #1 thru #4, as well as the mini bridge assembly noted in Section 2.2.12.



Figure 2.2.10.4



Figure 2.2.10.5

11. Place the gauge connection onto the containment can cam lock and engage the levers. The Velcro fastener is used to secure the camlock levers to prevent accidental disconnect.



Figure 2.2.11

12. When using the small round containment can, the mini bridge is required. Slide the mini bridge through the brackets attached to the top of the cans. A reduced friction bearing is mounted at the center of the mini bridge. The handle screw is to be centered inside the center of the bearing. Similar process that is used for the larger containment cans #1 thru #4.



Figure 2.2.12.1



Figure 2.2.12.2

13. Use the bolt cutter to cut away chain that may interfere with placement of containment cans.



Figure 2.2.13



Note: It is not uncommon to remove the angle valve handle and/or the plug in order for the can to fit over the valve. The kit is equipped an adjustable wrench, as well as a pipe wrench, for this work.

14. A cradle chain is provided in the kit as an alternate means to secure the bridge assembly to the housing. Adjust the chain around the bottom of the housing using the clasp links, and adjust chains using clasp links when engaged with the J-Hooks.



Figure 2.2.14.1

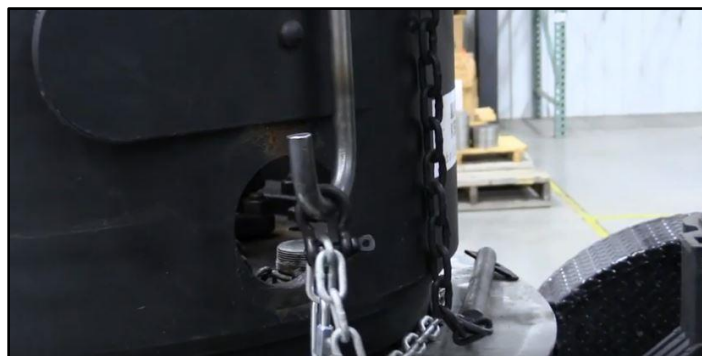


Figure 2.2.14.2

3.0 Inspection

A Kit inspection should be made well in advance of the ERK being used, whether for an actual emergency or when training personnel.

3.1 Components

1. **Containment Cans** – Inspect inside Teflon surface of cans for scratches, dents, excessive wear, damage, etc. Replace if such conditions exist.
2. **Gaskets** – With the exception of gaskets used for training, its recommended that gaskets be replaced after they've been used.
3. **Hand Tools** – Inspect to assure that tools are in good working order and functioning properly.



It is recommended that any replacement parts be purchased through Kelso Technologies for form, fit and function.

3.2 Cleaning

Components of the Kelso kit may be cleaned using any of the following methods:

1. Wire brushes and/or clean towel/cloth.
2. Low pressure water, glass bead, sand or soda blasting provided the blast media is not angular in form or leaves iron content on metal parts.
3. A chemical/surfactant application, in conjunction with manufactures prescribed instructions, to achieve a desired result. It is suggested the chemical/surfactant be of neutral pH to ensure the integrity of the metal composition.
4. Regardless of cleaning method, it is suggested that the parts be double rinsed and dried (with sanitary towel) immediately after any chemical/surfactant application.



Disposal should be managed in accordance with all applicable state and federal regulations.

4.0 Maintenance

Under normal operating conditions, the ERK does not require maintenance.

4.1 Components

1. **Gaskets** – The recommended shelf life of the gaskets is 5 years.



It is recommended that any replacement parts be purchased through Kelso Technologies for form, fit and function.

5.0 Warranty Information

See the Warranty Terms and Conditions.

6.0 Revision Log

Revision Level	Revision Date	Summary of Change(s)
0	11/1/2019	Original Document

7.0 Appendix

A Kelso ERK demonstration video is available on our website:
www.kelsotech.com/product/emergency-response-kit

7.1 ERK Packing Checklist



Kelso Emergency Response Kit Packing Checklist

ERK Serial No. _____

Part	Qty.	Packed ✓	Parts Tested
Pelican Case w/ attached Axle and Wheels	1		
1" Ratchet Strap	2		
Containment Cans (list serial numbers below)	6		
Aluminum 46" Bridge	1		
Aluminum Mini Bridge	1		
Bridge Stand	2		
"1" Bolt	1		
"J" Hook	2		
"J" Hook Nut	2		
Training Gasket	8		
EPDM Gasket	8		
Viton A Gasket	8		
Plastic Wedges	2		
Composite Shims	6		
15" Adjustable Wrench	1		
14" Pipe Wrench	1		
Cable Cutter	1		
Cradle Chain	1		
Gasket Scraper	1		
Lifting Rope with Snap Links	1		
Wire Brush	1		
Gauge (1 – 100 psi, 1 – 300 psi, 1 – 600 psi) w/ quick connects	3		
Gauge Connection (X-Tree)	2		
Yellow Pipe Tape	1		
14" Bolt Cutters	1		
Torque Multiplier	1		
Socket for Torque Multiplier	1		
Gorilla Glue	1		
Are threads of threaded components protected			

Containment Can	Serial Number	Quantity	Packed ✓	Cans Tested
Can #1 / LVS		1		
Can #2 / GD/AV		1		
Can #3 / AV		1		
Can #4 / GD		1		
Can #5A		1		
Can #5B		1		

Content has been packaged and verified for completeness against KERK Kit Packing Checklist above.

