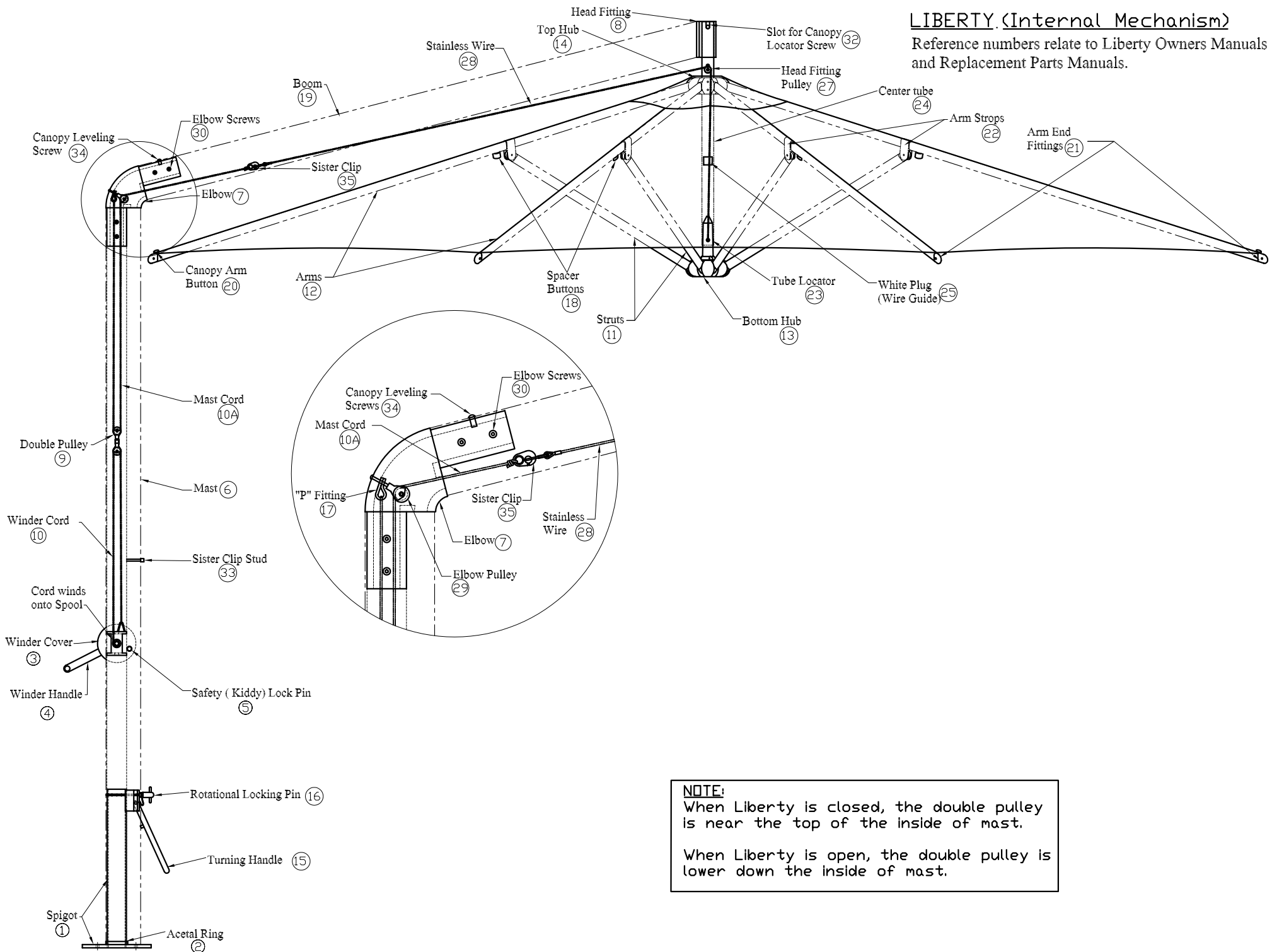


# LIBERTY (Internal Mechanism)

Reference numbers relate to Liberty Owners Manuals and Replacement Parts Manuals.



**NOTE:**  
 When Liberty is closed, the double pulley is near the top of the inside of mast.  
 When Liberty is open, the double pulley is lower down the inside of mast.

