Ogerator Daily Maintenance ChecksAguatic Weed Harvesting EguigmentBEFORE HARVESTING CHECKS:o Check engine oil levelo Check hydraulic fluid level.o Grease #1 conveyor bearings.o Check fuel level.o Inspect cutters for damaged or missing parts.o Check vessel for hydraulic leaks, cracked hoses, etc.o Start engine and check for unusual noises and leaks.o Allow the engine to warm up 4-5 minutes.o Test all Harvester functions.0 Before leaving the dock area check normal unloaded floatationo Check for mud under the #2 Storage conveyor.0 Make sure there are enough life jackets.0 Someone should know where you are going, when you willreturn.o Have radiolcell phone.AFTER HARVESTING CHECKS:¢ Idle the engine for 4-5 minutes before shutting down.o Shut down engine.0 Secure vessel to dock or shorev Clean harvester.o Check shafts and pitman rods for ﬁshing line.o Inspect cutters for damaged or missing parts.o Check vessel for hydraulic leaks.o Lock storage compartments.ENGINE MA\_lN\_TE\_Nj\N(\_§\_E,o Check Engine oil level each day, at start of work shift.o Inspect the clear fuel oil strainer every day for debris.CHANGE THE ENGINE OIL AND FILTER AT START OF SEASON.0 Run Engine for ‘/2 hour to warm old oil.o Place a large bucket or an Engine oil drain plan under theEngine platform.0 Remove oil drain connection cap.o Connect the clear oil drain hose to the drain fitting (makesure the end of the hose is in or directly over the drain pan).o Drain used Engine oil.0 Replace drain cap making sure it is not cross threaded.o Remove used Engine oil filter. Try not to damage the filternoise gasket.0 Fill a new Engine oil filter halfway with new Engine oil.0 Make sure to oil the gasket. Carefully slide the new filter intothe Engine housing and spin it into place. Make sure it fitssquarely and is not askew.o Tighten the new filter into place using a filter wrench.w Remove Engine oil filler cap and fill Engine with new oil.Refer to Engine manual for proper type and quantity of oil.OTHER ENGINE MAINTENEANCE0 Check and replace Engine air filter as needed.0 inspect the fan belt for tension, mouse damage, and winternests.o Change the Engine internal fuel filter.e Change Engine external Fuel filter.0 Inspect air inlet and outlet for debris, bird nests, cotton woodtree seed fluff, etc. Clean as necessary.CUTTER HEAD ASSEMBLYSprmg Loaded Hold Downs Ad\_|USl tension by turning the cambolt. For less tension turn clockwise, for more tension turncounter-clockwise. The part that touches the cutter blade is aPlastic Wear Bar. Replace plastic bar when it is noticeably wornand contact with blade can no longer be made by adjusting cambolt.Shims achieve the proper height between the Spring Loaded HoldDowns and the knife assembly. They are thin ﬂat metal bars thatare installed between the Spring Loaded Hold downs and theWear Plate. Inspect for worn or missing shims and replace.The Wear Plate is also a thin ﬂat metal strip that has a lip on it. ltis located between the shim and the cutter frame. Inspect forwear, especially on the lip. Replace as needed.Wear Bars are the white UHMW (Ultra High Molecular Weight)plastic strips above and below the triangular shaped Drive Plate.Inspect for wear on plastic. The Wear Bars ensure that propercontact (almost touching) is made between the cutter knives andthe shear ﬁngers beneath them.Inspect the triangular shaped Drive Plate for wear along thecontact point with the UHMW wear bars. Replace if wear shows1/16"‘ to 1/8"‘ inch deep. Keep the 1/. inch bolts that hold the DrivePlate to the knife assembly tightened.The Weed Shield is a protective plate that covers the Drive Plateslot to keep weeds and gravel from becoming caught. InspectWeed Shield plastic wear strip and replace if excessively worn.The Pitman Rod attaches to the Drive Plate with a 5/8 inch rod endbearing, and is attached