

Maxum® XTR Reliability Kit Instruction Manual

These instructions must be read thoroughly before installation or operation. This instruction manual was accurate at the time of printing. Please see dodgeindustrial.com for updated instruction manuals.

WARNING: To ensure the drive is not unexpectedly started, turn off and lock-out or tag-out the power source before proceeding. Failure to observe these precautions could result in bodily injury.

WARNING: All products over 55 lbs (25 kg) are noted on the shipping package. Proper lifting practices are required for these products.



OIL LEVEL AND RELIABILITY KIT INSTALLATION

Each Maxum XTR case size has a low and high oil level. The output speed determines which oil level should be used. Refer to Table 1 on page 4 to find the correct oil level for your application. The oil level will determine which Reliability Kit installation schematic should be followed.

INSTALLATION SCHEMATICS

For installation schematics, go to the back of this manual and review drawings found in Table 1 for each gearbox size.

INTRODUCTION

The Maxum XTR Reliability Kit is an accessory designed to improve asset reliability, simplify maintenance, and provide the user with an enhanced ability to understand the health of their installed asset. The reliability kit is designed to be installed in a typical horizontal mounting position. For additional mounting positions, contact application engineering. Scoop motor mount packages, shaft fans, and backstops can be used with these reliability kits as laid out in this manual. If a shaft fan is used, the fan shroud will need to be modified to accommodate these reliability kit components. The kit includes: E-Z drain, oil sampling pitot tube, extended oil sight tube, Hydra-Lock breather, quick disconnects for oil recirculation and all hardware/piping components to provide a closed loop system of operation.

WARNING: Because of the possible danger to person(s) or property from accidents which may result from the improper use of products, it is important that correct procedures be followed. Products must be used in accordance with the engineering information specified in the catalog. Proper installation, maintenance and operation procedures must be observed. The instructions in the instruction manuals must be followed. Inspections should be made as necessary to assure safe operation under prevailing conditions. Proper guards and other suitable safety devices or procedures as may be desirable or as may be specified in safety codes should be provided, and are neither provided by Dodge® nor are the responsibility of Dodge. This unit and its associated equipment must be installed, adjusted and maintained by qualified personnel who are familiar with the construction and operation of all equipment in the system and the potential hazards involved. When risk to persons or property may be involved, a holding device must be an integral part of the driven equipment beyond the speed reducer output shaft.

INSTALLATION INSTRUCTIONS

NOTE:

- Use pipe joint compound on all threaded connections that do not already have sealant on them
- Tools required for installation: a combination of Allen wrenches, pipe wrenches, crescent wrenches, and/or channel lock pliers to remove plugs and install pipe fitting from the kit
- Tighten all connections so they are oil tight
- Care must be taken when installing the brass sight tube and hose. Overtightening the fittings on the sight tube can cause damage.

If the gearbox is already in service, the oil must be drained prior to installing the reliability kit components. There may be some pipe fittings from this kit that are difficult to install with other accessories already installed. If possible, install all reliability kit components prior to installing additional accessories.

Installing E-Z Drain and Lower Quick Disconnect Components

The E-Z drain components contain fittings to utilize the lowest plug location from the housing cover on the output shaft facing side. The drain is designed to be installed like the drawings at the back of this manual. The E-Z drain components may be located on the other oil plug hole location at bottom end of the cover if the customer desires. The male quick disconnect for oil recirculation will be installed at the end of the E-Z drain.

See Figure 1 for general assembly steps regarding the E-Z drain. If the magnetic plug is removed to install the E-Z drain components, this needs to be re-installed in place of the other drain plug location (shown with "NOTE 2" in drawings at end of this manual). The connection point at this location on the gearbox is 3/4 inch NPT.

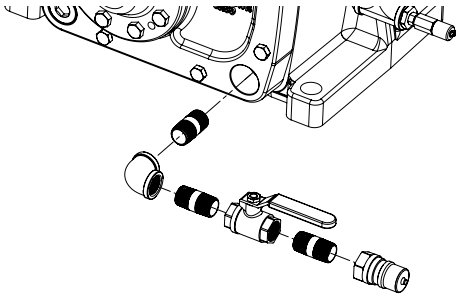


Figure 1 - E-Z Drain and Quick Disconnect Components

Installing Oil Sampling Pitot Tube and Sight Tube Components - Lower Speeds with Higher Oil Fill

A precut pitot tube and a 1/4 inch NPT adapter are provided as well as additional pipe fittings to mount all items to the gearbox.

