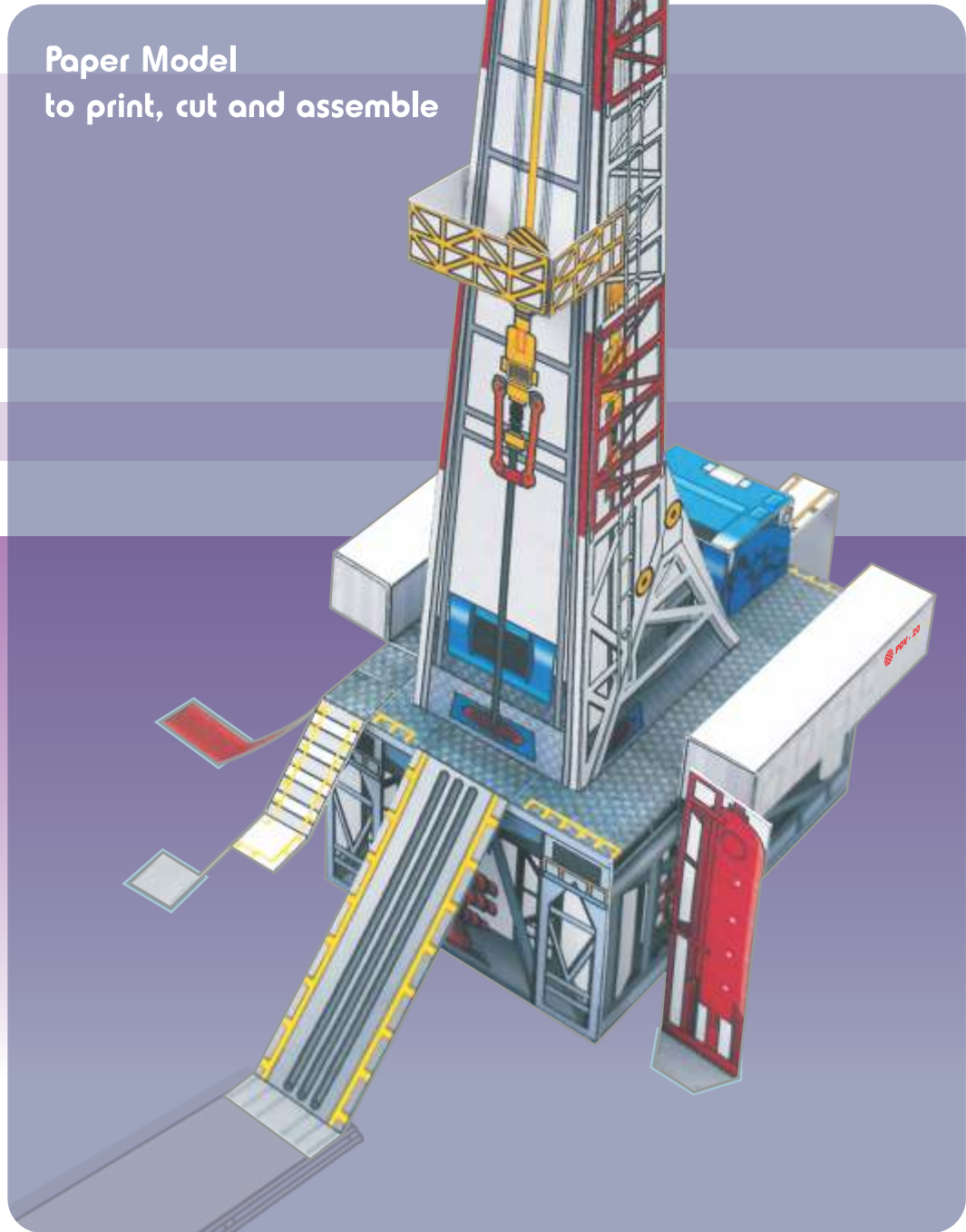


② The Drilling Rig

Paper Model
to print, cut and assemble



We, at the People's Ministry of Petroleum and Mining and PDVSA, have undertaken the task of educating Venezuelans, aware of the reasonable and sovereign use of oil, convinced of its strategic value to fight poverty and join peoples.

