UTLI35B AND UVI35B GENERAL SPECIFICATIONS

The UTEM SkyTel UTLI35B and SkyVan UVI/35B are insulated telescoping aerial lifts available with either a side mounted single man platform or an end mounted single man platform. The end mounted platforms may be fixed or equipped with a means to rotate the platform around the end of the boom. The SkyTel models are installed on a chassis cab with some form of body. The SkyVan models are installed on vehicles with enclosed bodies. The following is a brief description of the major components of the UTLI35B and UVI35B aerial lifts.

HYDRAULIC SYSTEM - The open center hydraulic system operates at a flow rate of 2.5 to 3.0 GPM (9.5 to 11.4 LPM) at a maximum pressure of 2200 PSI(l55kg/cm sq.).The pump draws oil from a 10 gallon (37.9L) reservoir through a 100 mesh suction strainer that is equipped with a bypass valve. A 10 micron return filter with a bypass valve is also included. The hydraulic pump can be powered by the chassis engine accessory drive belt, a chassis transmission power take off or an auxiliary engine/generator package.

Boom raise/lower and extension/retraction are accomplished with double acting hydraulic cylinders with holding valves integral to the cylinders. Boom rotation is accomplished with a hydraulic motor that actuates the rotation drive.

The adjustable pressure relief valve is integral to the lower control valve. The first spool of the control valve is a selector valve that directs hydraulic oil flow either to the upper controls or to the boom controls at the lower controls.

All hydraulic adapters are machined from forgings and hydraulic hoses are non-conductive Parker 518C with permanent crimped on fittings. Reusable fittings are available for field repairs.

HYDRAULIC POWER SOURCE - The hydraulic system accommodates an engine accessory belt driven hydraulic pump, a PTO driven hydraulic pump or an auxiliary engine driven hydraulic pump. The pump provides 2.5 to 3.0 GPM (9.5 to 11.4 LPM) flow for the aerial lift. Engine start/stop at the upper controls is included and includes an air plunger actuated control to start and stop the engine.

PEDESTAL - The standard pedestal is fabricated with 0.25 in. (6.4mm) steel into a rectangular shape with an access door on the curb side. The top plate is 1.0 in. (25.4mm) thick to support the rotation bearing. The hydraulic reservoir is a separate component housed inside the pedestal for protection. The 100 mesh suction strainer and 10 micron return filter are located inside the pedestal, A sight glass visible through the pedestal door indicates oil level and temperature. Bridge type pedestals and pedestal spacers are available for SkyTel models. Bridge type pedestals or van pedestal spacers are available for SkyVan models.

TURRET - The turret is fabricated with 0.50 in. (12.7mm) thick steel sides and a 0.75 in. (19.1mm) base plate. A formed flange on the turret wings and welded cross members provide rigidity. A removable bearing cover is provided to prevent foreign material from interfering with the lift rotation and to provide access to lubricate the rotation bearing gear teeth.

ROTATION DRIVE - Rotation is 540 degrees non-continuous with a mechanical stop to prevent hose and wire damage. Rotation is accomplished by a hydraulically driven worm driving directly on helical gear teeth machined on the outer race of a shear-ball rotation bearing. The worm is self- locking and hourglass shaped to engage multiple teeth at all times. The rotation bearing, worm and housing are factory set and do not require field adjustment. The critical bolts holding the turret to the rotation bearing and to the pedestal are SAE grade 5 specifications. These critical bolts are installed with thread lock to resist loosening. The worm shaft has an exposed hexagonal end for manual actuation. Continuous rotation is available as an option.

BOOM ASSEMBLY - The major components of the upper boom assembly are an outer boom, a telescoping inner boom, an extension cylinder, a hose carrier system, and slide pads mounted on the inner and outer boom.

The telescopic boom assembly articulates from 14 degrees below horizontal to 76 degrees above horizontal, A double acting cylinder equipped with holding valves provides boom elevation. The outer boom consists of an 6 in. X 10 in. (152mm X 254mm) rectangular steel section. The telescoping inner boom consists on a 5 in. X 7 in, (127 mm X 178 mm) rectangular fiberglass reinforced plastic section that extends 108 in.(2.74m). The 0.38 in. (9.5mm) wall fiberglass section is filament wound using oven cured epoxy resin for consistent strength. The fiberglass inner boom has a gelcoat finish with a painted topcoat for maximum water resistance. A 30 in. (0.76m) insulation gap is provided with the boom fully retracted. This insulation gap is non-tracking over any slide pads or rollers. Extended, the insulation gap increases to a maximum of 42 in. (1.07m). The inner boom is dielectrically tested and rated per ANSI A92.2-2001 for Category C, 46kV and below, fully retracted. The extension system consists of a hydraulic cylinder with wear rings on the piston and end gland and holding valves installed in the cylinder base. The hose carrier system is housed inside the boom assembly and consists of a steel multi-link assembly with adequate space to carry hoses and air lines to the upper control station. The inner boom does not have to be removed to service the extension cylinder; hose carrier or slide pads. The ultra high molecular weight polyethelene outer boom side and top slide pads are infinitely adjustable and like the lower pad can be replaced without removing the inner boom.

An optional 12 in. (0.30m) shorter inner boom is available for installations where it is required. The insulation gap is reduced to 18 in: (0.46m) fully retracted and 30 in. (0.76m) when extended.

HYDRAULIC LEVELING - Platform leveling is controlled automatically by a master and slave cylinder arrangement. The platform leveling system can be manually actuated from either the upper or lower controls to level the platform, to stow and unstow the platform, or to tilt the platform for clean out or rescue.