Signed: _____

Date: _____

Figure 7.1

7.2 ERK Packing Schematic

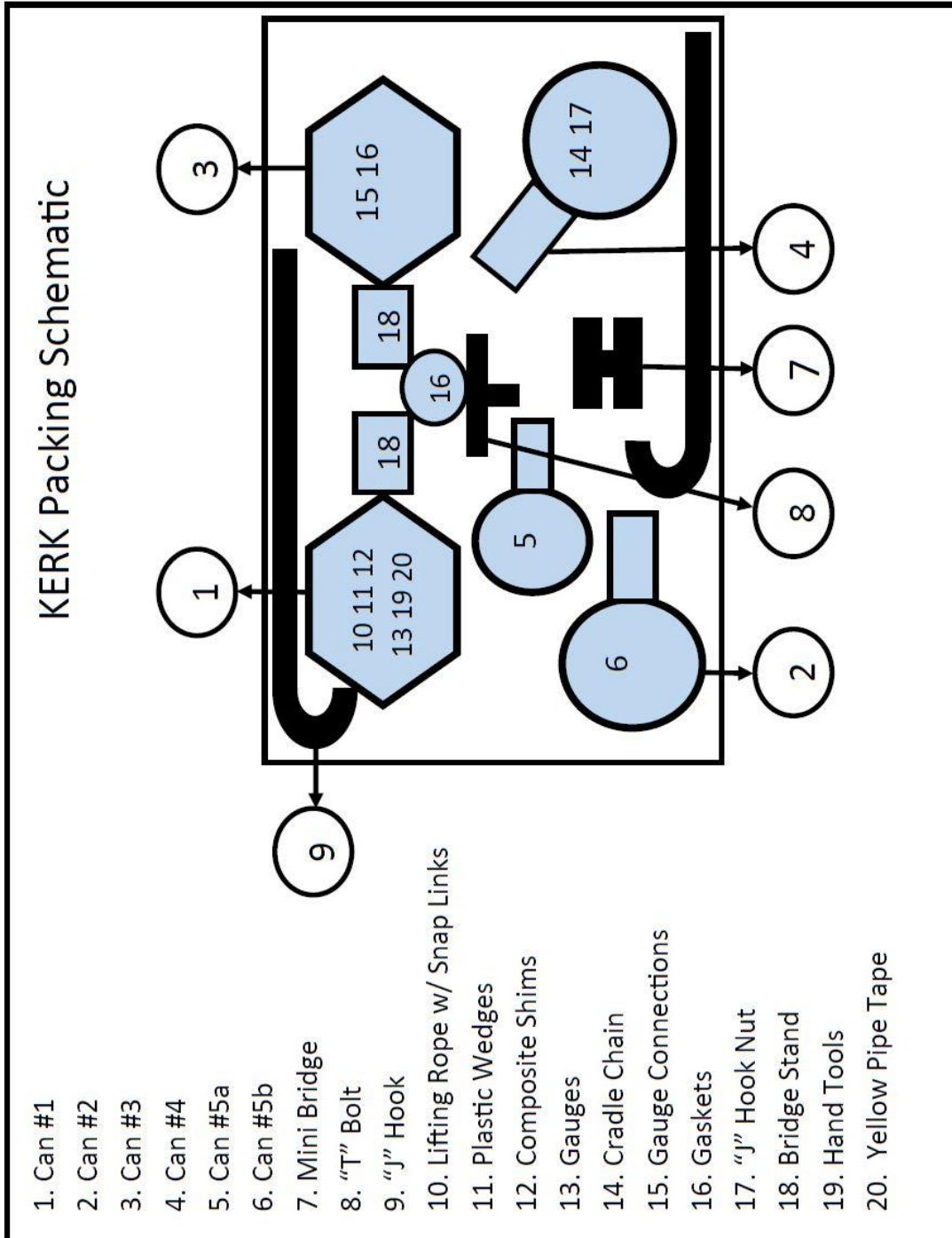


Figure 7.2

7.3 Gasket Chemical Compatibility Chart



Gasket Chemical Compatibility Chart		
Commodity	EPDM	Viton A
Acetaldehyde	X	
Alcohol - Ethyl	X	
Anhydrous Ammonia	X	
Benzene		X
Boric Acid	X	X
Butadiene		X
Butane		X
Butylene		X
Calcium Chloride	X	X
Chlorine		X
Citric Acid	X	X
Ethyl Mercaptan		X
Ethylene		X
Ethylene Glycol	X	X
Gasoline		X
Hydrochloric Acids		X
Hydrogen Peroxide		X
Iso-Butane		X
Jet Fuel		X
LPG		X
Methyl Acetate	X	
Methane		X
Nitric Acid		X
Phenol	X	X
Phosphoric Acid		X
Potassium Hydroxide	X	
Propane		X
Propylene		X
Propylene Glycol	X	X
Sodium Cyanide	X	
Sodium Hydroxide	X	
Styrene		X
Sulfuric Acid		X
Tetra Methyl Benzene		X
Toluene		X
Trichloroethylene		X
Turpentine		X
Vinyl Chloride		X
Xylene		X

Figure 7.3