We are positive that getting on the activities carried out by PDVSA to turn oil and gas into gasoline, computer items, toys and a wide array of useful goods will make us more careful and watchful of whatever is said and done in our oil industry.

For such purposes, we are handing in you the Series "Learning about oil," composed of simple, ready-to-assemble models of oil operations.

This time, we are providing you with The Drilling Rig. We are certain that as soon as you finish off, you will have discovered, along with us, one of the so many wonderful worlds of the oil industry.

How to use this material.

- Print the cover, the text information and the instructions to assemble the model, on bond paper.
- On a printer that accepts cardboard, print the parts of the model and its base. Use letter-size bristol cardboard.

WHAT IS AN OIL DRILLING RIG?

Also known as, derrick, the drilling rig is a device used to drill the soil, generally at 800-6,000 meters in depth, for gas, water, or oil wells.

DRILLING RIG OPERATION

Drilling rigs are used in a process called well drilling: a hole is bored in the soil to reach the oil trap (the place where the oil lies underneath). This hole is drilled with the auger or drill bit, sustained by a pulley system. The action is controlled by a rotary table. Engines in an area called drawworks for an effective extraction drive the rotary table.

MADE IN VENEZUELA

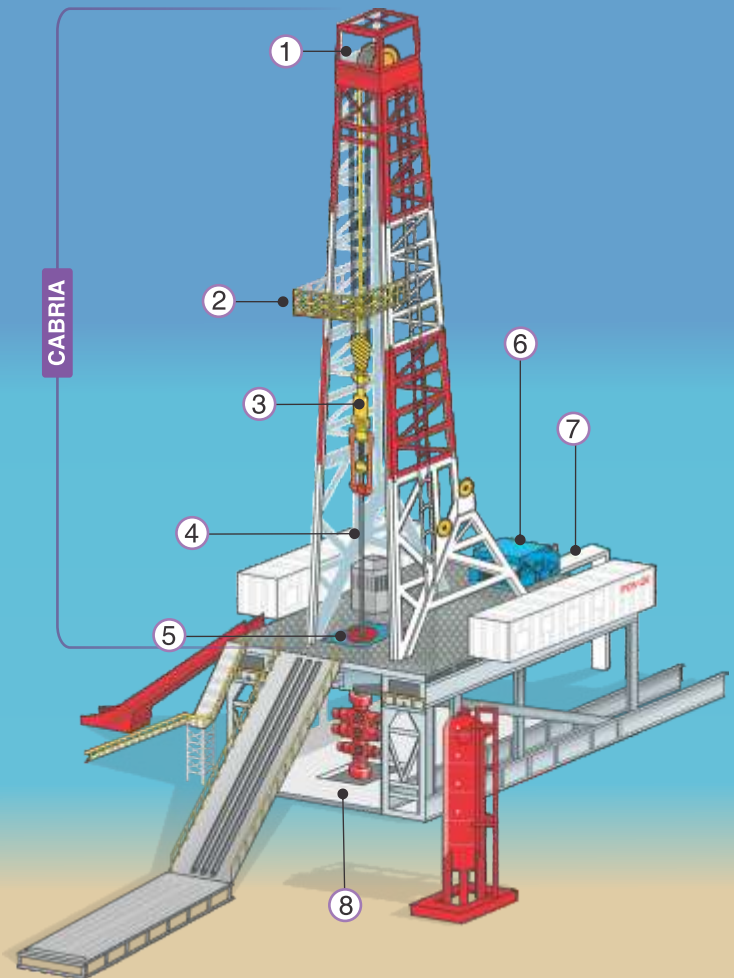
For the first time in the Venezuelan history, after almost 100 years of oil exploitation, the Industria China Venezolana de Taladros managed to develop, assemble, test and certify two inland drilling rigs: PDV 20 and PDV 21. Such assembly and testing is in line with the plan of the Bolivarian Government to underpin petroleum and technology sovereignty, in defense of the country hydrocarbons reserves.

The drilling rig is 2,000 HP, 60 meters in height; it has a capacity to drill wells from 12,000 to 20,000 feet in depth.

