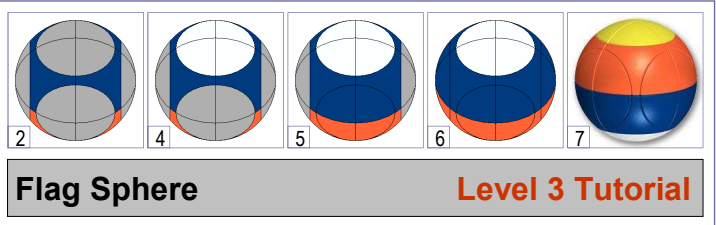


MARUSENKO SPHERE DESCRIPTION

A 3D rotational and sequential spheric puzzle, *Designed, Engineered and Manufactured* with **100% European Quality**. During the assembling process, no glue nor any metallic element such as springs, screws or washers are used. Actually, all of its 54 pieces are built with high quality and 100 % recyclable plastic. New, original, quiet and well defined movements, with the guarantee of a longwearing product. Surface of the Marusenko sphere has 24 triangles (arranged in 6 poles) and 8 stars (leaving a total of **32 moving pieces**). Its 2,279,626,699,712,199,018,518,937,600,000 positions (around 2.3×10^{30}) and all of its potential color configuration led us to present the sphere in 5 different designs, offering different levels of creativity and complexity. We hope that this challenge will be to your liking and we sincerely appreciate your purchase.



Flag Sphere

Level 3 Tutorial

Standard Method Summary:

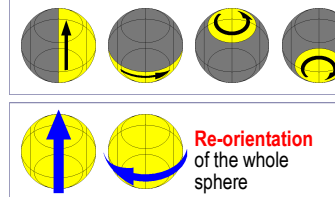
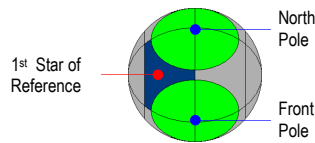
We solve the sphere from north to south through the following steps:

- 1.-Orient the Sphere: North Pole (as the active pole) and Front Pole (as the auxiliary pole).
- 2.-Solve the stars: 4 blue-stars at Northern Hemisphere & 4 orange-stars at the South one.
- 3.-Learn to bring a desired triangle to the Front Pole (auxiliary step useful during next steps).
- 4.-Solve the North Pole: Join 4 White-triangles in the North Pole.
- 5.-Solve the Front Pole: 2 blue-triangles on the upper half and 2 orange on the bottom half.
- 6.-Solve Side Poles (Right, Back and Left): repeat step #5 to solve them.
- 7.-South Pole will have been automatically resolved in yellow colour.

The flag sphere represents level 3 among the 5 levels that Marusenko offers. This method is not unique nor the fastest but it is an **step-by-step** approach in order to solve the sphere from any of its 1.932.542.454.240 ($7,9 \times 10^7$) possible positions; without shortcuts nor tricks that could lead us to a quicker resolution method. In this example we will solve the Northern Hemisphere in blue-stars colour and the Southern Hemisphere in orange-stars. Then the North Pole in white-triangles and the Side Poles in blue and orange triangles. The South Pole will have been automatically solved in yellow. After this first contact with this standard method, you will soon come up with your own trick and shortcuts, which leads to your own fast and smart solution.

STEP #1: Orient the Sphere: choose and view the North Pole, South Pole and 1st Reference Star

We choose any **"blue star"** as the **"front-upper-left star"**, and orienting and holding the sphere in hands leave the selected blue-star in such a position. In this way we have decided which one will be our **"North Pole"** and which one our **"Front Pole"**

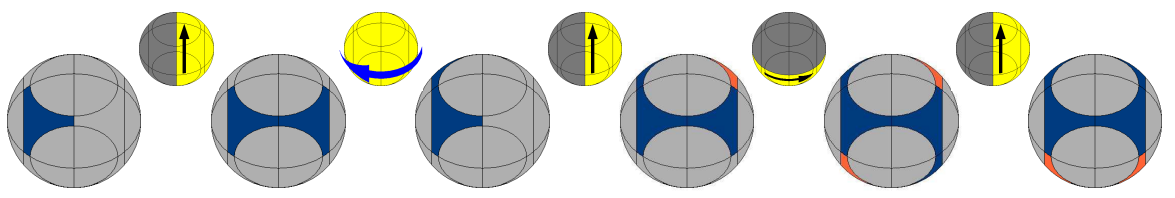


Movements: Half Right, Equatorial, or Polar movements means 90°, 180° or 270° twists.

