A/C Alternator Kit
for KUBOTA BX2370-1 and BX2380
p/n: 1ACBX2380DRK
(Note: the alternator is supplied with a new pulley)

Must be installed with one of the following three
Cab p/n’s: BX4070, 1KBX70-1AS, or 1KBX70-1SS

Must be installed with one of the following two Curtis
A/C Roof Kit p/n’s: 1ACBX80TLRFK or 1ACBX70TLRFK

Must be installed with one of the following two
Curtis A/C p/n’s: 1ACUNIT-G1 or 1ACUNIT-G2

Approximate Installation Time *

| Experienced Dealer Technician | 1.5 Hours |
| Average Dealer Technician     | 2 Hours   |
| Do-It-Yourself                 | 3 Hours   |

(*=Not including cab & other accessories)

Approximate Product Specifications

| Weight: 39 lbs. |

The contents of this envelope are the property of the owner. Leave with the owner when installation is complete.
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WARNINGS, TIPS, & REQUIRED TOOLS

Curtis accessories feature an assembly of parts designed for your vehicle which require adjustment and alignment of components to accommodate vehicle variations. For accurate installation, proper operation, and years of satisfaction, please read and understand the installation and owner’s manual fully prior to installing the A/C Drive Kit.

From all of us at Curtis, we thank you for choosing our product.

**NOTICE**

Curtis Cabs, blades and general accessories add additional weight to the base vehicle. All Curtis accessory weights are listed in product brochures. Deduct the accessory's total weight from the vehicle's rated capacity and never exceed the vehicle's rated capacity including driver and passenger.

**WARNING**

Exposure to Carbon Monoxide can Cause illness, serious injury or death. Never operate vehicle if suspicious of Carbon Monoxide. Inspect exhaust system for leaks monthly. Leaks can result from loose connections, corrosion, cracks or other damage to the exhaust manifold. If leaks are found, repair or replace exhaust system. Do not use vehicle until repaired or replaced.

**California Health and Safety Proposition 65 Warning:** This product may contain chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.

GENERAL INFORMATION BEFORE YOU START

HELPFUL HINTS:
- Refer to parts diagram found in the service parts section of this manual to help identify parts during the assembly process.
- To assist with the installation, leave all fasteners loose for later adjustment unless otherwise specified.
- Read and understand all instructions before beginning.
- Use proper personal protective equipment during all phases of installation.
- ALWAYS shut off engine before leaving the operator's seat to perform any portion of the procedures listed in this manual.
- ALWAYS disconnect the ground cable from the battery when working with any electronics components.
- Hang a “DO NOT OPERATE” tag in the operator station.

TOOLS REQUIRED
- Set of Metric & Standard Sockets (1/4” & 3/8” Drive)
- 1/4” & 3/8” Drive Ratchet and Extensions
- 22mm, 1/2” Drive Socket
- 1/2” Drive Impact Gun
- Set of Metric Open-End Wrenches
- #2 Phillips Head Driver Bit
- Drill
- Torque Wrench
- Pass-Through Socket Set (Kobalt #0747440) or Snap-on Socket #OG2828
- Silicone Sealant
- 5/16” Nut Driver
**KIT INSTALLATION**

**STEP 1: (VEHICLE PREP)**

1.1 Park vehicle on level ground, apply parking brake.

1.2 On BX80 series, remove the (6) 1/4-20 thumbnuts & (1) OEM thumbnut retaining the plastic air intake shroud. Set aside the plastic air intake shroud.

   *Note: On BX70-1 series, remove the vinyl cover over the air intake screen.

1.3 Remove the air intake screen.

1.4 Disconnect the negative battery terminal from the battery.
   Tools: 13mm Wrench

1.5 Per fig. 1.5, remove and discard one short piece of OEM hose from the Silencer. Rotate the Silencer counter clockwise and install the longer piece of hose (supplied). Remove and/or loosen hose clamps as required. Tighten hose clamps when done.
   Tools: 5/16” Nut Driver

1.6 Remove and discard the (2) M6 x 1 x 12mm bolts retaining the top of the exhaust manifold heat shield.
   Tools: 10mm Wrench

1.7 Remove and set aside the (1) M6 x 1 x 12mm bolt retaining the side of the exhaust manifold heat shield.
   Tools: 10mm Wrench

1.8 Remove exhaust manifold heat shield from vehicle and set aside.

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**Fig. 1.2 (Plastic Air Intake Shroud)**

