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THE

KRISTI

CO.

Snow Vehicles with Ski-Action

TRADE MARK

OPERATORS MANUAL
and
MAINTENANCE
HANDBOOK

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KRISTI MODEL KT-3



KRISTI MODEL KT-3

OPERATING INSTRUCTIONS

CHECK LIST

A check list is provided on the dash of each KRISTI. These items should be checked according to maintenance instructions. A minimum list is as follows for extended trips:

FUEL: 20 gallon VW-Regular. Porche - High Test.

OIL: Engine
Transmission
Differential
Hydraulic

LUBRICATION: Zerk fittings according to chart.

BATTERY: Fluid just covering plates.

LIGHTS: Check extra fuses and bulbs

TIRES: KT-2 20 PSI; KT-3 35 PSI. Check lug bolts and caps.

TRACK: Check tension, cleats, guides and sprockets.

HYDRAULIC SYSTEM: Check after warm-up.

STARTING AND WARM-UP

Cold Start:

1. Turn on key - check Green light (generator) and red light (oil pressure) on.
2. Depress clutch - transmission in neutral.
3. Pump throttle several times.
4. Choke full on.
5. Push key and turn right to start. If extremely cold additional throttle pumping is helpful.

Warm-up:

1. Lights should go out when generator cuts in and oil pressure raises to minimum. Should red light stay on on extremely cold start... stop after one minute and re-start again in three minutes (oil may be too cold to circulate until engine block is warmed). If either light remains on several minutes check circuits and instruments effected by use of engine manual.
2. Leave choke on full until engine runs smoothly at 1200 RPM. Slowly close choke as engine warms up.

NOTICE: DO NOT RACE ENGINE DURING WARM-UP.

3. On extremely cold mornings a partial cover over the engine air intake will speed warm-up. Remove before operating. Also the air outlet cover may be left closed until cab is sufficiently warm. NOTICE: If operating with closed air outlet to obtain maximum cabin heat, be sure to leave side windows slightly open to assure ventilation in case of exhaust stack leakage.

4. After engine is warm, the drive train may be warmed up by driving in first gear low range until gears shift freely.
5. Hydraulic System may be actuated fully right and left when oil is warm enough to pump without making a sound. Should normal tilt not be obtained, refer to maintenance instructions for pumping the system up.

GEAR SHIFTING

The transmission is a straight spur gear type with four speeds forward (green handle) and Low High and Reverse (red handle). This allows 8 speeds forward and four in reverse. The clutch (left foot pedal) has ball-bearing throughout and adjustable linkage. Normal start is in 2nd or 3rd low range.

Use high-low range gears to select intermediate speeds when it is not possible, go a full gear higher and maintain 2500 RPM minimum engine speed. A half gear lower at 3300 RPM will give equal speed with better engine efficiency, life, and gas mileage. All gears may be shifted without stopping, and with practice one can shift from 3rd gear high range to 4th gear low range. (The engine may be revved up to maximum just prior to shift.) Should any gears jump out, refer to maintenance instructions for adjustment. Use 1st gear low for parking. First gear will hold the tracks on the steepest incline.

STEERING

Steering is accomplished by use of two levers (black handles) which actuate brake bands on a controlled planetary gear differential. Both handles pulled at once give very effective braking. (When adjusted properly they will stop track on steepest incline.)

Any degree of turn is available from 0 degrees to a 10 foot radius depending on the amount of brake applied. When the brake is full on the drum is stopped completely which causes one drive shaft to turn about half the speed of the other although both tracks continue to pull. Since steering requires power to twist the tracks sideways, adequate RPM should be obtained before turning sharply. The bands and drums run in oil, therefore, proper differential oil level is very important. **NOTICE:** Steering levers should be applied firmly to obtain desired turn and then released completely so that the bands and drums can re-lubricate and avoid excessive heating which wears extremely fast. (Bands could burn out in ten hours by riding the handles.) The handles on Serial Numbers 00049 and preceding (with base above firewall) should pull about 2" to 2 1/2" before locking and should be readjusted when they reach 3" from the cowl. Serial Numbers 00050 and after have the steering handle base midway in two-piece firewall and normally pull 3" before locking and should be adjusted up when they reach 4" from lower dash. Refer to maintenance instruction for band change.

INTRODUCTION

The development of the KRISTI snow vehicles began in early 1947 in the form of a very unique snow plane. This propeller driven vehicle utilized a control by which the operator could tilt the machine from side to side in effect raising one ski and lowering the other to negotiate up to 45 degree side slopes and permit high speed turns without skidding. This tilting and edging of skis after the manner of a skier was called "Ski-Action". Since it could do a "Christie" up or down hill, the trade name "KRISTI" was adopted.

Because of the demand for a higher capacity machine with the ability to cope with mud, rocks and general off-the-road terrain conditions the KRISTI track machine was developed. The present KRISTI track models still retain the "Ski-Action" now hydraulically controlled. They also keep the light weight and trouble free operation afforded by an air cooled engine and a very compact drive system. The tubular steel frame and fiber-glass body allow maximum functional design for ruggedness with capacity and beauty. The unique suspension and track system gives full contact over extreme terrain with the maximum flotation and traction for operating over the most difficult terrain conditions of snow, mud, and swamp.

Because the KRISTI is primarily used to travel into inaccessible areas, where an hours' ride may be equivalent to a days' walk, dependability is extremely important. The KRISTI has been designed and built with dependability of primary importance; however, it is advisable, as in aircraft, to do preventative maintenance as may be found necessary by periodic checks; especially before long trips. The operator should have a working knowledge of the KRISTI machine as well as know the basic operating procedure for the best results. For this reason this handbook of operating and maintenance instruction is provided. A copy should be carried with the KRISTI at all times.

depending on the amount of brake applied. When the brake is full on the drum is stopped completely which causes one drive shaft to turn about half the speed of the other although both tracks continue to pull. Since steering requires power to twist the tracks sideways, adequate RPM should be obtained before turning sharply. The bands and drums run in oil, therefore, proper differential oil level is very important. NOTICE: Steering levers should be applied firmly to obtain desired turn and then released completely so that the bands and drums can re-lubricate and avoid excessive heating which wears extremely fast. (Bands could burn out in ten hours by riding the handles.) The handles on Serial Numbers 00049 and preceding (with base above firewall) should pull about 3" to 2 1/2" before locking and should be readjusted when they reach 3" from the cowl. Serial Numbers 00050 and after have the steering handle base midway in two-piece firewall and normally pull 3" before locking and should be adjusted up when they reach 4" from lower dash. Refer to maintenance instruction for band change.

SKI-ACTION

The Ski-Action hydraulic system is described in detail in the maintenance instructions. This section should be studied thoroughly so as to know what is happening when the control is used, and to know how to maintain the system. The control handle (left dash) is used to control the tilt of the body left and right so as to hold the body level up to a 25% gradient, and to assist in steering by changing the balance in the direction of turn. The Ski-Action has an automatic feature in which there is an interchange of fluid between the four supporting cylinders to absorb shocks and to allow the track carriers to conform to twisting terrain. This second feature (Model KT-3 or modified KT-2) is not controlled in any way and operates freely when the supporting surface of one track is not parallel with the other.

If properly co-ordinated with changing terrain and steering, the Ski-Action, combined with the tandem boggies, allow the weight to be carried evenly the full length of both tracks. Obviously this has a definite advantage on snow or marsh because if one track has more weight than the other it starts down and the weight is constantly increased by the shifting body. In loose powder snow or rotten spring snow the control is often used on level terrain since the slightest imbalance caused by steering or hollow snow may drop one track down causing a resultant turn in the direction. The control should be used slightly ahead of the steering in precarious conditions so that the imbalance actually takes place in the direction of your intended turn, and thereby assisting it. The use of the control to unbalance the machine in the direction of a desired turn can be used very effectively as a steering device when operating in very maximum conditions where the use of the steering levers may cause a track to spin.

The control should be used even in mild sidehill terrain to level the body so as to minimize the use of the steering levers to maintain a straight course.

DRIVING THE KRISTI IN MAXIMUM CONDITIONS

With deep snow all roads disappear leaving at times only the slightest hint as to where they were. Depending on the amount of drifting, location of trees, and the steepness of the slope, the road base may or may not form a satisfactory route for snow travel. Many times it is better to go straight up the side of a mountain, cut across creek bottoms, or follow ridges where travel would be impossible with heavier machines. Often one short slope impassable ordinarily, would stand in the way of several miles of travel to a desired destination. The KRISTI with its Ski-Action control enables it to climb and traverse such slopes. CAUTION: The operator traveling in these situations should watch closely for avalanche conditions.

In considering maximum climbs of 50% to 100% grades, there should be no fear that the KRISTI will tip over backwards. The front sprocket drive plus the forward weight of the engine and drive assembly make its

climbing balance very favorable. There are several basic rules to be remembered to obtain the maximum possible climb.

First, drive the machine as slow as it will go with the least amount of engine RPM possible. This is the main reason for the 1st gear low range with its' 1/2 MPN with less than 1000 RPM engine speed. In certain conditions such as new wet snow or spring corn snow, stopping the Kat each half track length to let the snow "set up" may enable one to surmount a short otherwise impossible pitch.

Second, keep the machine in as near perfect balance as possible so that the weight is distributed equally the length of both tracks. The Ski-Action control assists considerably in maintaining this balance. Longitudinal balance is also very important and may be assisted in emergency by shifting the passenger or load weight forward.

Third, the least amount of steering possible should be done with the Ski-Action control by slight imbalance of the body right or left. Here one must take exception to the firm positive steering and use only the slightest brake continuously at times to hold a steep traverse. If a great change of direction is needed, it is best to gradually accelerate to the highest engine speed possible in the gear (without breaking traction) ---- and then let up quickly on the throttle and at the same time firmly steering in the desired direction until the inertia is lost and the engine is back to minimum RPM. In effect the steering is done while coasting up hill.