NOTE: "clear grey coloured pieces" mean that during that step these pieces could be from any colour.

STEP #2: Solving the 8 Stars:

Join 4 blue-stars in our already decided North Pole. The 4 orange-stars will be automatically located in their South Pole. **Reminder:** clear grey triangles and stars represent any type of color at this stage. **Not all the intermediate steps are always necessary.**

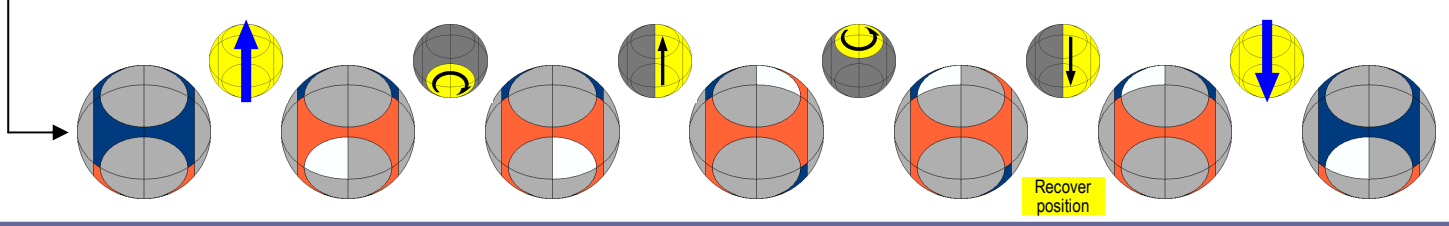


STEP #3: Learning to bring a triangle to the Front Pole. (AUXILIARY STEP: useful when we are executing 3rd and subsequent steps).

Next steps, when we are solving the North Pole in one color, triangles of this color should rest in the Front Pole before placing them in their position in the North Pole (Step #3 and following ones). Therefore we will now learn this **auxiliary step**, that is to bring any triangle to our Front Pole **without undoing the position of the stars already resolved**. We execute this example with a "white triangle". Two situations can take place:

- 1.- Bring a triangle to the "Front Pole" from "any Side Pole" (1st)
- 2.- Bring a triangle to the "Front Pole" from the "South Pole"

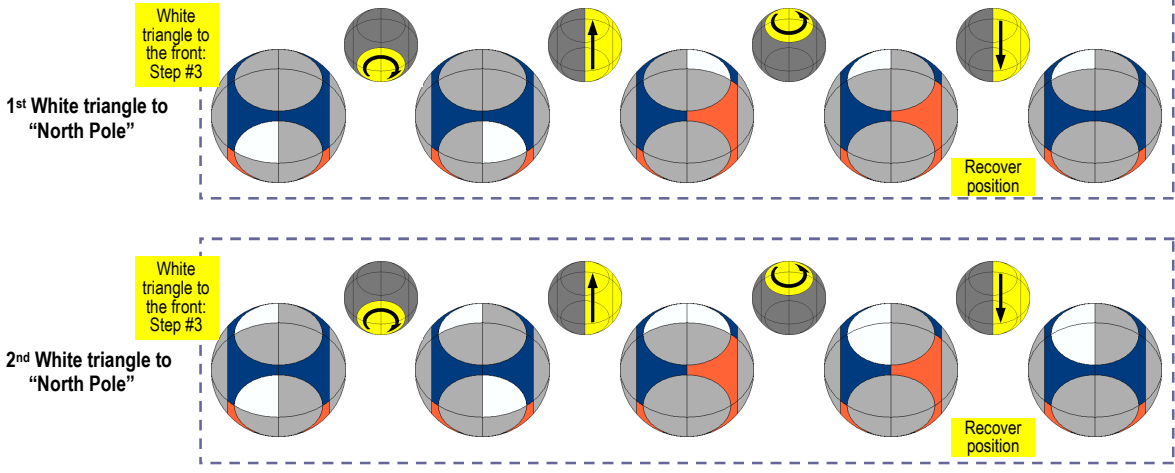
Not all the intermediate steps are always necessary.

