



Merlin Drone Magix

**Drone Photo Measuring Guide for
New and Replacement Safety Covers**

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Follow Our “Measuring Made Easy” Steps

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Page 12

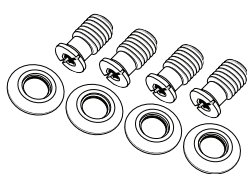
orders@merlinindustries.com

Supplies Checklist

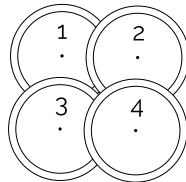
Select Your Drone Magix Kit



Drone with 4K or Better Camera



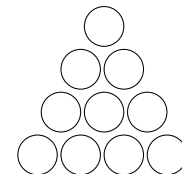
4 Brass Anchor Insert screws & 4 Brass Flanges



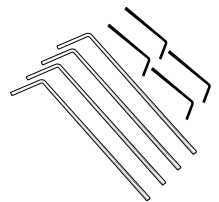
4 Measurement Discs



4 Aluminum Rivets

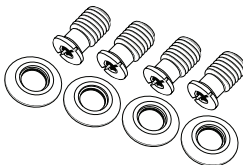


50-60 Small Discs

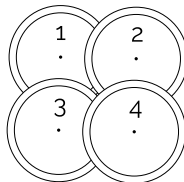


4 Large Allen & 4 Small Black Allen Wrenches

A



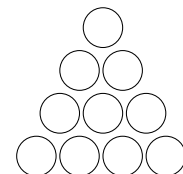
4 Brass Anchor Insert screws & 4 Brass Flanges



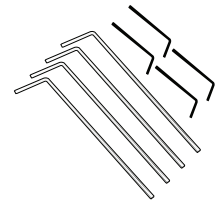
4 Measurement Discs



4 Aluminum Rivets



50-60 Small Discs

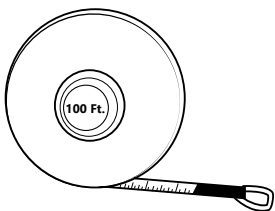


4 Large Allen & 4 Small Black Allen Wrenches

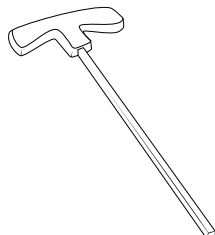
B

You must provide your own Drone if selecting Kit B.

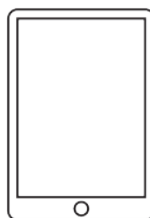
Required Supplies Not Provided in Kit



100' Fiberglass Measuring



Hex Tool for Anchor Inserts



Laptop or Mobile Device to download photos from drone



4 Brightly Colored Yard Sticks for Obstacles (Needed to locate hidden)

Drone Specifications

If you are purchasing Kit B and therefore utilizing your own drone, please note that Drone Magix requires your drone/camera combo to be equivalent to or better than the Mini-3 by DJI.

Your drone should have the following specifications:

- A resolution of 48MP or higher, with a capability to capture in 4K or better quality
- Ability to change camera settings (assists with managing sunlight variation)
- Gimbal with 90 degree setting/toggle (for vertical picture taking)
- Hovering capability
- Ability to download photos to your mobile device

To view the specifications for the DJI Mini-3, follow this link: <https://www.dji.com/mini-3/specs>

Drone Operations & Regulations

If you are not a qualified and trained drone operator, do not attempt to fly a drone.

It is the drone operator's responsibility to understand Federal and Local regulations pertaining to commercial drone use certifications.

It is the drone operator's responsibility to review Federal and Local regulations pertaining to overall drone use in the area and all safety guidelines.