Fourth, if climbing an open slope by use of a steep traverse where the fall line is too steep....do any necessary changes to the opposite traverse by means of backing slowly down the hill while steering firmly to set up a new tack and coordinating the tilt control to maintain balance. (A complete change of tilt is of course required) Here also the slight favorable imbalance can be used to assist the turn so that the least amount of climb is lost.

To descend a very steep incline, many of the climbing rules apply since one still needs maximum traction to hold the weight of the machine from accelerating. Should the tracks begin to slide....add power so as to catch up and then let the compression slow the machine down again to a safe speed.

Since the KRISTI is balanced to carry a load up an extreme slope it is at a slight disadvantage going down a grade of over 60%. This condition may be helped by shifting weight to the rear if practical. If such a slope as this is combined with vertical drop-off in excess of two feet, such as a road bank, it would be advisable to turn and back over it.

These instructions should be studied before operating the KRISTI and then again after having some experience with it. The various situations may be tried on small open hills where there is no danger of getting into trouble and the various techniques practiced so that when the real situations come about, the operator will be ready for them.

PART II

MAINTENANCE INSTRUCTIONS

BODY AND FRAME

BODY: The fiberglass body is heavily reinforced at places of strain. A thick coat of red pigment is moulded-in to insure a beautiful and durable finish. The body has a side and a rear door. The standard body has double front and rear cushioned seats with additional seating capacity for two people behind the rear seat. The rear seat may be removed for extra cargo capacity.

A roof rack is available to carry skis, baggage, or long objects. A standard stretcher may be mounted over the right half of the two main seats. The front windshield is safety-glass; the others are plexiglas. Driving lights and tail lights are standard with a spot light available for forward roof mount. A 20 gallon fuel tank with electric pump is placed under the front seat. Electric windshield wiper is standard. Engine air exhaust serves as efficient defroster. Engine air exhaust also is used for cabin heat.

FRAME: A welded one-piece steel frame is riveted to the lower body and supports the engine and the suspension members.

ENGINE

Manufacturers engine INSTRUCTION MANUAL is provided.

Special notices for KRISTI operation

IGNITION: For high altitude operation, slightly advanced ignition operates better.

OIL: Use only heavy duty high detergent oil of SAE 20 weight for normal operation. SAE 10 weight oil to be used in below zero average temperature (Fahrenheit), or SAE 30 at above 70 degree average temperature. Do not use multi-weight oil.

FUEL: Regular octane fuel is required for VW engine. Porche operates better on high test fuel. From 5,000 to 10,000 feet elevations use VE Air Jet 195 main fuel jet 112.5. VE engine average fuel consumption is 1 1/2 gallon per hour.

ELECTRICAL SYSTEM: Battery acid should just cover plates otherwise excessive spilling may occur in extreme maneuvers.

GENERATOR BELT: This should be tight enough to allow turning of the engine by the generator pulley. This is very important for both charging of the battery and especially for engine cooling.

TRANSMISSION

GEARS: Total transmission gear ratio is 7.12:1. The green shifting handle gives four speeds forward, the red shifting handle gives low-high

range and reverse. This allows a possible combination of 8 speeds forward or four in Reverse from 1/2 M. P. H. to 20 M. P. H. - (25 MPH with Porche engine) The transmission is manufactured by the KRISTI Co. **GEAR SHIFTING:** The gear shifting box is located on top of the transmission. It has lever actuated shifting forks with spring loaded ball indented positioning. Should the machine come out of gear while operating, the spring loaded indents, ball joints, and shifting mechanism in the box should be coated with light grease. The Allen shoulder screws on the top slide should be tight but should not cause the levers to bind. **OIL:** SAE 90 weight high pressure transmission lubricant is desired. Four pounds is the capacity. Best oil level is 5 1/4" below cover plate measured at breather outlet.

DIFFERENTIAL

TYPE: The controlled differential is manufactured by the Clark Manufacturing Company, Clark No. S70FS. It is standard equipment on Oliver OC-3 and OC-4 tractors.

OIL GRADE AND LEVEL: Oil is SAE 90 weight gear lubricant. Six pound capacity. Level should be just under the final drive shaft. A square plug is located on the left aluminum housing for oil level.

ADJUSTMENT OF STEERING BANDS: Take up lock nuts on rods at lower end of brake levers until lever in firm back position is about three inches from lower dash. On Serial No. 00049 and before adjust locking nuts of rod ends inside engine compartment until steering levers are 2 1/2" from top of cowl in firm back position. When steering action becomes unresponsive and has been adjusted several times it is necessary to change steering bands in the differential case.

REPLACEMENT OF STEERING BANDS: (Refer to drawing of Differential Case Assembly)

1. Remove fire wall.
 - (a) Serial No. 00050 and after, remove six metal screws from upper edge of fire wall. Remove nuts from steering rod ends letting steering handles back. Remove upper portion of fire wall. Remove screws from two tabs near floor. Remove throttle rod linkage from pedal and control arm on engine and pull from lower fire wall as it is removed back and out.
 - (b) Serial No. 00049 and before, remove clutch pedal and metal screws from top edge of fire wall pull back and out.
2. Remove rectangular plate from differential assembly. On KT-3 model this includes steering levers.
3. Remove old bands by following steps:
 - a. Loosen pin set screws (No. 7) about two turns.
 - b. With screwdriver slide pins (No. 6) toward center of case and insert safety wire in small hole at end of each pin to

- c. Remove lower pin first then rotate cam and remove top pin.
 - d. Grasp top end of steering band (No. 3) with plier or hook and pull out over the top of cam. NOTICE: Note that steering band lining does not extend to the last set of rivet holes on the top end of steering band. The new bands must be replaced the same as original.
4. Installing new bands:
- a. Stretch out and flatten new band and insert over cam placing end with full lining in first.
 - b. Hold band in alignment with drum while forcing band around drum.
 - c. Replace pin in top of band, tightening set screw firmly into groove in pin.
 - d. Use large screwdriver and wedge between steel back lap and lower case opening so as to lever the band up into alignment with cam. Replace pin as described above and tighten set screw.
5. Change oil if it has had sufficient time. Oil level is 1" below lower edge of opening. Check chain tightness.
6. Replace cover and spring returns on KT-2. Adjust steering levers as described in previous section. Replace fire wall.

ADJUSTMENT OF DIFFERENTIAL DRIVE CHAIN: (See differential Case Assembly drawing)

1. With cover removed from differential case check tightness of chain. New chain should be taut. Used chain should have slack enough to depress with finger approximately 1/4" at top of differential opening.
- a. To tighten chain, loosen all nuts holding the transmission to adapter plate. (No. 5) (Side and bottom have 3/8" allen nuts and top has standard 3/8" lock nuts.)
 - b. Loosen lock nut on jack screw at lower rear of transmission flange. (No. 2) Raise transmission with jack screw to desired chain tightness. Tighten lock nut and tighten all nuts around transmission.

FINAL DRIVE HOUSING

This aluminum housing contains lower chain drive and sprockets. The oil quantity is one pint of SAE 90 weight transmission oil. This does not require periodical checking except if it is noticed to leak oil. Occasionally check tightness of cap screws holding clam shell to steel drive housing.

TRACK DRIVE SPROCKET AND HUB: Check tightness of nut holding hub on tapered shaft. If rubber sprocket is noted to wear, check track for damaged steel guides or other reason for gouging.

TRACK ASSEMBLY

www.forumsforums.com/snowtrac.html

TRACK CARRIER: Model KT-3

1. Idlers are 6:00 X 9 6 ply tires. The hub and seal are standard front wheel Ford. Tire pressure is 35 pounds. Idlers are fitted with grease zerks and are packed solid with lythium based grease to repel water. **NOTICE:** When operating excessively in water over hubs they should be greased daily. These idlers are mounted in tandem. The rear half of the rear tandem has a slide for adjusting track tension. It may be reached from between rear wheels. The supporting trunion shaft is mounted to main carrier axle with two heavy ball bearings. These bearings require greasing every one hundred hours except when operating in water then they should be greased weekly.
2. The main carrier is supported by the clam shell housing in front and by a drag link to the rear suspension arm. The front of this main carrier has bronze bearings which should be greased weekly. The two bearings on the drag link in the rear should be greased weekly or more often depending on the amount of mud or water operated in.

TRACK CARRIER: Model KT-2 and KT-2a

1. Idlers are 6:00 X 6 4 ply tires. The hub houses tapered roller bearings. Tire pressure is 15 to 25 pounds depending on operating condition and temperature. Idlers are fitted with grease zerks and are packed solid with lythium based grease to repel water. **NOTICE:** When operating excessively in water over hubs they should be greased daily. The center mount on Model KT-2 has a rubber torsion mount for cushioning. This idler will appear slightly loose since it does not carry equal weight with other tires. The rubber mount and housing should be changed when it no longer exerts pressure on the track and therefore will not hold pressure against guides for turns and side hill operation.
2. The main carrier is supported by clam shell housing in front and by a track linkage to the rear suspension arm. The front of this main carrier has a bronze bearing which should be greased weekly. The two bearings in the track linkage in the rear should be greased weekly or more often depending on the amount of mud and water operated in.

TRACKS: The track assembly consists of two main belts of five ply cotton-nylon conveyor belting. The pressed steel idler guides have stainless steel cups for sprocket engagements. Treated hickory cleats with steel face are bolted together. An outside looped belt is attached to the long cleats. The track is made endless by a group of Flexco No. 500 fasteners with steel pins. The outside belts are fastened with lacing and a steel pin. The nuts of the fastening bolts are hard surfaced for security and wear.

1. The guides or cleats may be replaced individually by removing bolts. (Bolts are best removed by tightening to break the welded nut from the bolt or by grinding weld). To replace, new bolts must be used.
2. Permanent belt repair may be done by cutting damaged section from belt after the pattern of the main belt fastener and installing two sets of Flexco fasteners and steel pins. Repaired section should be drilled after pattern of damaged part.

TRACK ADJUSTMENT: The track should be tight enough so that when maximum turns are made on bare ground the sprocket will not tend to ride out of the slots and over the main belt or jump cogs on hard pulls.