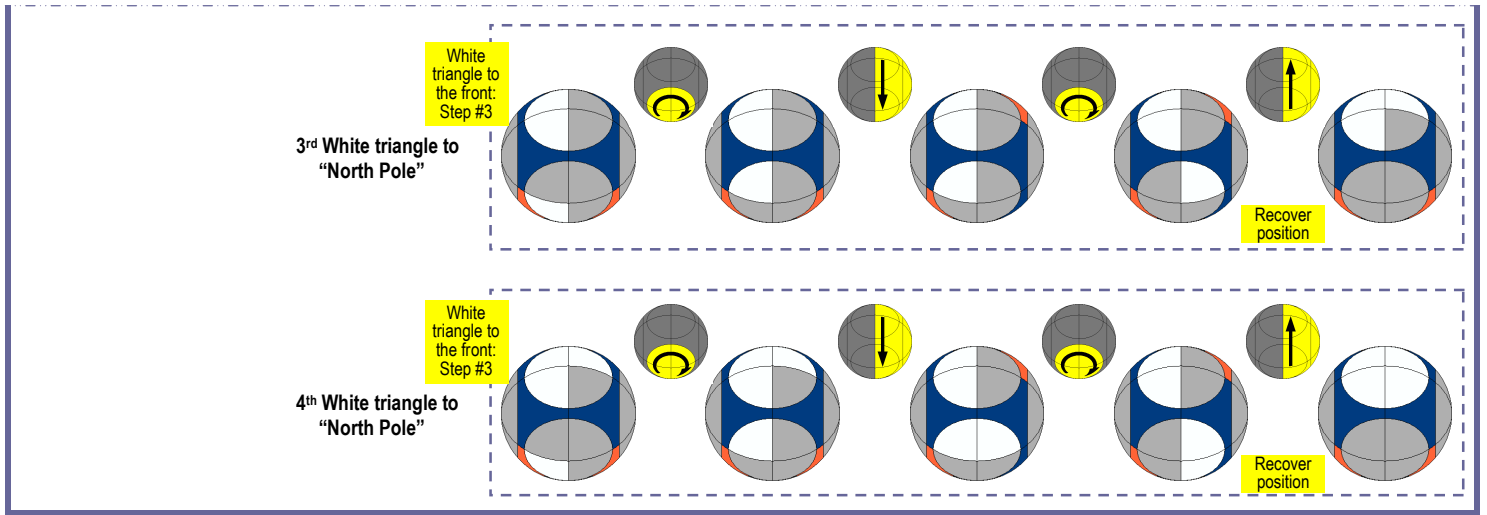


STEP #4: Solving the North Pole:

Join 4 "white-triangles" in our chosen "North Pole". Bring one-by-one the 4 white triangles from the Front Pole to the North Pole. Follow the next 4 sub-steps.

Not all the intermediate steps are always necessary.