Rules & Regulations pertaining to drone use within the United States can be found on the Federal Aviation Administration (FAA) website: www.faa.gov/uas/getting_started

Review the fundamentals of safe drone flight practices by visiting Fly Robotics at: <https://www.fly-robotics.com/public-safety-2>

Pre-Flight Checklist:

- ✓ Ensure drone and controller are fully charged.
- ✓ Remove lens cover from drone. Power on drone and controller.
- ✓ Ensure drone camera is set to Auto mode and JPEG photo capture.
- ✓ Set drone camera setting for a 4 to 3 aspect ratio.
- ✓ Ensure the weather is safe for flight and that the flight area is outside of controlled airspace.
- ✓ Confirm the operator is qualified and licensed, if necessary.
- ✓ Confirm operator has understood this procedure and what photos are required.
- ✓ Check flight area for flight hazards such as branches, fences, power lines, etc.
- ✓ Review flight regulation and permission compliance.
- ✓ Review your drone's safety guidelines.

Ideal Pool Types

It is important to note that Merlin Drone Magix is not suitable for ALL pool types. For the best possible results, we encourage you to use this method only on the ideal pool types listed below.

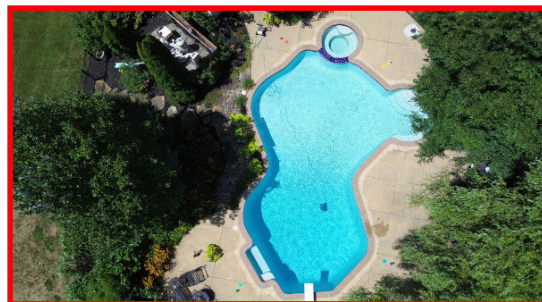
Ideal Pool Types:

- *Single plane deck*
- *Freeforms, rectangles*
- *Covered pools (remakes)*
- *Anchor matching*
- *New pools without anchors*
- *Basic raised spas*



Not Ideal:

- *Pool perimeter not fully visible*
- *Multiple riser raised spa*
- *Grotto/caves*
- *Vanishing edge*



Prepare Your Jobsite

Preparing your job site accurately will ensure that your photos allow Merlin Industries to provide an informed quote and cover design. **Drone Magix can be used on pools with the safety cover in place. Be sure that the cover is free of heavy debris or water. The cover needs to be taut as possible.** You will be assembling and positioning 4 numbered discs to create a large rectangle that will encompass a majority of or all of the pool.

First, unpack your Drone Magix Measuring Kit to ensure you have all the components.

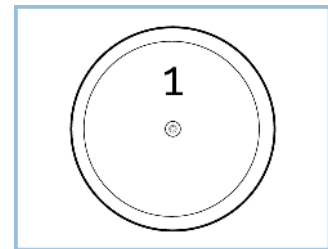
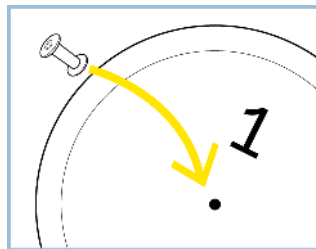
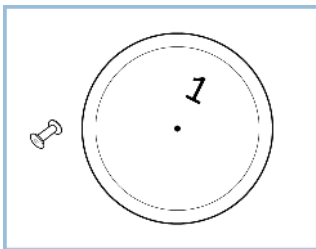
Note: There are two ways to prepare to measure a pool. Determine if you are working with a pool *without* existing anchors or *with* existing anchors. *Review the section that applies to your specific pool.*

Prepare Your Jobsite

1.) Preparing the Jobsite for a Pool WITHOUT Existing Anchors

For this method, two people are needed. You will assemble the 4 discs with the aluminum rivets provided in your kit. Simply push the rivets through the center hole of each large disc. *See image below.*

When you begin to measure, one person will stand at the first disc holding one end of the measuring tape while the other stands at the next disc with the other end of the measuring tape. Hold the tape in the center of each disc and follow the steps on Page 7.