## Liberty Repair Catalogue

<u>Manual #</u>	<u>Replacement part</u>
L 01	Replace arm end fitting
L02	Replace arm strop
L 03	Replace canopy arm
L 04	Replace canopy strut
L 05	Replace top hub
L 06	Replace bottom hub
L 07	Replace stainless wire
L 08	Replace winder cord
L 09	Replace winder cover and /or winder base
L 10	Replace “P” fitting
L 11	Replace elbow pulley
L 12	Replace winder spool
L 13	Replace mast cord
L 14	Replace canopy

## **Liberty: Parts Number List**

Part # 01	Spigot
Part # 02	Acetal ring
Part # 03	Winder cover and base
Part # 04	Winder handle
Part # 05	Safety (kiddy) lock pin
Part # 06	Mast
Part # 07	Elbow
Part # 08	Head fitting
Part # 09	Double pulley
Part # 10	Winder cord
Part # 10A	Mast cord
Part # 11	Struts x 8
Part # 12	Arms x 8
Part # 13	Bottom hub
Part # 14	Top hub
Part # 15	Turning handle
Part # 16	Rotation lock pin
Part # 17	“P” fitting. (Mast cord termination point)
Part # 18	Spacer button x 8
Part # 19	Boom
Part # 20	Canopy arm button x 8
Part # 21	Arm end fitting x 8
Part # 22	Arm strop x 8
Part # 23	Tube locator
Part # 24	Centre tube
Part # 25	Wire guide
Part # 26	Tube holder
Part # 27	Head fitting pulley
Part # 28	Stainless wire
Part # 29	Elbow pulley
Part # 30	Elbow screws (2 x each side)
Part # 32	Slot for canopy locator screw
Part # 33	Sister clip stud. ( for wire cord when unclipped)
Part # 34	Canopy leveling screw
Part # 35	Sister clip

## **Liberty Part Replacement Manual:**

**Legend:** See attached diagram for part s identification.

**Manual:** **Liberty L 01** **Replace arm end fitting.** (21)

**Parts required:**  
1 x Shademaker arm end fitting (21)  
1 or 2 x 5-4 aluminium rivets  
2 x 5mm Allen keys

**Specialist tools required:**  
(a) 4.2mm drill bit  
(b) hand drill  
(c) hand riveter  
(d) 4 and 5mm Allen key  
(e) 5.0mm drill bit (step B)

**Process:**

- (1) Drill out rivet.
- (2) Remove broken end of damaged fitting from arm or strut.  
(If necessary leave the broken piece in the arm of strut. No harm will occur)
- (3) Fit the new end fitting.
- (4) Using the original rivet hole in the arm or strut, drill into the end fitting. **Caution:** Do not go right through the fitting and out the other side.
- (5) Rivet the end fitting to the arm or strut. Use 1 or 2 rivets as original.

**Note:**

**A** Should the broken end fitting be attached to the strop (22) on an arm, first remove the M6 x 22 stainless pin from the strop by tapping it through with a punch. Complete steps (2) to (5) above. Replace the end fitting in the strop and re-fit the stainless pin.

**B** If the damaged end fitting is in the end of an arm (12) complete steps (2) to (5) above having first removed the canopy arm button (20) from the arm end. Once the end fitting has been replaced you will need to re-drill the plastic (through the canopy button hole) to accommodate the canopy arm button. Use the 5mm drill bit.

**C** If the end fitting to be replaced is attached to the top hub then first remove the broken fitting from the hub by (1) removing the four barrel couplers (through bolts) from the top hub, then (2) partially releasing the 4 cap screws in the top hub. You should now be able to prise the hub open sufficiently to allow the broken end fitting to be removed. In the bottom hub there are also 4 x barrel couplers to remove first. Then partially release the cap screws so as to enable the broken end to be released. Transfer the stainless pin from the broken end to the new end fitting and re-fit into the hub. Re-tighten screws as necessary. Note: This step can be completed without fully separating the halves of either hub.