**Fig. 1.3 (Remove Air Intake Screen)**

**Fig. 1.4 (Negative Battery Terminal)**

**Fig. 1.5 (Replace one radiator hose)**

**Fig. 1.6 (Exhaust Manifold Heat Shield)**
**STEP 1: (VEHICLE PREP)**

1.9 Remove and set aside the (3) M6 x 1 nuts securing the upper portion of the exhaust manifold to the engine block.
   Tools: 10mm Wrench

1.10 Remove and set aside the (3) M6 x 1 x 12mm bolts retaining the coolant reservoir. Temporarily position the reservoir to the side, out of the way.
   Tools: 10mm Socket

   *Note: Engine and radiator fan is hidden for clarity.*

1.11 Disconnect the lead from the alternator found under the black boot.
   Tools: 10mm Wrench

1.12 Unplug the wire harness connector from the back of the alternator.

1.13 Remove and discard the M8 x 1.25 x 30mm bolt and washers retaining the alternator to the alternator bracket.
   Tools: 12mm Wrench
**KIT INSTALLATION**

**STEP 1: (VEHICLE PREP)**

1.14 Remove and set aside the M8 x 1.25 nut, lock & flat washers retaining the dip stick tube to the lower alternator mounting bolt.

   Tools: 12mm Wrench & Socket

1.15 Begin to loosen the lower alternator M8 x 1.25 x 90mm bolt & nut. Once loose enough, position the dip stick tube out of the way. Remove and set aside the flat washer which was located between the nut and dip stick tube.

1.16 Finish removing the lower alternator M8 x 1.25 nut, bolt, flat & lock washers retaining the alternator to the engine block. Discard the M8 x 1.25 x 90mm bolt but retain all other OEM hardware for future use.

1.17 Remove Alternator from vehicle and discard the spacer bushing.

1.18 Remove and discard the (2) M6 x 1 x 16mm bolts retaining the alternator bracket from the engine block, discard the bracket also.

   Tools: 10mm Wrench

1.19 Remove the nut retaining the OEM alternator pulley & pulley spacer. Discard the OEM pulley & pulley spacer but set aside the nut for future use.

   Tools: 22mm Socket Impact Gun
**KIT INSTALLATION**

**STEP 2: (A/C DRIVE KIT)**

2.1 Install the provided double groove pulley onto the OEM Alternator and tighten to required torque.

Tools:  
- 10mm Socket
- 22mm Pass-Through Socket, use either Pass-Through Socket Set (Kobalt #0747440) or Snap-on Socket #OG2828
- Torque Wrench

Torque: 58.4 to 78.9 N-m  
43.1 to 58.2 lbf-ft

2.2 Loosely position the OEM alternator back onto the engine as shown.

HW:  
- (1) M8 x 1.25 x 80mm Bolt
- (1) M8 x 24mm Flat Washer
- (1) Bolt Liner

2.3 Place the supplied ribbed-belt over the inboard groove of the pulley.

2.4 Rotate alternator up and towards the radiator to provide enough slack to place the OEM V-belt into the outboard groove of the pulley.

2.5 Once belts are positioned over the pulley, install the supplied 4.95mm (.195") thick washer along with the (2) flat washers, lock washer and the M8 x 1.25 nut that were removed in step 1.15 & 1.16 onto the previously installed alternator bolt. Finger tighten only at this time.

HW:  
- (1) M8 x 22mm x 4.95mm Thick Hardened Washer  
  (ref.: approximately 3/16" thick)

*Note: These (5) items (shown lined up in Fig. 2.5) go between the alternator mounting ear of the engine block and the dip stick tube bracket in the order shown.

2.6 Position the supplied alternator bracket in place as shown. Finger tighten only at this time.

HW:  
- (2) M6 x 1 x 25mm Bolts
- (2) M6 Lock Washers
- (2) M6 Flat Washers
KIT INSTALLATION

STEP 2: (A/C DRIVE KIT)

2.7 Install the OEM alternator’s upper hardware as shown. Finger tighten only at this time.
HW:
- (1) M8 x 1.25 x 35mm Bolt
- (1) M8 x 14.8mm Lock Washer
- (1) M8 x 24 Flat Washer

2.8 Position the auxiliary alternator in place as shown.
HW:
- (1) M10 x 1.5 x 55mm Bolt
- (1) M10 x 20mm Flat Washer
- (1) M10 x 1.5 Flange Nut

2.9 Torque the alternator bracket bolts. Reference Fig. 2.6 on previous page.
Tools: 10mm Socket, Torque Wrench
Torque: 7 N-m / 5 lbf-ft

2.10 Adjust the OEM alternator’s V-belt tension and torque lower M8 x 1.25 bolt.
Tools: 12mm Wrench & 13mm Socket, Torque Wrench
Torque: 17 N-m / 12 lbf-ft