to the Eccentric on the drive end. Makesure the Eccentric maintains proper clearance between it and themotor. Grease rod end bearings twice daily and inspect for wear.If the rod end bearing appears sloppy it is time to be replaced.They are usually replaced more than once per season.There are Pitman Rods and Rod End Bearings driving the VerticalCutters too. Inspect and maintain in the same manner.There is a Vertical Drive Lever for each vertical cutter. Inspectshafts for wear and make sure they are tightly fastened.UHMW blocks act as hold-downs on the vertical cutters. Checkfor wear and replace as needed.Horizontal Shear Fingers are the cast steel rock guard that protectthe knife assembly. Make sure they are not bent and straighten ifneeded. Shear Fingers rarely become damaged; if there seems tobe a height difference, it may indicate that part of the cutter frameis bent. If so, it will have to be straightened out.Vertical Shear Fingers are formed steel guards. Inspect for properalignment and material wear, and straighten or replace as needed.The Rubber Flap helps direct weeds onto the pick-up conveyor.Inspect underside and replace when it becomes very worn.CONVEYOR MESH MAI TENANCENGENERAL0 Conveyor mesh should be adjusted to 6” - 8” of gap when pulled upfrom the conveyor frame.o The mesh will stretch during the ﬁrst year of operation.o Standard mesh stretches more than heavy duty mesh.0 Increase or decrease conveyor mesh tension by adjusting conveyortake-up accordingly.STANDARD MESH REPLACEMENT0 Straighten pin ends on each side of where damaged section meetsundamaged mesh, and remove each pin.o Remove damaged section and measure length.0 Install the new mesh section of same length. Insert two new pins toconnect each end of new section with existing mesh. Bend the pinsusing a vice grips or channel lock pliers.HEAVY DUTY MESH REPLACEMENTo Similar to above procedure, except for style of pins.0 Grind pins in damaged section and remove damaged mesh.o Install new mesh using new pins.e Thread on pin nut after mesh is installed.~ Peen threads sticking out of pin nut to keep it from backing off.CONVEYOR DRIVE BEARINGS0 Grease bearings at every conveyor shaft end. Grease #1 ConveyorBearings twice daily and #2 and #3 conveyor bearings once per day.Grease #1 Conveyor Center Support Bearing twice daily and #2Conveyor Center Support Bearing once per day.YDRAULIC TANK 8» FLUID MAINTENANCEOpen pet cock at the bottom of the tank and drain a smallamount — about a cup full - of oil from the bottom of thesump every morning. Close pep cock. Check oil for debrisand excessive water.Inspect hydraulic ﬁttings and hoses for obvious leaks everymoming before shift, and during the noon time greasing.Check hydraulic ﬂuid level in sight gauge every moming andduring the noon greasing. Add ﬂuid as needed.Check hydraulic temperature throughout the day. The normaltemp range is 130 to 170 degrees F.Change Hydraulic “Spin - On” ﬁlter every season, or every250 hours, whichever comes ﬁrst.Replace the old ﬁlter with a new clean ﬁlter that has beenpre-ﬁlled with new hydraulic ﬂuid.Pull and clean magnet at every ﬁlter change.Change hydraulic oil every season or every 1,000 hours,whichever comes ﬁrst. Check your manual for the properﬂuid to use in replacement.Pull suction strainer out of tank and clean when you changethe hydraulic ﬂuid.Always change oil with the same ﬂuid. Do not mix mineral oiland vegetable based oils as they are not compatible andmixing can damage hydraulic components.PADDLE WHEEL I GEARBOX MAINTENANCEo lnspect Paddle Wheels daily for any severe dents or damage.Straighten out dents and make sure paddles spin freelywithout hitting the side of the barge.~ Make sure Paddle Wheels are fastened tightly to Gear Boxes.- Frequently inspect other fasteners around Gear Box forproper tension.0 Inspect all fittings and drive components for damage.CHANGE GEAR LUBE ONCE PER SEASON~ When harvester is out of the water for the season, place abucket under Paddle Wheel Gear Box.o Remove top plug.~ Remove bottom plug and drain approximately one quart ofold gear lube.o Remove side plugs.~ Install bottom drain plug, use thread seal on plug.o Fill with new 85-140 Gear Lube in top hole until oil comes outof the side plug holes.~ Seal side plugs and install.~ Seal top plug and install.0 Make sure all plugs are sealed tightly.o Check allen head bolts and hub bolts for proper tension.HYDRAULIC MOTOR MAINTENANCECHANGE THE SEALo Remove drive shaft chain coupling guard.0 Remove drive shaft coupling chain.0 Remove coupling sprocket from Hydraulic Motor.0 Take the Hydraulic Motor to a clean work bench.o Put motor into a vice and remove the shaft key by gentlytapping it out with a screw driver and hammer.o Clean the shaft and inspect for any damage or burrs0 Remove the motor flange bolts.o Remove old seals and O-rings.0 Lubricate new seals and 0-rings with clean hydraulic fluidand carefully install.0 Replace flange into proper position.o Use loctite on the flange bolts and torque to 250 inch-pounds.o Reinstall the key.0 Return motor to machine. Reattach coupling sprocket.- Align to drive shaft and reinstall coupling chainv Reinstall chain coupling guard.HYDRAULIC C\_YLlNDER |v|AME\_rgANcE\_CHANGE THE SEALPlace ram assembly (cylinder) in vice.Remove paint from top end of rod.Loosen and remove seal gland nut.Remove rod from housing (Use pipe through pin hole toassist in pulling rod out).Watch for stop rings and washers while removing the rod, asthey may fall loose.Flush cylinder housing with solvent.Inspect housing with flashlight for debris or damage.Remove seals from rod and gland nut.Wipe rod with clean rags and inspect for damage. It shouldbe very smooth.Install stop rings and washers on rod.Drop rod back into cylinder housing.Slide first seal onto rod and slide down to seal seat, using along flat head screw driver.Install remaining seals, making sure they are properlyseated.Install new wiper seal in gland nut.Slide seal and gland nut onto cylinder rod.Tighten gland nut with a pipe wrench.SHORE CONVEYOR CHECKS .Check Conveyor tires for wear and damage regularly.Check Conveyor lights for proper operation. Thisincludes right and left turn signals, brakes and flashers.Check the conveyor for corrosion.Check the A-Frame winch wire to keep the wrapssmooth and in alignment.Note that Shore Conveyors with Power Packs have thesame hydraulic maintenance requirements as theharvesters and transports.Always use wheel chocks on the Shore Conveyor whenthe unit is not hooked up to the towing vehicle. Wheelchocks must be used to stabilize the Shore Conveyorwhen it is in the collection position.Visually inspect the pintle chain and conveyor flightsdaily for damage.Grease lower shaft bearings once daily.Grease upper shaft bearings once per weekNEVER CLIMB TO THE TOP OF THE CONVEYOR IF THEEND OF THE UNIT IS NOT LOCKED DOWN!IRAILER CHECKSCheck Trailer Tires for wear and damage regularly.EZ Lube hubs with clean grease at least once per season.Check brake shoes and drums at least once per season.Check trailer lights for proper operation, including right andleft turn signals, brakes and flashers.Check the trailer bed for corrosion.Check break away battery for proper charge.Keep trailer guides free of rocks and dirt.Check winch wire to keep the wraps smooth and alignedproperly.Always check conditions of the ramp before launching theharvester or transport.Note that Trailers with Power Packs have the same hydraulicmaintenance requirements as the Harvesters and Transports.Always chock the trailer wheels when the trailer is no hookedup to the towing vehicle.Make sure your license plate and DOT papemork are up todate.