## **Liberty Part Replacement Manual:**

Legend: See attached diagram for parts identification

Manual: **Liberty L 02** **Replace arm strop** (22)

Parts required: 1 x Shademaker strop (1 x per arm) (12)

Specialist tools required:

- (a) 1 x 4.2mm drill bit
- (b) hand riveter

- Process:
- (1) Remove the end fitting in the strut (11) from the strop (22)  
(Tap the 8x22 stainless pin out with a small hammer.)
  - (2) Remove the canopy button (20) on the end of the arm.
  - (3) Drill out the rivet from the arm end fitting at the end of the arm.  
**Note:** This rivet and fitting needs to be removed so that the new Strop (22) can be fitted over the end of the arm.
  - (4) Remove the arm end fitting from the end of the arm.  
Suggestion: A small screw driver through the hole in the end of the fitting will give some purchase.
  - (5) Drill out the rivets in the strop. Remove the old strop. (Tap it down with a hammer if required.)
  - (6) Fit the new strop over the arm end and re-position on the arm.
  - (7) Fix the new strop in place with a 5-4 aluminium rivet.
  - (8) Fit the strut into the strop and replace the stainless pin.
  - (9) Replace the arm end fitting in the arm end and rivet.
  - (10) Replace the canopy button (20) into the arm end on top.

## **Liberty Part Replacement Manual:**

Legend: See attached diagram for parts identification

Manual: **Liberty L 03**

**Replace canopy arm** (12)

Parts required: 1 x correct length of Shademaker profile arm aluminium (12)  
1 x arm strop (22) (optional. The old one may be re-used.)  
3 x 5-4 aluminium rivets

Specialist tools required:

- (a) 1 x 4.2mm drill bit
- (b) hand riveter
- (c) 2 x 4mm Allen keys

Process:

- (1) Remove the canopy button (20) from the arm end.
- (2) Remove the 8 x 22mm stainless pin from the strop (22) on the arm.
- (3) Drill out the rivet from the arm end fitting (21) where the arm connects to the top hub (14). Leave the arm end fitting retained within the hub. Use the 4.2mm drill bit
- (4) Remove the arm from the umbrella frame.
- (5) Drill out the rivets and remove the end fitting and the strop from the damaged arm.
- (6) If it is not already fitted to the new arm, slide and tap the strop into position and drill and rivet as necessary.
- (7) Re-fit the end fitting (from 5) into the new arm. Drill and rivet as before.
- (8) Fit the new arm to the end fitting attached to the top hub. Use rivet supplied and drill as necessary.
- (9) Re-position the end fitting on the strut into the strop and re-connect with the 8 x 22mm stainless pin. (Removed in step 2)
- (10) Re-fit the canopy attachment button (20) with the canopy.

**Note:** The position of the strop on the new arm should be the same as on the old arm.

## **Liberty Part Replacement Manual:**

Legend: See attached diagram for parts identification.

Manual: **Liberty L 04** **Replace canopy strut** (11)

Parts required: 1 x correct length Shademakers arm profile aluminium  
2 x 5-4 aluminium rivets  
2 x Shademaker arm end fittings. (21)  
(you can re-use the old ones if they remain intact.)

Specialist tools required: (a) 1 x 4.2mm drill bit  
(b) hand riveter  
(c) punch  
(d) hammer

Process: Note: This replacement is easiest conducted with the canopy off.

- (1) Remove rivet from the end fitting (21) near the bottom hub. (13)  
Use a 4.2mm drill bit.
- (2) With a punch tap out the 8 x 22mm stainless pin from the strop  
(22) on the arm.
- (3) Drill out the rivets and remove the arm end fittings from the  
damaged or old strut.
- (4) Replace one arm end fitting in the new strut. Drill and rivet as  
necessary.
- (5) Re-attach the other end onto the arm end fitting still retained in the  
bottom hub. (13)
- (6) Re-connect the top end into the strop using the 8 x 22mm pin  
removed in step (2)

**Note:** For rivet hole positions please use other struts on the  
Shademaker frame as a guide.

## **Liberty Part Replacement Manual.**

Legend: See attached diagram for parts identification.

Manual: **Liberty L 05**

**Replace top hub** (14)

Parts required:

- 1 x Shademaker top hub (2 x halves) drilled for Liberty.
- 1 x 3mm crimp
- 1 x 3mm thimble
- 1 x 4-4 rivet

Specialist tools required:

- (a) 1 x 4mm Allen key
- (b) 1 x 5mm Allen key
- (c) 1 x 4.2mm drill bit.
- (d) 1 x crimping tool
- (e) 1 x hand riveter.