The pitot tube and applicable piping components will be installed in the location of the lowest oil plug hole on the side of the gearbox housing. The connection point at this location on the gearbox is 1/2 inch NPT. This installation is for lower gearbox output speeds per Table 1. Remove the lower, side oil plug from the gearbox. Install pitot tube and applicable piping components as seen in Figure 2. The two street elbows will not be used with this configuration.

The sight tube will need to be facing up, perpendicular to gravity, as seen in Figure 2.

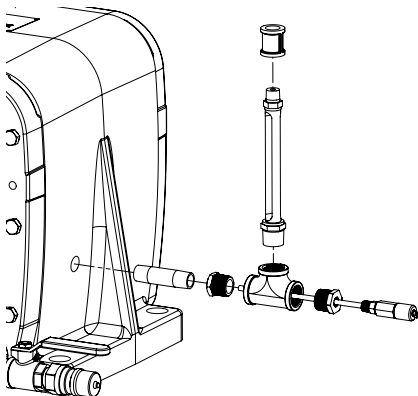


Figure 2 - Lower Speeds Oil Sampling Pitot Tube and Sight Tube Components

The reliability kit includes a sampling port adapter that can be added to an existing sampling vacuum pump tubing. Oil sampling collection supplies are not included. When taking a sample, this port adapter screws onto the end of the pitot tube.

Pitot tube and sampling port adapter are manufactured by Trico Corporation. Collection supplies can be ordered directly from them.

Installing Oil Sampling Pitot Tube and Sight Tube Components - Higher Speeds with Lower Oil Fill

A precut pitot tube and a 1/4 inch NPT adapter are provided as well as additional pipe fittings to mount all items to the gearbox.

The pitot tube and applicable piping components will be installed in the location of the lowest oil plug hole on the side of the gearbox housing. The connection point at this location on the gearbox is 1/2 inch NPT. This installation is for higher gearbox output speeds per Table 1. Remove the lower, side oil plug from the gearbox. Install pitot tube and applicable piping components as seen in Figure 3.

The sight tube will need to be facing up, perpendicular to gravity, as seen in Figure 3.

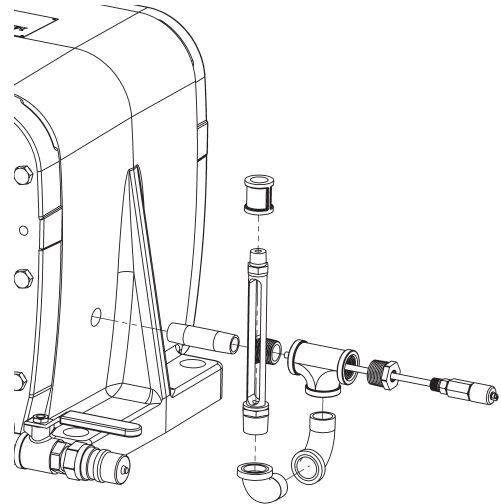


Figure 3 - Higher Speeds Oil Sampling Pitot Tube and Sight Tube Components

Installing Reclaim Hose and Breather Components

The reliability kit contains a reclaim hose for any excess oil that may be displaced due to pressure build up internal to the gearbox during operation. This hose connects the sight tube and components to the breather components. Note, the hose may be longer in length than shown in the drawings for some gearbox sizes. Route the hose where it will not interfere with any rotating equipment and maintain a minimum radius of 3 inches or greater at any bend. The breather provided with the level 1 kit is a Hydra-Lock desiccant breather that provides maximum protection from humidity and contaminants.

The breather that comes from factory on the gearbox will need to be removed at this time to install the pipe components leading to the heavy-duty breather included in the reliability kit. The connection point at this location on the gearbox is 3/4 inch NPT.

For CR50—80 size gearboxes, the reclaim hose will be installed from where the previous installation step left off at the 3/8 inch pipe coupling as seen in Figure 4. Note, these size gearboxes will use both 3/4 inch to 3/8 inch NPT adapters to connect the breather assembly. Additional parts that come in the kit and will not be used include one 3/4 inch NPT x 2 inches pipe nipple and 1 inch x 3/4 inch bell adapter.

For CR90—130 size gearboxes, the reclaim hose will be installed from where the previous installation step left off at the 3/8 inch pipe coupling as seen in Figure 5. Note, these size gearboxes will use all included components that come in the kit except for one additional 3/4 inch to 3/8 inch NPT adapter that will not be used.