1. MODEL KT-3

- a. Track adjustment is accomplished by loosening the jam nut and extending adjusting screw the desired amount. This jack screw adjustment is located between the rear two idlers. The sliding portion should be greased occasionally to prevent rust.
- b. Track removal or installation is accomplished by use of a track jack applied to cleats adjacent to fasteners. When sufficient slack is obtained, ends may be removed or installed with the off-set head on the inside next to slot of the main belt with the off-set portion countersunk in the inside Flexco fastener and the locking nut put on outside toward the sidebelt.

2. MODEL KT-2

- a. The track may be adjusted by the following procedure:
- (1) Remove 7/16 stud from lower clevis of the arm supporting the rear hard rubber idler. Loosen the greasing top stud.
 - (2) Lift at rear of track with hands or with pry bar so that the idler is forced upward and forward in between the two rear pneumatic idlers. This will allow the track to be peeled off to the side.
 - (3) Loosen the 3/8 bolt in center slot.
 - (4) Remove outside bolt and extend the idler the desired amount replacing the bolt in either side of the slide. (1/4 inch adjustment is usually sufficient and is obtained by placing the bolt in the next hole on the opposite side of the slide).
 - (5) Replace track over idlers and roll idler toward the rear while applying pressure to the top of the track. (Pressure may be applied by a man standing on the track just forward of the center idler and forcing the arm down into position.) Replace bolt and tighten.
- b. Track removal and installation may be accomplished by releasing the arm and taking the track apart. The coil

spring should be replaced by 3/8" steel bolts with an off-set head and locking nut. The Kat may be driven out of one track by applying opposite brake.

TIRE PRESSURE:

1. MODEL KT-3
 - a. Tire pressure in the rear and front idlers is very important. It should be 35 pounds.
2. MODEL KT-2
 - a. Tire pressure in the rear and front idlers is very important. It should normally be 20 pounds. 15 pounds air pressure for extremely cold weather or when soft ride is desired and 25 pounds air pressure for extremely steep side hills and warm weather operation.

Should one of these go flat in the field (rear or front idler) the tire and wheel should be replaced by the third tire from the front. Except over extremely rough terrain or steep side hills the damaged tire need not be placed on the vacant axle.

TRACK TENSION:

1. MODEL KT-3
 - a. Track tension may be roughly measured by lifting belt over center of track with one hand. It should not lift easily more than two inches by one hand in the center of the track. The proper track tension is important since a loose track will cause the sprocket to come off in extreme conditions; where as, too tight a track will cause excessive bearing wear and rob power especially in cold weather. A track adjusted well for moderate weather may need loosening for continued sub-zero weather.
2. MODEL KT-2
 - a. Track tension may be roughly measured by lifting belt over center of track with one hand. It should not lift easily more than four inches.

SUSPENSION SYSTEM

MODEL KT-3: The suspension system consists of two front and two rear arms attached at their outer ends to the track carriers front and rear and at the inter ends mounted to the frame on system of coil springs. The front arms form the housing for the power transmission system and are mounted directly to the differential unit on bronze bearings. The main front arm consists of two clam shell like aluminum castings which house a final drive double roller chain and sprockets. This housing contains 1 pound of 90 weight transmission grease and need not be refilled or checked unless leak is noted. The studs holding the steel flanges to the aluminum casting should be checked occasionally for tightness. Just inside the body is another vertical steel arm which is connected back to the frame through a hydraulic cylinder and cushioning spring.

The rear arms have a drag link connection to the track carrier. The lateral part of the arm is a housing which rotates on a cross tube. This housing is mounted to the frame through coil springs. These arms also have an interior vertical arm which is connected to the frame through hydraulic cylinder and cushioning spring.

This four point suspension system allows flexibility both between the four hydraulic cylinders while at the same time supporting the machine weight on a cushion of oil.

The coil spring mount assembly consists of an arm bearing housing with two double cups for the four coil springs. This coil spring torsion system is held to the steel frame with two bolts. The tension of the springs is controlled by the tightness of the bolts and should be sufficient to hold the arm housing firmly and yet allow cushioning of shocks.

The hydraulic cylinders have a clevis mount to the interior arm on the shaft and are mounted to the frame through two cushioning coil springs. Should the main arms in an extreme upward position touch the body, they may be adjusted by adding shims at appropriate places between the spring and frame.

MODEL KT-2: The KT-2 is generally as described above for the KT-3 Model with the following exceptions:

1. It has hydraulic cylinders only connected to the front two arms. The rear arms consist of two lateral tubular shafts which have common bearing housings at each spring mount and have two sets of half gears welded adjacent to and between the spring mounts. With this arrangement when one arm is caused to lower the other necessarily raises. It is necessary to grease these gears as well as bearing mounts so that the arms can move freely. It is important that no foreign objects fall into the gears or they will either bind the system or spring the bearing housing or both.
2. The interior arms are connected to the body only by means of a telescoping cup which forms a stop so that the main arms do not touch the body. **NOTICE:** Some KT-2 Models have been modified to obtain the four point hydraulic system advantages by use of one hydraulic cylinder mounted as in the KT-3 Model with hydraulic cylinders connected to the front hydraulic cylinders. In this case the hydraulic cylinder forms the stops and powers the rear arm for extreme action.

HYDRAULIC SYSTEM

The hydraulic system consists of engine driven pump, four-way control valve, two needle valves, and a hydraulic reservoir. The hydraulic fluid is routed between the main control valve and the four cylinders to accomplish the Ski-Action control of the body.

HYDRAULIC PUMP: The hydraulic pump operates automatically at about 2/3 engine speed through a steel cable timing belt and sheaves. The fluid circulates constantly through the open center control valve, the reservoir, and back to the pump.

CONTROL VALVE: All KT-3 Models have Sarasota control valve made by the Sarasota Precision Products Co., Sarasota, Florida. The KT-2 Models have a Republic four-way valve.

RELIEF VALVE: The relief valve is manufactured by Fluid Controls, Inc., Mentor, Ohio. This is a sleeve type valve set up to relieve at 1000 pounds pressure. With use, the sleeve mechanism may become unoperative. It will always stick in the open position so that excessive pressure is not exerted on the system. In this case the relief valve may be disassembled and the sleeve polished with steel wool. To check or adjust the pressure, tie a gauge into the system ahead of the valve and adjust valve by the set screw and lock assembly on top of the valve. **NOTICE:** Only a very small degree of turn is required to reach 1000 pounds, so it is advisable to check it in small steps up to 1000 pounds and again after locking set screw.

THE RESERVOIR: The reservoir is situated in the upper engine compartment. It contains the reserve oil for the system. It should be filled 2/3 to 3/4 full with light weight high quality hydraulic oil refrigeration fluid. The air breather on top of the hydraulic tank is also the filling point. The breather filter should be cleaned with solvent occasionally to prevent over-flow of oil. The outlet inside the tank is screened by a fine mesh screen filter. Motor oil may be used in emergency.

NEEDLE VALVE: The needle pump up valve, one for the front two cylinders and one for the rear two, hold the hydraulic fluid on the pressure side of the hydraulic cylinders which in turn holds the weight of the vehicle. A packing nut just under the valve should be tightened sufficiently to retain oil.

HYDRAULIC CYLINDERS: The standard hydraulic cylinders are double acting with double "O" ring shaft seal (7/8" ID X 1/8"). The stroke is 8 inches. Serial Number 00043 and before had snap ring mounted heads and 3/4" shaft size. All models since this serial number have threaded, "O" ring seated heads. These cylinders have a clevis shaft which is mounted to the suspension arms. The other end has a bolt for the cup frame mount.

HYDRAULIC HOSES: The hydraulic hoses are single wire 2000 pounds capacity flexible hose with "JIC" fittings. **NOTICE:** All after Serial Number 00052 have commercial iron fittings except on the pump. **NOTICE:** Hoses should be kept well clear of exhaust stacks or sharp edges that might wear through rubber covering and steel braid; however, hose normally will not leak unless the wire braid is broken.

PUMPING UP THE HYDRAULIC SYSTEM: (ALL MODELS)

Should the body of the machine sink down due to the fluid going by the pistons of the cylinders or the needle valve leaking by, it is necessary to pump the system back up to normal. This is done in the following way:

Hold the control valve handle left or right until the body tilts as far as possible and the relief valve begins to by-pass. (The down side cylinders are fully closed).

Open the needle pump-up valves several turns. This will allow the pressure to pump the opposite cylinders all the way open so that full tilt of the body is obtained.

The relief valve will again by-pass and as it is continuing to do so, close the needle valves.

Return the body to center by opposite body control.

SERVICING THE HYDRAULIC PUMP MODEL KT-3:

1. Remove pump from mount by following steps:
 - a. Loosen two bolts on pump mount. (Belt adjustment slide)
 - b. Rock pump toward engine crankshaft.
 - c. Remove belt.
 - d. Remove timing gear by loosening two set screws on gear hub.
 - e. Remove pump by removing four (4) allen cap screws.
2. To replace seal:
 - a. Remove snap ring and washer (magnet is helpful)
 - b. Remove old seal.
 - c. Place new seal (regardless of position of old seal) with lip and spring retainer toward the pump. This will require the use of a small dull screwdriver to expand the spring and lip over the round of the shaft.
 - d. Press seal into housing.
3. Replace all parts in reverse order.

