

KOLPIN[®]

OUTDOORS

HIGH RISE POWER ANGLE KIT

P/N 33-0100

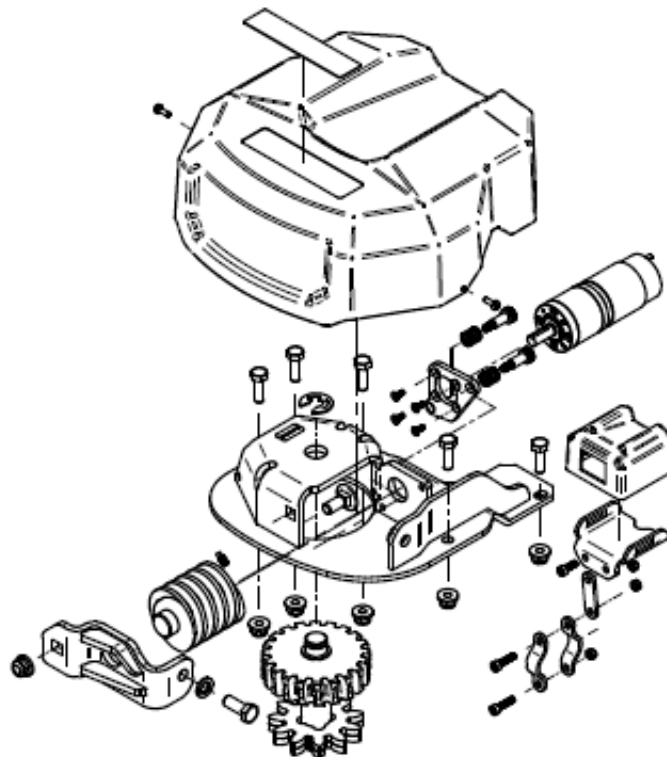
OWNER'S MANUAL

Application

HIGH RISE PUSH TUBE 33-0000 & 34-0000

**ATTENTION DEALER: CUSTOMER MUST RECEIVE A COPY OF THIS MANUAL
AT THE TIME OF SALE.**

Before you begin, please read these instructions and check to be sure all parts and tools are accounted for. These instructions will help you to become familiar with operation of the plow push frame. Instructions contain details required to install, service the contents of this kit, for adjustment and maintenance.



OPERATING INSTRUCTIONS

Congratulations! You've just purchased one of the industry's top plow system component. The High Rise Power Angle works great for all types of plowing. With proper care and maintenance, your power angle kit will last for many years!

The power angle motor design allows the operator to select a finite range of angled left-or-right blade positions while sitting on the ATV. The heavy-duty gear system is designed to absorb the impact loading during normal operation. Once installed, the power angle kit will remain on the High Rise push frame and includes a wire disconnect terminal. Additionally, this power angle will handle light to medium-duty summer landscape work in moderate climates.

NOTICE

**Plow operation requires additional components for operation:
*Kolpin Snow Plow Blade, High Rise Push Frame, Winch Kit, Mid-Body Plow Mount ****

**These components may be specific to your vehicle.*



Please read and understand all assembly instructions, notices and warnings before assembling and operating your High Rise Power Angle plow system.

Follow these guidelines to ensure satisfactory operation:

- Read this manual and your ATV operators manual before use.
- Periodically check for wear and tightness of all fasteners. Replace or re-torque fasteners as necessary.
- Before first use, set plow in the furthest right or left angled position to check for clearance between the plow and front tires.
- Do not operate angling kit in temperatures above 65°F (18°C) or below -20°F (-28°C).
- *The Power Angle motor provides enough torque to pivot when blade is in lifted position only. **Do not pivot system when blade is resting on the ground. Damage may result.***
- *Once the plow is not turning anymore (due to an obstacle or being locked in the furthest angle position on either side), release the switch.*
- ***Do not keep operating the angling kit when the plow is locked. Damage may result.***
- Operate with extreme caution on slopes and rough terrain. Be familiar with the area before you plow.
- Be aware of immovable objects that could be hidden in the area you are plowing.
- To avoid damage when pushing snow into a pile, reverse direction before raising the plow blade.
- Do not ram the plow blade into piles of snow. ****Slow down before hitting a pile.****
- For best results, set the suspension preload of your ATV to the stiffest setting.
- To reduce steering effort and increase mobility, set the air pressure of your tires to the maximum pressure specification.
- The plow skids are adjustable. General skid setting is even with the plow wear bar bottom edge, higher settings reduce the chance of rocks and gravel from being collected.
- To increase traction during plow operation, operators can try: Securing weight to the ATV for additional tire downforce, reducing tire air pressure, or installing tire chains.
- The plow blade assembly is designed to 'trip' when it strikes an object or digs in too far. When pressure is released, the plow springs back into position. ***Spring tension can be increased by tightening the locknuts on the bottom of the eyebolts. For less spring tension, loosen the locknuts.***
- Always wear appropriate protective clothing as recommended in ATV's operator's manual.
- Keep away from blade and moving parts during operation.

SAFETY INFORMATION

Our plow systems were designed with your safety in mind. Please read and understand all Cautions, Notices and Warnings in this manual before you begin. In order to protect you and your ATV, certain parts of the plow system and/or hardware are designed to fail when the equipment is over-stressed.

 **WARNING** 

TO AVOID SERIOUS INJURY OR DEATH:

1. **DO NOT EXCEED 5 MPH (8 KMH) WITH BLADE INSTALLED**
2. **OPERATE WITH EXTREME CAUTION ON SLOPES, STEEP GRADES, AND ROUGH TERRAIN**
3. **ALLOW NO RIDERS ON BLADE OR ATV WHILE MOVING OR STATIONARY**
4. **KEEP BYSTANDERS AWAY FROM THE BLADE OR ATV WHILE MOVING OR STATIONARY**
5. **WHEN PUSHING HEAVY MATERIAL, DIRECTION CONTROL MAY BECOME DIFFICULT**
6. **BEFORE ADJUSTING BLADE: STOP ATV ENGINE; SET AND LOCK BRAKES; RAISE AND LOCK BLADE**
7. **LOWER BLADE TO DOWN POSITION WHEN BLADE AND ATV ARE NOT IN USE**
8. **READ BLADE INSTRUCTION SHEETS AND ATV OWNER'S MANUAL**

BEFORE YOU BEGIN:

- Your Kolpin accessory is exclusively designed for your vehicle.
- Please read and understand all instructions.
- Verify all parts and tools are accounted for.
- To ensure a satisfactory installation, follow all steps correctly and in the sequence described.
- Keep these instructions for future reference or for informational requests.
- To facilitate installation, make sure that your vehicle is clean and free of debris.
- All directions referring to right and left are when the rider is sitting on the machine

TOOLS REQUIRED:

- 10mm wrench
- 8mm wrench or 8mm socket
- 13mm wrench and 13mm socket
- 4mm allen key wrench
- Long nose pliers or spring puller or shoe-string sized rope
- For UTV installations only, plastic cutting tool (Dremel tool or drill bit)

APPROXIMATE ASSEMBLY TIME: 30 minutes

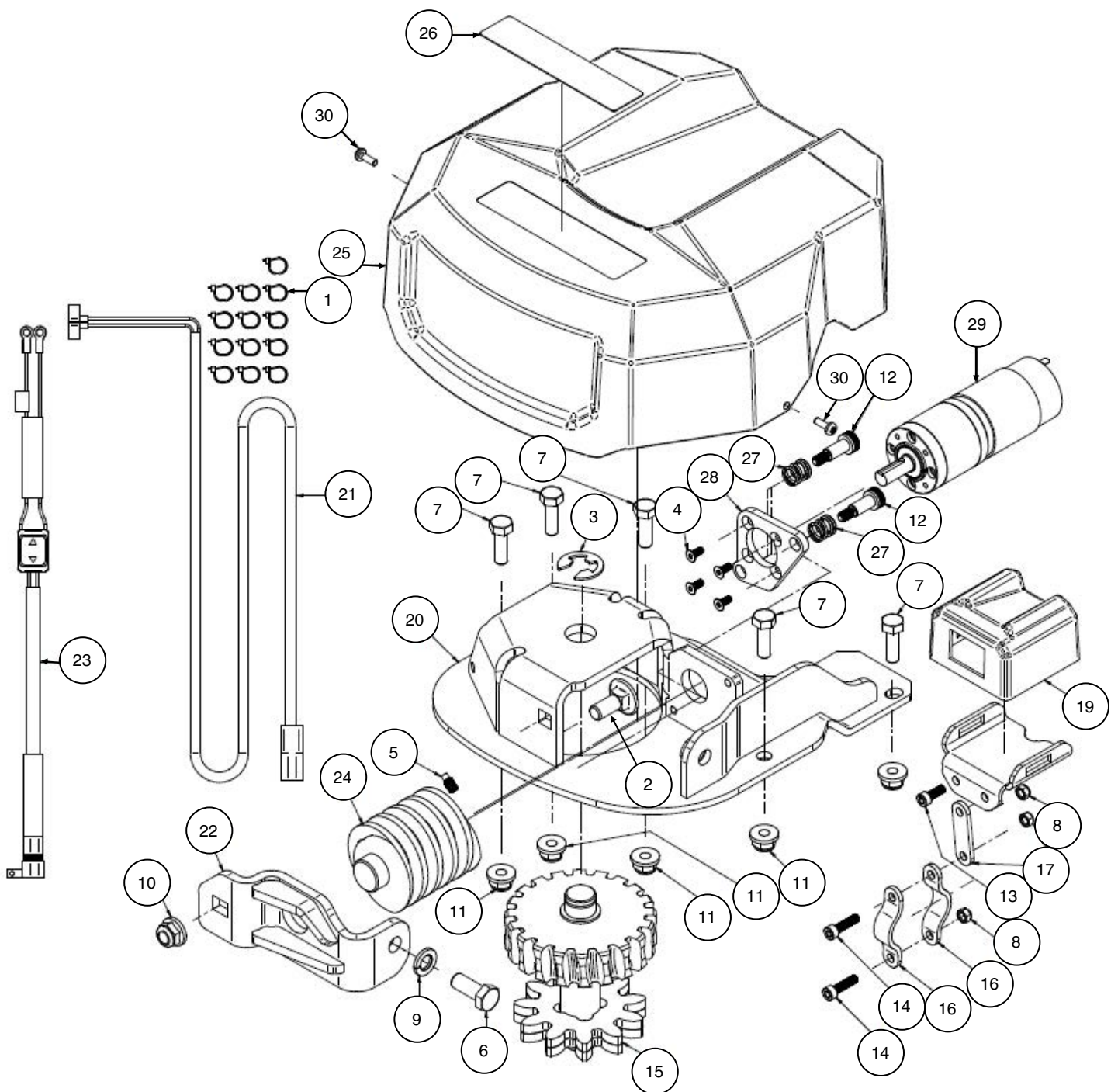
Note: The High Rise Power Angle kit comes mostly assembled from factory. Some assembly is required.

RE-TORQUE ALL BOLTS AND NUTS AFTER THE FIRST 30 MINUTES OF USE.

Kit Contents:

Item	Qty	Part Description	Part Number
1	13	Cable Tie, 141mm long	-
2	1	Carriage Bolt, Zinc Plated, M10-1.5 x 25mm	-
3	1	Circlip, Zinc Plated	-
4	4	Flat Socket Head Cap Screw, Zinc Plated, M4-0.7 x 10mm	-
5	1	Set Screw, Zinc Plated, M6-1.0 x 12mm	-
6	1	Hex Bolt, Zinc Plated, M10-1.5 x 25mm	-
7	5	Hex Bolt, Zinc Plated, M8-1.25 x 25mm	-
8	3	Hex Nylon Nut, Zinc Plated, M5-0.8	-
9	1	Lock Washer, Zinc Plated, M10	-
10	1	Nylon Flange Nut, Zinc Plated, M10-1.5	-
11	5	Nylon Flange Nut, Zinc Plated, M8-1.25	-
12	2	Shoulder Screw, Zinc Plated, Dia. 8mm x 14mm, M6-1.0	-
13	1	Socket Head Cap Screw, Zinc Plated, M5-0.8 x 14mm LG	-
14	2	Socket Head Cap Screw, Zinc Plated, M5-0.8 x 20mm LG	-
15	1	Gear Assembly, Zinc Plated	-
16	2	Handlebar Clamp, Painted	-
17	1	Straight Section Bracket, Painted	-
18	1	Switch Bracket, Painted	-
19	1	Plastic Handlebar Switch Cap	-
20	1	Welded Frame Assembly, Zinc Plated	-
21	1	Wiring Harness Assembly (motor side)	-
22	1	Plate Assembly, Zinc Plated	-
23	1	ATV/UTV Wiring Harness with Switch and Fuse (vehicle side)	-
24	1	Worm Gear, Zinc Plated	-
25	1	Plastic Motor Cap	33-0120
26	1	Decal	-
27	2	Spring	-
28	1	Motor Mounting Plate, Zinc Plated	-
29	1	Electric Motor	33-0111
30	2	Self-Tapping Screw, Zinc Plated, M4-0.7 x 12mm LG	-
31	1	Instruction Guide (not shown)	-