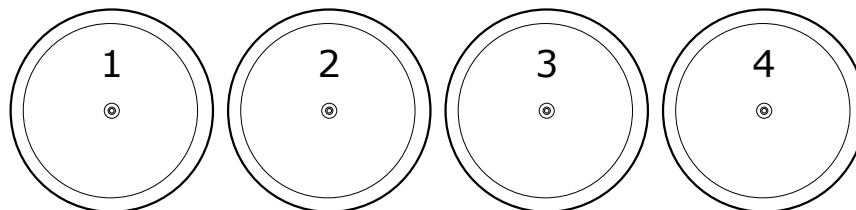


1

Identify the best placement for the four discs around the pool perimeter. Make sure measurements with a tape measure can be taken between all four discs.

2

Place the four measuring discs with the rivet centers around the pool perimeter as shown on page 7.



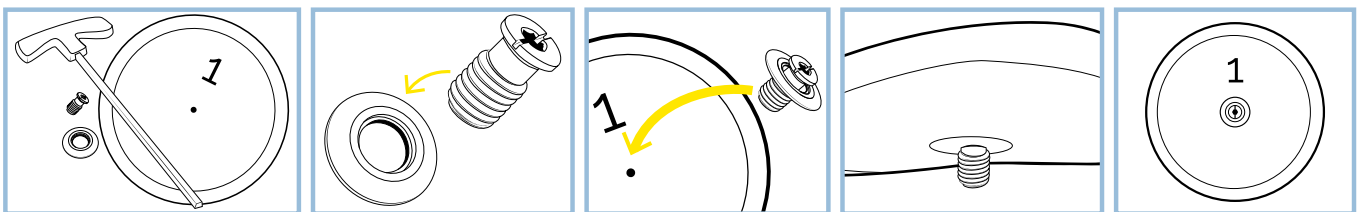
3

Place the small 2" discs on top of existing anchors, especially if the safety covers anchors are not clearly visible. Use the small discs for any tarnished anchors or anchors located in the lawn or flower beds.

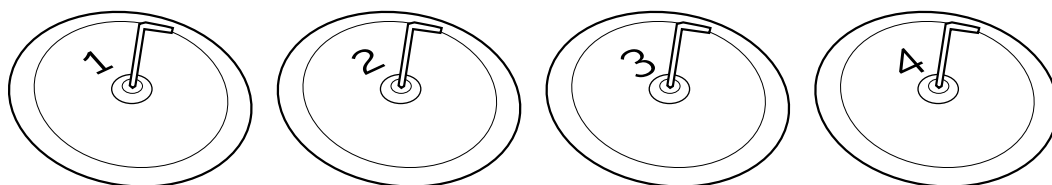
Prepare Your Jobsite

2.) Preparing the Jobsite for a Pool WITH Existing Anchors

Assemble the four discs with the four brass anchor insert screws and the four anchor flanges as shown below. Then follow the steps below. Note: There is no need to remove the anchor inserts if the small Allen wrenches fit the existing inserts.



- 1** Identify four existing anchors on the pool deck that will create the desired rectangle. (see page 7 for examples)
- 2** Using the Hex Anchor Insert Tool, remove the brass anchor insert screws from those four anchors.
- 3** Push the brass inserts into the center hole of each of the four discs as shown in the illustrations above. Then, insert the four allen wrenches as shown below:



- 4** Place the small 2" discs on top of the existing anchors, especially if the safety cover's anchors are not clearly visible. Use the small discs for any tarnished anchors or anchors located in the lawn or flower beds.