Overview: To replace the top hub is quite involved as the new hub needs to have the stainless wire inside it. This means an end of the wire needs to be passed through the new hub. This is done where the wire terminates in the tube locator.

Process:

- (1) This replacement is easiest conducted with the canopy off.  
(See Shademaker Liberty manual **Liberty L 14.**
- (2) Remove the canopy frame from the head fitting (8)
- (3) Drill the rivet out of the centre tube guide (24)
- (4) Back the 4 x cap screws off that hold the bottom hub together.  
Sufficient to release the tube locator (23).
- (5) Expose out the bottom of the tube locator the wire termination system and cut the wire wasting as little wire as possible.
- (6) Remove the 4 x barrel couplers from the top hub.
- (7) Release but not totally the 4 x cap screws in the top hub.
- (8) The 8 x arms should now be able to be removed from the top hub.  
Be careful to not loose the 8 x 22 mm stainless pins in the arm end fittings (21)
- (9) In the largest gap in the old top hub there are 2 x cap screws with spring washers exposed. Undo these 2 screws and the top hub should be able to be removed down the central tube.(24)



- (10) Transfer the 4 x cap screws from the old hub to the new hub to hold it together.
- (11) Replace the old hub with the new one over the wire and onto the centre tube (24) and re-fasten the 2 x cap screws with the spring washers securing the new top hub to the centre tube.
- (12) Re-rivet the wire guide in the centre tube. This can be a difficult operation but a new rivet hole can be drilled in the guide if the old hole cannot be located.
- (13) Re-thimble and crimp the wire end and place inside the tube locator.
- (14) Re-position the 8x struts in the bottom hub by capturing the stainless pins in the hub.
- (15) Re-position the tube locator on the hub with the 4 x cap screws. Fully tighten.
- (16) Place the 8 x arms in the top hub in the same way as the struts are held in the bottom hub.
- (17) Tighten the 4 x cap screws in the top hub.
- (18) Re fasten the 4 barrel couplers in the top hub. Previously released in step (6)
- (19) Re-fit the frame into the head fitting, connect the sister clips (35) and test.
- (20) Re-place the canopy on the frame.

## **Liberty Parts Replacement Manual.**

Legend: See attached diagram for parts identification.

Manual: **Liberty L 06** **Replace bottom hub (13)**

Parts required: 1 x Shademakers bottom hub (2 halves)  
1 x Shademakers decal for hub

Specialist tools required: (a) 2 x 4mm Allen key  
(b) 1 x 5mm Allen key

- Process:
- (1) This replacement is easiest conducted with the canopy off.  
(See Shademaker manual **Liberty L 14.**
  - (2) Have the Shademaker Liberty positioned on its spigot with the canopy frame in a half open position.
  - (3) Undo the 4 x barrel couplers in the bottom hub. (4mm Allen keys)
  - (4) Undo the cap screws on the top side of the bottom hub (13). The 8 x struts (11) will come out of the old hub. The tube locator (23) will also separate. (Beware not to loose the stainless pins)
  - (5) Fit the new bottom hub to the 8 x struts. Capture the stainless 8 x 22 stainless pins and partially secure by tightening the 4 x cap screws.
  - (6) Re-fit the tube locator to the new bottom hub and fully tighten all 4 x cap screws.
  - (7) Re-fit the 4 x barrel couplers to the bottom hub.
  - (8) If the decal needs fitting then now is a good time.
  - (9) Re-fit the canopy

## **Liberty Part replacement Manual:**

Legend: See attached diagram for parts identification.