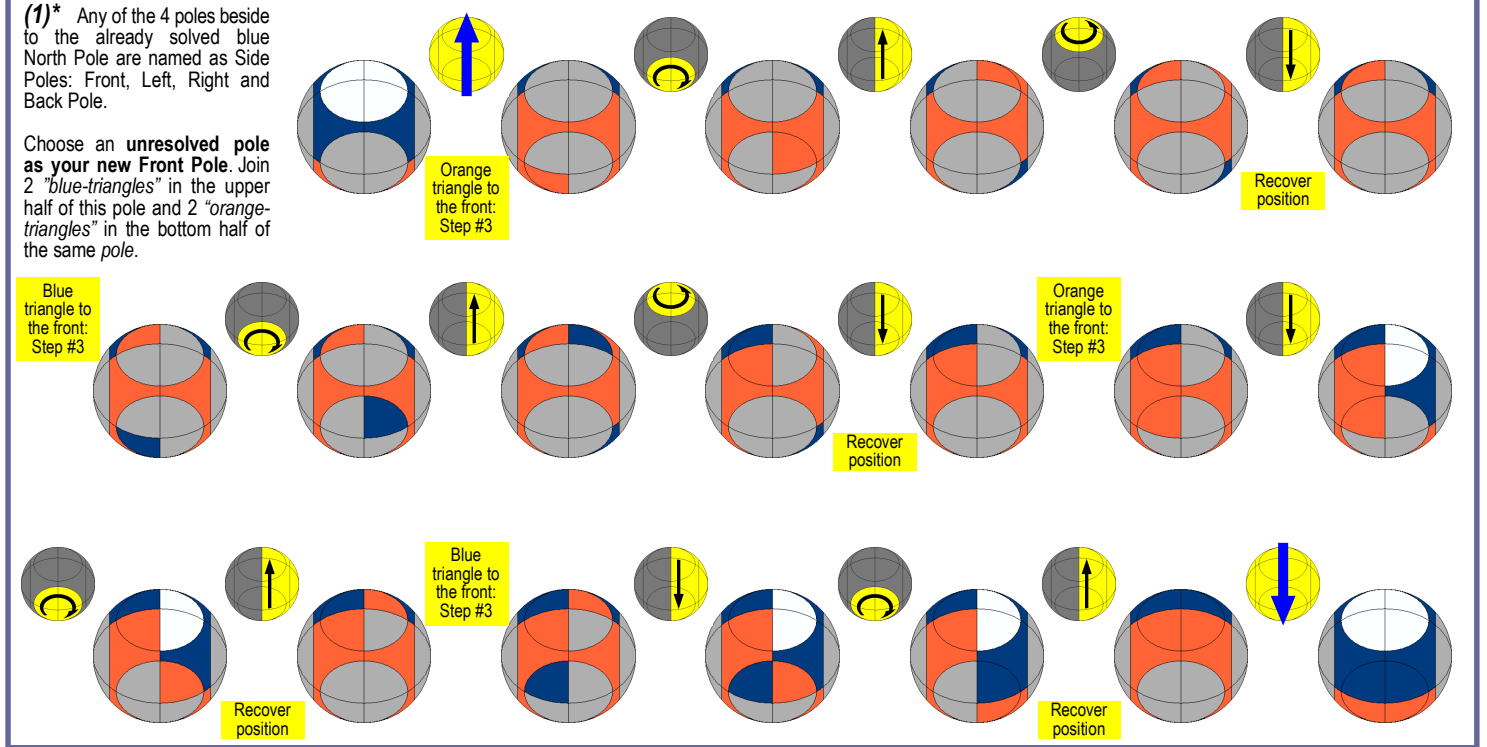




STEP #5: Solving the 1st Side Pole

(1)* Any of the 4 poles beside to the already solved blue North Pole are named as Side Poles: Front, Left, Right and Back Pole.

Choose an **unresolved pole as your new Front Pole**. Join 2 "blue-triangles" in the upper half of this pole and 2 "orange-triangles" in the bottom half of the same pole.



STEP #6: Solving the rest of the Side Poles:

Solve the 3 remaining "Side Poles" (Right, Back and Left) with their upper half in blue and their bottom half in orange. Repeat for each one of them the Step #5. "South Pole" will have been automatically resolved in yellow.



OTHER SOLUTIONS

Try to obtain the other possible color sequence, as the right picture, by yourself. Develop your own trick and shortcuts, they will come soon practicing.



MARUSENKO GUARANTEE:

100 % guaranteed product:



www.marusenko.com
customer@marusenko.com
 Marusenko s.l.
 C/ Roncesvalles 10, 31350 Peralta
 (Navarra) SPAIN

Patented Product:
 WO 2004/030776 2007/028837
 PCT/ES2005/000485
 ASTM F963-08
 CPSC-CH
 CPSIA