Measuring Made Easy

For Pools WITH and WITHOUT existing anchors

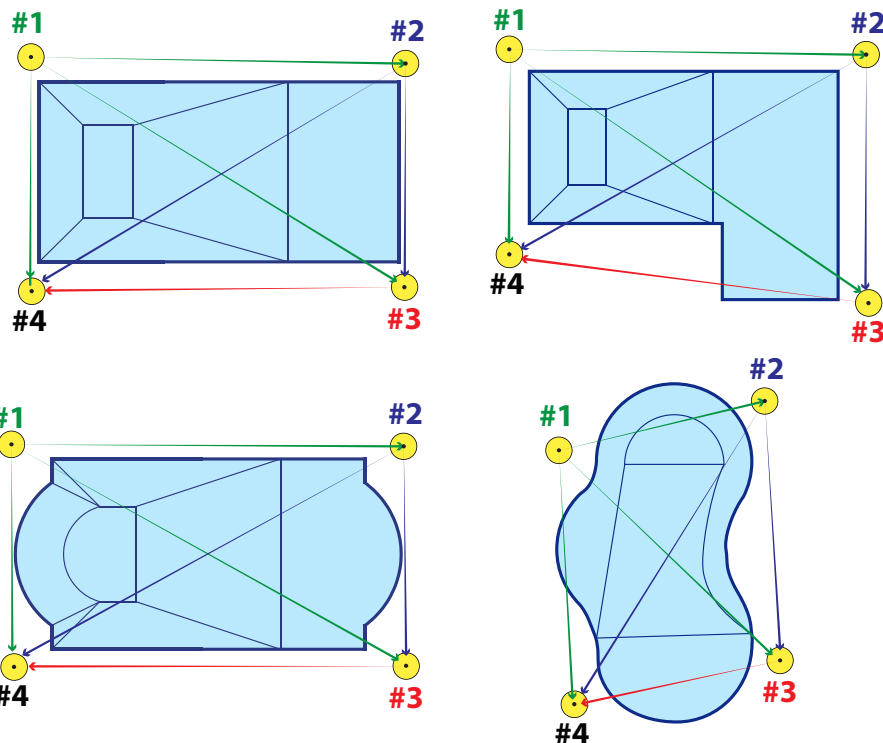
1

Discs **MUST** be placed in a clockwise orientation. Start with Disc #1 placed at the top left of the pool.

2

Repeat the same process for Discs #2, #3 and #4 moving clockwise around the pool to complete the rectangle.

Examples:



3

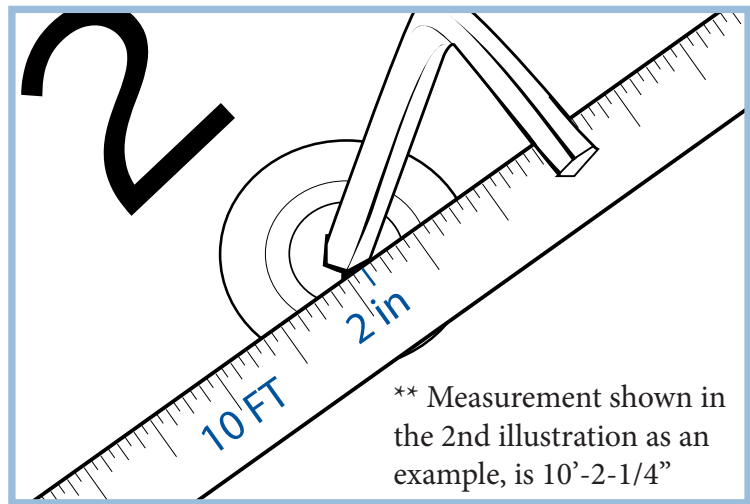
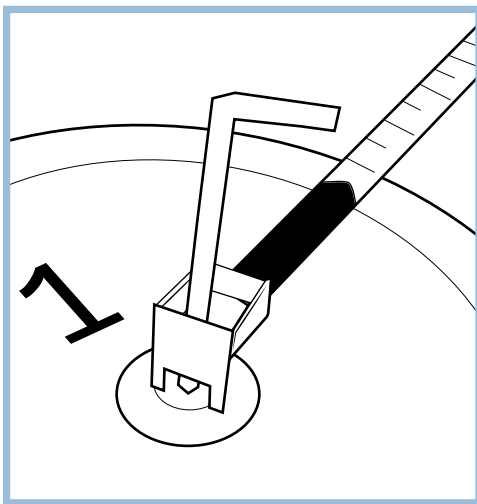
Place the small 2" discs on top of existing anchors, especially if the safety covers anchors are not clearly visible.