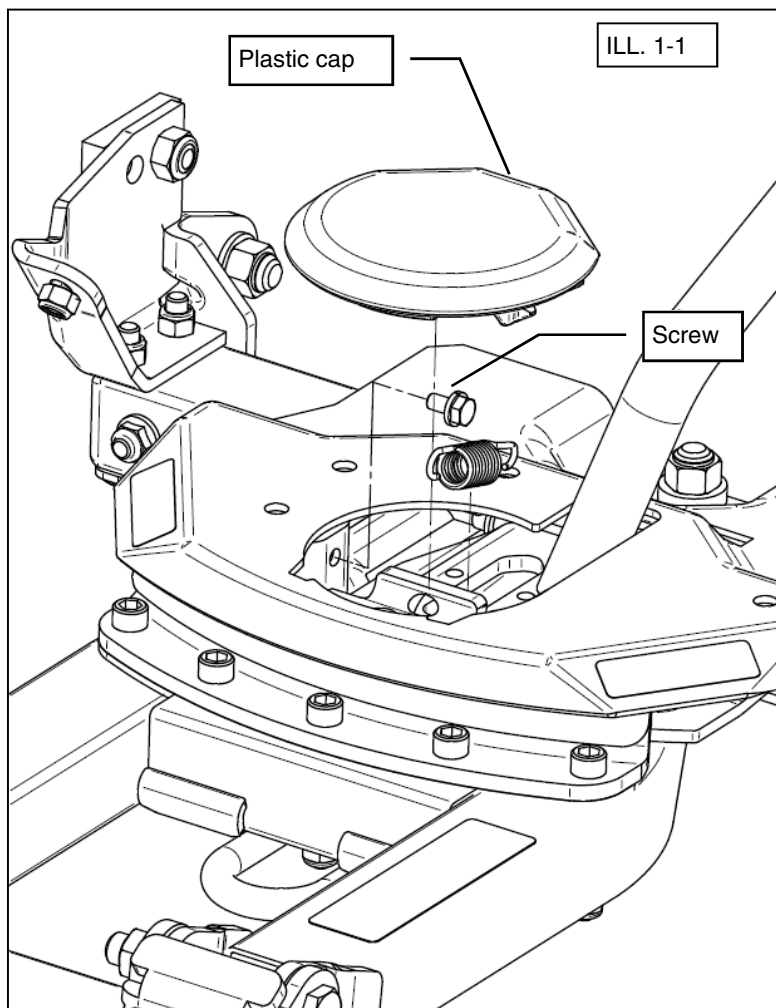
Kit Contents (continued):



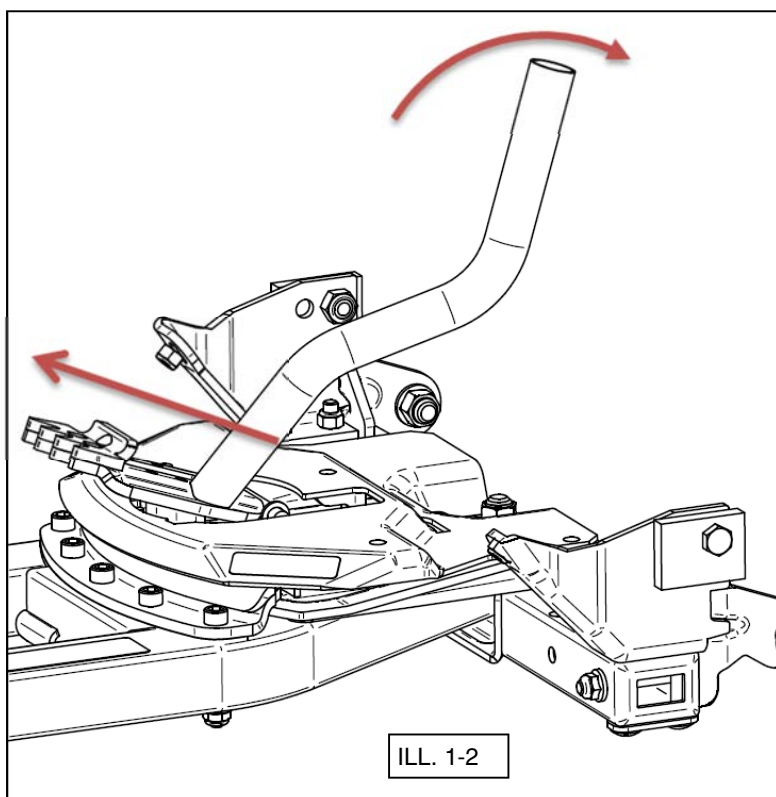
ASSEMBLY INSTRUCTIONS:

INSTALLATION PREP:

1. Remove the plastic cap from the push frame. Remove the spring and the screw securing the angling arm as shown. Using a rope or a spring puller to pull on the higher side allows for easy removal of spring. (See illustration 1-1).