2.11 Torque the upper M8 x 1.25 alternator bolt.
Tools: 13mm Socket, Torque Wrench
Torque: 17 N-m / 12 lbf-ft

2.12 Tighten, but do not torque at this time, the auxiliary alternator’s lower nut & bolt. Tightening is required for alignment purposes.
Tools: 17mm Wrench & 15mm Socket
**KIT INSTALLATION**

**STEP 2: (A/C DRIVE KIT)**

2.13 Position the upper auxiliary alternator bracket over the exhaust manifold studs.

2.14 Reinstall the (3) previously removed M6 x 1 nuts onto the exhaust manifold studs retaining the upper auxiliary alternator bracket. Finger tighten only at this time.

2.15 Place the lock washer onto the bolt first, then the thick hardened washer. Insert the bolt thru the long adjustment slot on the upper auxiliary alternator bracket and thread into the tapped ear of the auxiliary alternator as shown. Tighten bolt.

**HW:** (1) M8 x 1.25 x 30mm Bolt
(1) M8 Lock Washer
(1) M8 x 22mm x 4.95mm Thick Hardened Washer
(ref.: approximately 3/16" thick)

**Tools:** 13mm Socket

2.16 Torque the (3) previously installed exhaust manifold nuts retaining the upper auxiliary alternator bracket.

**Tools:** 10mm Socket & Extension
Torque Wrench
**Torque:** 7 N-m / 5 lbf-ft

2.17 Reposition the exhaust manifold heat shield back onto the engine using (1) previously removed M6 x 1 x 12mm bolt located on the side of the manifold. Finger tighten only at this time.

**Tools:** 10mm Socket

2.18 Install the manifold gusset as shown. Torque listed fasteners along with the side exhaust manifold heat shield bolt at this time.

**HW:** (3) M8 x 1.25 x 20mm Flange Head Bolts
(3) M8 x 1.25 Flange Nuts
(2) M6 x 1 x 20mm Bolts
(2) M6 Lock Washers
(2) M6 Flat Washers

**Tools:** 13mm Wrench & Socket
10mm Socket
Torque Wrench
**Torque M8 x 1.25 fasteners:** 17 N-m / 12 lbf-ft
**Torque M6 x 1 fasteners:** 7 N-m / 5 lbf-ft
KIT INSTALLATION

STEP 2: (A/C DRIVE KIT)

2.19 Slightly loosen both the upper and lower auxiliary alternator mounting hardware.
   Tools: 13mm Socket
          17mm Wrench & 15mm Socket

2.20 Tension auxiliary alternator belt and torque the mounting hardware.
   Tools: 13mm, 15mm Socket & 17mm Wrench
          Torque Wrench

Torque M8 x 1.25 fasteners: 17 N-m / 12 lbf-ft
Torque M10 x 1.5 fasteners: 33 N-m / 24 lbf-ft

2.21 Secure dip stick tube with M8 x 1.25 nut, lock washer & flat washer removed during step 1.14.
   Tools: 12mm Socket & 13mm Wrench
          Torque Wrench

Torque M8 x 1.25 fasteners: 17 N-m / 12 lbf-ft

2.22 Reconnect the lead (found under the black boot) to the OEM alternator.
   Tools: 10mm Wrench

2.23 Plug the wire harness connector into the back of the OEM alternator.

2.24 Reposition the coolant reservoir back into its stock location and secure with the (3) M6 x 1 x 12mm bolts which were removed in step 1.10.
   Tools: 10mm Socket

   Caution: Over tightening these bolts could result in stripping the threaded insert in the radiator shroud.

2.25 Secure throttle cable to the upper radiator hose with supplied zip tie.

2.26 If vehicle is equipped with optional heater, route the coolant line over the top of the engine and use the supplied P-Clamp to attach to 1 of the 3 optional mounting holes on the side flange of the upper auxiliary alternator bracket. See fig. 2.25.
   HW: (1) M6 x 1 x 20mm Bolt
        (1) M6 x 1 Lock Nut
        (1) 1-1/4" P-Clamp
   Tools: 10mm Wrench & Socket

2.27 Install the A/C Roof Top Kit P/N 1ACBX80TLRFK or 1ACBX70TLRFK if you have not already done so.
STEP 3: (A/C DRIVE KIT, WIRING)

3.1 Disconnect the battery to starter connection as shown.
   Tools: 12mm Wrench

3.2 Discard the OEM red protective boot.

3.3 Unbolt the engine ground as shown and set aside the fasteners for future use.

3.4 Prepare the power supply harness for routing by laying it out on the floor along the right side front tire of the tractor with the end containing the (2) eyelets, female bullet & push-on terminals facing toward the rear of the tractor as shown.