Use the small discs for any tarnished anchors or anchors located in the lawn or flower beds.

Measuring Made Easy

4

Record measurements to the nearest 1/4" and make sure you measure to the center of the measurement disc. Take and record the six cross dimension measurements in the Drone Magix Measurement form or the Mobile Magix tool.



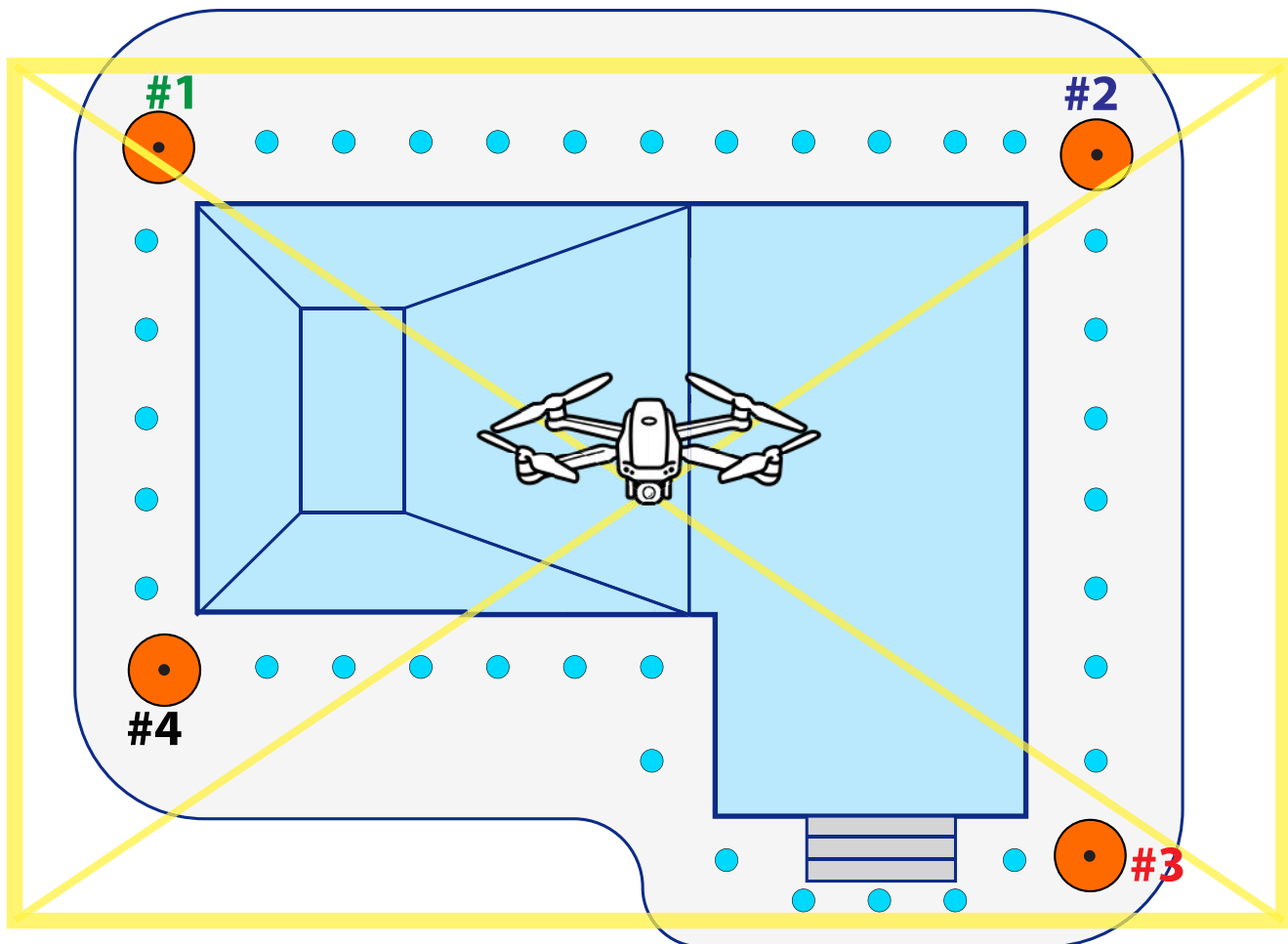
REQUIREMENTS TO NOTE FOR PLACING DISCS

- The discs can be placed with the existing cover in place or with the existing cover completely removed.
- There must be a clear line of sight to measure between each of the numbered discs.
- The discs must be placed on the deck surface and must be at the same height to each other.
- **IMPORTANT:** discs MUST be placed in a clockwise orientation, otherwise there is risk for the cover being manufactured incorrectly.

Taking the Perfect Drone Photo

The ideal drone position is to stay as close as possible to the **center of the pool** while maintaining the required Field of View (the yellow box below). Keep the **drone altitude at the minimum height** so that the camera's field of view captures all measurement discs, anchors and most of the pool desk. *Review the tips on the next page for working with altitude & center obstructions.*

Desired Field of View



Taking the Perfect Drone Photo

The drone flight and pictures are the most critical part of the Drone Magix process. You will want to ensure you have the right settings for your drone and camera. Depending on the size of the pool, you will only need as little as one or two drone pictures.