Manual: **Liberty L 07** **Replace stainless wire** (28)

Parts required: 1 x 2 meter length of 3 mm stainless wire.  
2 x 3mm stainless crimp  
2 x 3mm thimble

Specialist tools required: (a) Crimping tool  
(b) Wire cutters  
(c) 2 x 5mm Allen keys

Process:

- (1) This process is easiest conducted with the canopy removed but not essential (see Manual L 14). Remove the umbrella frame from the head fitting and stand it like a wigwam on the ground.
- (2) Remove the 4 x barrel couplers from the bottom hub. Use the 2 x 5mm Allen keys.
- (3) Release the 4 x cap screws in the bottom hub (13) sufficiently to allow the tube locator (23) to be removed from the bottom hub.
- (4) Expose the wire holding system in the tube locator and cut the wire.
- (5) Tape the new wire to the old wire with insulation tape or similar.
- (6) By pulling the old wire at the sister clip (35) end and pushing the new wire at the bottom hub end you can thread the new wire through the top hub (14) and head fitting pulley (27). Any more than one layer of insulation tape may cause this process to jamb.
- (6) Re-crimp the wire into the tube locator and fasten the tube locator to the bottom hub with the previously released 4 x cap screws.
- (7) Replace the 4 x barrel couplers. Tighten with the 5mm Allen keys.
- (7) You may need to shorten the wire at the sister clip end. The new wire should be the same length as the old wire. When the canopy is collapsed and standing unsupported on the ground the sister clip should be approx 250mm from the centre tube aperture.
- (8) Attach the sister clip cut from the old wire. (Thimble and crimp.)
- (9) Re-fit the canopy. (Manual L 14)

## **Liberty Part Replacement Manual:**

Legend: See attached diagram for part identification.

Manual: **Liberty L 08**      **Replace winder cord** (10)

Parts required:      1 x 3.5 meter length of 4mm marine cord.  
Or 1 x Shademaker winder system incl pulley, internal spool and sister clip

Specialist tools required:      (a) 3mm, 4mm and 5mm Allen keys

Overview: The complete cord winder replacement (parts 10 winder cord, and 10A mast cord) is easiest when a complete cord replacement part has been purchased. (The wire section is covered in Manual # L 07). Should a complete cord “kit” not be available, either section can be replaced using 4mm yachting cord. The part list is the same in this case however the spool, and sister clip parts need to be re-used. In either case the winder spool needs to come out of the top of the mast so the elbow needs to be separated at the connection with the mast. The mast cord replacement manual is **Liberty L 13**

Process:

- (1) Remove the canopy frame and lie the mast and boom on a bench or stools with the winder up.
- (2) Remove the 4 screws that connect the elbow to the mast.  
(2 on each side of the mast)
- (3) Remove the elbow from the mast. You will need to unwind (anti-clockwise) the winder handle to facilitate this.
- (4) Undo the screw (4mm Allen key) at the centre of the winder cover (3) and remove cover.
- (5) Undo the 2 screws that secure the winder base to the mast. Lift winder base off. Use 3mm Allen key
- (6) Withdraw the now exposed winder shaft from the mast.
- (7) Remove the sister clip stud (33) from the mast. Use 5mm Allen key.
- (8) With the 2 cords visible at the top of the mast pull the winder cylinder/mechanism out the top of the mast.

- (9) The new winder cord can now be fitted. Undo the old winder cord and remove from the winder cylinder. **Make the new winder cord the same length** and re-fasten both ends as the old one was. A knot or crimp is adequate to attach the new winder cord to the wire strap. Ensure the new cord is through the bottom half of the double pulley.
- (10) With a stick or rod push the winder cylinder down the mast until it can be seen through the hole in the mast at the winder base position.
- (11) Align the cylinder and push the winder shaft back into position. (taken out in step 6) **Caution:** Do not allow the winder cord to be twisted as this will cause the winder to be difficult to operate.
- (12) Fasten the winder base to the mast using the earlier withdrawn screws. Removed in step (5)
- (13) Refit the winder cover. Removed in step (4)
- (14) Take up any slack in the winder by turning the winder handle clockwise.
- (15) Re-fit the sister clip stud removed in step (7)
- (16) Re-position the Liberty Shademaker on its spigot (1) and test.
- (17) Re-fit the canopy.

## **Liberty Part Replacement Manual.**

Legend: See attached diagram for part identification:

Manual: **Liberty L 09** **Replace winder cover (3) and or winder base.**

Parts required: 1 x Shademaker winder cover (3)  
1 x Shademaker winder base

Specialist tools required: (a) 1 x 3mm Allen key  
(b) 1 x 4mm Allen key  
(c) Loctite.