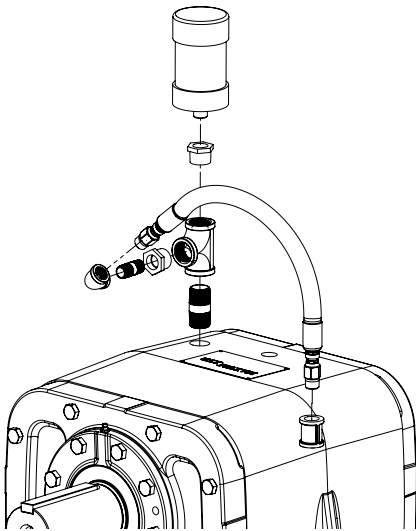


Figure 4 - CR50-80 Reclaim Hose and Breather Components

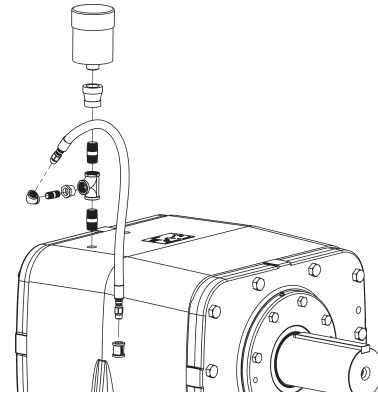


Figure 5 - CR90-130 Reclaim Hose and Breather Components Configuration

Installing Upper Quick Disconnect Components

Oil will need to be added at this time before the upper quick disconnect components are installed. The higher side plug hole can be used for oil fill as well if desired. Fill the gearbox with the appropriate amount of oil (until it shows in the sight tube above the level of the pitot tube). Refer to the gearbox manual or catalog for approximate oil volumes. Verify there are no leaks.

Install the upper quick disconnect like shown in Figure 6. The connection point at this location on the gearbox is 1/2 inch NPT. The quick disconnect can be facing any direction the customer desires. It would be most beneficial to face the same direction as the lower quick disconnect for ease of oil recirculation.

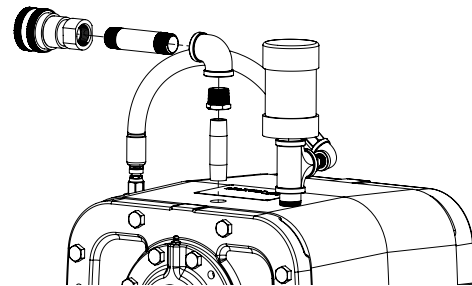


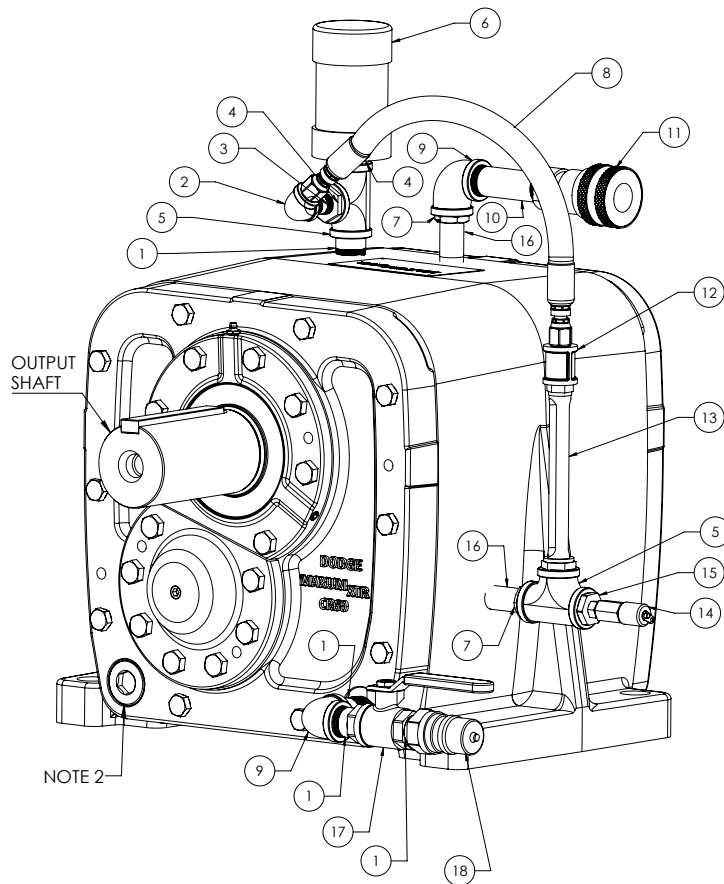
Figure 6 - Upper Quick Disconnect Components