Pro Tips to Review

CHECK YOUR ALTITUDE

If your altitude is too high, the photo processing can be difficult or even impossible. If you are too low, you run the risk of eliminating needed features of the pool and deck. Your altitude should be just high enough to capture all required objects in the field of view such as the pool, anchors, and measuring discs.

WATCH FOR OBSTRUCTIONS

Obstructions such as tree branches will prevent the drone from being as close to the center of the pool as possible and will prohibit you from getting the needed field of view. If you encounter these types of obstructions, move the drone off-center.

GIMBAL ADJUSTMENT

If the desired altitude cannot be achieved and moving the drone off-center does not clear your field of view from obstructions, you can adjust the gimbal. **The angle of the gimbal must be noted and added to the measurement sheet.** Optimal gimbal setting is 90 degrees.

SUPPLEMENTARY PHOTOS

Take additional photos with a cell phone of any fixed objects that may interfere with the safety cover. **Include these photos in your order submission.**

Taking the Perfect Drone Photo

1

Set the camera to AUTO mode (not manual) and ensure picture format is set to JPEG mode.

2

Establish your correct field of view while considering altitude and obstruction tips from the previous page.

3

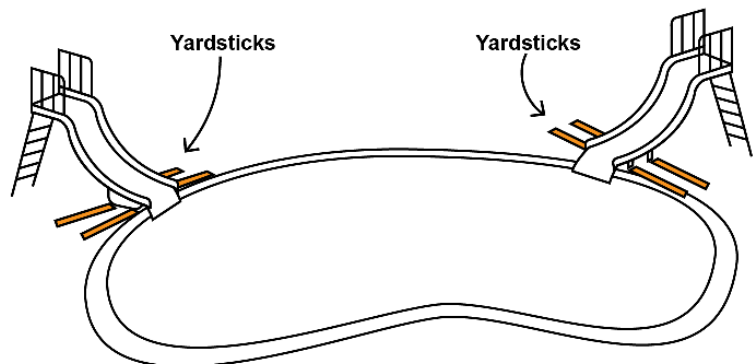
Set gimbal face down at 90 degrees after reaching desired altitude. Avoid facing the drone into direct sunlight.

4

Take the required photos and download the drone photos to your laptop or mobile device.