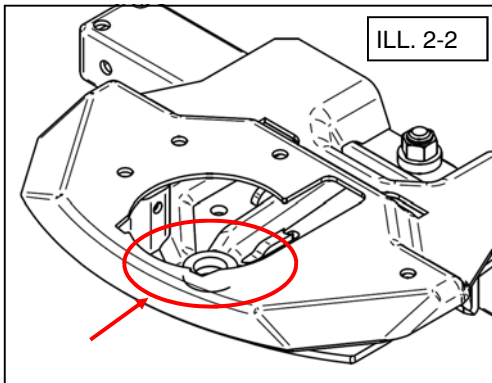
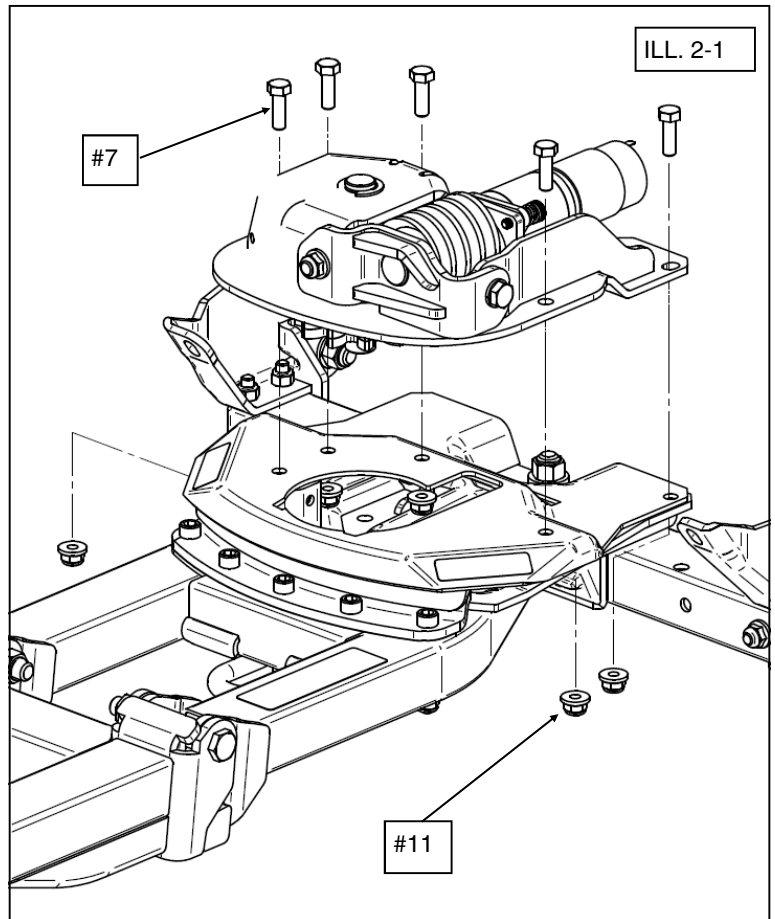
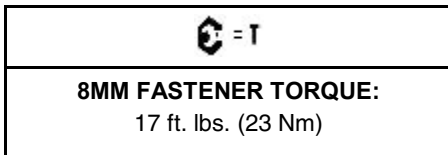


2. Tilt the angling arm up toward the blade, then pull it toward the ATV. The arm will come out of push frame. (See illustration 1-2).

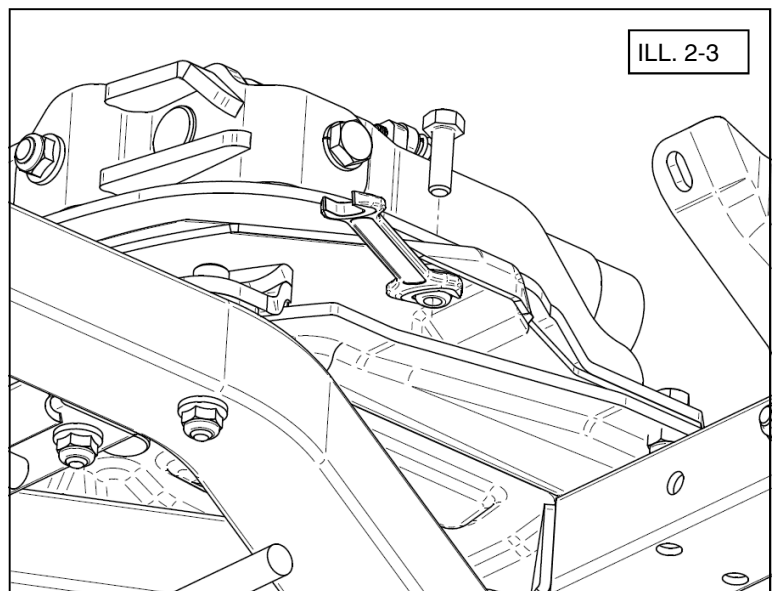


POWER ANGLE INSTALLATION ONTO PUSH FRAME ASSEMBLY:

1. Position the power angle motor frame assembly onto the push frame as shown. The hole (see illustration 2.2) in the push frame pivot assembly serves as bottom alignment guide for the gear assembly. Insert the five bolts, item #7, thru the power angle frame holes and push frame holes. Fasten the five flanged M8 nylon nuts, item # 11, onto bolts. Tighten to specification. (See illustration 2-1).