Table 1 – List of Installation Schematics and Oil Level & Capacity

Reducer Size	Output Speed (RPM)	Lower or Higher Output Speed	Reliability Kit Installation Schematic	High or Low Oil Level	Oil Capacity	
					U.S Gallons	Liters
CR50	250 & Below	Lower	Page 5	High	2.7	10.2
	Above 250	Higher	Page 6	Low	1.7	6.44
CR60	225 & Below	Lower	Page 5	High	4.8	18.2
	Above 225	Higher	Page 6	Low	2.7	10.2
CR70	205 & Below	Lower	Page 5	High	5.6	21.2
	Above 205	Higher	Page 6	Low	3.2	12.1
CR80	180 & Below	Lower	Page 7	High	8.3	31.4
	Above 180	Higher	Page 8	Low	4.6	17.4
CR90	150 & Below	Lower	Page 9	High	12.2	46.2
	Above 150	Higher	Page 10	Low	7.2	27.3
CR100	135 & Below	Lower	Page 9	High	13.0	49.2
	Above 135	Higher	Page 10	Low	7.7	29.1
CR110	122 & Below	Lower	Page 9	High	19.3	73.1
	Above 122	Higher	Page 10	Low	11.5	43.5
CR120	104 & Below	Lower	Page 9	High	22.6	85.6
	Above 104	Higher	Page 10	Low	14.9	56.4
CR130	95 & Below	Lower	Page 9	High	28.0	106
	Above 95	Higher	Page 10	Low	17.6	66.6

Contact Dodge if the Maxum XTR is being mounted on an incline to confirm correct oil quantity .
Refer to Maxum XTR manual MN16009 for complete lubrication instructions.

CR50-CR70 Reliability Kit Layout Oil Fill for Lower Speed Applications



Item	Part number	Description	Quantity
1	034530016EC	3/4" NPT X 2" pipe nipple	4
2	034650003AC	3/8" NPT (90° elbow)	1
3	034530012CC	3/8" X 1-1/2" pipe nipple	1
4	034600009AC	3/4" to 3/8" NPT adapter	2
5	034720005AC	3/4" NPT tee	2
6	NOTE 1	Heavy-duty breather	1
7	430079	3/4" to 1/2" adapter	2
8	454631-30	Hose assembly	1
9	034670005AC	3/4" NPT (90° elbow)	2
10	034530032EC	3/4" NPT X 4" pipe nipple	1
11	965908	Female quick disconnect	1
12	034630003AC	3/8" NPT pipe coupling	1
13	967052	Oil sight tube	1
14	453303-7	Pitot tube (7" long)	1
15	034600008AC	3/4" to 1/4" adapter	1
16	034530024DC	1/2" X 3" NPT pipe	2
17	095967	3/4" ball valve	1
18	965930	Male quick disconnect	1

NOTE:

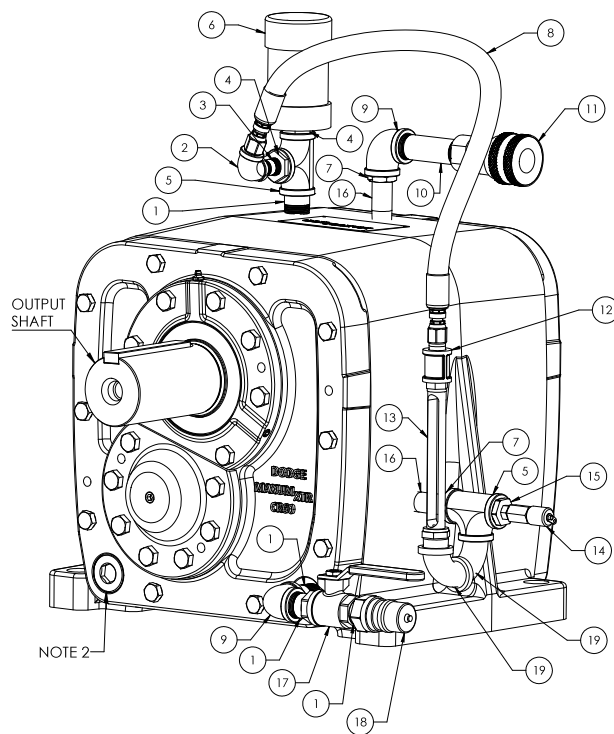
1. Hydra-Lock breather will come standard as shown. Other Dodge breathers are optional and will need to be requested at time of ordering.