HOW TO HANDLE HIDDEN OBSTACLES

- Some features or obstacles on the pool deck such as a slide obscuring its support legs or blocks, may be hidden from the view of the drone when the drone photo is taken.
- The appropriate way to handle the obstacle is to place one end of the yardsticks (safety brightly-colored if possible) against four sides of the hidden feature so that most of the yardsticks will be visible in the drone photo.
- The visible section of the yardsticks will be used to help determine the location and dimension of the hidden feature or obstacle.
- When a hidden obstruction such as a rail or slide foot is part of a pool feature, note the diameter or size of the obstruction in the notes section of the measurement form.



Submitting Your Work

Email Submission

Complete the enclosed Drone Magix Measurement Sheet by hand.

Take a photo of the measurement sheet or scan it into your computer.

Download the photo(s) from the drone in either a JPEG, JPG, or PNG format.

Start an email and attach a photo of the measurement sheet along with all photos taken during flight and send email with attachments to orders@merlinindustries.com

Once your submission has been received, Merlin Industries will provide you with a timely quote for a cover based on your specifications.

Ready to purchase? Send us an email at orders@merlinindustries.com when you are ready to convert your quote to an order.

Submitting Your Work

Magix Submission

Log in to Mobile Magix with your Dealer ID and Password.

Name the job and receive a work number.

Measure the distance between Disc 1 and Disc 2 and enter it in the “Distance between your ‘A’ point and ‘B’ point” field.

Make sure the selected Entry Mode is “AB”. See figure 1.

Measure and enter the distances as follows:

A1 will be 0' 0 ¼”

B1 is the distance between Disc 1 and Disc 2

A2 is the distance between Disc 1 and Disc 2

B2 will be 0' 0 ¼”

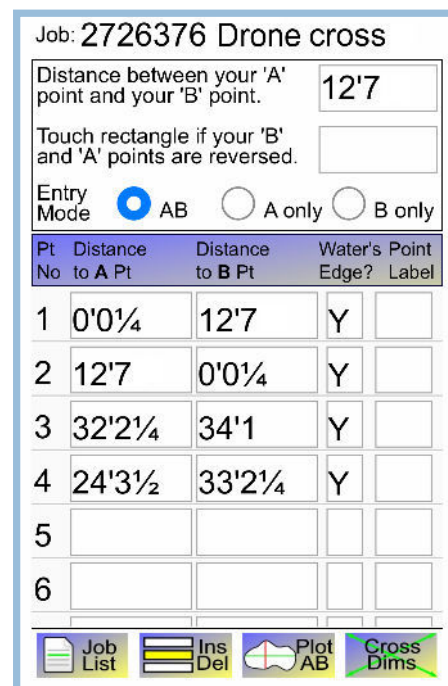
A3 is the distance between Disc 1 and Disc 3

B3 is the distance between Disc 2 and Disc 3

A4 is the distance between Disc 1 and Disc 4

B4 is the distance between Disc 2 and Disc 4

Tap “Cross Dims” on the bottom of the screen.



Job: 2726376 Drone cross

Distance between your 'A' point and your 'B' point. 12'7

Touch rectangle if your 'B' and 'A' points are reversed.

Entry Mode ☒ AB ☐ A only ☐ B only

Pt No	Distance to A Pt	Distance to B Pt	Water's Point Edge?	Label
1	0'0¼	12'7	Y	
2	12'7	0'0¼	Y	
3	32'2¼	34'1	Y	
4	24'3½	33'2¼	Y	
5				
6				

Job List Ins Del Plot AB Cross Dims

Fig. 1

Submitting Your Work

Magix Submission

Fill in all the Measured Cross Dimensions from disc to disc, there should be six total measurements, *as in Figure 2*.

Tap “Plot AB” to check the dimensions as a drawing, *as seen in Figure 3*.

The difference between Measured Dimensions and Actual Dimensions for the cross dimensions between Disc 3 and 4 should be less than 2 inches, *as highlighted in Figure 2*.