   Note: Temporarily taping the (4) “loose” wires together may make routing easier.

3.5 Begin to route the end of the power supply harness without the red rubber protective boot rearward over the front loader receiver mount tube as shown.

   Caution: Make sure harness is clear of all moving parts.
KIT INSTALLATION

STEP 3: (A/C DRIVE KIT, WIRING)

3.6 Continue following the steel hydraulic lines rearward to the area in front of the rear wheel as shown (viewed from under the right side of tractor facing rearward).

3.7 Pass the harness up and over the hydraulic lines at the transaxle keeping away from the moving handle linkages and tire as shown (viewed from the rear of tractor).

3.8 Continue to route the harness rearward and out from under the tractor as shown.

3.9 Apply the supplied 6” length of Trim-Lok to the edge of the rear fender to protect power supply harness from abrasion.

3.10 Route the harness up along the right side of the vehicle ROPS in front of the rear mount as shown.
**KIT INSTALLATION**

**STEP 3: (A/C DRIVE KIT, WIRING)**

3.11 Locate the solenoid found at the right front corner of the A/C unit. Remove and set aside the nut and lock washer found on the unoccupied solenoid lug.

Note: Vent ducting and wires not pertaining to these steps may be hidden in the illustrations for clarity.

3.12 Remove and discard the (3) plastic plugs found at the right rear corner of the A/C unit.

3.13 Slip a supplied grommet over both the large red & large black cables, position the grommets approximately 24” from the end of the black cable.

3.14 Slip the smaller supplied grommet over both the purple & brown wires as far as the (2) previously installed larger grommets.

3.15 Feed the (2) smaller wires through the smaller hole found on the rear of the A/C unit & install grommet.

3.16 Feed the large red cable through the right hole found on the rear of the A/C unit & install grommet.

3.17 Feed the large black cable through the left hole found on the rear of the A/C unit & install grommet.

3.18 Once all of the harness wires are through their respective grommets, pull the wire ends toward the front of the unit as shown.

3.19 Connect the female bullet terminal found on the brown wire of the power supply harness to the male bullet terminal found on the brown wire of the controller.

3.20 Connect the male push-on terminal found on the red wire w/white stripe of the controller to the female push-on terminal found on the pink pig-tail coming from the small solenoid lug found at the front of the A/C unit.

3.21a Connect the male 2-pin MLX connector terminated to the black & white w/black stripe wires found on the controller to the female 2-socket MLX connector found on the A/C unit harness.

3.21b Connect the female push-on terminal found on the purple wire of the power supply harness to the male push-on terminal on the purple pigtail coming from the small solenoid lug.
KIT INSTALLATION

STEP 3: (A/C DRIVE KIT, WIRING)

3.22 Position the controller over the studs on the front side of the A/C unit. Fasten the controller to the A/C unit as shown.

HW: (2) #8-32 Nuts

Tools: 11/32” Wrench

3.23 Make the power connection by positioning the eyelet terminated on the large red cable onto the forward most terminal found on the solenoid as shown. Fasten with the lock washer and nut that was previously removed in step 3.11.

3.24 Remove the existing nut and make the ground connection by positioning the eyelet terminated on the large black cable onto the grounding stud (which is also securing the solenoid as shown) and reinstall the nut.

Note: Ensure the existing wires remain installed on ground stud.

Tools: 7/16” Socket

3.25 Using the (3) small supplied wire ties, secure the power supply harness wires inside the A/C unit.

3.26 Route the 24” long red lead containing the red protective boot and the 18-1/2” long lead containing the male push-on connector up to the auxiliary alternator post. Route both leads between the alternators keeping away from exhaust manifold while maintaining adequate clearance around dip-stick.

3.27 Connect the 24” long brown lead to the auxiliary alternator post. Once connection is tight, verify that the protective boot is fully covering the connection.
KIT INSTALLATION

STEP 3: (A/C DRIVE KIT, WIRING)

3.28 Connect the male push-on connector to the short lead attached to the supplied auxiliary alternator.

Note: If installing on a BX2380 vehicle, proceed to step 3.29.

Note: If installing on a BX2370-1 vehicle, skip step 3.29 & refer to page 8 of the 1ACBX70TLRFK, A/C Roof Kit installation instructions for 12-volt ignition power connection then proceed to step 3.30 on this page.

3.29 Route the 38" long purple lead of the power supply harness containing the male bullet terminal w/ pig-tail & female bullet terminal up into the battery compartment and connect to the female bullet terminal marked with blue tape.