PLATFORM - The fiberglass basket is 24in. X 24in. X 42in. (.61 m X .61 m X 1.07 m) with a step for easy access. The standard platform capacity is 300 lbs. (136kg). The maximum platform capacity is 400 lbs. (181kg) with side or fixed end mounted platforms and 350 lbs. (159kg) with end mounted platforms with either the manual or hydraulic rotator. Increased curb weight may be required for stability with 350 lbs. (159kg) or 400 lbs. (181kg) capacity. Walk-in or duck under baskets with a door and steel baskets are also available.

MOUNTING - The pedestal base is secured to the vehicle frame. The vehicle body is isolated from the mounting. A boom support and a ratchet-type boom tie down strap are included.

CYLINDERS - The extension cylinder has wear rings on the piston and end gland for extended seal life. Dual holding valves are mounted at the extension cylinder base to prevent boom creep
during travel or uncontrolled movement in case of hydraulic hose failure. The extension cylinder can be removed without removing the inner boom. The boom elevation cylinder has a single holding valve.

BOOM AND CYLINDER PINS - Pins are high strength alloy steel and zinc plated for corrosion resistance.

LOWER CONTROL VALVE - For SkyTel models, the hydraulic system pressure relief valve, the selector control, the boom controls and the hydraulic leveling control are provided in a one-piece, monoblock valve body mounted on the turret, The selector control directs hydraulic oil flow to either the upper controls or to the lower controls to override the upper controls.
For SkyVan models, the hydraulic system pressure relief valve, the unloader valve and the electric! hydraulic boom and leveling controls are an integrated valve assembly mounted on the turret. An electric/hydraulic selector valve directs hydraulic oil flow to either the upper controls or to the lower controls to override the upper controls. The remote lower electric controls are housed in either a permanently mounted weather-resistant plastic enclosure or a hand-held enclosure on an umbilical cord for convenience and to allow visual contact with the unit while operating from the lower controls.

UPPER CONTROLS - On side mounted platforms, the controls are mounted on the platform support and remain level with the platform. On end mounted platforms, the controls are mounted on the side of the platform. Individual locking lever controls are provided as standard to protect against inadvertent operation. An emergency stop control, the boom controls and the hydraulic leveling control are provided in a one-piece, monoblock valve body.
A single handle joystick is available for one handed operation of boom raise and lower, boom extend and retract and boom rotation. A lever in the single stick control handle must be actuated before the boom controls are operable to protect against inadvertent operation. A separate locking lever control is provided with the single handle joystick to operate the leveling function. A separate emergency stop control is also provided.

LUBRICATION - Non-lube bearings are used at all points of motion. The rotation bearing is the only component that requires periodic lubrication.

PAINTING - The complete unit is primed and painted prior to assembly. White hardened enamel paint is standard.

MANUALS - Two operator's manuals and two parts and service manuals are included with each UTEM aerial lift.

FALL PROTECTION SYSTEM - A body harness and adjustable length lanyard are provided. The anchor for the lanyard is attached to the inner boom.

UTLI35B AND UVI35B OPTION SPECIFICATIONS

A brief description of some of the options available for the SkyTel UTLI35B and SkyVanUVI35B aerial device is given below.

BRIDGE MOUNT PEDESTALS - Optional Bridge mount pedestals allow the center of the load space to be unobstructed. The hydraulic oil reservoir is a separate assembly located wherever required.

EMERGENCY LOWERING - This system provides a 12VDC motor driven hydraulic pump connected in parallel with the engine driven hydraulic pump in the event the engine driven pump becomes inoperable. An air plunger actuated control is provided at the upper controls to actuate the emergency lowering motor. This control must be held actuated while operating the upper controls.

TORSION BAR - Stable Ride over frame and under frame torsion bars are available and add to the stability of the vehicle. All Stable Ride torsion bars include rubber bushings at all points of movement and do not require lubrication.

TWO SPEED MANUAL THROTTLE CONTROL - This control provides for efficient, economical operation at engine idle or a preset higher engine speed for the optional hydraulic tool circuit. The throttle control includes an air plunger actuated control at the upper controls.

HYDRAULIC TOOL CIRCUIT - A hydraulic pressure and return connection are provided at the upper controls for operation of hydraulic tools. The system is designed for up to 5 GPM (I 9lpm). Quick disconnect fittings are not included. The two speed manual throttle control is required.

PLATFORM VARIATIONS - A 24 in. X 30 in. X 42 in. (0.6lm X 0.76m X l.07m) fiberglass basket with steps is available. A 24 in. X 24 in. X 42 in. (0.61m X 0.6lm X 1.07m) fiberglass walk- in or duck under basket is available with a door. An open 24 in. X 24 in. X 42 in. (0.61m X 0.61m X 1.07m) steel platform with a door is available as well.

CAPACITY VARIATIONS - The standard platform capacity is 300 lbs. (136kg). However a maximum platform capacity of 400 lbs. (181kg) can be provided with side mounted platforms or end mounted platforms without a platform rotator. With the end mounted platform with either the manual or hydraulic rotator, the maximum platform capacity is 350 lbs. (159kg). Increased curb weight may be required for stability with 350 lb. (159kg) or 400 lb. (181kg) capacity.

PEDESTAL SPACERS - Pedestal spacers are available for increased cab clearance. These spacers will increase the unit working height as well as the stowed travel height.