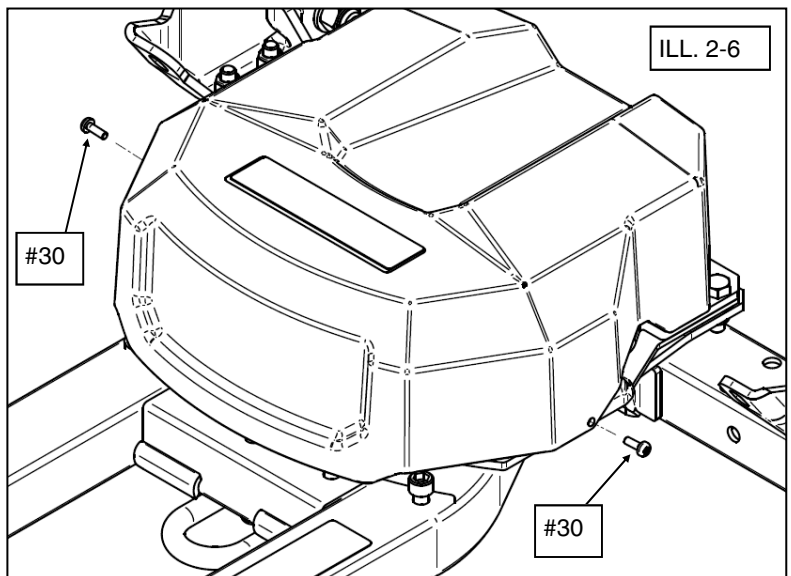
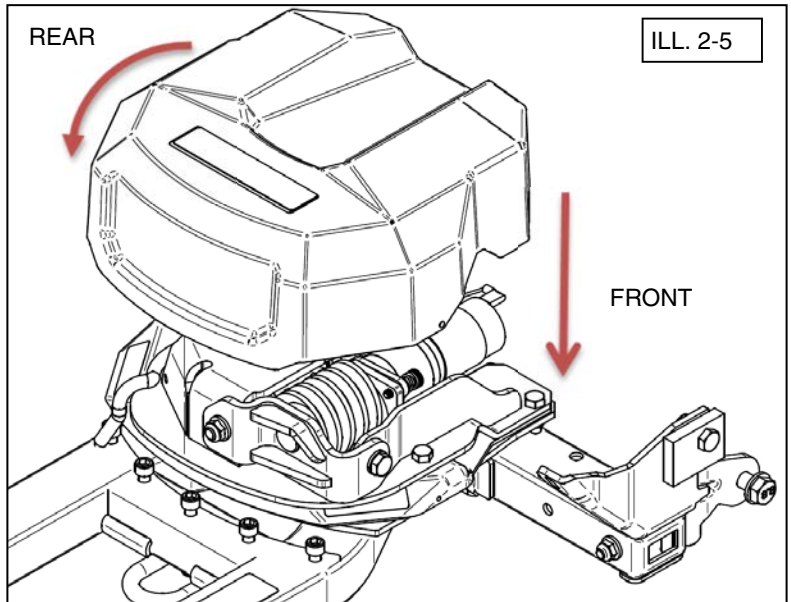
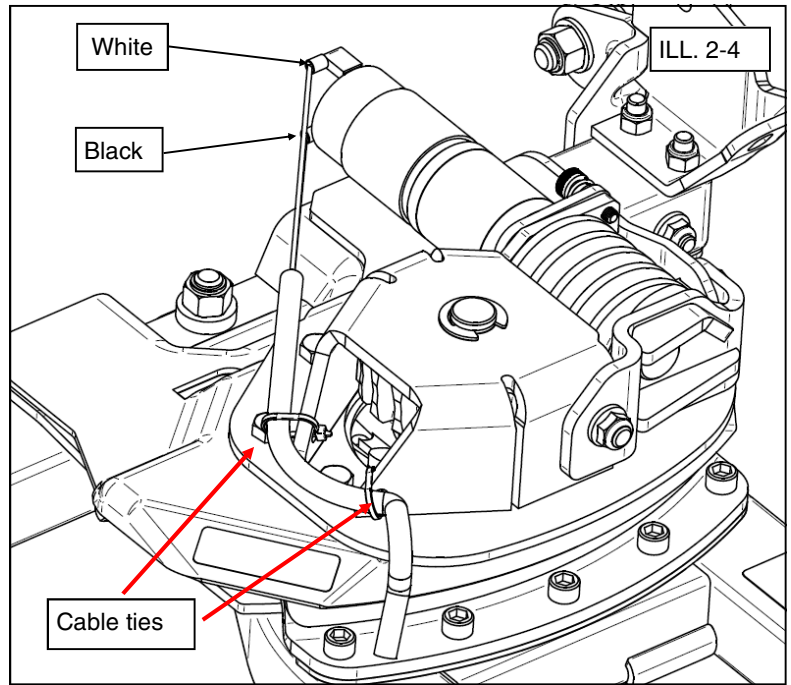


2. Note, for the hard-to-reach nuts, use a 13mm wrench to hold the nuts while tightening. (See illustration 2-3).



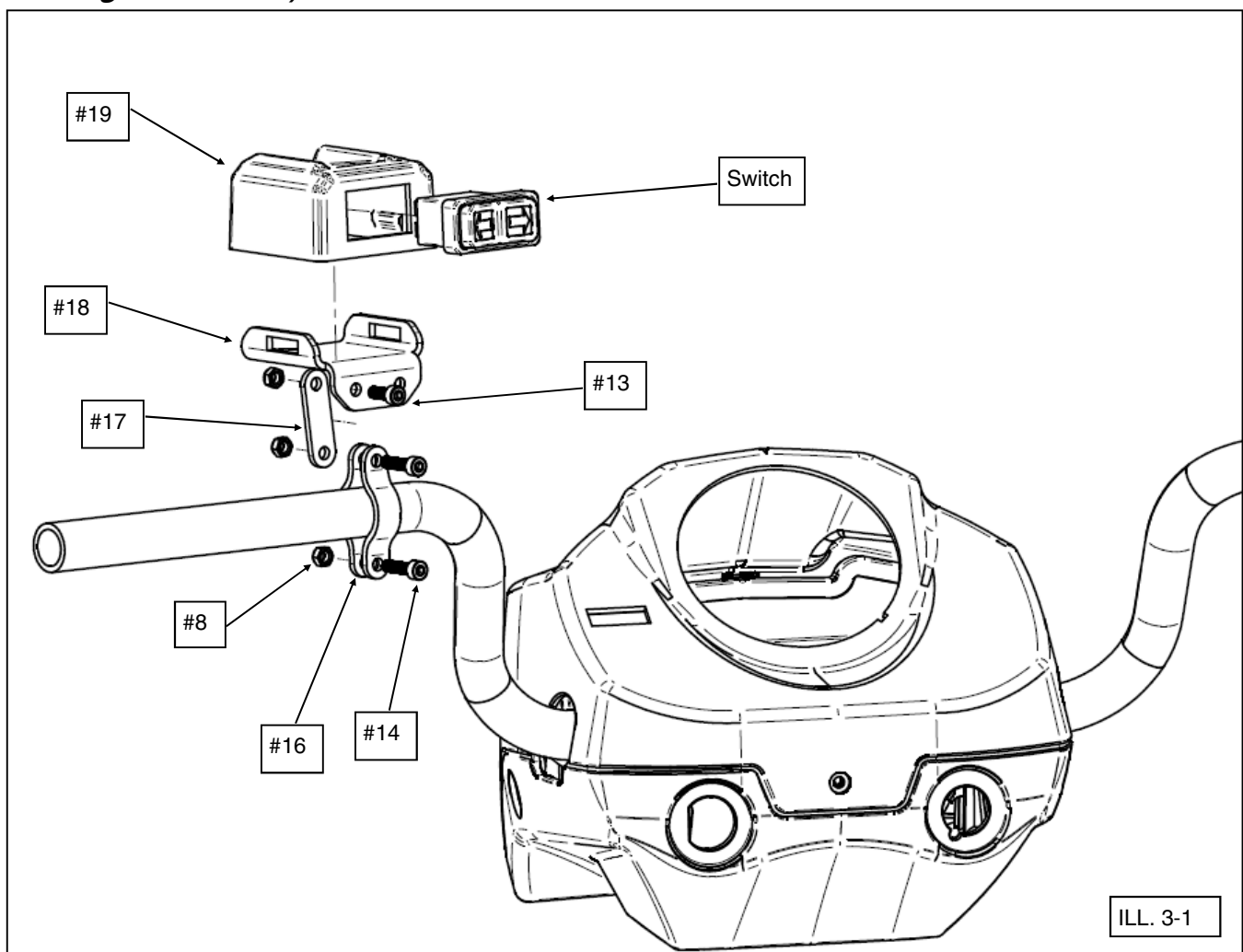
POWER ANGLE INSTALLATION ONTO PUSH FRAME ASSEMBLY (continued):