2. If MAG plug is removed to attach components, replace other lowest plug with MAG plug

3. Item 14 and 455003 sampling port adapter (not shown) come from Trico Corporation, sampling collection supplies not supplied

4. Check manual for optimal oil fill level. Contact Dodge Application Engineering with any custom mounting position questions.

CR50-CR70 Reliability Kit Layout Oil Fill for Higher Speed Applications

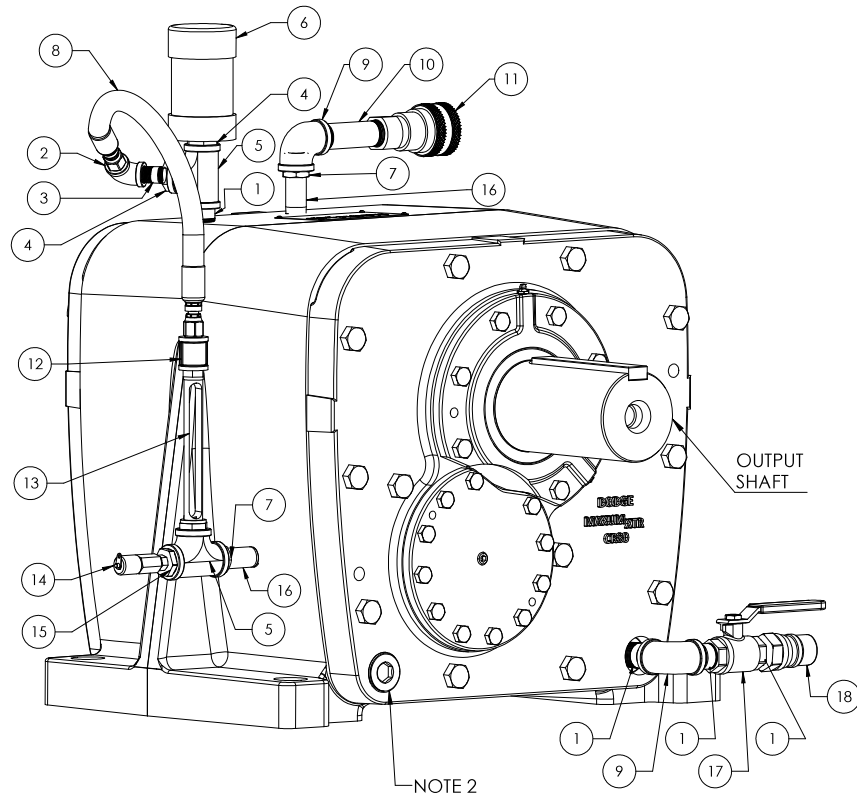


Item	Part number	Description	Quantity
1	034530016EC	3/4" NPT X 2" PIPE NIPPLE	4
2	034650003AC	3/8" NPT (90° ELBOW)	1
3	034530012CC	3/8" X 1-1/2" PIPE NIPPLE	1
4	034600009AC	3/4" TO 3/8" NPT ADAPTER	2
5	034720005AC	3/4" NPT TEE	2
6	NOTE 1	HEAVY DUTY BREATHER	1
7	430079	3/4" TO 1/2" ADAPTER	2
8	454631-30	HOSE ASSEMBLY	1
9	034650005AC	3/4" NPT (90° ELBOW)	2
10	034530032EC	3/4" NPT X 4" PIPE NIPPLE	1
11	965908	FEMALE QUICK DISCONNECT	1
12	034630003AC	3/8" NPT PIPE COUPLING	1
13	967052	OIL SIGHT TUBE	1
14	453303-7	PITOT TUBE (7" LONG)	1
15	034600008AC	3/4" TO 1/4" ADAPTER	1
16	034530024DC	1/2" X 3" NPT PIPE	2
17	095967	3/4" BALL VALVE	1
18	965930	MALE QUICK DISCONNECT	1
19	034670005AC	3/4" NPT (90° STREET ELBOW)	2

NOTE:

1. Hydra-Lock breather will come standard as shown. Other Dodge breathers are optional and will need to be requested at time of ordering.
2. If MAG plug is removed to attach components, replace other lowest plug with MAG plug.
3. Item 14 and 455003 sampling port adapter (not shown) come from Trico Corporation, sampling collection supplies not supplied.
4. Check manual for optimal oil fill level. Contact Dodge Application Engineering with any custom mounting position questions.

CR80 Reliability Kit Layout Oil Fill for Lower Speed Applications



Item	Part number	Description	Quantity
1	034530016EC	3/4" NPT X 2" PIPE NIPPLE	4
2	034650003AC	3/8" NPT (90° ELBOW)	1
3	034530012CC	3/8" X 1-1/2" PIPE NIPPLE	1
4	034600009AC	3/4" TO 3/8" NPT ADAPTER	2
5	034720005AC	3/4" NPT TEE	2
6	NOTE 1	HEAVY DUTY BREATHER	1
7	430079	3/4" TO 1/2" ADAPTER	2
8	454631-30	HOSE ASSEMBLY	1
9	034650005AC	3/4" NPT (90° ELBOW)	2
10	034530032EC	3/4" NPT X 4" PIPE NIPPLE	1
11	965908	FEMALE QUICK DISCONNECT	1
12	034630003AC	3/8" NPT PIPE COUPLING	1
13	967052	OIL SIGHT TUBE	1
14	453303-7	PITOT TUBE (7" LONG)	1
15	034600008AC	3/4" TO 1/4" ADAPTER	1
16	034530024DC	1/2" X 3" NPT PIPE	2
17	095967	3/4" BALL VALVE	1
18	965930	MALE QUICK DISCONNECT	1

NOTE:

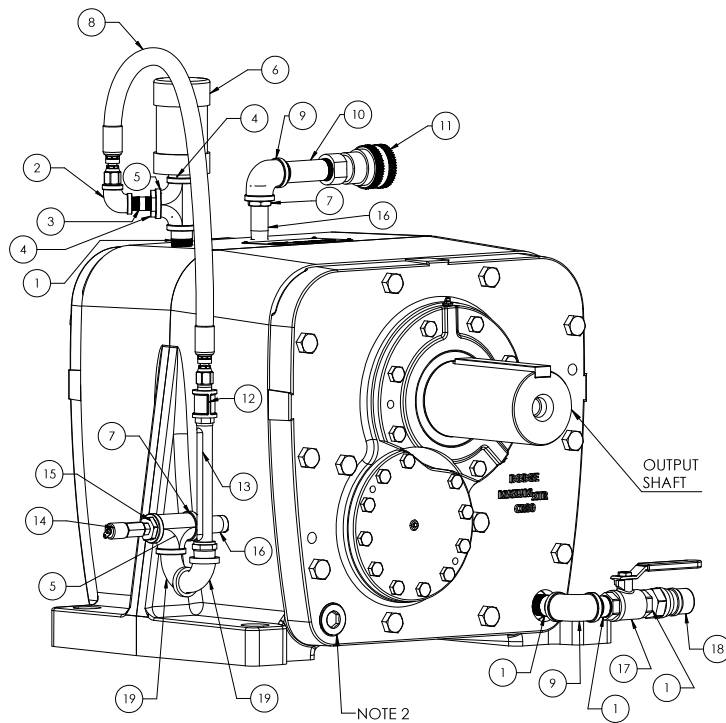
1. Hydra-Lock breather will come standard as shown. Other Dodge breathers are optional and will need to be requested at time of ordering.

2. If MAG plug is removed to attach components, replace other lowest plug with MAG plug

3. Item 14 and 455003 sampling port adapter (not shown) come from Trico Corporation, sampling collection supplies not supplied

4. Check manual for optimal oil fill level. Contact Dodge Application Engineering with any custom mounting position questions.

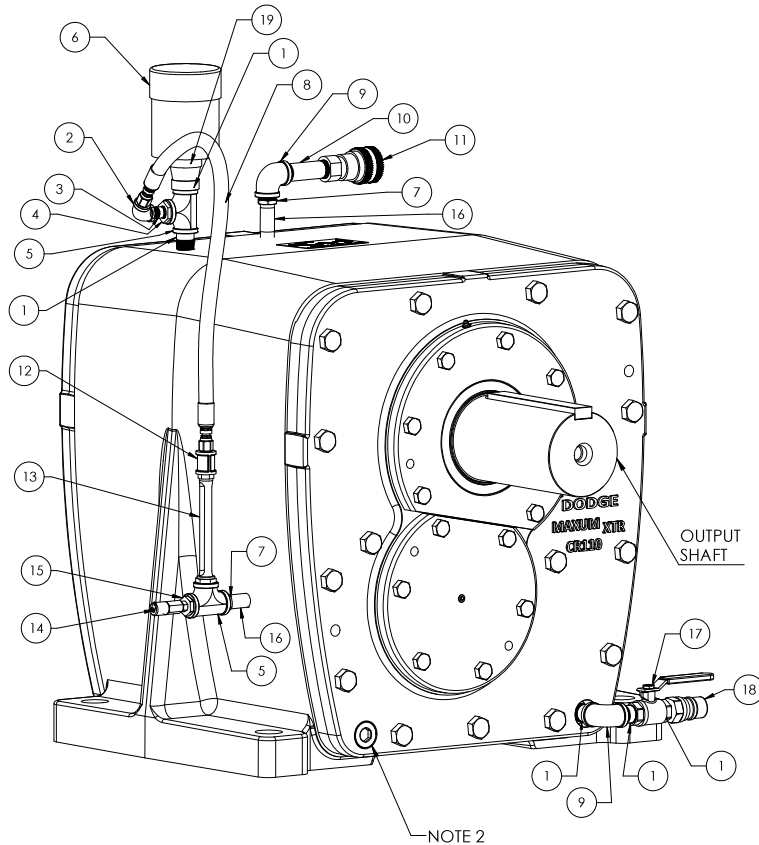
CR80 Reliability Kit Layout Oil Fill for Higher Speed Applications



Item	Part number	Description	Quantity
1	034530016EC	3/4" NPT X 2" PIPE NIPPLE	4
2	034650003AC	3/8" NPT (90° ELBOW)	1
3	034530012CC	3/8" X 1-1/2" PIPE NIPPLE	1
4	034600009AC	3/4" TO 3/8" NPT ADAPTER	2
5	034720005AC	3/4" NPT TEE	2
6	NOTE 1	HEAVY DUTY BREATHER	1
7	430079	3/4" TO 1/2" ADAPTER	2
8	454631-30	HOSE ASSEMBLY	1
9	034650005AC	3/4" NPT (90° ELBOW)	2
10	034530032EC	3/4" NPT X 4" PIPE NIPPLE	1
11	965908	FEMALE QUICK DISCONNECT	1
12	034630003AC	3/8" NPT PIPE COUPLING	1
13	967052	OIL SIGHT TUBE	1
14	453303-7	PITOT TUBE (7" LONG)	1
15	034600008AC	3/4" TO 1/4" ADAPTER	1
16	034530024DC	1/2" X 3" NPT PIPE	2
17	095967	3/4" BALL VALVE	1
18	965930	MALE QUICK DISCONNECT	1
19	034670005AC	3/4" NPT (90° STREET ELBOW)	2

NOTE:
 1. Hydra-Lock breather will come standard as shown. Other Dodge breathers are optional and will need to be requested at time of ordering.
 2. If MAG plug is removed to attach components, replace other lowest plug with MAG plug
 3. Item 14 and 455003 sampling port adapter (not shown) come from Trico Corporation, sampling collection supplies not supplied
 4. Check manual for optimal oil fill level. Contact Dodge Application Engineering with any custom mounting position questions.

CR90 - CR130 Reliability Kit Layout Oil Fill for Lower Speed Applications



Item	Part number	Description	Quantity
1	034530016EC	3/4" NPT X 2" PIPE NIPPLE	5
2	034650003AC	3/8" NPT (90° ELBOW)	1
3	034530012CC	3/8" X 1-1/2" PIPE NIPPLE	1
4	034600009AC	3/4" TO 3/8" NPT ADAPTER	1
5	034720005AC	3/4" NPT TEE	2
6	NOTE 1	HEAVY DUTY BREATHER	1
7	430079	3/4" TO 1/2" ADAPTER	2
8	454631-30	HOSE ASSEMBLY	1
9	034650005AC	3/4" NPT (90° ELBOW)	2
10	034530032EC	3/4" NPT X 4" PIPE NIPPLE	1
11	965908	FEMALE QUICK DISCONNECT	1
12	034630003AC	3/8" NPT PIPE COUPLING	1
13	967052	OIL SIGHT TUBE	1
14	453303-7	PITOT TUBE (7" LONG)	1
15	034600008AC	3/4" TO 1/4" ADAPTER	1
16	034530024DC	1/2" X 3" NPT PIPE	2
17	095967	3/4" BALL VALVE	1
18	965930	MALE QUICK DISCONNECT	1
19	A38814	1" X 3/4" BELL ADAPTER	1

NOTE:

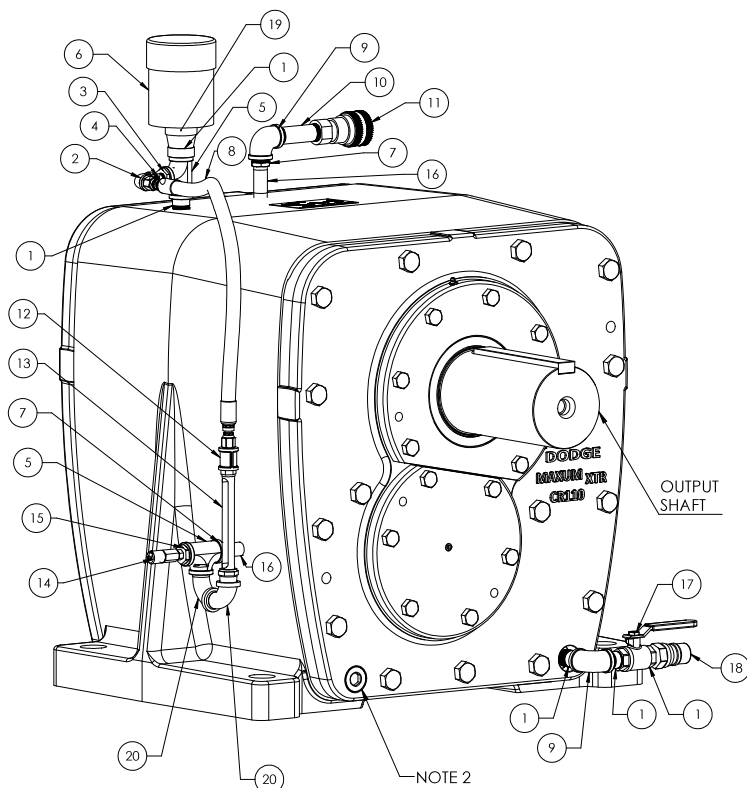
1. Hydra-Lock breather will come standard as shown. Other Dodge breathers are optional and will need to be requested at time of ordering.

2. If MAG plug is removed to attach components, replace other lowest plug with MAG plug

3. Item 14 and 455003 sampling port adapter (not shown) come from Trico Corporation, sampling collection supplies not supplied

4. Check manual for optimal oil fill level. Contact Dodge Application Engineering with any custom mounting position questions.

CR90 - CR130 Reliability Kit Layout Oil Fill for Higher Speed Applications



Item	Part number	Description	Quantity
1	034530016EC	3/4" NPT X 2" PIPE NIPPLE	5
2	034650003AC	3/8" NPT (90° ELBOW)	1
3	034530012CC	3/8" X 1-1/2" PIPE NIPPLE	1
4	034600009AC	3/4" TO 3/8" NPT ADAPTER	1
5	034720005AC	3/4" NPT TEE	2
6	NOTE 1	HEAVY DUTY BREATHER	1
7	430079	3/4" TO 1/2" ADAPTER	2
8	454631-30	HOSE ASSEMBLY	1
9	034650005AC	3/4" NPT (90° ELBOW)	2
10	034530032EC	3/4" NPT X 4" PIPE NIPPLE	1
11	965908	FEMALE QUICK DISCONNECT	1
12	034630003AC	3/8" NPT PIPE COUPLING	1
13	967052	OIL SIGHT TUBE	1
14	453303-7	PITOT TUBE (7" LONG)	1
15	034600008AC	3/4" TO 1/4" ADAPTER	1
16	034530024DC	1/2" X 3" NPT PIPE	2
17	095967	3/4" BALL VALVE	1
18	965930	MALE QUICK DISCONNECT	1
19	A38814	1" X 3/4" BELL ADAPTER	1
20	034670005AC	3/4" NPT (90° STREET ELBOW)	2

NOTE:

1. Hydra-Lock breather will come standard as shown. Other Dodge breathers are optional and will need to be requested at time of ordering.

2. If MAG plug is removed to attach components, replace other lowest plug with MAG plug

3. Item 14 and 455003 sampling port adapter (not shown) come from Trico Corporation, sampling collection supplies not supplied

4. Check manual for optimal oil fill level. Contact Dodge Application Engineering with any custom mounting position questions.

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