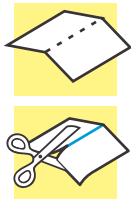
By 2014, Venezuela is to cover the entire productive chain of the drilling rig and will manufacture 85% of its components (derrick, substructures, and tanks).

The rigs can be located both on land and at sea depending on the methods and processes for drilling. When a rig is mounted on a barge or ship in respect of the seabed, is called rig.

Parts of the Drilling Rig



- 1 Crown block.
- 2 Monkeyboard.
- 3 Travelling block.
- 4 Drill string.
- 5 Rotary table.
- 6 Drawworks.
- 7 Power supply main train.
- 8 BOP.



DOTTED LINES
Show the area that needs to be **folded**.

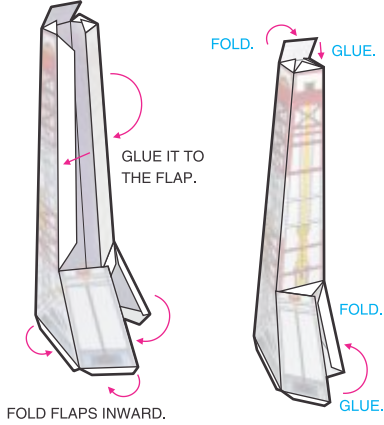
SOLID LINES
Show the area that needs to **cut out**.

HOW TO ASSEMBLE THE DRILLING RIG

- Before cutting the pieces out, go over all the fold lines with the tip of an exhausted ballpoint pen and a rule. This will help you fold the pieces.
- Cut out every piece; arrange them in your workplace in alphabetical order (each piece has an identity letter).
- Fold each piece.
- Carefully read the directions before starting.
- Take your time to assemble each piece, following the steps.
- Once the model is over, glue it on its base; the base is overleaf.
- You can glue the base on a piece of cardboard, polyethylene, or MDF, of 23 x 30 cm to make it steadier.

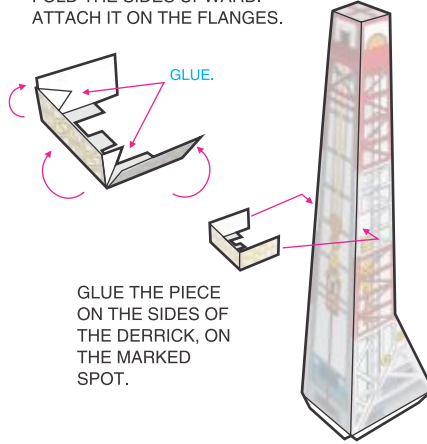
1 "A" PIECE. THE DERRICK.

FOLD THE FLAPS OF THE PIECE AS SHOWN IN THE PICTURE.



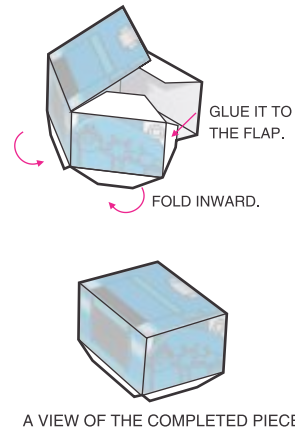
2 "B" PIECE. MONKEYBOARD.

FOLD THE SIDES UPWARD. ATTACH IT ON THE FLANGES.

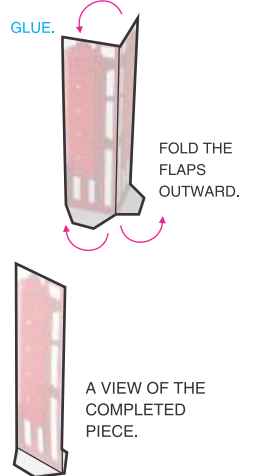


3 "C" PIECE. DRAWWORKS.

ASSEMBLE THE PIECE AS SHOWN IN THE FIGURE.

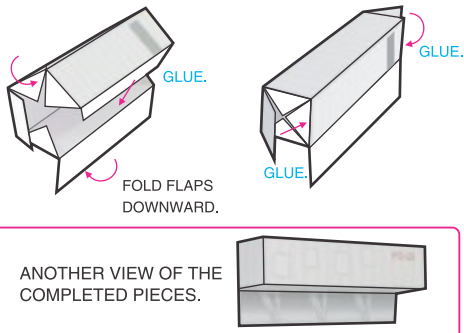


4 "D" PIECE. DEGASSER.



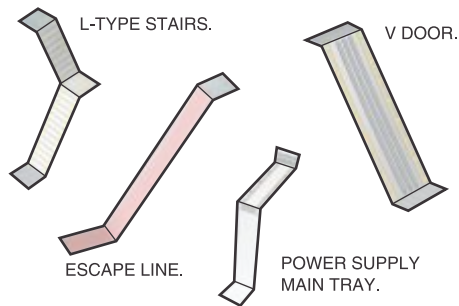
5 "E" PIECE. DOGHOUSE.

ASSEMBLE THE PIECES AS SHOWN IN THE FIGURE.

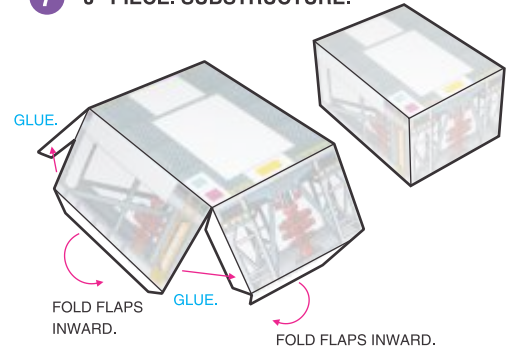


6 "F", "G", "H" and "I" PIECES.

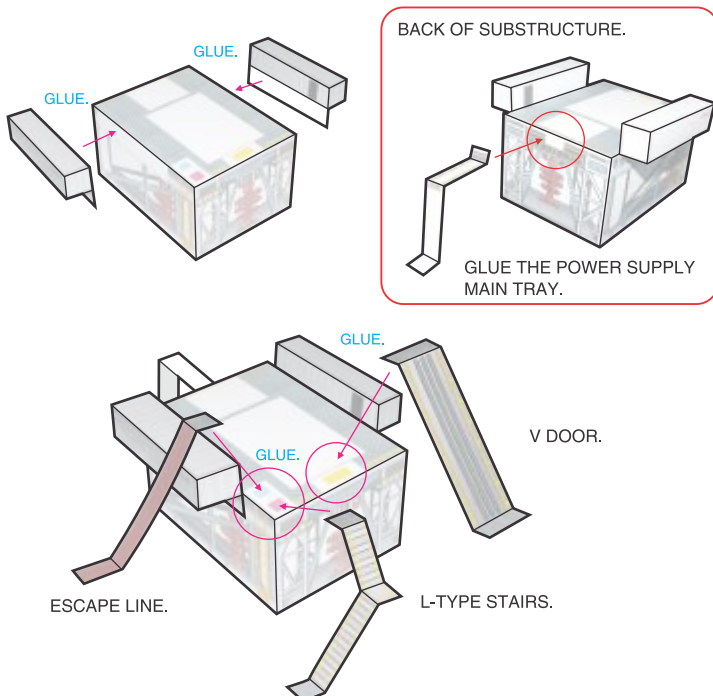
FOLD THE PIECES AS SHOWN IN THE FIGURE.



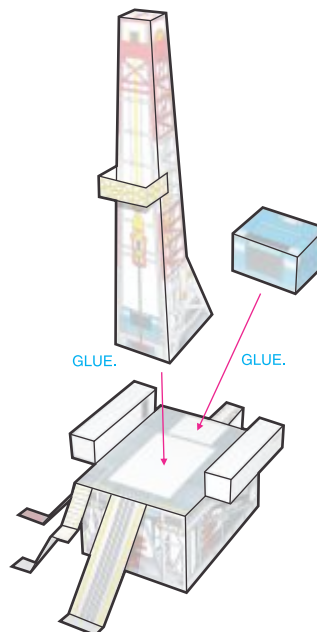
7 "J" PIECE. SUBSTRUCTURE.



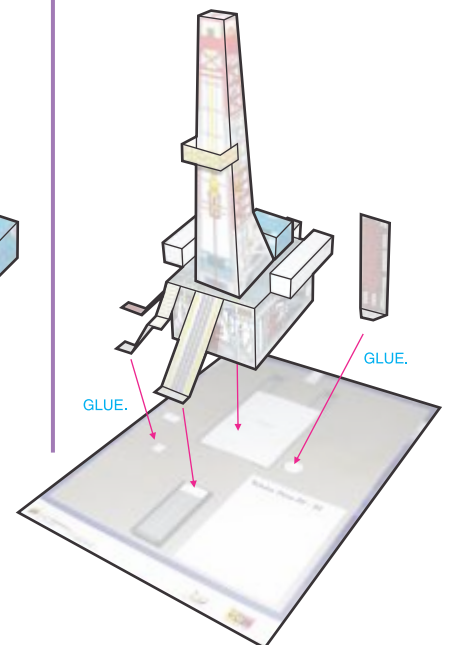
8 GLUE THE PIECES ON THE MARKED SPOTS OF THE SUBSTRUCTURE, AS SHOWN IN THE PICTURE.



9 GLUE THE DERRICK AND THE DRAWWORKS ON THE SUBSTRUCTURE.



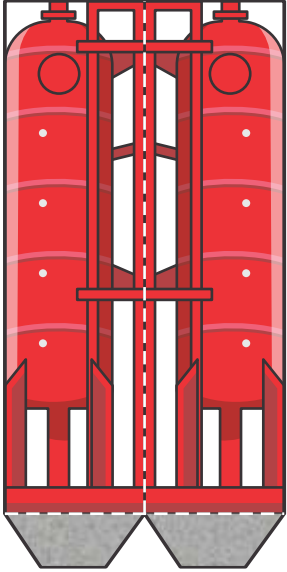
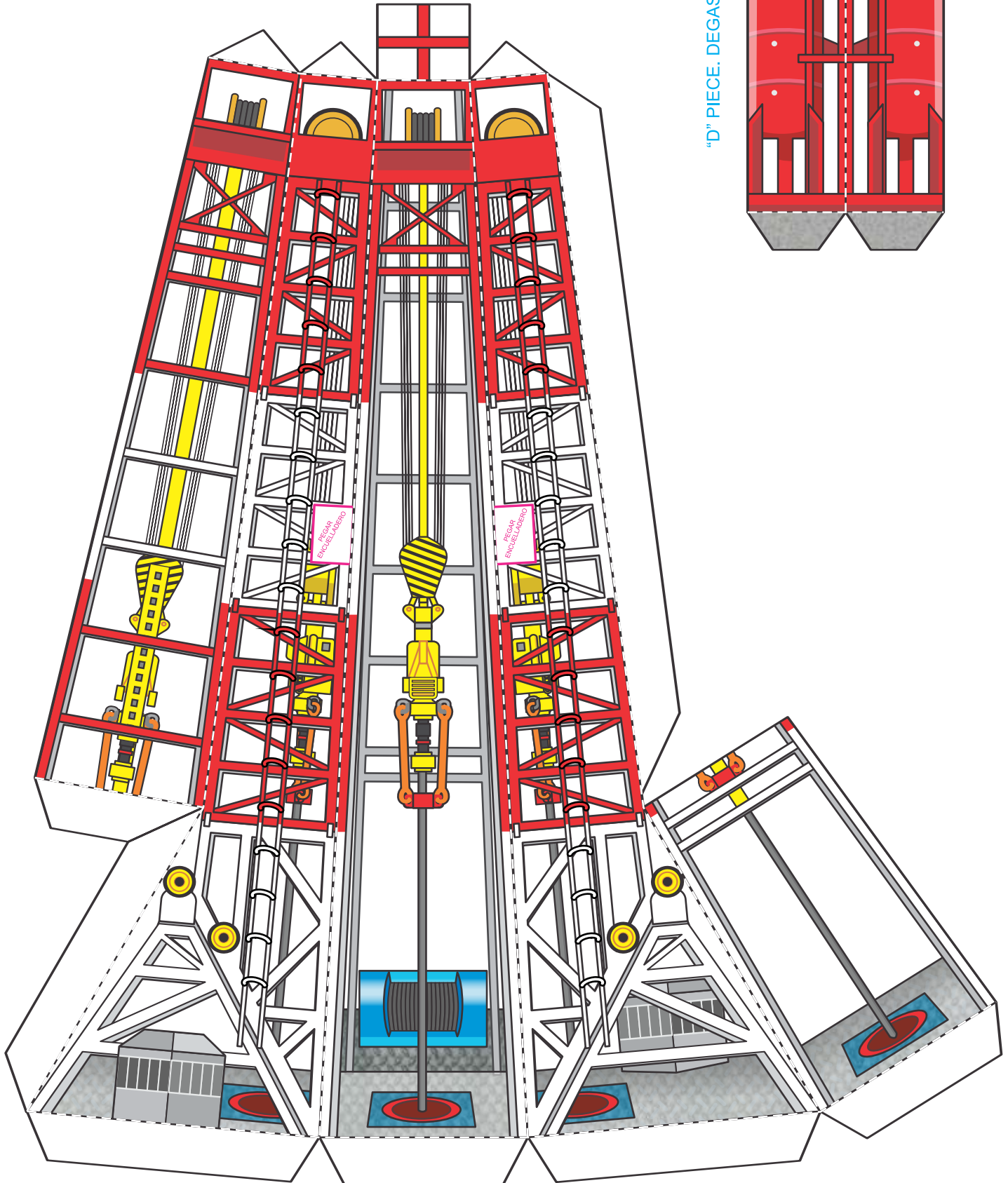
10 GLUE THE MODEL ON ITS BASE. THE BASE IS OVERLEAF.