3. Connect the wiring (item #21) to the motor. Plug the white wire and black wire to the motor connectors as shown. Use the holes found on the left side of the gear housing to safely route the wiring using the included cable ties. (See illustration 2-4).
4. Then connect the wire harness (item #23) to the vehicle battery or power terminal block. The fused ring terminal wire lead connects to 12 VDC positive connection. The black ring terminal wire connects to the vehicle ground connection or negative battery terminal. **Note, see the wiring diagram and switch installations on following pages.**
5. Install the new plastic cap (item #25) over the angling kit as shown. Be careful not to damage the wiring during installation. Begin by hooking the front of the cap to the front of the unit, then tilt the rear down until it clips. (See illustration 2-5).
6. Once cap is installed, secure using self-tapping screws (item #30) as shown. Tighten the screws until snug. (See illustration 2-6). **Note, older gen plow frames may not have pre-drilled holes for self-tapping screws. Use the plastic cap as pattern to mark hole location and drill using 1/8" drill bit (3.2mm).**



SWITCH INSTALLATION ONTO ATV VEHICLE:

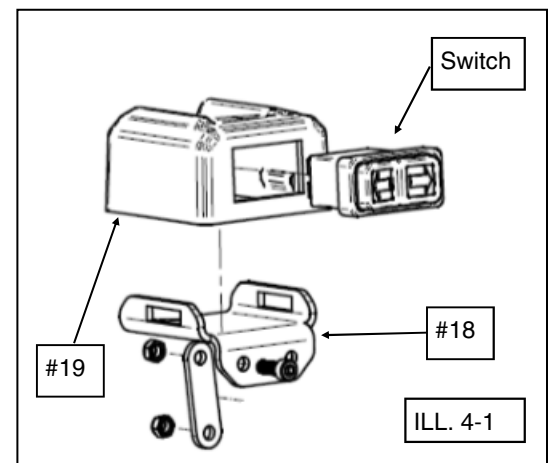
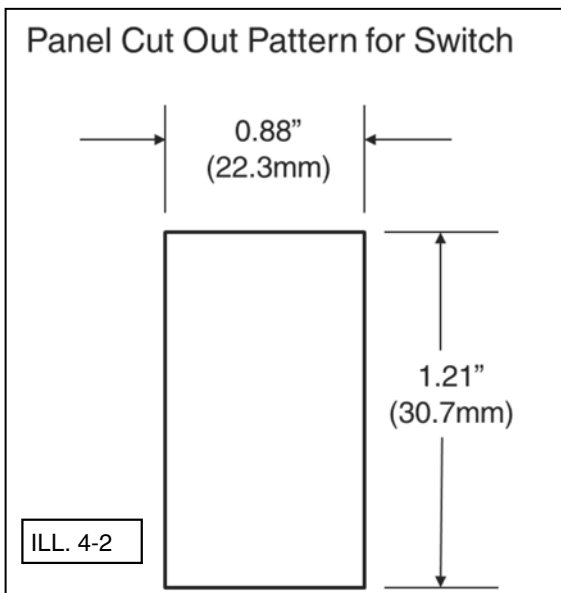
1. Install the bar clamps (item #16), straight section bracket (item #17) and switch bracket (item #18) onto the handlebar using screws (items #13 & #14) and nuts (item #8) as shown below. (See illustration 3-1).
2. Route the wiring and connected switch thru the plastic cap (item #19), then continue routing it along the handlebar using included cable ties. **Note, make sure to route wires where it will not make contact with hot engine surfaces or will be pinched by body components or make contact with moving parts.**
3. Verify the orientation of the angling kit switch by operating the motor using the switch. This will determine the orientation of the switch in the housing. Using the left arrow, the blade should be rotating counterclockwise (the left side of the plow rotating toward the vehicle). Be careful of your surroundings when operating the plow angling kit.
4. Install the switch inside the plastic cover (item #19) in the correct orientation.
5. Clip the plastic cover to the switch bracket (item #18). **Note, if the angling kit is not turning the correct way, the switch will need to be rotated 180 degrees in the housing. Using the left arrow, the blade should be rotating counterclockwise to the left (the left side of the blade rotating toward ATV).**



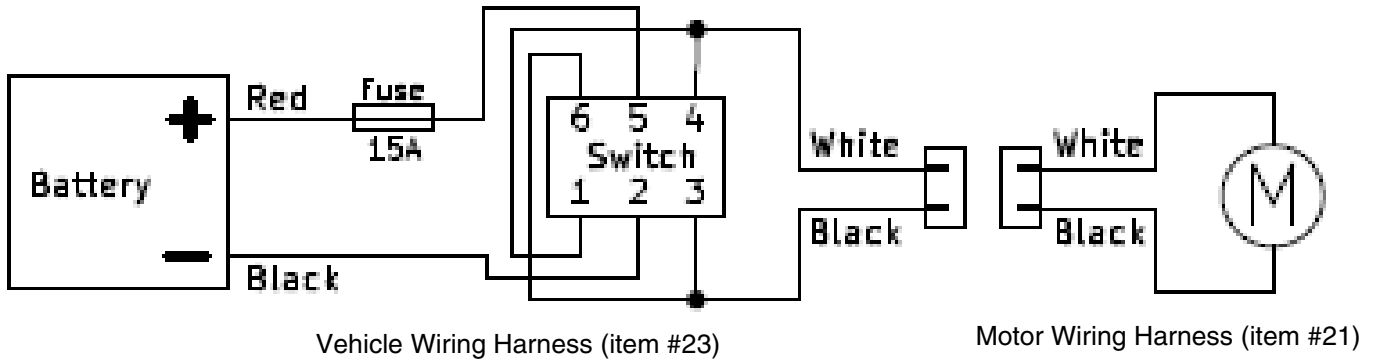
ILL. 3-1

SWITCH INSTALLATION ONTO UTV VEHICLE:

1. To dash mount switch onto UTV, the switch bracket will need to be disassembled from factory ATV setup. Remove the switch from the switch bracket (item #18) and plastic switch cap (item #19) as shown below. For UTV installations, the ATV switch cover and bracket assemblies will not be needed. Save the wiring for next steps. (See illustration 4-1).
2. Prepare location for dash panel mount. Using the panel hole cut out pattern below, mark or scribe the rectangle pattern into the dash. Using plastic cutting tool such as Dremel or drill bit, remove the material for the cut out. (See illustration 4-2 for cut out pattern dimensions. **Note illustration 4-2 is not to scale, please confirm measurements with ruler.**)
3. Route the wiring and connected switch thru the dash cut out, then continue routing it along the body or frame using included cable ties. **Note, make sure to route wires where it will not make contact with hot engine surfaces or will be pinched by body components or make contact with moving parts.**
4. Verify the orientation of the angling kit switch by operating the motor using the switch. This will determine the orientation of the switch in the housing. Using the left arrow, the blade should be rotating counterclockwise (the left side of the plow rotating toward the vehicle). Be careful of your surroundings when operating the plow angling kit.
5. Clip the switch into the dash hole cut-out. (See example images below). **Note, if the angling kit is not turning the correct way, the switch will need to be rotated 180 degrees in the housing. Using the left arrow, the blade should be rotating counterclockwise to the left (the left side of the blade rotating toward UTV).**

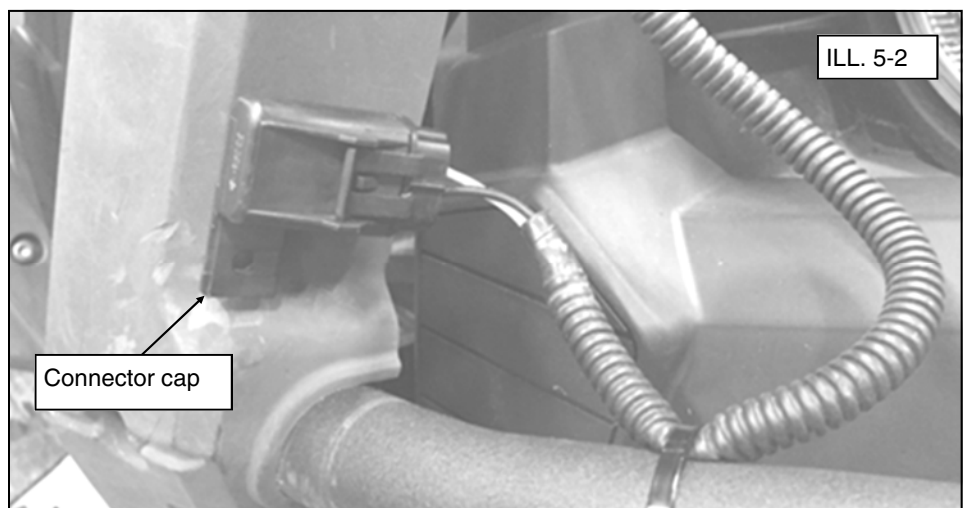
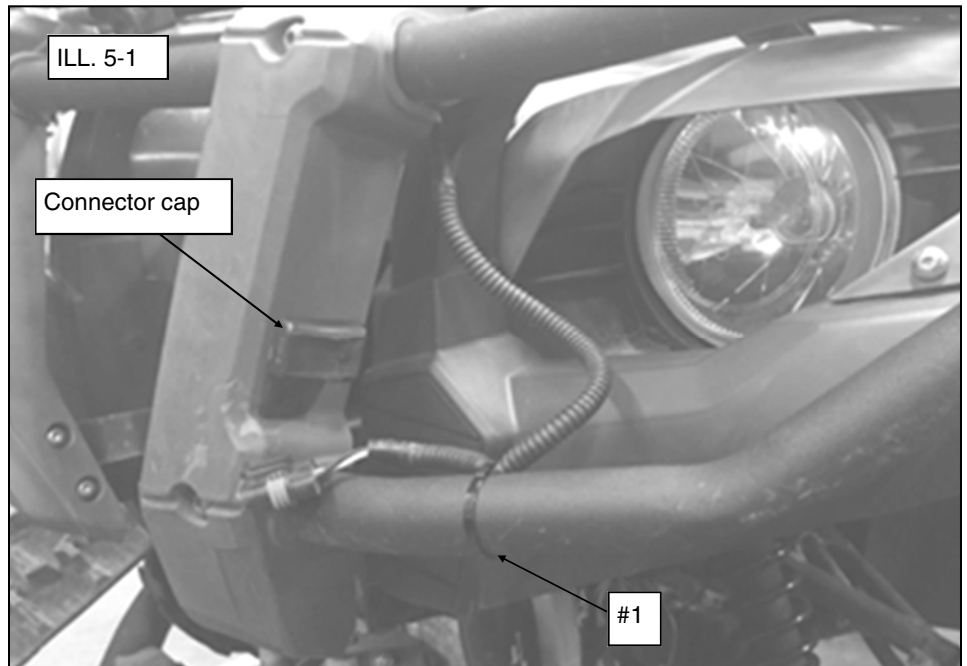


Wiring Diagram:



WIRE HARNESS ROUTING ON VEHICLE:

1. The vehicle wire harness (item #23) can be routed to the front grill area and secured using provided cable ties (item #1) as shown. To allow for plow raising and lowering movements, make sure to leave enough slack wire length from connector to cable tie. (See illustration 5-1).
2. The vehicle wire harness (item #23) includes a cover cap for the connector. The cap can be attached to the vehicle using provided cable ties (item #1) or badge trim adhesive (not included). When the plow is not attached to vehicle, the wire harness can be plugged into the cover cap as shown. (See illustration 5-2).



USAGE INSTRUCTIONS:

1. Use the angling kit only when the plow is up, with no contact on the ground or against any obstacle.
2. Once the plow is not turning anymore (due to an obstacle or being locked in the furthest angle position on either side), release the switch.
3. Do not keep operating the angling kit when the plow is locked.
4. If there is ice build-up on gear system preventing power angle pivot operation, let plow system thaw in warm environment for 30 minutes.
5. Operate the power angle system per the duty cycle listed below.