Tap “Finish”, then “Save Data” on the next screen. See *Figure 4*.

Tap “Send Mail” in the Get a Quote area.

Attach all photos taken during flight to the email on your screen.

Once your submission has been received, Merlin Industries will provide you with a timely quote for a cover based on your specifications.

Ready to purchase? Send us an email at orders@merlinindustries.com when you are ready to convert your quote to an order.

CD No	From Point	To Point	Measured Dimension	Actual Dimension
1	1	2	12'7	12'7
2	1	3	32'2¼	32'2
3	1	4	24'3½	24'3
4	2	3	34'1	34'1
5	2	4	33'2¼	33'2
6	3	4	19'7	19'8
7				
8				
9				

A-B Data Plot AB Finish

Fig. 2

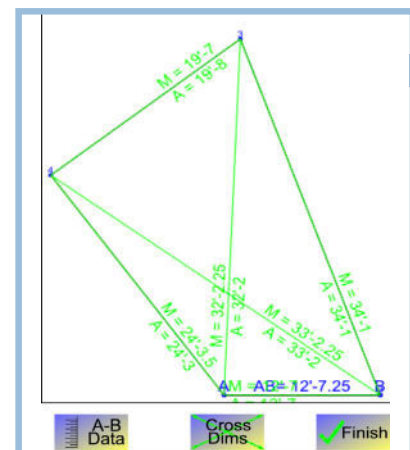




Fig. 3

Get a Quote
Tell Merlin to calculate your quote, touch button. 

Save AB Data
Transfer AB data, cross dims, notes to Merlin, touch button. 




  

Fig. 4

Merlin Drone Magix Measurement Form

Discs MUST be placed in a clockwise orientation around the pool perimeter.
Use the center of the disc as the start and end points for cross-dimensional measurements.

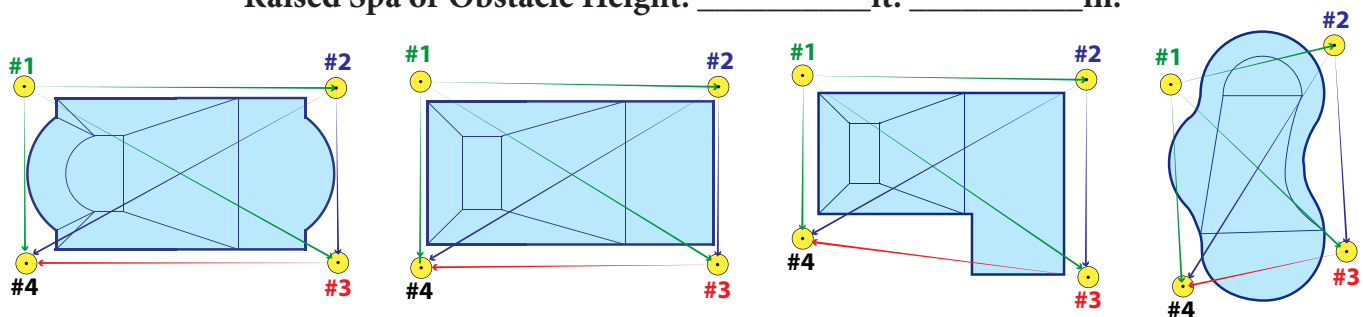
Date:	Homeowner Last Name:
Dealer Name:	Homeowner Address:

Step #1 - Disc #1 Starting Point	Distance	Re-check
Disc #1 to Disc #2		
Disc #1 to Disc #3		
Disc #1 to Disc #4		

Step #2 - Disc #2 Starting Point	Distance	Re-check
Disc #2 to Disc #3		
Disc #2 to Disc #4		

Step #3 - Disc #3 Starting Point	Distance	Re-check
Disc #3 to Disc #4		

Raised Spa or Obstacle Height: _____ ft. _____ in.



Notes:
