

Universal Field Installation Kit Assembly Instructions

Models 1020,
1120, 1050 and 1150

How to Use the Assembly Instructions

The instructions describe the assembly of the Smart Condition Monitoring System for the A+Plus and Y-Unit Gear Drives. It consists of an oil quality sensor, two vibration sensors, an Andon light (to show system status), an Edge Device, signal converter, ambient temperature sensor, speed sensor, optional current transducer, and an optional loss of oil sensor as shown in **Figure 1**. Not shown in **Figure 1** is the oil quality sensor, located in the high speed end drain, and the current transducer. **Table 1** shows the preferred sensor locations. Consult site survey and pictures submitted with it to determine sensor locations. These instructions apply to the units and configurations as listed in **Table 2**.

Figure 1 – Smart Condition Monitoring System for A and Y Gear Drive

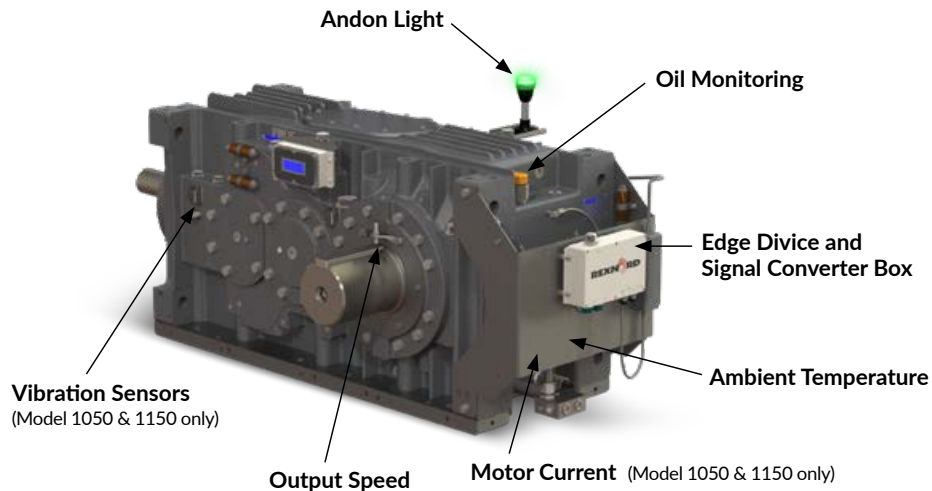


Table 1 – Preferred locations of sensors

Sensor	Preferred location	Remarks
Speed sensor	Low speed shaft end that couples to driven equipment	—
Low speed shaft vibration sensor (Model 1050 & 1150 only)	Next to low speed shaft seal cage	Same side as speed sensor
High speed shaft vibration sensor (Model 1050 & 1150 only)	Next to high speed shaft seal cage	Same side as speed sensor
Loss of oil sensor	Low speed end drain hole	—
Oil quality sensor	High speed end drain hole	—
Andon light	Top of housing near lifting lug	Same side as speed sensor

Table 2 – Size range of A+Plus and Y-Unit unit sizes that are covered in this manual

A1, A2, A3	AB2, AB3, AB4	Y1, Y2, Y3	YB2, YB3
385	385	2050	2050
405	405	2060	2060
425	425	2070	2070
445	445	2080	2080
465	465	2090	2090
485	485	2100	2100
505	505	2110	2110
—	—	2120	2120

Suggested assembly sequence: speed sensor, vibration sensors, Andon light, oil quality sensor, loss of oil sensor, Edge Device and signal converter, current transducer, wiring and cabling.

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Safety Requirements

The gear drive and power to Edge Device needs to be locked out during installation and troubleshooting.

Site Preparation

The gear drive that the Smart Condition Monitoring System will be assembled to needs to be drained of oil and locked out prior to the installation. Coupling guards on the high speed (input) and low speed (output) shaft need to be removed to gain access to the gear drive housing side walls and seal cages.

Speed Sensor Installation

This section covers the installation of the speed sensor. There are several different configurations for the speed sensor, depending on the gear drive and output shaft coupling arrangement. The configurations fall within two main categories – those using the cylindrical proximity sensor (see **Figures 2-8**) and those using the flat proximity sensor (see **Figures 9-14**). **Based on the site survey, the speed sensor configuration should already be selected and the corresponding parts included in the kit. However, the coupling dimensions should still be checked to ensure the proper configuration is being used and to determine which parts within the kit to use.**

It may be necessary to modify the coupling guard to accommodate the installation of the speed sensor. When fully assembled, create gaps no greater than 0.250" (6mm).

Cylindrical Proximity Sensor Installation

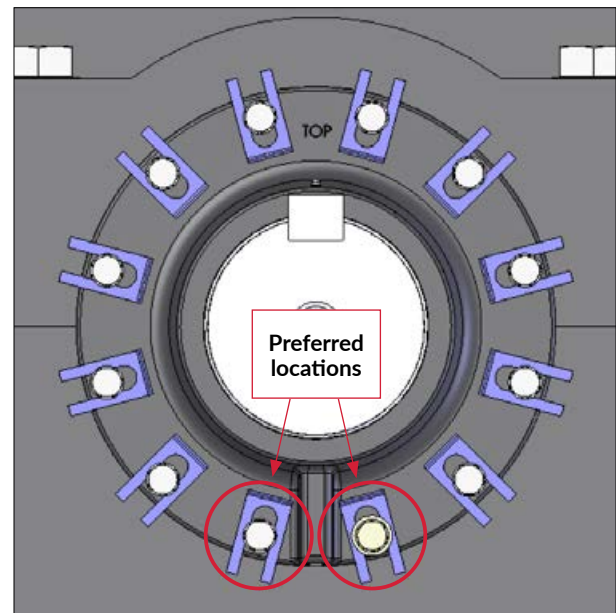
The cylindrical proximity sensor is used in conjunction with a magnetic target base and a pan head screw target. The magnetic target base is designed to be mounted to either the output shaft diameter, or, in some cases, the coupling hub OD. If the distance between the coupling hub on the output shaft and the seal cage / seal cover is greater than or equal to 38 mm [1.5"], the target can be mounted on the exposed shaft. If the distance is less than that, the target must be mounted to the coupling hub OD.

Note that if the distance between the coupling hub on the output shaft and the seal cage / seal cover is less than 38 mm [1.5"] AND the distance between the coupling hub and the seal cage bolting surface is greater than 43 mm [1.7"], the flat sensor solution should be used.

Solid Low Speed Shaft Mounted Target with Cylindrical Proximity Sensor Installation Procedure

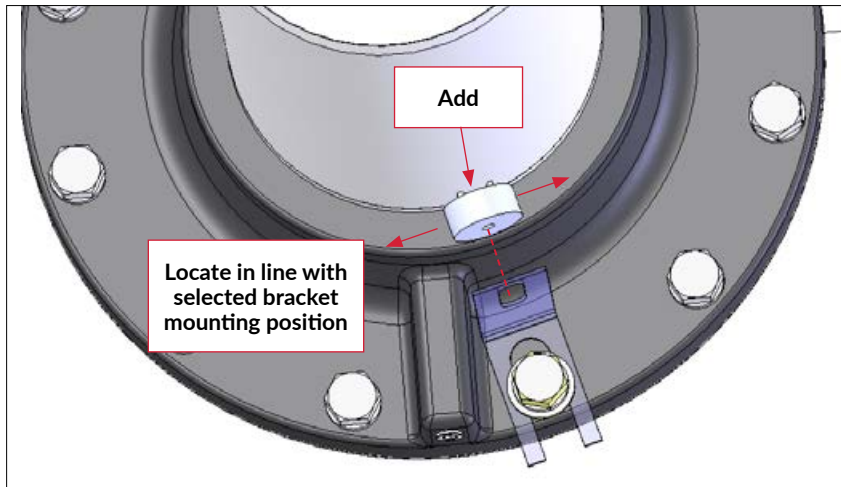
1. The bracket holding the speed sensor is to be installed in the location of one of bolts for the low speed seal cage. Select an appropriate location based on the application constraints. The preferred installation locations are shown in **Figure 2**.
2. Place the magnetic target base on the shaft with magnets parallel to the axis of the shaft. Apply the Devcon plastic welder epoxy between the base and the shaft. The epoxy is necessary to ensure sufficient retention of the target during all operating conditions.
 - a. Locate the base as close to the seal cage / seal cover as possible without touching.
 - b. To aid in alignment with the sensor, try to center the base as close to the sensor mounting bracket centerline as possible.
3. Install the ¼-28 pan head screw into the target base. Use Loctite #242 threadlocker or equivalent to secure the fastener from backing out during operation. *Note that the head of the pan head screw will act as the target for the proximity sensor.*
4. Remove the existing seal cage bolt in the location selected for installation of the cylindrical sensor bracket. Install the sensor bracket oriented with the open end of the slot towards the outside of the seal cage. Use the supplied replacement lock washer and new flat washer. Do not re-use the old bolt, but use the new bolt that is supplied.
 - a. *Note that some kits will include two seal cage bolts of different lengths. Use the one that is slightly longer than the old bolt. Discard the other.*
5. Install the cylindrical proximity sensor on the bracket. Adjust the position along the slot such that the sensor is centered on the target.

Figure 2 – Potential cylindrical speed sensor bracket mounting locations. Preferred locations are circled.



Speed Sensor Installation

Figure 3 – Locating the target base on the shaft

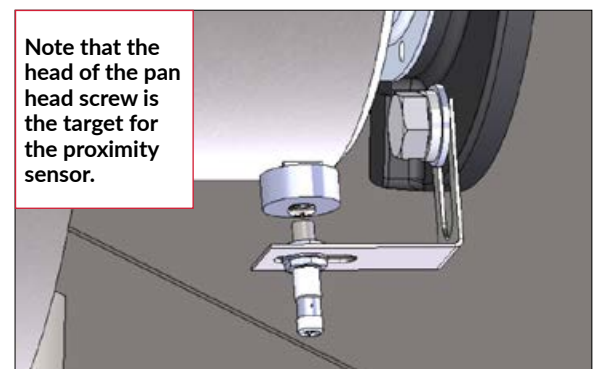


6. Adjust the assembly such that the **gap between the pan head screw and the face of the sensor is between 4 mm [0.16"] and 8 mm [0.31"]**. Adjustments can be made by:
 - a. moving the bracket position on the seal cage via the open ended slot and
 - b. by adjusting the sensor depth in the bracket slot
7. Torque the new seal cage bolt to the proper torque based on the size of the fastener.
 - b. *Note that the "legs" of the sensor bracket that extend past the outside diameter of the seal cage can be bent towards the gear drive housing to resist the bracket from rotating while torqueing the seal cage fastener.*
8. When the sensor is connected to the Edge Device, powered and detecting a target the LED's will illuminate.
9. It is important that no metal surround the sensing head of the cylindrical proximity sensor. If the sensor is inserted through a metal coupling guard, it is important that the sensing head is fully inside the metal coupling guard.

Figure 4 – Finished cylindrical sensor assembly showing bracket legs bent to resist rotation of the bracket during fastener torqueing



Figure 5 – Cylindrical proximity sensor assembly with coupling hub OD mounted target



Low Speed Shaft Coupling Hub OD Mounted Target with Cylindrical Proximity Sensor Installation Procedure

The procedure for installing the cylindrical proximity sensor with the target on the coupling hub OD is the same as with the target mounted on the shaft. The difference is that an alternate bracket is provided that is designed to reach the hub OD. Note that this design is only used when both the shaft mounted target and the flat proximity sensor solutions are not workable.

Speed Sensor Installation

Flat Proximity Sensor Installation Criteria

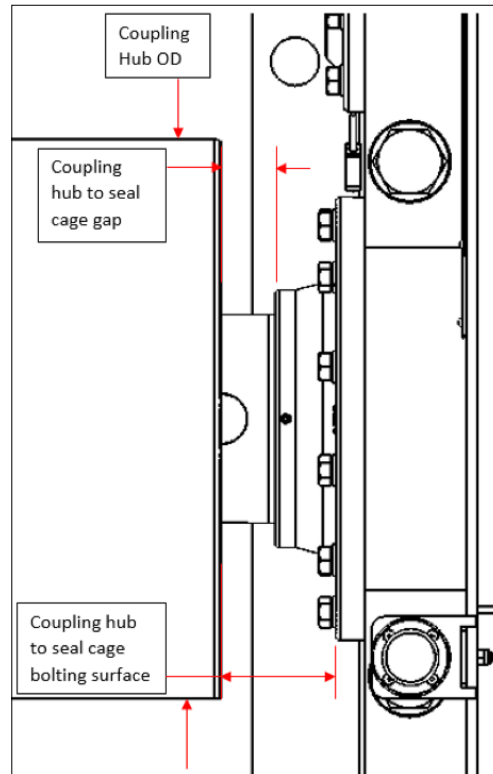
The flat proximity sensor is used when the distance between the coupling hub on the output shaft and the seal cage / seal cover is less than 38 mm (1.5") AND the distance between the coupling hub and the seal cage bolting surface is greater than 43 mm (1.7"). These distances are illustrated in **Figure 9**.

Additionally, the coupling hub OD must be checked to make sure the flat sensor can achieve line of sight with the target. For the following gear drive sizes, the minimum coupling hub ODs are listed in **Table 4**. **If the coupling hub OD is smaller than indicated, the flat proximity sensor cannot be used. See "Cylindrical Proximity Sensor Installation Criteria" earlier in this section.**

Table 4 – Min. coupling hub diameters for flat sensor

Gear Drive	Minimum Coupling Hub OD in (mm)
385A1, 2 and 3	8.32 (211)
405A1, 2 and 3	9.70 (246)
425A1, 2 and 3	9.57 (243)
445A1, 2 and 3	10.38 (264)
465A1, 2 and 3	11.07 (281)
485A1, 2 and 3	13.57 (345)
505A1, 2 and 3	15.71 (399)
2050Y1, 2 and 3	6.24 (158)
2060Y1, 2 and 3	6.86 (174)
2070Y1, 2 and 3	6.99 (178)
2080Y1, 2 and 3	7.74 (197)
2090Y1, 2 and 3	8.36 (212)
2100Y1, 2 and 3	9.24 (235)
2110Y1, 2 and 3	10.24 (260)
2120Y1, 2 and 3	10.24 (260)

Figure 9 – Critical dimensions for speed sensor install

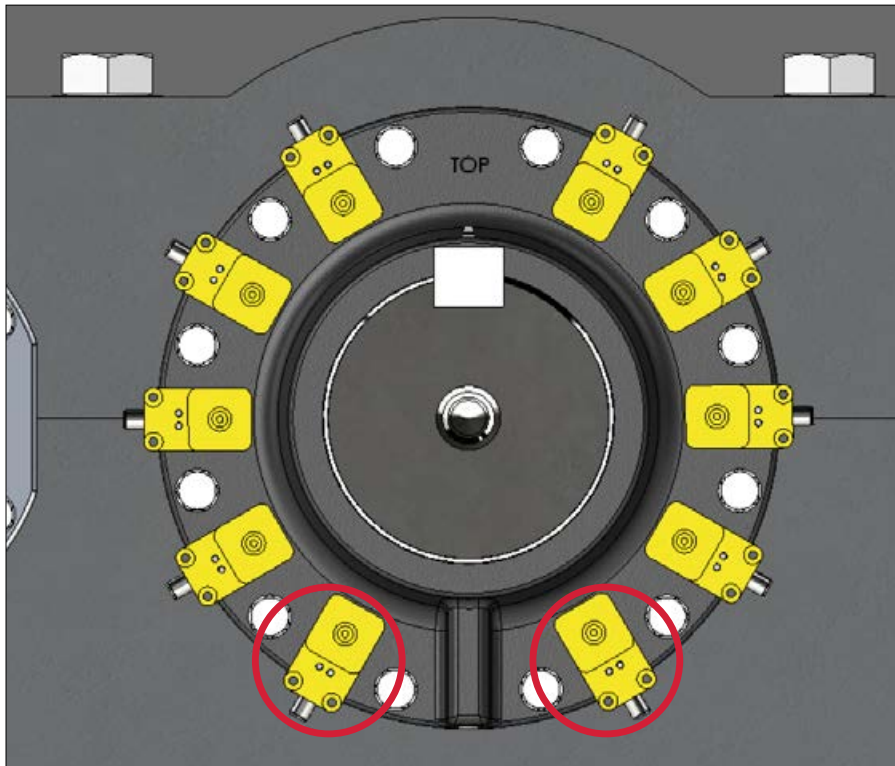


Speed Sensor Installation

Flat Proximity Sensor Installation Procedure for Solid Low Speed Shafts

1. The flat proximity sensor will be attached directly to the seal cage (optionally with a keystock spacer, when needed). Determine the most suitable location on the seal cage bolting surface to attach the proximity sensor. The following should be considered when determining where to place the sensor: Shape, size and location of coupling guard (to avoid interference), routing of cable back to Edge Device and general ease of access. See **Figure 10** for potential locations.

Figure 10 – Potential locations on the low speed seal cage for the flat proximity sensor. Preferred locations are circled.



2. Measure the distance between the coupling hub and the seal cage bolting surface. Based on that measurement, **Table 5** can be used as a general guide for what parts to use. The purpose of the various lengths of screws and the spacer are to achieve the proper axial gap between the sensor and the target across a variety of couplings and gear drives.

Table 5 – Part selection guideline for flat proximity sensor

Gap (mm)	Gap (in)	Use spacer key?	Pick one only – y's indicate potentially acceptable choices				
			Use 0.5" screw?	Use 0.625" screw?	Use 0.75" screw?	Use 1.0" screw?	Use 1.25" screw?
45	1.77	n	y	y	n	n	n
50	1.97	n	n	y	y	n	n
55	2.17	n	n	n	y	y	n
60	2.36	n	n	n	n	y	y
65	2.56	n	n	n	n	n	y
70	2.76	y	n	n	n	n	n
75	2.95	y	n	y	y	n	n
80	3.15	y	n	n	y	y	n
85	3.35	y	n	n	n	y	y
90	3.54	y	n	n	n	n	y
95	3.74	y	n	n	n	n	y

Speed Sensor Installation

- Epoxy the target base disc (CTC part MH130-1A) to the coupling hub face, with the grooved surface towards the hub and the tapped hole toward the gear drive. Make sure to position the disc such that it will align with the proximity sensor when the sensor is attached. The sensor has a “crosshair” on the surface to indicate the center of the sensing area. (see **Figure 11.**)
- Epoxy the sensor to the seal cage location previously selected on the seal cage bolting surface. Note that if it was identified (based on the gap measured) that the spacer key is needed, epoxy the spacer to the seal cage, then the sensor to the key. **MAKE SURE TO ALIGN THE SENSOR CROSSHAIRS WITH THE CENTER OF THE TARGET DISC.** This is necessary for the sensor to detect the target. (See **Figure 12.**)

a. Note: In some situations, the hub diameter will be too small to align the target base center with the sensor crosshair. In these situations, the oversized (3" OD) washer is to be used as the target. This sensor crosshair should align with the face of the washer.

Figure 11 – Flat proximity sensor



Figure 12 – Flat proximity sensor alignment with target base

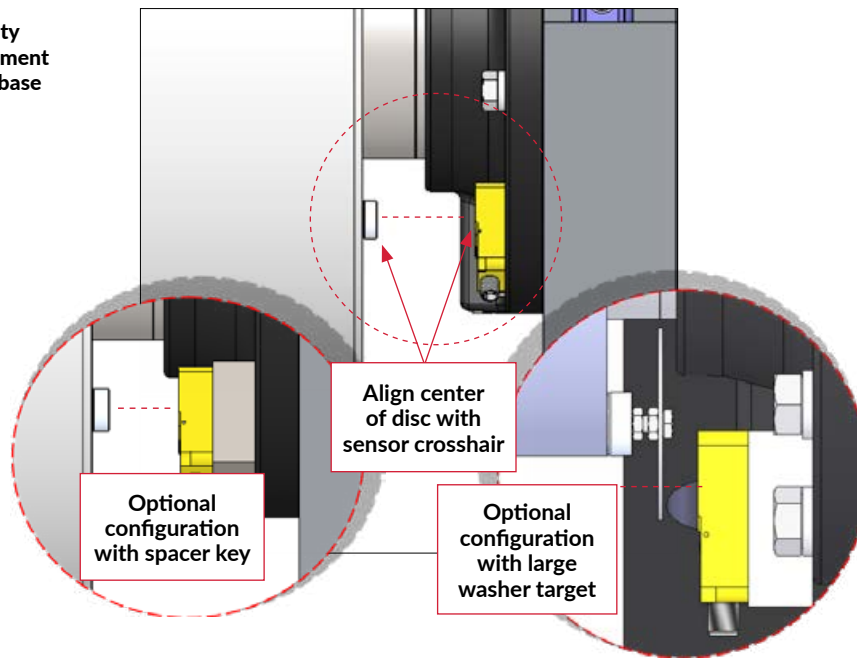
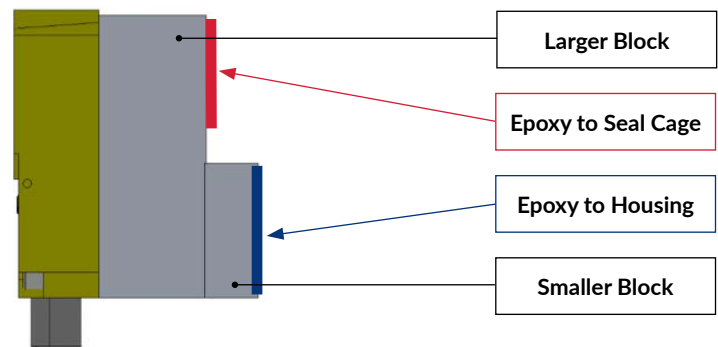


Figure 13 – Flat Proximity sensor assembly with double spacer block

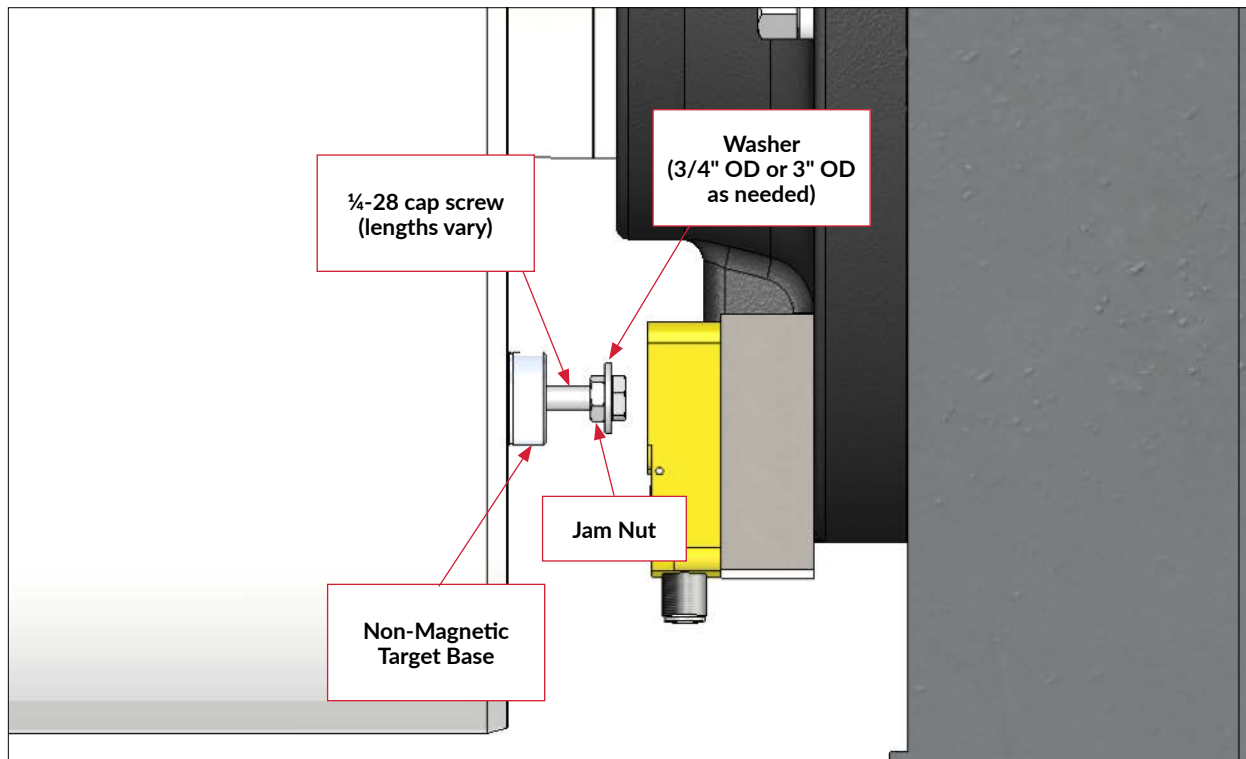
- If the double spacer block is provided, assemble flat proximity sensor to the two blocks using the two #10-24 socket headed cap screws. Then epoxy the larger block to the seal cage, and epoxy the smaller block to the housing. **DO NOT** epoxy the two blocks together. (See **Figure 13.**)



Speed Sensor Installation

6. Using the appropriate length ¼-28 cap screw from your kit, assemble the flat washer to the target base to achieve the required target gap. The cap screw is used to position the washer at an appropriate distance from the sensor. The jam nut is used to secure the washer in place at the head of the cap screw. A second jam nut is provided to secure the cap screw to the base if needed (See **Figure 11**).
 - a. Note that the washer becomes the target, not the head of the fastener. Therefore, when the target to sensor gap is checked in this configuration, make sure the measurement is taken from the washer to the sensor.
 - b. Note that two washer diameters are included in the package. Use the large OD washer only when needed, per above instructions.

Figure 14 – Flat Proximity sensor assembly with target extension via cap screw and washer



7. When assembly is complete, double check that gap between target and sensor face is between 4 mm [0.16"] and 16 mm [0.63"]. Also check and confirm that gap between sensor face and coupling hub is greater than 23 mm [0.91"].
8. When the sensor is properly connected and powered, the green LED will illuminate. When the sensor is connected, powered, and is detecting a target, the yellow LED will illuminate.
9. It is important that no metal is present between the 40mm square sensing surface of the flat proximity sensor and the target. If the sensor is sensing through a metal coupling guard, it is important that the space between this sensing surface and the target is unobstructed by the metal coupling guard.

Vibration Sensor Installation (Model 1050 & 1150 only)

The two vibration sensors and the Andon light are to be installed on the same side of the gear drive to have serial cables running along just one side of the gear drive. The preferred side to mount these components, for parallel shaft gear drives, is the side where the motor drives the high speed input shaft. For right-angle, foot mounted gear drives, there is no preferred side.

The vibration sensor is to be mounted to a mounting plate. The mounting plate is bolted to the side of the housing cover as shown in the exploded view in **Figure 15** and being installed on a foot mounted gear drive in **Figure 15**. **Table 6** shows the parts list of the vibration sensor.

Figure 15 – Exploded view of the vibration and oil quality sensor assemblies

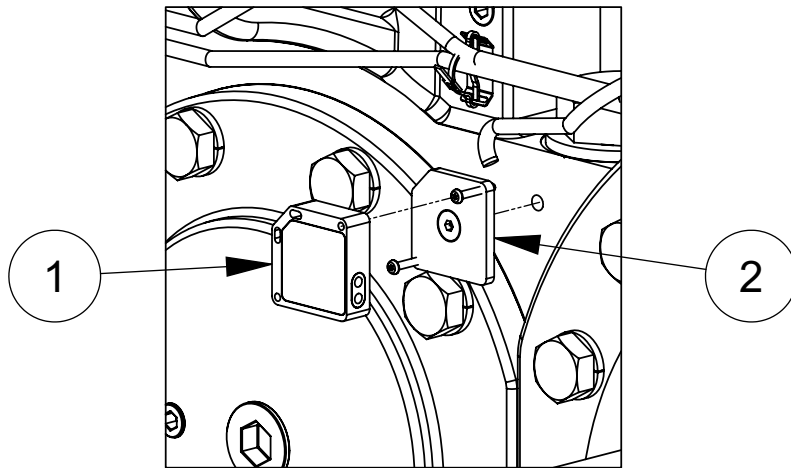
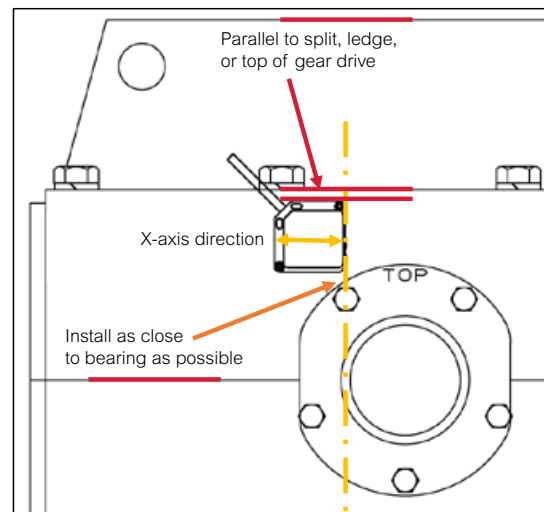


Table 6 – Vibration sensor parts lists

Item number	Description	Quantity
1	VIBRATION SENSOR	2
2	CENTER MOUNTING BRACKET W/SCREWS AND THERMAL TAPE	2

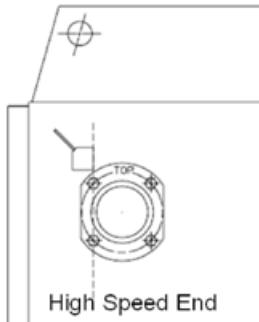
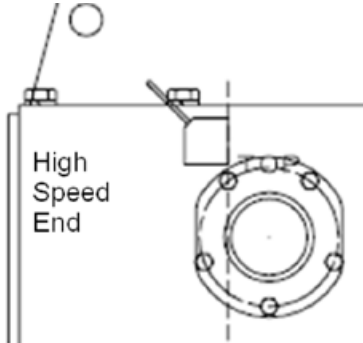
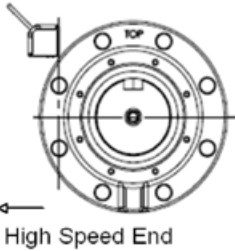
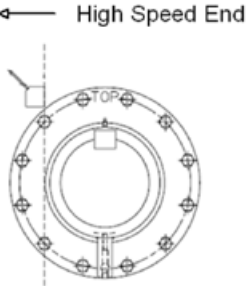
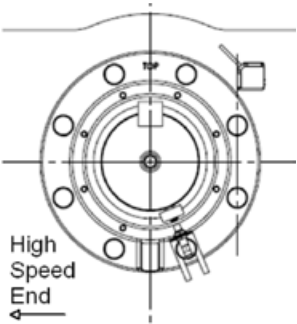
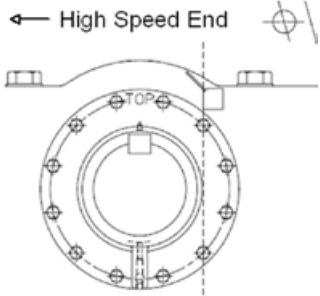
Both sensor and mounting plate have a short edge that is at a 45 degree angle to its neighbors. This 45 degree edge where the cable exits will be oriented at 11 o'clock when the mounting plate is attached to the housing cover. See **Figure 16** and **Figure 17** for placement and orientation of the sensor relative to the seal cage, shaft cover or end cover. Avoid drilling into the bore of a split bolt by moving the mounting plate such that its bore is far enough away from the split bolt. The vibration sensors are to be mounted on the split face near the high and low speed seal cage/end cover/shaft cover as shown in **Table 7**. Its pictures show an imaginary vertical centerline through one or two of the bolts that are used to mount the seal cage to the housing. One edge of the sensor is to be on or parallel to the imaginary centerline. The sensor edges perpendicular to the imaginary centerline are to be parallel to the ridge of the face where the split bolt heads are resting, see **Figure 16**. Leave a gap of no more than 0.25 inch between the lower edge of the sensor and the seal cage.

Figure 16 – Placement and orientation of vibration sensor



Vibration Sensor Installation

Table 7 – Placement of vibration sensors for high and low speed shafts

High speed seal cage with four bolts	High speed seal cage with five bolts
	
High speed seal cage with eight bolts	High speed seal cage with twelve bolts
	
Low speed seal cage with eight bolts	Low speed seal cage with twelve bolts
	

The mounting plates are to be bolted to the housing cover using the 0.25 inch - 28 bolt. Use a 0.213 inch diameter bit (#3) to drill the hole about 0.512 inch deep. **DO NOT DRILL THROUGH OR DEEPER.** Tap to a minimum 0.335 inch thread depth. When mounting the plate to the housing wall attach the thermal tape **between the wall and the mounting plate.** See **Figure 18** for example of the mounting plate installation. The vibration sensor is bolted to the plate with two stainless steel M3 bolts.

Vibration Sensor Installation

If it is impossible or impractical to attach the mounting plate with the bolt because of interference from accessories, other components, or lack of sufficient clearance; inadequate reach of the drill; or the hole cannot be drilled safely, the plate may be epoxied using 2 PART DEVCON PLASTIC WELDER, SAP material number 10724955. The thermal tape will not be used when the plate is epoxied. The surface where the plate attaches to the housing needs to be roughened with sandpaper and cleaned thoroughly to ensure proper adhesion of the epoxy. When mounting the plate to the epoxy ensure that the threaded holes in it stay clear of any epoxy, for example by threading the bolts into the holes.

Figure 17 – Vibration sensor on split face of housing cover with 45 degree edge at 11 o'clock and cable to top left



Figure 18 – Bolting vibration sensor mounting plate to housing cover wall



Andon Light Installation

Figure 19 shows the components needed to assemble the Andon light. For foot mounted gear drives, the two vibration sensors, the speed sensor and the Andon light are to be installed on the same side of the gear drive to have cables running along just one side of it. There are two mounting brackets. One is used for A and Y units that have housing covers shaped as in **Figure 22** without rounds at the lifting hole bores. The other mounting bracket is used on older Y unit housing covers that have a rounded, sloped section near the low speed end as shown in **Figure 21**.

The mounting bracket, grommet and the mounting bracket fastener will be used separate from the rest of the components. They can be assembled according to **Figure 20** first and bolted to the bracket once it is in place.

Figure 19 – Components of the Andon light assembly



Andon Light Installation

Figure 20 – Exploded view of Andon light assembly

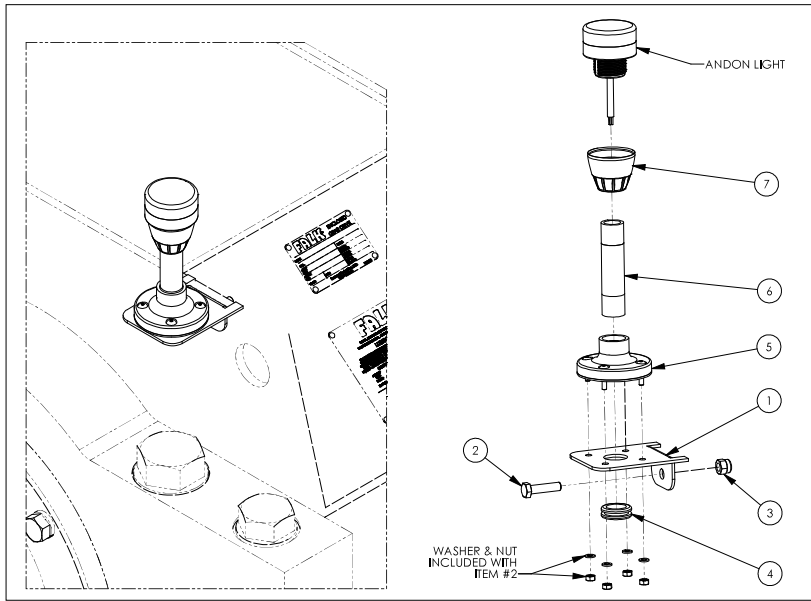
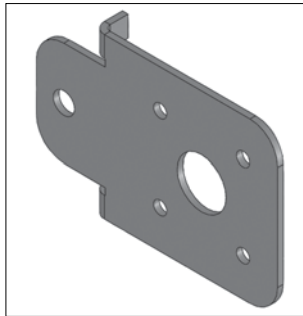


Table 8 – Andon light mounting parts

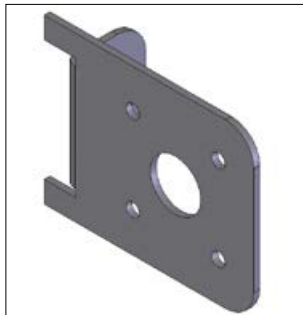
Item number	Description	Quantity
1	ANDON LIGHT BRACKET	1
	ANDON LIGHT BRACKET (old Y-units)	1
2	CAP- SCREW HEX HD 0.313-18UNC X 1.250, ZINC PL	1
3	LOCKNUT HEX. LIGHT TYPE NE 0.313-18UNC ZINC PL	1
4	GROMMET, RUBBER PUSH-IN, 13/16"	1
5	ANDON LIGHT MOUNTING FLANGE	1
6	CONDUIT NIPPLE ELECTRICAL 0.50-14NPT X 3.50	1
7	ADAPTER PIPE - ANDON	1
-	ANDON LIGHT	1

Figure 21 – Y units with sloped and rounded section near low speed end



Use mounting bracket part number 10716680

Figure 22 – A and Y units without rounded section at low speed end



Use mounting bracket part number 10674013

Andon Light Installation

To mount the bracket position it on top of the ridge on the housing cover near the lifting hole (see **Figure 23**) on the same side that the vibration sensors are mounted as shown in **Figure 1**. Drill a hole for a 5/8 inch diameter fastener using a 0.67 inch (#51) bit as far away from the lifting hole as possible without drilling through into the interior of the housing, **Figure 24**. Mount the bracket with grommet inserted using the 5/8 inch diameter fastener and locknut to housing cover. Thread connector through grommet and mount light subassembly to bracket using M5 fasteners, lock washers and nuts. **Figure 25** shows the mounted assembly. **Figure 26** shows the mounted assembly when attached to the edge mounting plate.

Figure 23 – Andon light bracket positioned near lifting hole



Figure 24 – Hole drilled for Andon light bracket



Figure 25 – Assembled Andon light



Figure 26 – Assembled andon light mounted on edge mounting plate



Oil Quality Sensor Installation

The oil quality sensor will be installed in the high speed end drain hole of the gear drive. The gear drive must be drained of oil when installing it. **Figure 27** shows the components of the oil quality sensors. The longer part, on the right, is the sensor with a cover. The part on the left is the plug adapter that threads into the drain hole in the housing base. Exploded view in **Figure 28**. **Table 9** shows the two most common plug adapter sizes and the gear drives they are used on. Use Loctite Pipe Joint Compound, Permatex Pipe Joint Compound, or equivalent only on the NPT threaded connection between the plug adapter and the housing. Do not use joint compound on the straight threads of the oil quality sensor.

Figure 29 shows the assembled sensor with its connector and sensor cover installed.

Table 9 – Oil quality sensor plug adaptor size and which gear drives used on

Drain hole thread size	Used on these gear drives
1.000-11.5 NPT	2050 through 2070 Y, YB
1.25-11.5 NPT	385 through 505 A, AB and 2080 through 2120 Y, YB

Figure 27 – Components of the oil quality assembly



Table 10 – Oil quality sensor parts list

Item number	Description	Quantity
3	PLUG ADAPTER, MALE & FEMALE - 1.25-11.5 NPT X 0.75-16UNF - 2B	1
	PLUG ADAPTER, MALE & FEMALE-1.000-11.5 NPT X 0.75-16UNF - 2B	1
4	OIL QUALITY SENSOR	1
5	OIL QUALITY SENSOR COVER	1

Figure 28 – Exploded view of the oil quality sensor assembly

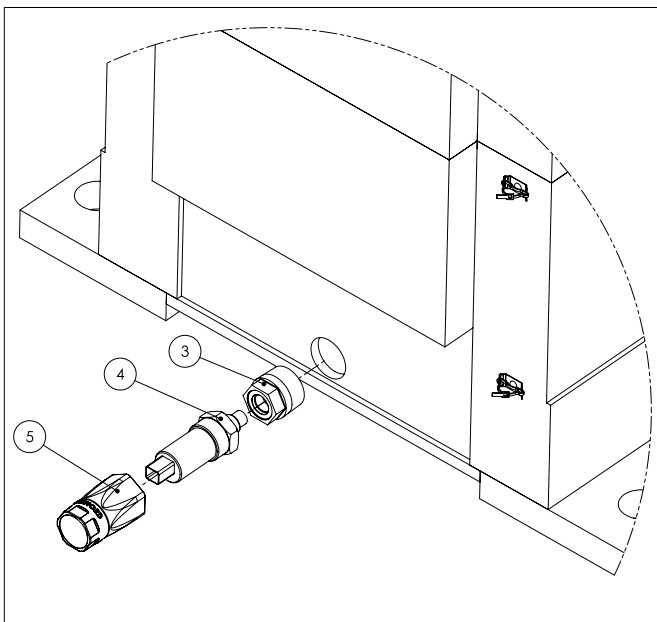


Figure 29 – Assembled and wired oil quality sensor



Loss of Oil Sensor Installation

This section covers the installation of the loss of oil sensor. The loss of oil sensor should be installed in the drain port on the low speed end of the unit. It may also be installed in the drain port on the high speed end of the unit if one is present.

The loss of oil sensor is assembled to the anti-foam block using two tube fittings and a pre-cut length of tube. This minimizes tolerance stack up vertically on the assembly and allows precise location of the loss of oil sensor relative to the gearbox. Note that when the loss of oil sensor assembly is complete, it will be located between the gearbox and the Edge Device mounting bracket (when the Edge Device is mounted on the same end of the unit as the loss of oil sensor). Therefore, it is recommended to install the loss of oil sensor prior to installing the Edge Device mounting bracket.

Installation Procedure

The gear drive must be drained of oil when installing the loss of oil sensor assembly.

If there is an existing sight glass, ball valve, or quick disconnect fitting(s) present in the port needed for installation, remove those accessories. If possible, re-install those accessories in another drain port or look for additional documentation with the parts to indicate other, custom arrangements.

See exploded view **Figure 30** and **Table 11** for a list of parts.

Figure 30 – Exploded view of the loss of oil sensor assembly

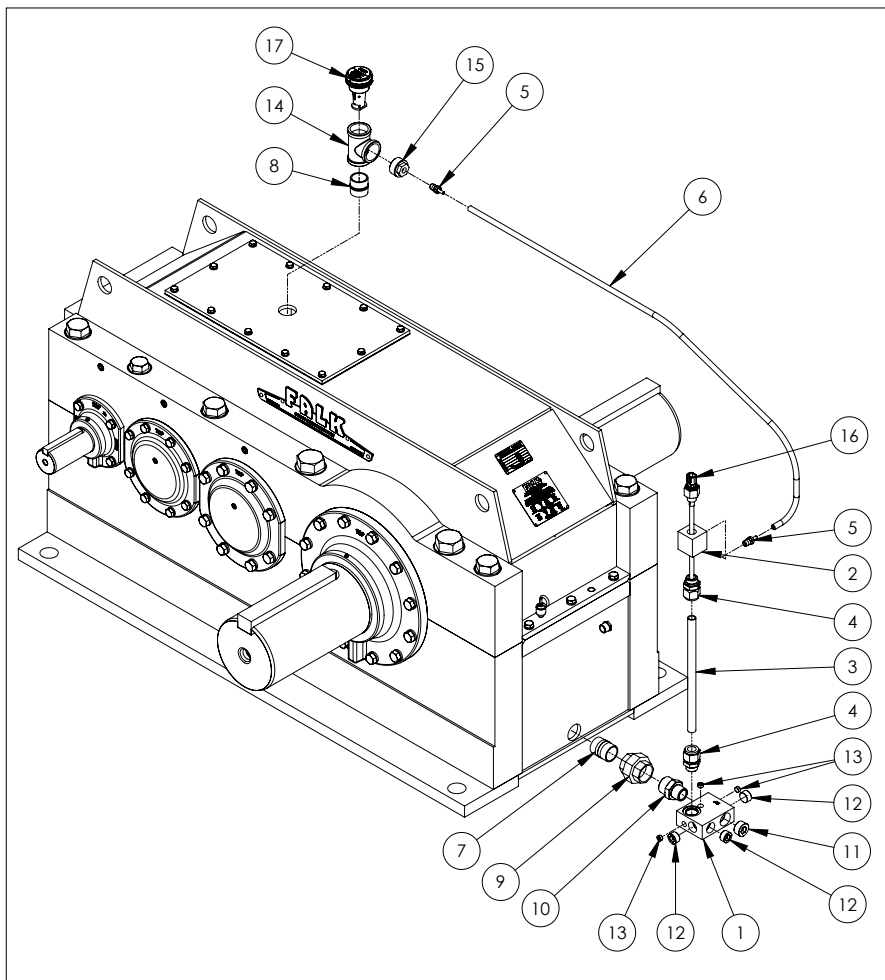


Table 11 – Loss of oil sensor parts list for the lower fitting kit and 1.25-11.5NPT thread

Item number	Description	Quantity
1	ANTI-FOAM BLOCK	1
2	TEE MANIFOLD	1
3	CUT TO LENGTH TUBE	1
4	TUBE FITTING, STRAIGHT	2
5	BARB FITTING, STRAIGHT	2
6	HOSE	1
7	PIPE NIPPLE	1
8	PIPE NIPPLE	1
9	PIPE COUPLING	1
10	PIPE THREAD ADAPTER	1
11	PIPE PLUG, 1.000\" NPT	1
12	PIPE PLUG, 0.750\" NPT	3
13	PIPE PLUG, 0.250\" NPT	3
14	TEE PIPE THREAD ADAPTER	1
15	PIPE BUSHING	1
16	LOSS OF OIL SENSOR	1
17	AIR VENT ASSEMBLY	1

Loss of Oil Sensor Installation

- Install the pipe nipple (item 9) in the drain hole in the gearbox. If present, install the threaded adapter as well (item 10).
- Install the anti-foam block (item 1) to the pipe nipple or threaded adapter. Use Loctite Pipe Joint Compound or equivalent on all tapered pipe threads.
- Rotate the anti-foam block until the side labeled “top” is oriented upward. Take care to orient the long side of the anti-foam block as close to parallel with the gearbox split line as possible.
- Install one of the tube fittings (item 4) into the SAE port on the top surface of the anti-foam block. Do not use pipe joint compound on this connection. Tighten to 110-115 ft-lbs (149-156 Nm). Leave the nut on the tube end of the fitting loose.
- Install the cut to length tube (item 3) into the tube end of the tube fitting installed in the anti-foam block. Take care to ensure the tube is fully seated in the fitting. There is a machined stop in the fitting to locate the tube.
- Tighten the nut on the first tube fitting to secure the tube in place.
- Install the second Tube fitting (item 4) on the top of the tube, taking care to ensure the fitting is fully seated on the tube. There is a machined stop in the fitting to locate the tube.
- Tighten the nut on the second tube fitting to secure it to the tube.
- Install the tee manifold (item 2) on the second tube fitting. Take care to ensure the SAE port on the manifold is used for this connection. Torque to 110-115 ft-lbs (149-156 Nm).
- Rotate the tee manifold such that the side port is oriented to allow for the vent line to be plumbed without interference with the gearbox, edge mounting bracket, or other accessories.
- Install the barbed fitting (item 6) in the side port of the tee manifold.
- Remove any previously existing air vent assembly installed in the inspection cover of the unit.
- Install the pipe nipple (item 8) and the pipe tee (item 14) in the tapped hole in the inspection cover. Use pipe joint compounded on tapered threaded connection.
- Install the pipe reducing bushing (item 15) and barbed tube fitting (item 5) into the side port of the pipe tee. Use pipe joint compounded on tapered threaded connection.
- Connect the flexible rubber vent hose (item 7) to the barbed fitting on the top vent of the unit and the barbed fitting on the side of the tee manifold. It will need to be trimmed to length. **DO NOT LOOP OR KINK THE HOSE.** Having the vent hose open and clear is critical to the proper operation of the loss of oil sensor.
- Install loss of oil sensor (item 16) in the top of the tee manifold. Use pipe joint compounded on tapered threaded connection.
- Re-install other, related accessories as needed (oil sight glass, breather, etc.) Use pipe joint compounded on tapered threaded connections.
- Install pipe plugs in all unused ports. Use pipe joint compounded on tapered threaded connections.

Figure 31 – Loss of oil sensor assembly



Current Transducer Installation (Model 1050 & 1150 only)

See [Rexnord Smart Condition Monitoring System Installation Manual SS3-001](#) available on [Rexnord.com](#).

Edge Device and Signal Converter Installation

All A and Y unit field upgrades will utilize the same edge mounting assembly. The preferred mounting location for this is near the low speed end of the gearbox, but other locations (such as on the high speed end of the gearbox) can be used if needed. Remote mounting (mounting to something other than the gearbox itself) can be done but may require longer cables to accommodate.

Never install the Edge Device upside down, sideways, or at any angle other than the upright position pictured in these instructions.

The edge mounting plate is attached to the gearbox via a single piece of Unistrut with two socket head capscrews. Holes will need to be drilled and tapped in the housing to support this. It is critical to ensure the location selected has sufficient housing thickness in the area to support the depth needed for the tapped holes. Additionally, the mounting holes should be spaced apart from each other sufficient to provide a stable mounting surface (minimum of 8" apart). See **Figure 32** for location and **Figure 34** for an exploded assembly.

Edge Device & mounting assembly installation procedure

- Drill and tap 2x 5/16"-18 holes to mount the Unistrut to the housing. Per Figure 1, space the holes at least 8" apart for stability and ensure the hole locations align with the Unistrut slots. Use a 0.257" diameter drill bit (size F) and drill about 0.454" deep. DO NOT DRILL THROUGH OR DEEPER. Tap to a minimum of 0.354" of thread depth.
- Before securing the Unistrut to the housing, check the installed height. If necessary, the Unistrut can be cut shorter for smaller gearboxes or areas with limited space.
- Install the Unistrut (item 4 in **Table 12**) to the housing using the supplier 5/16"-18 socket head capscrews and washers (items 5, 6, and 7).
- Install the power supply to the back side of the edge mounting plate (item 1) using the #8 socket head capscrews and washers (items 13 and 14).
- Install the spring nuts (item 11) in the Unistrut channel, roughly positioning them based on the corresponding holes in the edge mounting plate.
- Install the edge mounting plate (with power supply mounted) to the Unistrut using the 1/2"-13 hex head capscrews and washers (items 8, 9, and 10) and spring nuts.
- Install the Edge Device to the edge mounting plate using the #12 socket head capscrews and washers (items 2 and 3). Use Loctite #242 threadlocker or equivalent on threads.
- Install the signal converter (if provided) to the edge mounting plate using the Clamp hose (Item 15) secured with Hex head capscrews (item 16). Use Loctite #242 threadlocker or equivalent on threads.
- Attach Unistrut end caps (item 12) to top and bottom of Unistrut to prevent snagging.

Figure 32 – Location of Edge Device assembly on gearbox

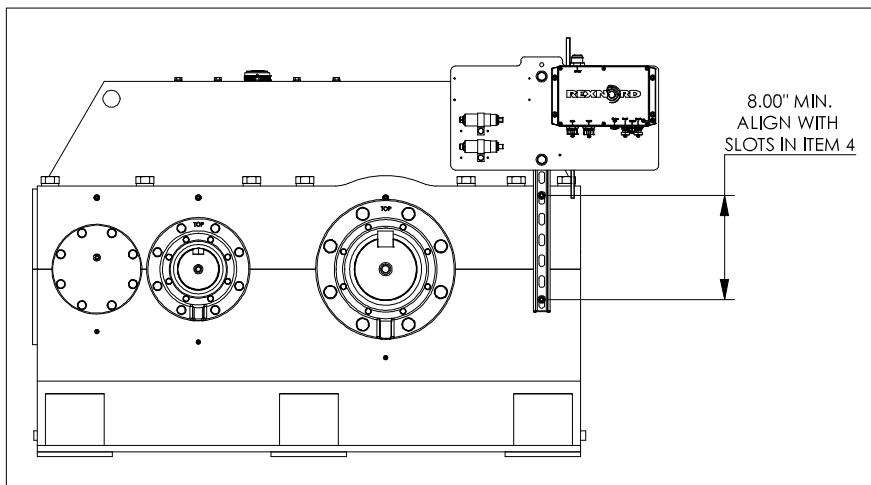


Figure 33 – Assembled andon light mounted on edge mounting plate



Edge Device and Signal Converter Installation

Figure 34 – Exploded view of foot mounted gear drive Edge Device and signal converter assembly

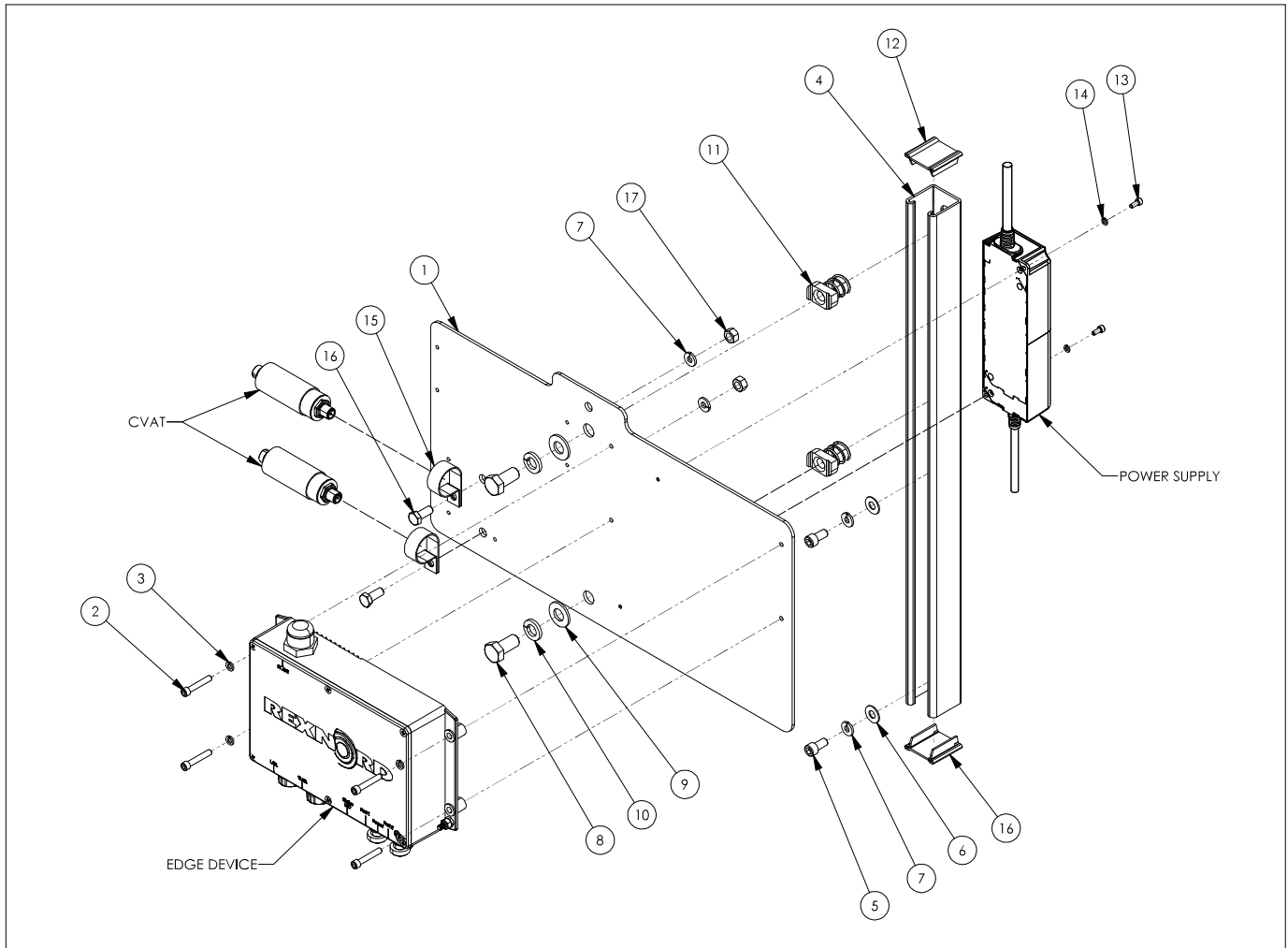


Table 12 – Parts list of the Edge Device mounting for foot mounted gear drives

Item number	Description	Quantity
1	EDGE DEVICE MOUNTING PLATE	1
2	SOCKET HEAD CAP SCREW, #12-24UNC X 1-1/4"	4
3	LOCK WASHER #12	4
4	CHANNEL 1-5/8" x 1-5/8" SLOTTED, 32 IN	1
5	SOCKET HEAD CAPSCREW, 0.312-18UNC x 0.625"	2
6	FLAT WASHER, 316SS	2
7	LOCKWASHER, 0.312", ZP	4
8	HEX HEAD CAP SCREW, 1/2-13UNC X 1"	2
9	FLAT WASHER, 0.095 THK.	2
10	LOCK WASHER, 1/2"	2
11	CHANNEL NUT WITH SPRING, 1-5/8" SERIES, 1/2-13UNC	2
12	UNISTRUT END CAP	2
13	SOCKET HEAD CAPSCREW, #8-32UNC x 0.375"	2
14	LOCKWASHER #8	2
15	CLAMP HOSE, 1.187" ID, Ø0.343" HOLE	2
16	HEX HEAD CAPSCREW, 0.312-18UNC x 0.750"	2
17	HEX NUT, 0.312-18UNC	2

Wiring/Cable Routing

There are two different wiring schematics, depending on your exact model. The 1020 and 1120 models are shown in **Figure 36** while the 1050 and 1150 models are shown in **Figure 37**. Note that there are stickers on the sensors that correlate with the sensor ID values indicated in the schematics. For vibration sensors on 1050 and 1150 models, care must be taken to ensure the right sensor ID is located in the right spot.

The speed sensor, loss of oil sensor and current transducer (1050 and 1150 models only) connect to the signal converter using unique connectors that fit each specific sensor and connect to an identical M12 8-position connector to the signal converter. The signal converter is programmed with a unique sensor ID in the Rexnord Edge software depending on they type of sensor it is connected to. (see **Figure 35**).

Figure 35 – Sensor connection to signal converter



Figure 36 – Wiring schematic for sensor connections (1020 & 1120 models)

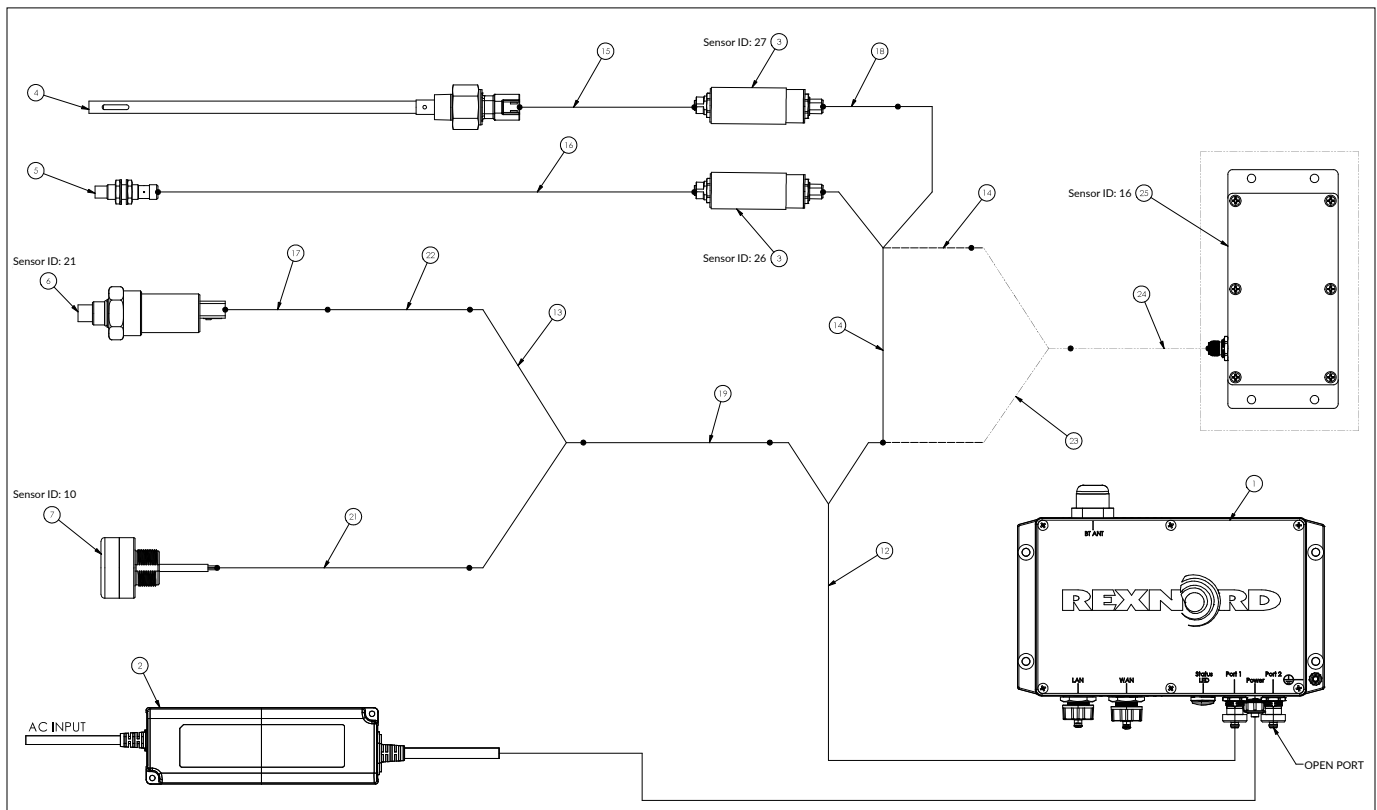


Table 13 – Item list for sensors and cables (1020 & 1120 models)

Item No.	Description	Quantity
1	EDGE DEVICE	1
2	AC POWER SUPPLY	1
3	SIGNAL CONVERTER	2
4	LOSS OF OIL SENSOR	1
5	SPEED SENSOR	1
6	OIL QUALITY SENSOR	1
7	ANDON LIGHT	1
12	SERIAL Y-CABLE (0.5M LONG)	1
13	SERIAL Y-CABLE (0.5M LONG)	1
14	SERIAL CABLE (0.5M LONG)	1

Item No.	Description	Quantity
15	LOSS OF OIL SENSOR CABLE (1.0M LONG)	1
16	SPEED SENSOR CABLE (3M LONG)	1
17	OIL QUALITY SENSOR CABLE (LENGTH VARIES)	1
19	SERIAL CABLE (LENGTH VARIES)	1
21	SERIAL CABLE (0.5M LONG)	1
22	SERIAL CABLE (LENGTH VARIES)	1
23	SERIAL Y-CABLE (0.25M LONG - OPTIONAL)	1
24	SERIAL CABLE (2M LONG - OPTIONAL)	1
25	DISPLAY (OPTIONAL)	1

Wiring/Cable Routing

Figure 37 – Wiring schematic for sensor connections (1050 & 1150 models)

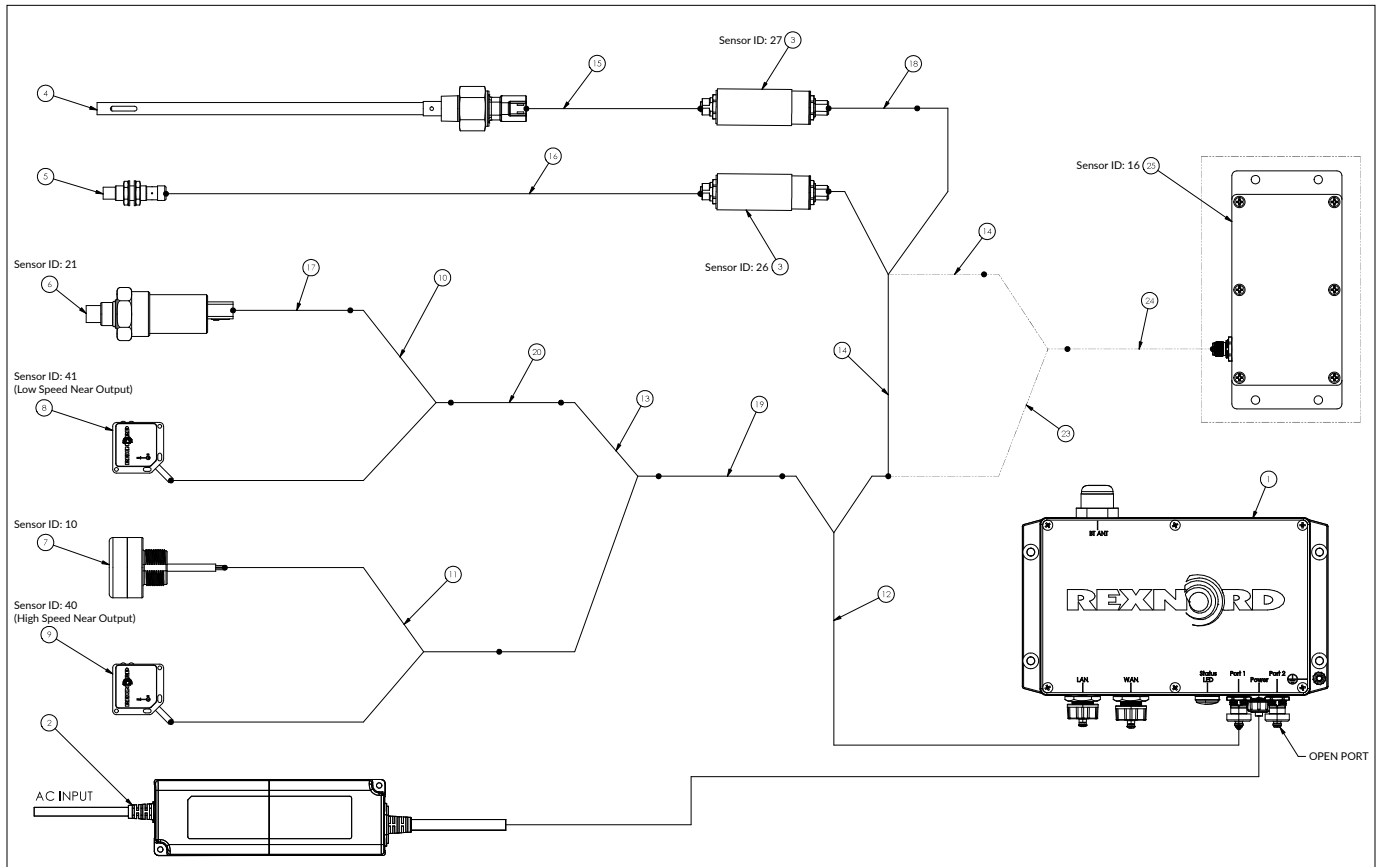


Table 14 – Item list for sensors and cables (1050 & 1150 models)

Item number	Description	Quantity
1	EDGE DEVICE	1
2	AC POWER SUPPLY	1
3	SIGNAL CONVERTER	2
4	LOSS OF OIL SENSOR	1
5	SPEED SENSOR	1
6	OIL QUALITY SENSOR	1
7	ANDON LIGHT	1
8	VIBRATION SENSOR (NEAR OUTPUT)	1
9	VIBRATION SENSOR (NEAR INPUT)	1
10	SERIAL Y-CABLE (0.25M LONG)	1
11	SERIAL Y-CABLE (0.25M LONG)	1
12	SERIAL Y-CABLE (0.5M LONG)	1

Item number	Description	Quantity
13	SERIAL Y-CABLE (0.5M LONG)	1
14	SERIAL CABLE (0.5M LONG)	1
15	LOSS OF OIL SENSOR CABLE (1.0M LONG)	1
16	SPEED SENSOR CABLE (3M LONG)	1
17	OIL QUALITY SENSOR CABLE (LENGTH VARIES)	1
18	SERIAL CABLE (LENGTH VARIES)	1
19	SERIAL CABLE (LENGTH VARIES)	1
20	SERIAL CABLE (LENGTH VARIES)	1
23	SERIAL Y-CABLE (0.25M LONG - OPTIONAL)	1
24	SERIAL CABLE (2M LONG - OPTIONAL)	1
25	DISPLAY (OPTIONAL)	1

Wiring/Cable Routing

Cables are to be secured with cable ties and mounts every 12-16 inches. Stainless steel cable tie mounts are to be attached to the gear drive with one drive screw #8-8. The sensor cables are to be secured to the cable tie mounts with the plastic cable ties. Preferred routing of the Andon light and vibration sensor serial cables for foot mounted gear drives is up to the ledge of the split bolts and then horizontally along the ledge of the split bolts as seen in **Figure 38** and **Figure 39**.

Figure 38 – Sensor cables secured with cable tie mounts



Figure 39 – Cable routing on top of split bolt ledge.

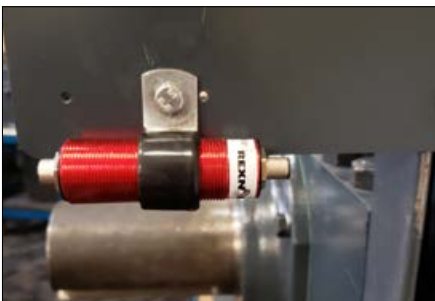


When the oil quality sensor is not assembled at the same end of the foot mounted gear drive as the Edge Device its wiring should be routed along the ledge of the split bolts of the gear drive. When the sensor is installed at the same end as the Edge Device the cable can be connected to the Edge Device directly or to the cable from the Andon light and vibration sensors using a Y splitter cable.

Figures 40, 41, 42 and 43 show views of the signal converter mounting locations for easy to access cable connections.

Signal converter mounted to universal kit mounting plate:

Figure 40



Signal converter mounted to side of gearbox:

Figure 41



Figure 42



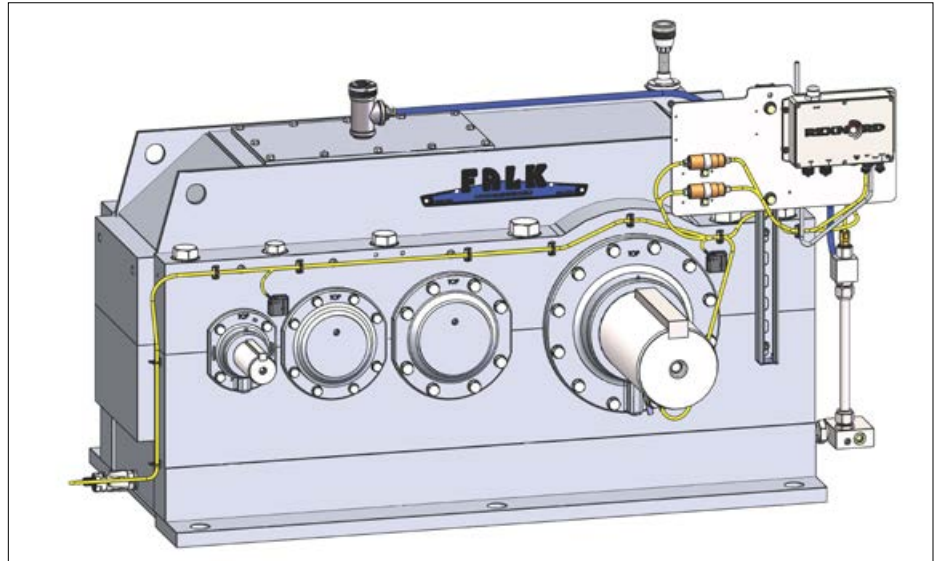
Figure 43



Wiring/Cable Routing

See **Figure 44** for illustrations of typical cable routings. A strategy for installing the serial cables is to install all of the Y cables first, then connect the Y cables together with an appropriate length straight cable.

Figure 44 – Illustration of typical cable routings for a foot mounted gear drive

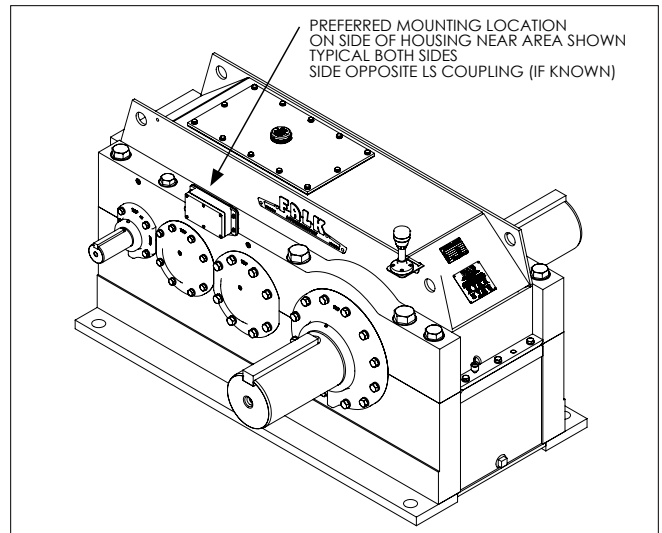


Optional Display Installation Instructions

For all models, an optional display package is available. This display provides a local source of information about the status of your system. The package comes with the display, cables, and a flat bracket to facilitate mounting to the gearbox. It is designed to be mounted anywhere along the top edges of the gearbox.

Drill and tap 2x 5/16"-18 holes to mount the display mounting plate to the housing. Use the display mounting plate as a template to mark the hole locations on the housing. Use a 0.257" diameter drill bit (size F) and drill about 0.454" deep. **DO NOT DRILL THROUGH OR DEEPER.** Tap to a minimum of 0.354" of thread depth. See **Figure 45**.

Figure 45 – Optional display mounting



Information Required to Commission the Edge Device

The following information is to be emailed to connect.support@rexnord.com upon completion of the installation of the Smart Condition Monitoring System for Falk V-Class Gear Drives for quality control.

1. Location of Andon light.
2. Location of vibration sensors.
3. Pictures of installation showing all sensors.
4. Actual low speed shaft coupling GAP and OD measurements of site survey document.