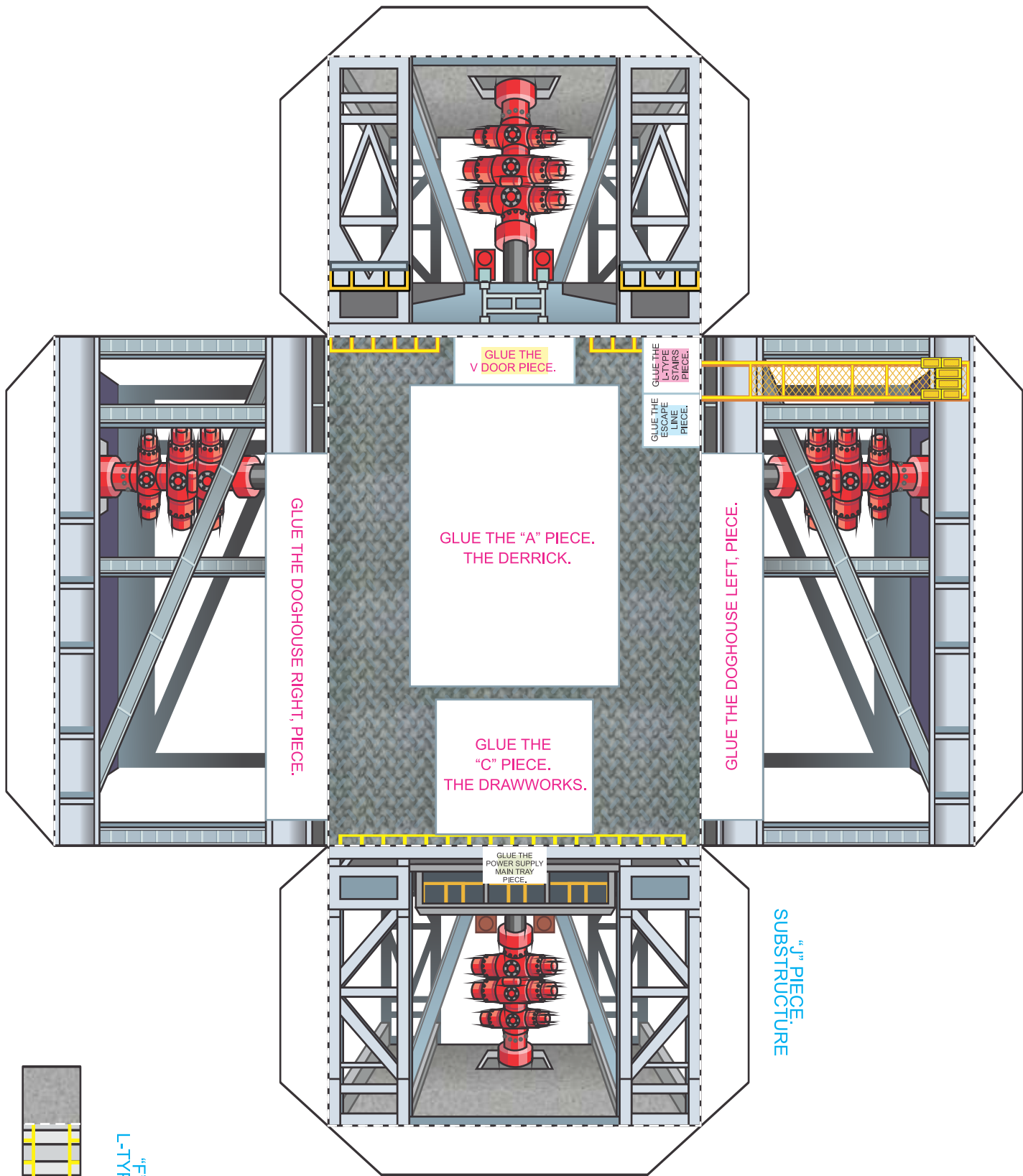


"G" PIECE. ESCAPE LINE.

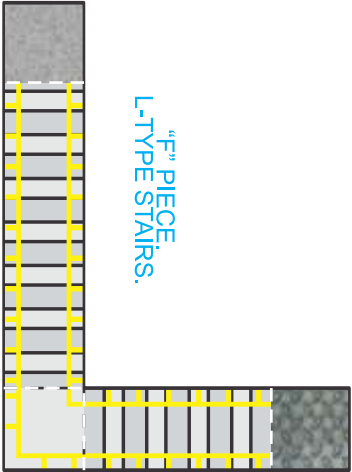
"A" PIECE. THE DERRICK.



"D" PIECE. DEGASSER.

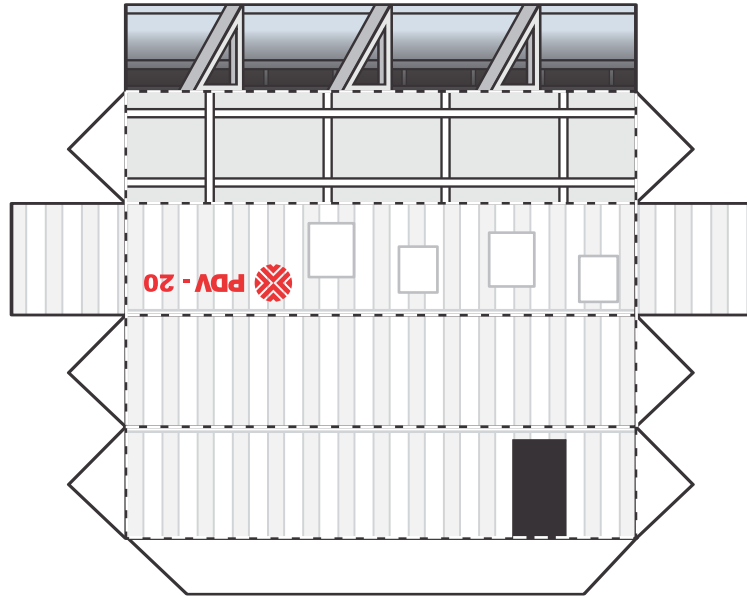


"J" PIECE
SUBSTRUCTURE

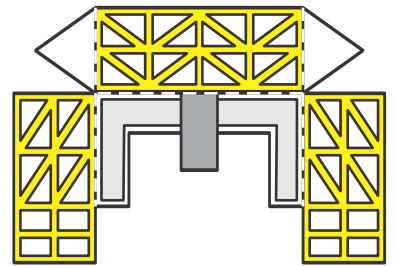
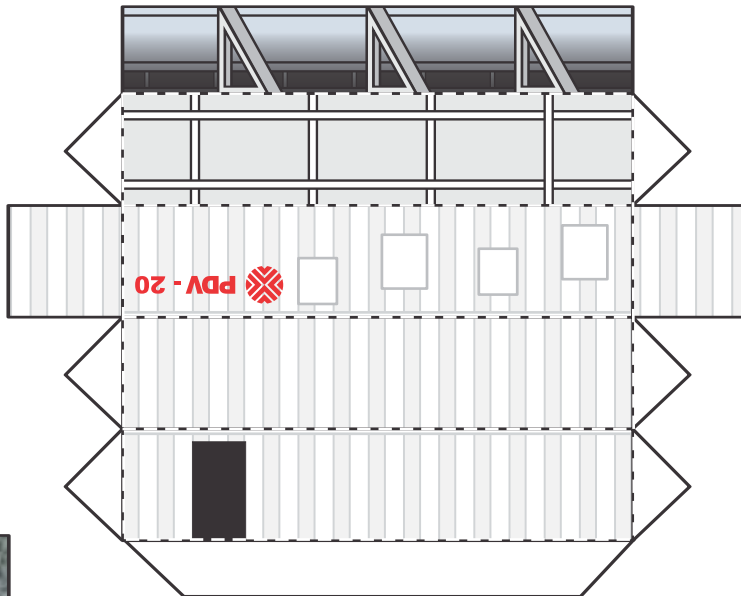


"H" PIECE. POWER SUPPLY MAIN TRAY.

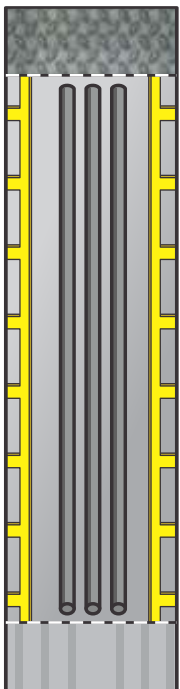
"E" PIECE. DOGHOUSE, LEFT.



"E" PIECE. DOGHOUSE, RIGHT.

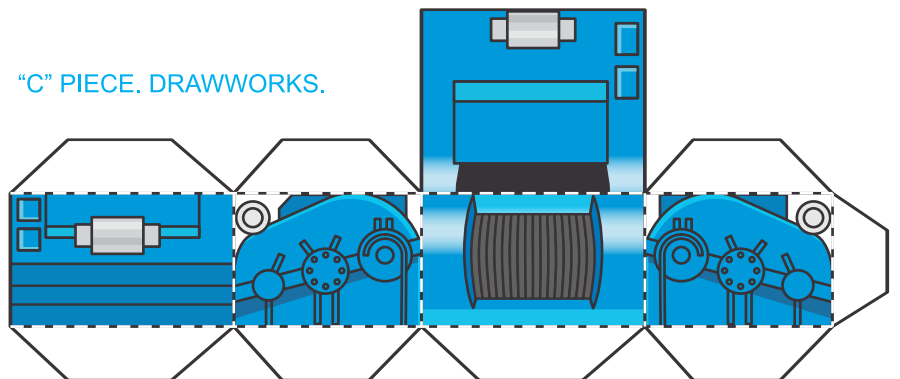


"B" PIECE. MONKEYBOARD.



"I" PIECE. V DOOR.

"C" PIECE. DRAWWORKS.





The Drilling Rig

OPERATION OF THE DRILLING RIG

- An oil well is drilled where crude oil reserves are estimated.
- The drilling rig is composed of a mechanical or electromechanical system, including a derrick of about 20-30 meters in height.
- The frame has a drill bit, that is, a cutting tool for drilling.
- In submarine exploitation, the same drilling method is used. The rig is mounted onboard large barges or platforms.
- Once the drilling head reaches the reservoir, a number of pipelines replace it.
- Once the equipment is ready, you wait for the crude oil to flow up to the surface.