BELT ADJUSTMENT:

1. Use slide adjustment on pump mount for pulley adjustment.

BELT REPLACEMENT:

1. Loosen two bolts on pump mount and rock pump toward engine. Replace belt and readjust.

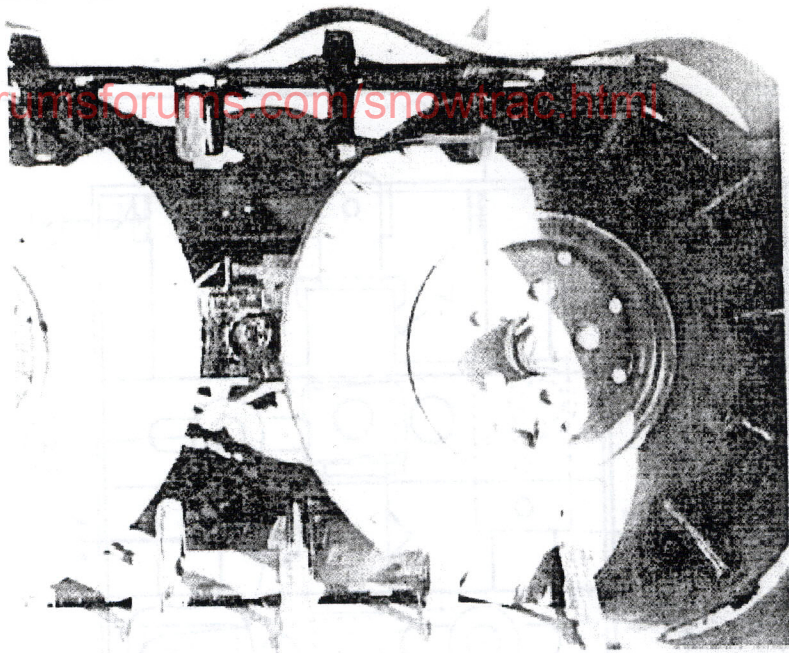
PARTS: Eastern Pump Model 104-32
Seal # VE 63633
U. S. Timingbelt 240L050 or equivalent.
Size: 24" length 3/8" pitch and 1/2" wide.

SERVICING HYDRAULIC PUMP MODEL KT-2:

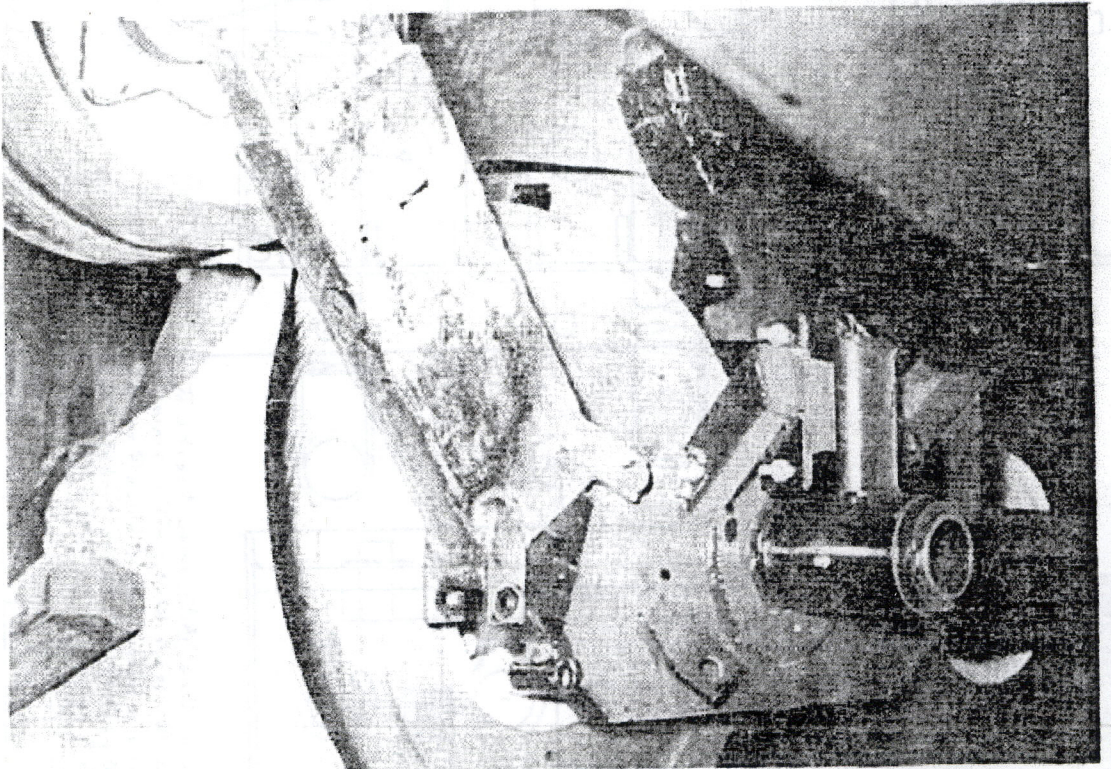
1. Remove pump from engine by following steps:
 - a. Remove two nuts from studs on engine casting which hold steel base of pump mount. (four bolts at base of aluminum pump mount are for belt adjustment only)
 - b. Rock pump toward engine crankshaft and peel timing belt off the crankshaft drive.

- c. Remove pump and mount from engine. (Probably requires removal of hydraulic hoses ... NOTICE: Mark hoses before removal.
2. Remove pump from aluminum base mount by these steps:
 - a. Loosen set screws two turns at hub of driving gear.
 - b. Tilt assembly so that pump is on top.
 - c. Tap lightly near shaft while rotating gear until shaft has two parts... a small misalignment plug at pump end)
 - d. Remove timing gear.
 - e. Remove the four (4) allen cap screws then remove mount.
3. To replace seal:
 - a. Remove snap ring and washer (magnet is helpful)
 - b. Remove old seal.
 - c. Place new seal (regardless of position of old seal) with the lip and spring retainer toward the pump. This will require the use of a small dull screwdriver to expand the spring and lip over the round of the shaft.
 - d. Press seal into housing.
4. Replace all parts in reverse order.
5. Belt adjustment
 - a. Belt should not be slack (after mount is tight) but only tight enough so that the middle of the belt can be displaced with the finger about 1/4" to 3/8". Use the slotted adjustment with the four bolts taking care to align pulleys.

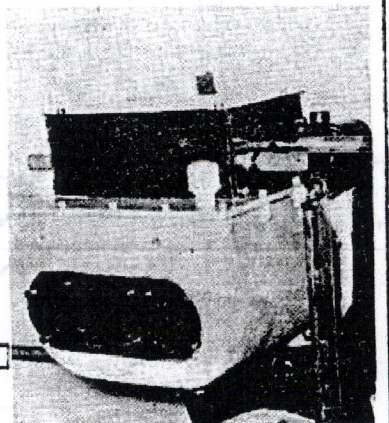
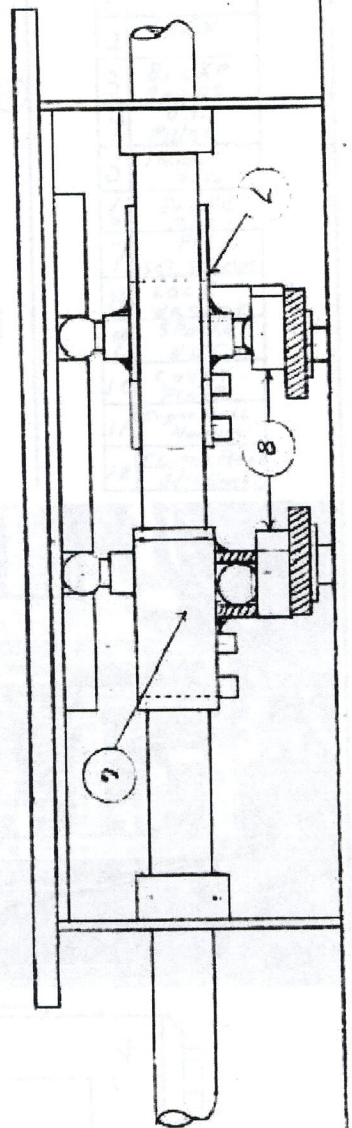
PARTS: Eastern Pump Model 104-32 Seal # VE 63633
U. S. Timingbelt 240L050 or equivalent
Size: 24" length 3/8" pitch and 1/2" wide.



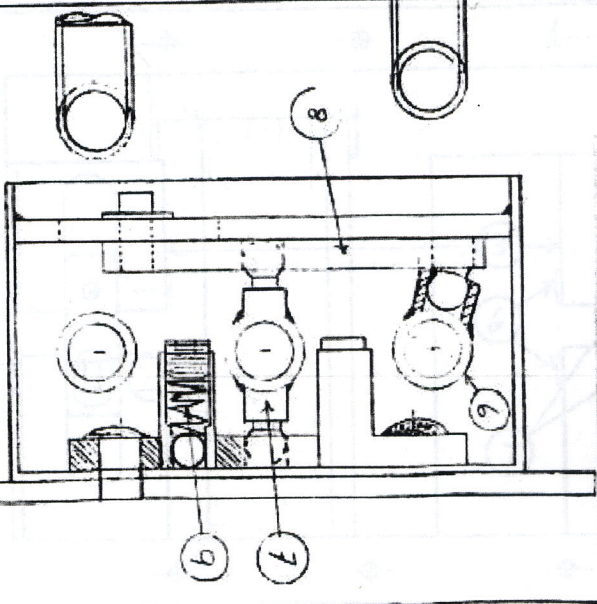
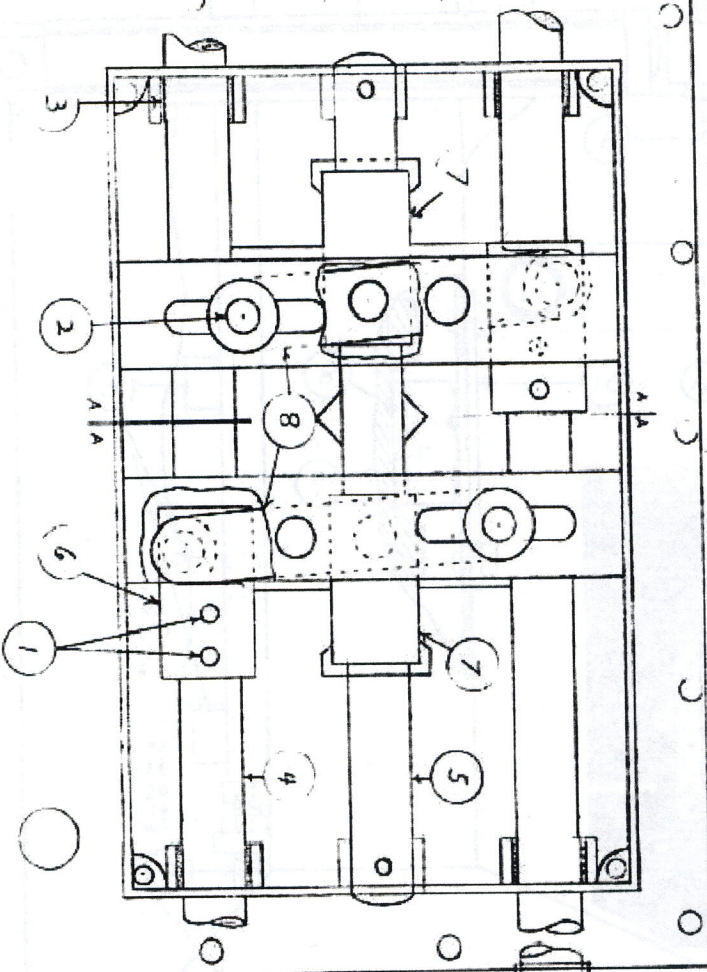
TRACK ADJUSTMENT KT-3