DUTY CYCLE:

- Run Time: 10 seconds free or 2 seconds locked
- Cool Time: 45 seconds
- Do not use over 65°F (18°F) or under -20°F (-28°C)

TROUBLESHOOTING:

- If the plow is not turning:
 - ◇ Check the fuse (located near positive terminal connection) for the Power Angle wiring harness
 - ◇ Check for dust or debris (ice, gravel, etc.) in the gears (located under plastic cap)
 - ◇ Check for any damage to the gear sets or plow push frame (related to hard impacts)
 - ◇ Check the connectors on the motor for a loose connection
 - ◇ Check the wiring for any damage
 - ◇ Check the battery voltage (continuous use with the vehicle not running will drain the battery)

MAINTENANCE:

- Lightly grease the worm gears annually
- To remove dust or debris build-up on gears, use water to loosen material, then blow dry with pressurized clean air

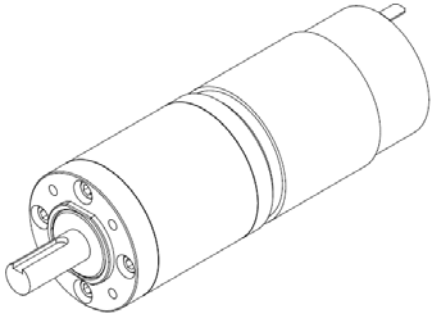
SPARE KITS

Item	Description	Motor kit P/N 33-0111	Wiring kit P/N 33-0112	Gear kit P/N 33-0115	Hardware kit P/N 33-0117	Plastic Cap kit P/N 33-0120
1	Cable Tie, 141mm long		13x			
2	Carriage Bolt, Zinc Plated, M10-1.5 x 25mm				1x	
3	Circlip, Zinc Plated			1x		
4	Flat Socket Head Cap Screw, Zinc Plated, M4-0.7 x 10mm				4x	
5	Set Screw, Zinc Plated, M6-1.0 x 12mm			1x		
6	Hex Bolt, Zinc Plated, M10-1.5 x 25mm				1x	
7	Hex Bolt, Zinc Plated, M8-1.25 x 25mm				5x	
8	Hex Nylon Nut, Zinc Plated, M5-0.8		3x			
9	Lock Washer, Zinc Plated, M10				1x	
10	Nylon Flange Nut, Zinc Plated, M10-1.5				1x	
11	Nylon Flange Nut, Zinc Plated, M8-1.25				5x	
12	Shoulder Screw, Zinc Plated, Dia. 8mm x 14mm, M6-1.0				2x	
13	Socket Head Cap Screw, Zinc Plated, M5-0.8 x 14mm		1x			
14	Socket Head Cap Screw, Zinc Plated, M5-0.8 x 20mm		2x			
15	Gear Assembly			1x		
16	Handlebar Clamp		2x			
17	Straight Section Bracket		1x			
18	Switch Bracket		1x			
19	Plastic Switch Cap		1x			
21	Wiring Assembly		1x			
23	ATV Wiring Harness		1x			
24	Worm			1x		
25	Plastic Cap					1x
26	Decal					1x
27	Spring				2x	
28	Motor Mounting Plate				1x	
29	Electric Motor	1x				
30	Self-Tapping Screw, Zinc Plated, M4-0.7 x 12mm LG					2x

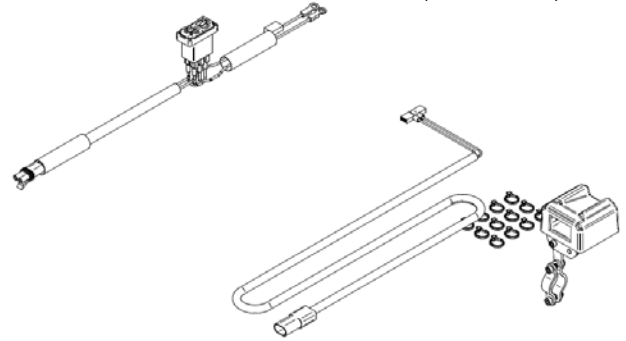
SPARE KITS:

See the table on page 12 for a full description.

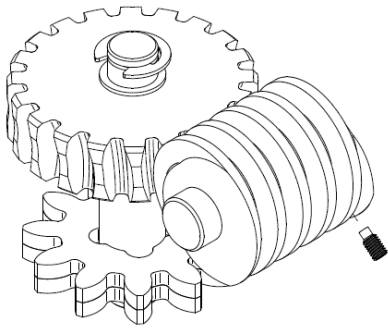
Motor kit (PN 33-0111)



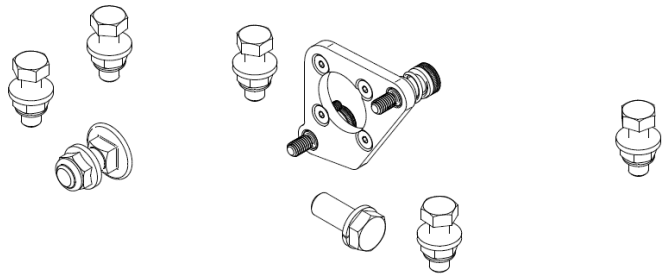
Wiring kit
(PN 33-0112)



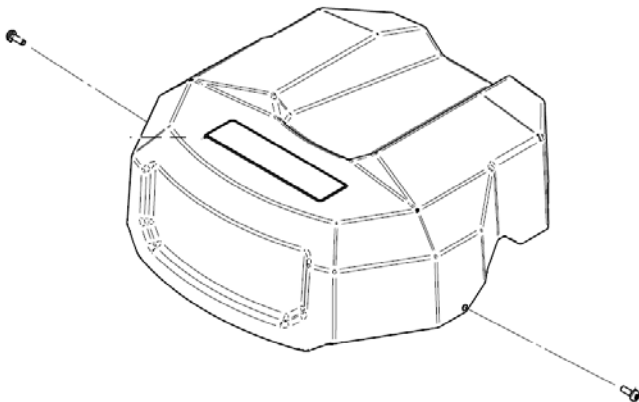
Gear kit (PN 33-0115)



Hardware kit
(PN 33-0117)



Plastic cap kit
(PN 33-0120)





Two Year Limited Warranty

For the period of two (2) years from the purchase date, Kolpin will replace for the original purchaser, free of charge, any part or parts found upon examination by Kolpin to be defective in material, workmanship, or both.

All transportation costs incurred submitting product to Kolpin for warranty consideration must be borne by the purchaser. If Kolpin determines that the product must be returned to the factory for credit, please call 1-877-956-5746 for a Return Merchandise Authorization (RMA) number and shipping instructions.

This warranty does not apply to parts that have been damaged by accident, alteration, abuse, improper maintenance, normal wear, or other causes beyond the manufacturer's control. In order to protect you and your ATV, certain parts of the plow system and/or hardware are designed to fail when the equipment is over-stressed. Parts that are lost due to loosening and improper maintenance are not covered under warranty. This warranty does not cover removal or reinstallation labor fees of the plow system and related components.

Peripheral products such as engines, electric motors, and actuators may carry an original manufacturer's warranty. Most hardware is general in nature and is easily obtained locally. Be sure to replace with minimum metric class 8.8 specification.

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