Note: If there is already an accessory connected to the female bullet with blue tape, disconnect it and connect it to the pigtail found on the 38" long purple lead of the power supply harness.

3.30 Locate the remaining heavy red lead of the power supply harness containing a new red protective boot. Slip the OEM starter cable through the backside of the new red protective boot beside the power supply harness.

3.31 Assemble both the red power supply wire and OEM starter cable onto the starter lug.

Tools: 12mm Wrench
KIT INSTALLATION

STEP 3: (A/C DRIVE KIT, WIRING)

3.32 Reassemble the chassis ground along with the black power supply ground wire as shown. Tools: 12mm Wrench & Socket

3.33 Reinstall the negative battery cable.

3.34 Turn engine on and check operation of unit. Give the unit approximately 1 minute to blow cool air.

3.35 Using the supplied wire ties, secure the power supply harness ensuring adequate clearance around moving parts and away from heat sources.

3.36 Reinstall the air intake screen as shown.

3.37 On BX80 Series, reposition the plastic air intake shroud into the operator’s compartment and secure with the previously removed (6) 1/4-20 thumbnuts & (1) OEM thumbnut.

On BX70 Series, re-install the removed vinyl air intake cover.

3.38 Taking care that all wires are free from being pinched, refer to the A/C Roof Kit Installation Manual that is specific to the corresponding vehicle and install the top cover to air conditioner.

Fig. 3.32 (Engine Ground Connection)

Fig. 3.36 (Air Intake Screen)

Fig. 3.37 (Plastic Air Intake Shroud)
SAFETY RECOMMENDATION

STEP 4: (FINISHING TOUCHES)

4.1 For stability, add a min. of 100 lbs. (45kg) as far below the vehicle's center of gravity as possible. Tire filling ballast is recommended.

CARE AND MAINTENANCE

• Check and tighten hardware after 20 hours of operation. Periodically inspect and tighten hardware for the remainder of the unit's life.
• Wash the painted surfaces of the drive kit with commercial automotive cleaning products.
KUBOTA BX2370-1 & BX2380 A/C ALTERNATOR KIT
SERVICE PARTS

ALT BRKT, LOWER OEM/UPPER AUX
P/N: 9SV-MP-00008

BRACKET, UPPER AUX ALTERNATOR
P/N: 8SV-WA-00312

GUSSET, AUX ALT TO MANIFOLD
P/N: 8SV-SM-01299

PULLEY, OEM ALTERNATOR
P/N: 9SV-MP-00001

PULLEY, AUX ALTERNATOR
P/N: 9SV-MP-00007

ALTERNATOR, PULLEY, SPACER, AND
WIRE HARNESS
P/N: 8SV-114-00010

FUSE
P/N: 9SV-85-00-0011

PROGRAMMED CONTROLLER
P/N: 8SV-114-00016

BELT
P/N: 9SV-9BLT-01

FUSE HOLDER (QTY.: ONE)
P/N: 9SV-85-02-0032

ADDITIONAL SERVICE PARTS

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<td>HARDWARE KIT, A/C DRIVE KIT, ACBX23</td>
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<td>WIRE HARNESS, A/C POWER SUPPLY, 15’ LG.</td>
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<td>9SV-9HR-00028</td>
<td>RADIATOR HOSE, 1-3/4” I.D. x 4-1/4” LONG</td>
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GENERAL TORQUE SPECIFICATION TABLE

Use the following torques when special torques are not given. These values apply to fasteners as received from suppliers, dry, or when lubricated with normal engine oil. They do not apply if special graphited or moly disulphide greases or other extreme pressure lubricants are used. This applies to both UNF and UNC threads. Remember to always use grade five or better when replacing bolts.

IMPORTANT: On all PLATED GRADE 8 bolts, reduce torque 15% from listed bolt torque specification.

**SAE Grade No.**
**Bolt head identification mark as per grade.**
**NOTE: Manufacturing Marks Will Vary**

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**METRIC BOLT TORQUE SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Size of Screw</th>
<th>Property Class</th>
<th>Pitch (mm)</th>
<th>Course Thread</th>
<th>Pounds Feet</th>
<th>Newton-Meters</th>
<th>Pitch (mm)</th>
<th>Fine Thread</th>
<th>Pounds Feet</th>
<th>Newton-Meters</th>
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<tr>
<td>M6</td>
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<td>3.6-5.8</td>
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<td>7.2-14</td>
<td>9.8-19</td>
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<td>27.1-35.2</td>
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<td>27.1-33.9</td>
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<td>34-40</td>
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<td>47.4-63.7</td>
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*Thick Nuts must be used with Grade 8 bolts*