TRACK ADJUSTMENT KT-2

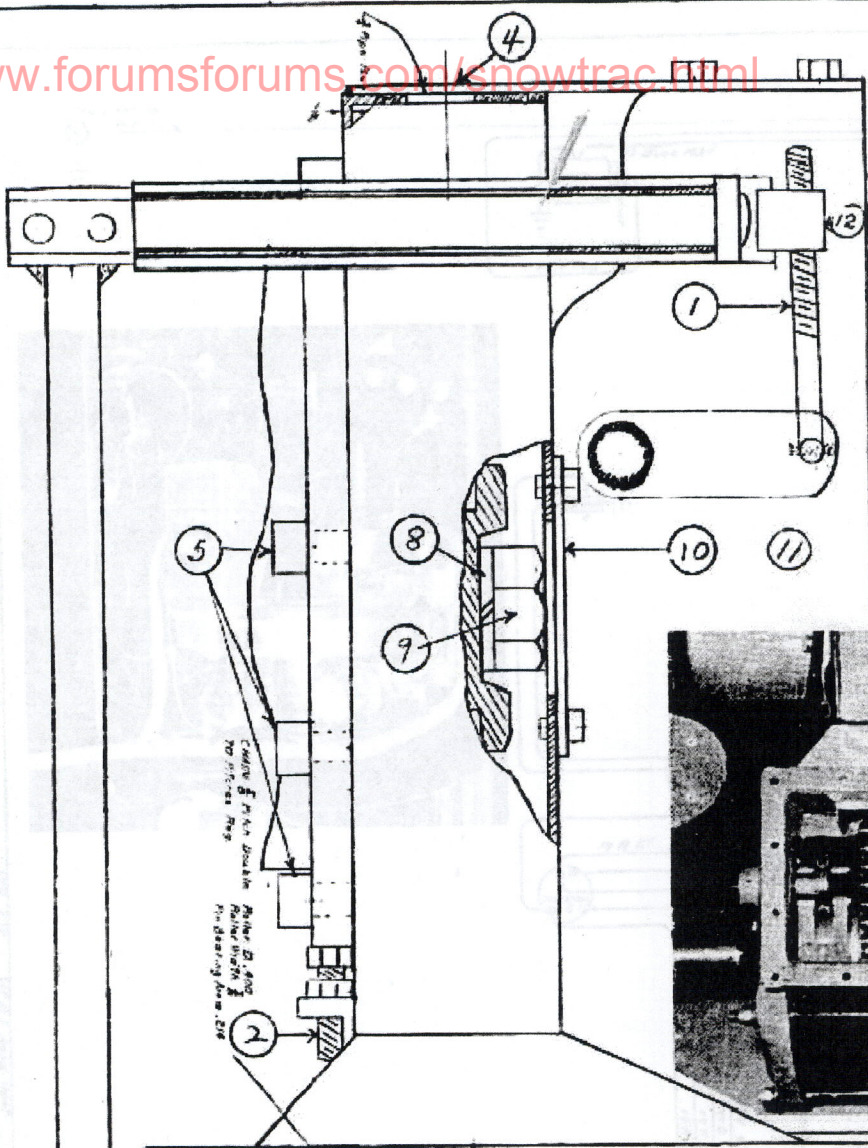


Page 16

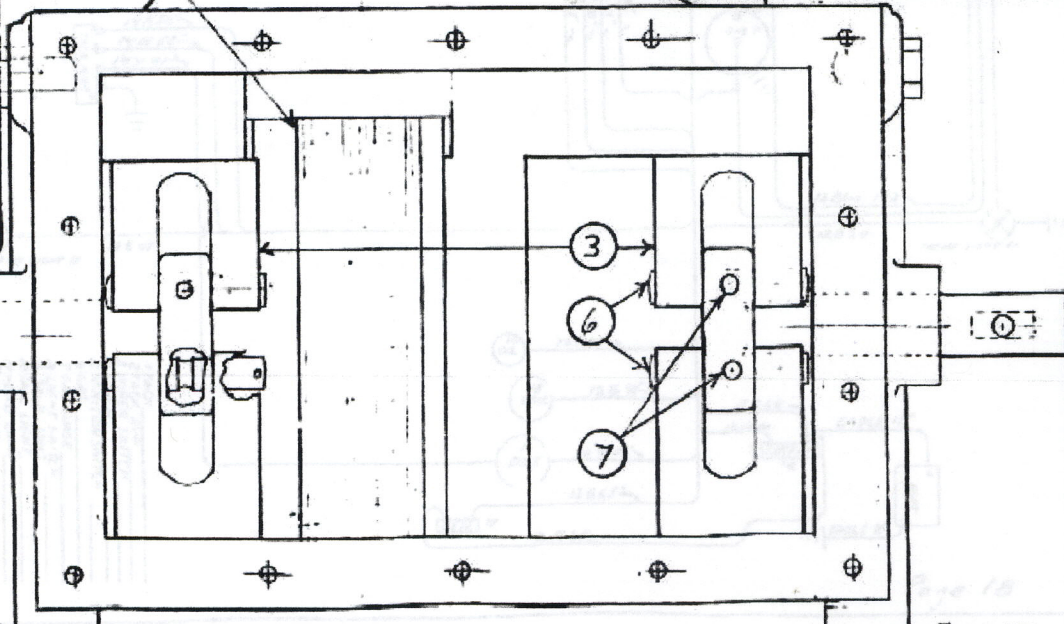
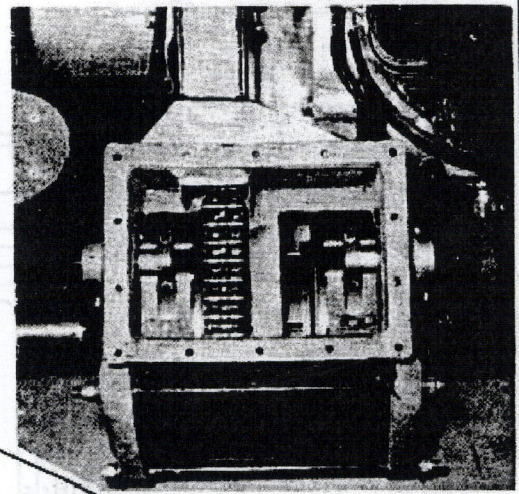


WIKI:ST:1:0 Gear Shift Assembly

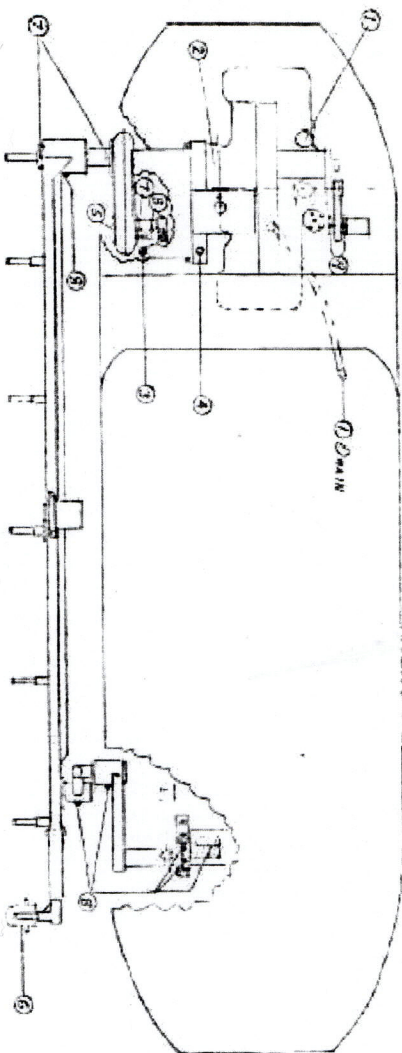
To adjust gear shift ball indent, remove a 1/8" shim under screw 3 - slide to lever 2 aside to get a allen wrench to ball indent set screw assembly 8 then rotate in counter face a ballface and tight shimlock screw to correct assembly.



1	CLUTCH
2	CHAIN
3	Brake BANDS
4	OIL FILLER
5	Trans. Nut
6	Brake PINS
7	SET SCREWS
8	LOCK WASHER
9	NUT
10	COVER PLATE
11	Engine Ball Housing
12	Clutch Pedal Adjustment



741 K-41 1100
 1/2" SCALE
 W/400 DIFF. CASE ASS'Y
 2



LUBRICATION CHART

No.	UNIT	TYPE	SAE - AT Temp.		CAPACITY	CHANGE	REMARKS
			0°	32°-40°			
①	ENGINE	HEAVY DUTY HIGH DEG.	10	20 30	1W - 2.5 qts Rackless 3.5 qts	30 Hrs.	* In addition service engine as indicated re engine manual.
②	HYDRAULIC	TURBINE QUALITY	10	20 20	8 Qts.	100 Hrs.	* Check level 1/2 to 3/4 full each Trip
③	TRANSMISSION	HEAVY DUTY HIGH PRESSURE	90	110	11 Lbs.	100 Hrs.	Fill to 5" from Top measured at leveler
④	DIFFERENTIAL	"	90	110	4 Lbs.	100 Hrs.	* Change when steering bands are replaced.
⑤	CLAM SHELL	"	"	"	1 Lb.	100 Hrs.	* Add oil only if leaking
⑥	WHEEL HUB	Wheel Bearing Lithium Grease			Asst full	100 Hrs.	* Acc & Full - check each season.
⑦	DRIVE SHAFT	"			Grease Sparingly	100 Hrs.	* Bearings are sealed and require little attention
⑧	BRONZE	Drive Bushing Grease				For 1st 50 Hrs. Extend to 25 Hrs.	* KT-3 model has two tension knives not shown on the above chart
⑨	DRIVE PUMP	"			Grease Sparingly	25 Hrs.	* KT-3 requires no grease

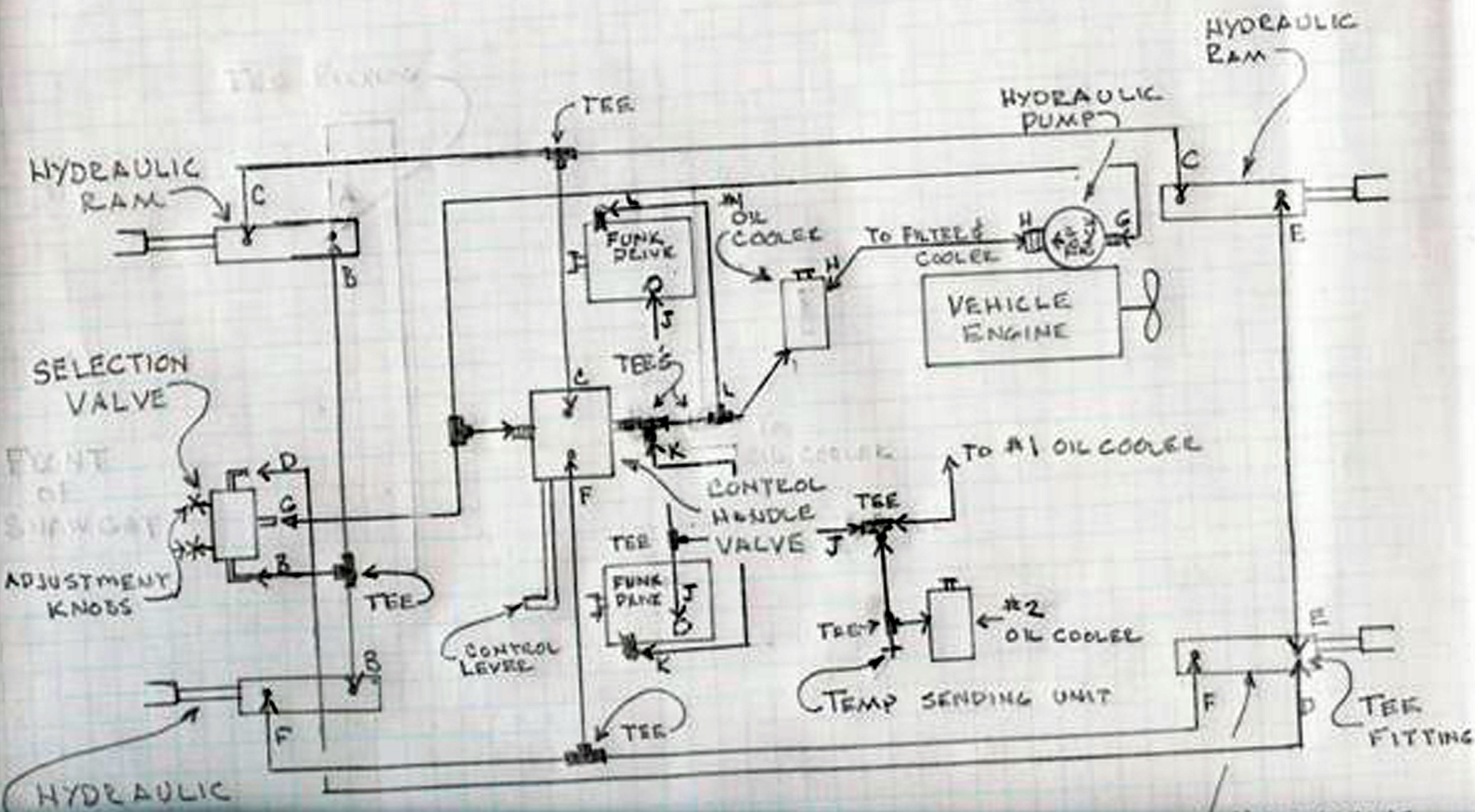
THE KRISTI CO. DATE / 31/20/05

KRISTI SNOW CAT

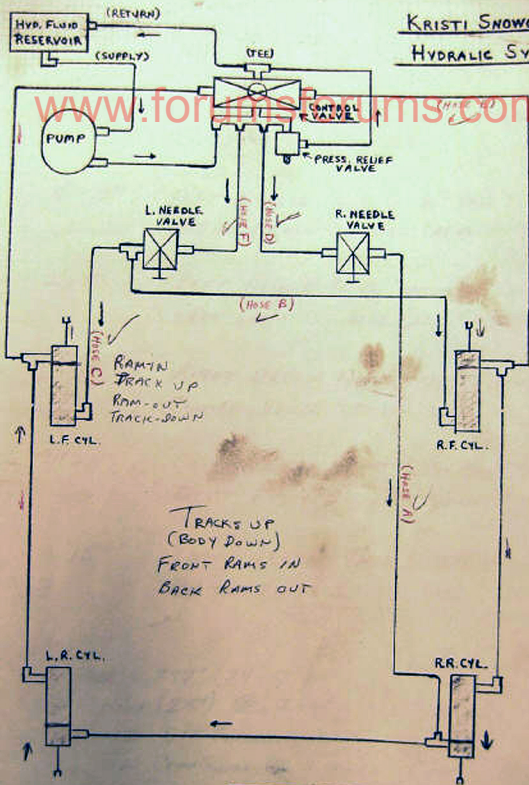
HYDRAULIC TILT DIAGRAM

AND DRIVE MOTORS LAYOUT

www.forumsforums.com/snowtrac.html



KRISTI SNOWCAT
HYDRALIC SYSTEM



TRACKS UP
(BODY DOWN)
FRONT RAMS IN
BACK RAMS OUT

DRAWN: 11/16/93
GDW

HYDRAULIC HOSE LENGTHS (END TO END w/ FITTINGS),
FOR REPLACEMENT.

11/16/93

HOSE

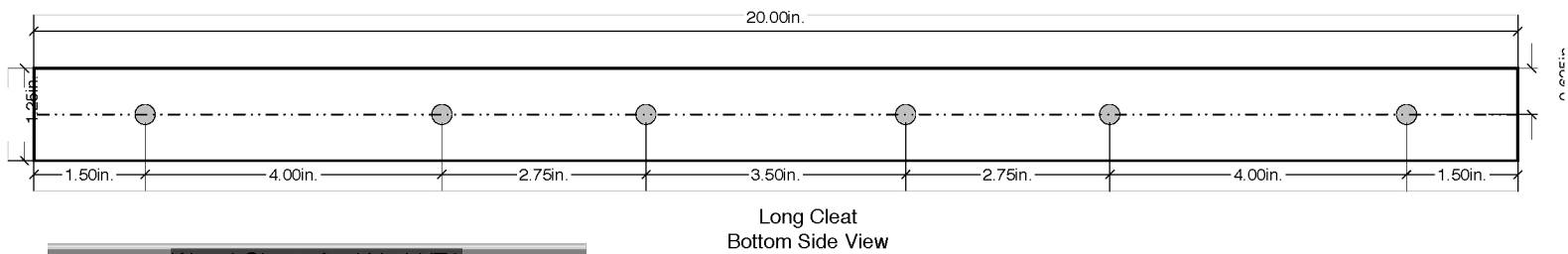
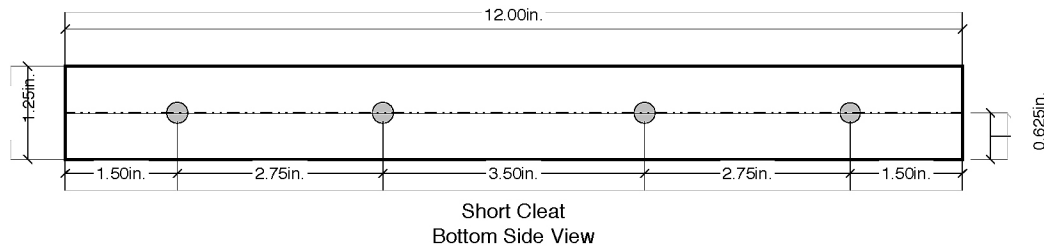
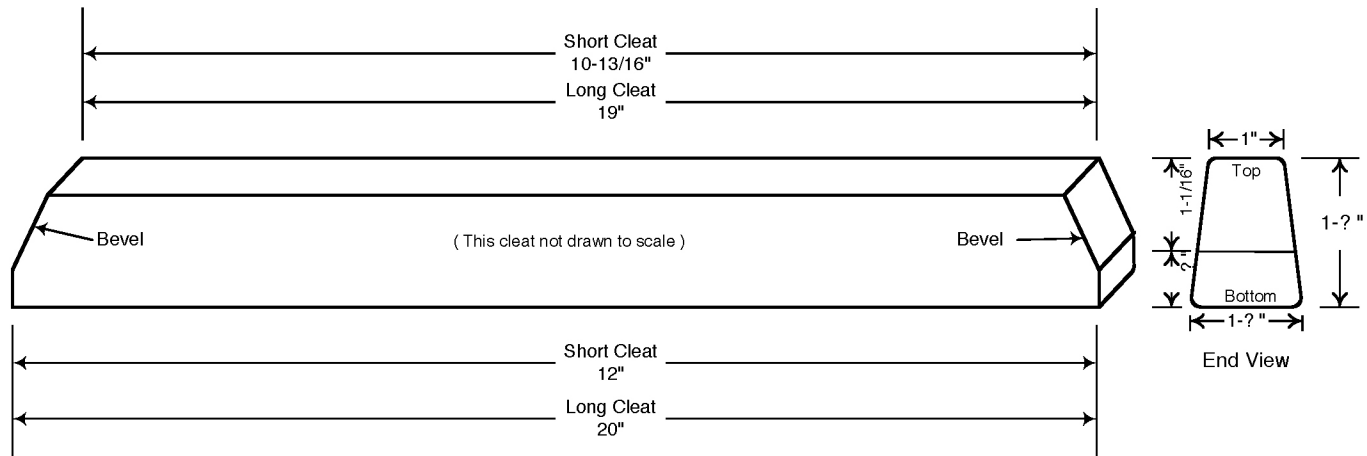
- "A" 8'-7" - RIGHT NEEDLE VALVE TO RIGHT REAR CYLINDER (REAR FITTINGS)
- "B" 4'-10" - LEFT NEEDLE VALVE (OUTPUT TEE) TO RIGHT FRONT CYLINDER (REAR FITTINGS)
- "C" 2'-3" - LEFT NEEDLE VALVE (OUTPUT TEE) TO LEFT FRONT CYLINDER (REAR FITTINGS)
- "D" 2'-11" - RIGHT NEEDLE VALVE (INPUT) TO CONTROL VALVE (BOTTOM TEE)
- "E" 4'-11" - CONTROL VALVE OUTPUT (RIGHT PORT) TO RIGHT FRONT CYLINDER (FRONT FITTINGS)
- "F" 15" - LEFT NEEDLE VALVE (INPUT) TO CONTROL VALVE (BOTTOM TEE)

TOTAL HOSE = 297" (24'-9")

SOUTH
DOUGLAS
SUPPLY

{ HOSE (25') @ 2.54/FT = 63.50
12 GIC FITTINGS @ 2.73 ea = 32.76
12 CAMP COUPLERS @ 1.16 ea = 13.92

\$110.18



Wood Cleats for Kristi KT3

Drawings for wood cleats & hole patterns.
 Bolt drill holes are 19/64", max. 5/16".
 Wood manufactured from hard Hickory or Oak. Each track has 21 Long Cleats & 21 Short Cleats. For both tracks, total of 42 each.

Pacific Microwave

Drawn by: Gary Wilkinson

4/11/2006

The KRISTI Co.
P.O. Box 15515
Denver 15, Colo.
U.S.A.

THE *KRISTI* CO.

Snow Vehicles with Ski-Action

TRADE MARK

PARTS
LIST

TABLE OF CONTENTS

	<u>Page</u>
Forward	2
Engine - 01. . . (See applicable Engine Parts List)	Na
Differential Steering Assembly - 02*	3
Transmission Assembly - 03	4
Gear Shift Assembly - 04	4
Main Drive Assembly - 05	5
Final Drive Assembly - 06	6
Electrical System - 07.	7
Hydraulic System - 08.	8
Fuel System - 09.	8
Suspension System - 10	9
Track Assembly - 11	9
Carrier Assembly - 12	10
Body and Frame Assembly - 13	11

* System code - all parts preceded by a system code number listed above are part of the applicable system as shown.

FOREWORD

1. This parts list has been prepared to assist in ordering replacement or spare parts for the KRISTI Models KT-2 and KT-3 only.

PLEASE NOTE

2. When ordering parts please follow the simple procedure outlined below to avoid costly delays or receipt of the wrong parts:

- a. Type orders
- b. State model and serial number of KRISTI for which parts are being ordered.
- c. Identify part or assembly by part number (when one is given)
- d. Use parts list description exactly as described in the DESCRIPTION column
- e. Specify total quantity required
- f. Submit simple sketch of parts not listed and give part number and description of listed part or assembly to which it attaches
- g. Address all orders and inquiries to

The KRISTI Co.
P. O. Box 15515
Denver 15, Colorado
U. S. A.

3. USE OF PARTS LIST.

- a. To locate proper page on which an item is listed, turn to the Table of Contents and locate the Main Assembly or System of which the item in question is a part.
- b. Locate item in DESCRIPTION Column on the appropriate page and turn to the illustration or page indicated in the PAGE AND INDEX NO column to confirm the correct part has been located.

NOTE

A double asterisk (**) indicates no illustration is available.
A single asterisk (*) indicates a page in the Operation and Maintenance Handbook has additional descriptive information.

- c. The USEABLE ON CODE column indicates whether an item is used with KT-2, KT-3, or both models as follows:

"A" indicates KT-2 model only,
"B" indicates KT-3 model only,
"BLANK" indicates both models.

DIFFERENTIAL STEERING ASSEMBLY - 02

<u>PAGE AND INDEX NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QUAN. PER ASSEMBLY</u>	<u>USEABLE ON CODE</u>
17-	02-00A	DIFFERENTIAL ASSEMBLY	1	A
17-	02-00B	DIFFERENTIAL ASSEMBLY	1	B
-1	02-01	CLUTCH	1	
-2	02-02	CHAIN, 5/8" pitch, double row	2	
-3	02-03	BAND, Brake	2	
-4	02-04	PLUG, Oil fill	1	
-5	02-05	NUT	2	
-6	02-06	PIN, Brake	4	
-7	02-07	SET SCREW, Brake pin	4	
-8	02-08	LOCK WASHER	1	
-9	02-09	NUT, Sprocket	1	
-10	02-10A	PLATE, Cover	1	A
-10	02-10B	PLATE, Cover	1	B
-11	02-11	HOUSING, Engine bell	1	
-12	02-12	SCREW, Clutch pedal adjust	1	
	02-13	FACE PLATE	1	
Not Shown	02-14	CLUTCH PEDAL ASSEMBLY	1	
	02-15A	ARM, Steering	1	A
	02-15B	ARM, Steering	2	B
	02-16A	ROD, Steering	2	A
	02-16B	ROD, Steering	1	B
	02-168	ROD, Steering	1	B
	02-17A L	BRAKE CAM ARM ASSEMBLY	1 left	A
	02-17A R	BRAKE CAM ARM ASSEMBLY	1 right	A
	02-17B L	BRAKE CAM ARM ASSEMBLY	1 left	B
	02-17B R	BRAKE CAM ARM ASSEMBLY	1 right	B

▶ TRANSMISSION ASSEMBLY - 03

www.forumsforums.com/snowtrac.html

-03 & -04

<u>PAGE AND INDEX NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QUAN. PER ASSEMBLY</u>	<u>USEABLE ON CODE</u>
**	03-00	TRANSMISSION ASSEMBLY, Complete	1	
	03-01	SHAFT or GEAR or BEARING, Input drive ***	1	
	03-02	SHAFT or GEAR or BEARING, Reverse idler ***	1	
	03-03	SHAFT or GEAR or BEARING, center idler ***	1	
	03-04	SHAFT or GEAR or BEARING, Final drive ***	2	
	03-05	SHAFT or GEAR or BEARING, Shifting ***	2	
	03-06	FORK, Shifting	2	

*** Indicate applicable item(s), or order complete assembly.

GEAR SHIFT ASSEMBLY - 04

16-	04-00	GEAR SHIFT ASSEMBLY, Complete	1	
-1	04-01	SET SCREW, Shift rod cup collar	4	
-2	04-02	SHOULDER SCREW, Shift rod	4	
-3	04-03	BEARING, Shift rod	4	
-4	04-04L	SHIFT ROD	1 left	
-4	04-04R	SHIFT ROD	1 right	
-5	04-05	CENTER SHAFT	1	
-6	04-06	CUP COLLAR, Shift rod	2	
-7	04-07	BALL COLLAR, Center shaft	2	
-8	04-08 F	SHIFT LEVER	1 front	
-8	04-08 R	SHIFT LEVER	1 rear	
-9	04-09	BALL INDENT ASSEMBLY	1	
Not Shown	04-0901	. . Set Screw, Ball indent	1	
	04-0902	. . Spring, Ball indent	1	
	04-0903	. . Ball, Ball indent assembly	1	

MAIN DRIVE ASSEMBLY - 05

FINAL DRIVE ASSEMBLY - 05 (Continued from page 5)

**	05-00L	DRIVE ASSEMBLY, MAIN	1 left
	05-00R	DRIVE ASSEMBLY, MAIN	1 right
	05-01L	SHAFT, Differential drive	1 left
	05-01R	SHAFT, Differential drive	1 right
	05-02	BEARING, Differential cone	2
	05-03	PLATE, Differential end	1
	05-04	BOLT, Outer differential end plate	6
	05-05	BOLT, Inner differential end plate	6
	05-06L	TUBE, Differential drive	1 left
	05-06R	TUBE, Differential drive	1 right
	05-07	WASHER, Thrust; differential drive tube	1
	05-08	SNAP RING, Differential drive tube	1
	05-09	WASHER, Hanger retainer	1
	05-10	WASHER, Hanger thrust	2
	05-11	FITTING, Lubrication (Zerk)	2
	05-12	BEARING, Differential drive tube	1
	05-13	HANGER ASSEMBLY (front and rear same on KT-3)	2
	05-14	BEARING, Hanger	1
	05-15	BOLT, Hanger	1
	05-1501	. . Nut, Hanger bolt	1
	05-1502	. . Washer, Hanger bolt	1
	05-16	SPRING, Hanger	1

FINAL DRIVE ASSEMBLY - 06

**	06-00L	DRIVE ASSEMBLY, FINAL	1 left
	06-00R	DRIVE ASSEMBLY, FINAL	1 right
	06-01	BOLT, Clam shell bolt	4

5 (continued on page 6)

FINAL DRIVE ASSEMBLY - 06. (Continued from page 5)

PAGE AND
INDEX NO.

PART
NO.

DESCRIPTION

QUAN. PER
ASSEMBLY

USEABLE
ON CODE

**

06-0101

. . Nut, Clam shell bolt

4

06-0102

. . Washer, Clam shell bolt

8

06-02

PLATE, Cover

1

06-03

SCREW, Cap; sprocket retainer

1

06-03A

SCREW, Cap; clamshell drive tube

2

A

06-0301A

. . Lockwasher, Cap screw; clamshell drive tube

2

A

06-04

WASHER, Sprocket retainer

1

06-05A

SCREW, Cover plate

6

06-05B

SCREW, Cover plate

6

A

06-06A

SPROCKET, Drive; final chain (single row)

1

A

06-06B

SPROCKET, Drive; final chain (double row)

1

B

06-07A

CHAIN, Final drive (single row)

1

A

06-07B

CHAIN, Final drive (double row)

1

B

06-08

SHELL, Clam

1

06-09

SNAP RING, Interior bearing

1

06-10

BEARING, Drive axle (interior)

1

06-10A

BEARING, Drive axle (outside)

1

A

06-10B

BEARING, Drive axle (outside)

1

B

06-11

FITTING, Lubrication (Zerk)

1

06-12

TUBE, Final drive

1

06-13

AXLE, Final drive

1

06-14

WASHER, Front track carrier thrust bearing

2

06-15

BEARING, Front track carrier (bronze)

1

06-22

WASHER, Retainer; final drive tube

1

06-23

SNAP RING, Final drive bearing

1

06-24

SET SCREW, Final drive bearing

1

06-25

FLANGE, Sprocket; track drive

1

<u>PAGE AND INDEX NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QUAN. PER ASSEMBLY</u>	<u>USEABLE ON CODE</u>
	06-26	BOLT, Sprocket flange; track drive	6	
	06-28	HUB, Track drive	1	
	06-29	WASHER, Final drive shaft	1	
	06-30	NUT, Final drive shaft	1	
	06-31	COTTER KEY	1	
	06-32	KEY, Final drive shaft	1	

ELECTRICAL SYSTEM - 07*

<u>PAGE AND INDEX NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QUAN. PER ASSEMBLY</u>	<u>USEABLE ON CODE</u>
18-1	07-01	TACHOMETER	1	
-2	07-02	LAMP, Ampere signal	1	
Not Shown	07-03	AMMETER	1	
-3	07-04	SWITCH, Windshield wiper	1	
-4	07-05	WIPER, Windshield	1	
-5	07-06	SWITCH, Ignition	1	
-6	07-07	PUMP, Fuel (Bendix or Autopulse)**	1	
-7	07-08	GAUGE, Fuel	1	
-8	07-09	SWITCH, Head lamp	1	
-9	07-10	LAMP, Dashboard	2	
-10	07-11	LAMP, Tail	2	
-11	07-12	LAMP, Head	1	
-12	07-13	MOTOR, Starter	1	
-13	07-14	LAMP, Oil gauge signal	1	
-14	07-15	GAUGE, Oil	1	
-15	07-16	COIL, Ignition	1	

8

PAGE AND
INDEX NO.PART
NO.

DESCRIPTION

QUAN. PER
ASSEMBLYUSEABLE
ON CODE

60-880-

(continued from page 7)

-16 07-17

DISTRIBUTOR

1

-17 07-18

GENERATOR, Electrical

1

* - Specify 6 or 12 volts

** - Pick one

HYDRAULIC SYSTEM - 08

11*

08-01

PUMP, Engine driven hydraulic

1

08-02

BELT, Hydraulic pump drive

1

08-03

SEAL, Hydraulic pump drive

1

08-04A

VALVE, 4-way control (Republic)

1

A

08-04B

VALVE, 4-way control (Sarasota Precision)

1

B

08-05

VALVE, Needle

2

08-06

RESERVOIR, Hydraulic

1

08-07

VALVE, Relief

1

08-08A

CYLINDER, Hydraulic (snap ring mounted head)

2

A

08-08B

CYLINDER, Hydraulic (O-ring seated head)

2

B

08-09A

HOSE, Hydraulic; w/JIC fitting

AR**

A early

08-09B

HOSE, Hydraulic, w/comm. fitting

AR

(indicate length and position of hose and size of fitting)

** - As required

PAGE AND
INDEX NO.PART
NO.

DESCRIPTION

QUAN. PER
ASSEMBLYUSEABLE
ON CODE

FUEL SYSTEM - 09

**

09-01

TANK, Fuel

1

09-02

HOSE, Fuel, w/clamps

1

09-03

FITTING, Hose assembly flanged

2

09-04

ACTUATOR, Fuel gauge

1

09-05

STRAINER, Fuel

1

09-06

REGULATOR, Fuel

1

No Number

PUMP, Fuel (see ELECTRICAL SYSTEM)

AR

09-07

LINE, Fuel; copper
(indicate position and approx. length)

AR

09-08

LINE, Fuel; flexible
(indicate position and approx. length)

SUSPENSION SYSTEM - 10

10*

10-01LA

REAR SUSPENSION ASSEMBLY**

1 left

10-01RA

REAR SUSPENSION ASSEMBLY

1 right

10-01LB

REAR SUSPENSION ASSEMBLY

1 left

10-01RB

REAR SUSPENSION ASSEMBLY

1 right

10-02LA

SHAFT AND GEAR ASSEMBLY

1 left

10-02RA

ARM SHAFT AND GEAR ASSEMBLY

1 right

10-03A

BEARING AND SPRING HANGER ASSEMBLY

2

10-04LA

STOP ARM ASSEMBLY, Telescoping

1 left

10-04RA

STOP ARM ASSEMBLY, Telescoping

1 right

10-05A

CYLINDER, Rear hydraulic
(modified KT-2 models only)

1 right

(continued on page 10)

PART NO.	DESCRIPTION	QUAN. PER ASSEMBLY	USEABLE ON CODE
10-06LB	ARM HOUSING AND BEARING ASSEMBLY	1 left	B
10-06RB	ARM HOUSING AND BEARING ASSEMBLY	1 right	B
10-07B	CROSS SHAFT ASSEMBLY	1	B
10-08B	CYLINDER, Rear hydraulic	1	B
10-09A	DRAG LINK	2	A
10-09B	DRAG LINK	2	B

* - for front suspension see FINAL DRIVE ASSEMBLY.

TRACK ASSEMBLY - 11

8*	DESCRIPTION	QUAN.	USEABLE ON CODE
11-00A	TRACK ASSEMBLY, Complete (specify width)	2	A
11-00B	TRACK ASSEMBLY, Complete (specify width)	2	B
11-01A	CLEAT, Track; hickory	AR	A
11-01B	CLEAT, Track; hickory	AR	B
11-02	PLATE, Track clear face	AR	
11-03	LACING, Main belt	AR	
11-04A	BELT, Main track	AR	A
11-04B	BELT, Main track	AR	B
11-05A	BELT, Track side	AR	A
11-05B	BELT, Track side	AR	B
11-06	LACING, Track side belt	AR	
11-07	PIN, Main belt lacing	AR	
11-08	GUIDE ASSEMBLY, Track	AR	
11-09	BOLT, Track	AR	
11-0901	Nut, Track bolt	AR	

CARRIER ASSEMBLY - 12

8*	12-00A	CARRIER ASSEMBLY (less wheels)	2	A
	12-00B	CARRIER ASSEMBLY (less wheels)	2	B
	12-01A	HUB SEAL and Bearing Assembly	2	A
	12-01B	HUB SEAL and Bearing Assembly	2	B
	12-02A	WHEELS	10	A
	12-02B	WHEELS	8	B
	12-03A	TIRES (6.00 x 6, 4 ply)**	10	A
	12-03B	TIRES (6.00 x 9, 6 ply)	8	B
	12-04A	TUBES (6.00 x 6)	10	A
	12-04B	TUBES (6.00 x 9)	8	B
	12-05	HUB CAP	AR	
	12-06A	IDLER WHEEL (hard rubber)	2	A
	12-07B	TRUNION ASSEMBLY	2	B
	12-08B	BEARING, Trunion Assembly (front and rear)	4	B
	12-09LA	SUSPENSION ASSEMBLY, Center bogie	1 left	A
	12-09RA	SUSPENSION ASSEMBLY, Center bogie	1 right	A

** - nylon aircraft tire available, 7.00 x 6, 4 or 6 ply (optional)

BODY AND FRAME ASSEMBLY - 13

5*	13-00	BODY ASSEMBLY (specify model and serial number)	1	
	13-01B	FRAME ASSEMBLY, Steel	1	B
	13-02-B	FIBERGLASS SHELL, Lower	1	B
	13-03B	HOOD ASSEMBLY (with air vent)	1	B
	13-04B	HOOD AND DASHBOARD ASSEMBLY	1	B
	13-05B	CAB ASSEMBLY	1	B
	13-06B	DOOR ASSEMBLY, Rear	1	B
	13-07B	DOOR ASSEMBLY, Left	1	B

(continued on page 12)

PAGE AND
INDEX NO.PART
NO.DESCRIPTIONQUAN. PER
ASSEMBLYUSEABLE
ON CODE

13-08B	LATCH, Door assembly; rear	1	B
13-09B	LATCH, Door assembly; left	1	B
13-10A	WINDSHIELD, Glass, front	1	A
13-10B	WINDSHIELD, Glass, front	1	B
13-11LA	WINDOW, Front quarter, left	1	A
13-11LB	WINDOW, Front quarter, left	1	B
13-11RA	WINDOW, Front quarter, right	1	A
13-11RB	WINDOW, Front quarter, right	1	B
13-12	WINDOW, Front side, sliding (left or right)	1	
13-13	WINDOW, Front side, stationary (left or right)	1	
13-14A	WINDOW, Rear side	1	A
13-14B	WINDOW, Rear side	1	B
13-15A	WINDOW, Rear door	1	A
13-15B	WINDOW, Rear door	1	B
13-16A	MOULDING, Rubber; windshield and plexiglass windows	AR	A
13-17B	MOULDING, Rubber; windshield only	AR	B
13-18B	MOULDING, Rubber; plexiglass windows	AR	B