Process:

- (1) This step is best conducted with the umbrella on a bench or stools with the winder uppermost.
- (2) Remove the winder cover by undoing the screw in the centre of the winder cover. Use the 4mm Allen key.
- (3) Remove the cog by pulling it off the central spindle.
- (4) Remove the winder base by undoing the 2 or 3 screws (depending on your model) set in the winder base. Use the 3mm Allen key.
- (5) Fix the new winder base to the mast using the pre-used screws.
- (6) Replace the cog on the central spindle. Be sure you fit it the same side up as you dismantled it. **Note:** Only one position is correct. Line up the two T marks on the cog and cover.
- (7) Replace the winder cover. (use a little Loctite on the screw)

## **Liberty Part Replacement Manual.**

Legend: See attached diagram for parts identification.

Manual: **Liberty L 10** **Replace “P” fitting or attach mast cord to “P” fitting.**  
(17)

Parts required: 1 x stainless “P” fitting (if old one is unusable.)

Specialist tools required: (a) 1 x 5mm Allen key

Process: **If the “P” fitting has separated from the elbow:**

- (1) Remove canopy frame from the head fitting and lie the mast and boom on a bench or stools.
- (2) Remove the 4 x cap screws (30) that hold the mast onto the elbow. 2 x screws on each side of mast.
- (3) Separate the mast from the elbow. You may need to unwind the winder to permit this to happen.
- (4) Either by using gravity (turn the umbrella upside down and shake) or using a hook on a pole retrieve the end of the mast cord with the fitting attached.
- (5) Re-screw the “P” fitting back onto the elbow.
- (6) Re-fit the elbow into the mast and tighten the 4 x cap screws.

**If the mast cord has separated from the “P” fitting.**

- (1) Complete steps (1) (2) and (3) above
- (2) Using a hook on a pole retrieve the mast cord.
- (3) Should the mast cord have come out of the top section of the double pulley then it will need to re-threaded through the pulley. To enable the pulley too be exposed at the top of the mast the winder handle will need to be unwound fully (anti-clockwise). There is enough length on the winder cord to enable the pulley to be exposed.
- (4) Unscrew the screw that holds the “P” fitting to the mast.
- (5) Re-fasten the loose end of the mast cord to the “P” fitting. A non slip knot is adequate.
- (6) Re-screw the “P” fitting to the elbow.
- (7) Re-connect the elbow with the mast and tighten the 4 x cap screws.

## **Liberty Part Replacement Manual:**

Legend: See attached diagram for part identification.

Manual: **Liberty L 11** **Replace elbow pulley (29)**

Parts required: 1 x elbow pulley

Specialist tools required; (a) long nosed pliers

- Process:
- (1) Remove the canopy from the head fitting and lie the mast and boom on a bench or stools with the winder handle up.
  - (2) Undo the 4 x cap screws (3) that connect the boom (19) to the elbow (7). Also undo the canopy leveling screw (34)
  - (3) Cut the sister clip off the mast cord 10A .
  - (4) Pull the boom off the elbow. You may need to unwind the winder handle (4) to achieve some slack in the cord.
  - (5) To gain easier access to the elbow pulley it is best to remove the 4 x cap screws that hold the mast to the elbow and separate the elbow from the mast.
  - (6) Undo the screw on the outside of the elbow that holds the elbow pulley (29) to the mast. **Caution:** Do not undo the “P” fitting screw. Observe inside the elbow through the exposed elbow end.
  - (7) Thread the cord through the new pulley and out the hole in the elbow.
  - (8) Using the screw that held the old elbow pulley to the elbow, re-fasten the new elbow pulley to the elbow. Long nosed pliers will help with this operation. Be careful not to twist the cord around the pulley or it will make it hard to open the canopy.
  - (9) Re-fit the sister clip so that the cord cannot disappear down the mast.
  - (10) Re-connect the boom to the elbow and re fix the 4 x cap screws and the leveling screw (34).
  - (11) Re-connect the mast to the elbow and re-fix the 4 x cap screws.
  - (12) Stand the mast and boom upright and connect the sister clips and hang the canopy frame from the head fitting.



## **Liberty Part Replacement Manual:**

Legend: See attached diagram for parts identification.

Manual: **Liberty L 12** **Replace winder spool**

Parts required: 1 x Shademaker winder spool housing with spindle.  
Insulation tape or similar

Specialist tools required: (a) 1 x 4mm Allen key  
(b) 1 x 3mm Allen key

Overview: Before this step can be carried out the winder cover and winder base needs to be removed. See Manual **Liberty L 09.** The winder spool needs to come out of the top of the mast to be repaired or replaced.

Process:

- (1) Lie the Liberty on a bench or stools with the winder up.
- (2) Undo the 4 cap screws that secure the mast to the elbow.
- (3) Remove the winder cover, cog, winder base and axel (spindle) from the mast.
- (4) Separate the mast from the elbow. This will cause the winder spool to unwind.
- (5) Remove the sister clip stud (33).
- (6) Pull the 2 cords hanging out of the top of the mast. The double pulley will appear first then the winder housing with the spool inside.
- (7) Remove the tape and the winder housing will separate in half releasing the winder spool
- (8) Fit the new spool and or housing as necessary and push the winder housing back down the mast with a long stick or similar.
- (9) Once in the correct position, re-fit the axel through the mast and winder housing. **Caution:** Do not allow the winder cord to become twisted in this process or operation will be difficult.
- (10) Re-fit the elbow to the mast and tighten the 4 x cap screws.
- (11) Re-fit the winder base to the mast, the cog to the axel and the winder cover.

## **Liberty Part Replacement Manual:**

Legend: See attached diagram for parts identification.

Manual: **Liberty L 13** **Replace mast cord** (10A)

Parts required: I x length 2.7 meter x 4mm marine cord.  
1 x 3mm thimble (Optional)  
1 x 3mm stainless or brass crimp. (optional)

Specialist tools required: (a) crimping tool (optional)  
(b) Long nosed pliers

Process:

- (1) Remove the canopy frame and lie the mast and boom on a bench or stools.
- (2) Undo the 4 x cap screws (30) (2 on each side of the mast) and pull the elbow (7) out of the mast (6). (You may need to unwind the winder handle to facilitate this)
- (3) Unscrew the screw that holds the “P” fitting (17) onto the mast.
- (4) Remove the “P” fitting from the mast, cut the old cord and attach the new cord to the “P” fitting in the same manner as the old.
- (5) Re-screw the “P” fitting to the elbow. (hold with long nosed pliers)
- (6) Tape the new cord to the old cord and from the sister clip (35) end pull out the old cord, at the same time pulling the new cord through the double pulley (9) and elbow pulley (29)
- (7) Cut the new cord the same length as the old cord.
- (8) Attach the sister clip to the new cord. ( double non slip knot)
- (9) Re-connect the elbow into the mast and replace the 4 x cap screws.
- (10) Stand the mast onto its spigot and connect the sister clips. (You may need to unwind the winder handle to ease the winder cord.)
- (11) Re-connect the 2 x sister clips, replace the canopy frame in the head fitting and test. (Note: You may need to re-adjust the length of the mast cord again if it is not the correct length.)

## **Liberty Part Replacement Manual:**

Legend: See attached diagram for parts identification.

Manual: **Liberty L 14**

**Replace Canopy.**

Parts required:

New canopy

Specialist tools required:

- (a) Phillips screw driver for some models
- (b) 4mm Allen key for some models

Process:

- (1) With the canopy frame still installed in the head fitting (8) close the canopy.
- (2) Undo the 8 screws in the canopy arm buttons (20)  
Note: Some models will need the Allen key end some models the Phillips screw driver
- (3) Un-dome and remove the top hat from the canopy.
- (4) Undo the 4 x screws that hold the canopy onto the arms at the top of the arms (12)
- (5) The canopy will fall to the ground.
- (6) To fit the new canopy pull the canopy up and around the frame. Using the winder open the frame approx 25% so that the canopy will not fall off the frame.
- (7) Re-fit the 8 canopy arm buttons. Ensure that the 4 x tapes in the top of the canopy are lined up with the drilled holes at the top of the arms so that step (8) can be completed easily.
- (8) Close the frame and re-fit the 4 x screws through the tapes in the top of the canopy to the arms.
- (9) Re-dome the top hat.
- (10) Open the canopy carefully to ensure all the screws are in the right place and not offset.