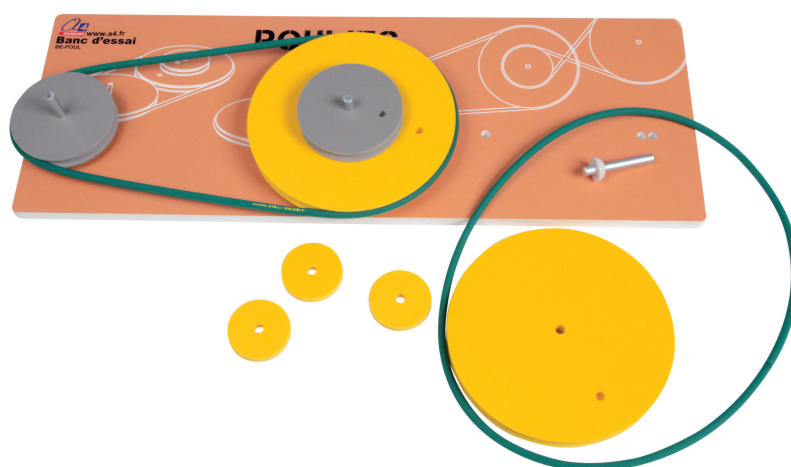
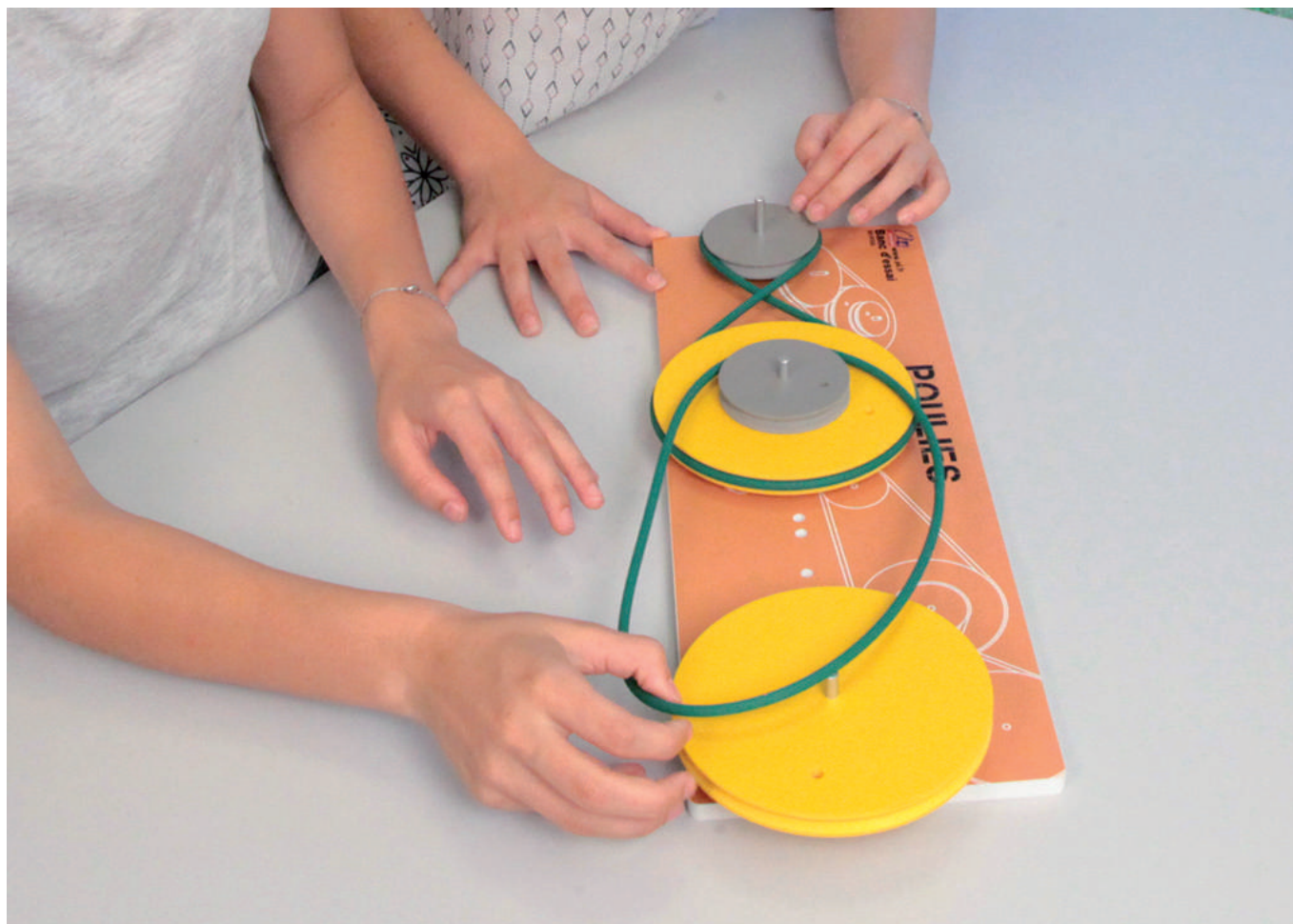


Test Stand PULLEYS



Test Stand PULLEYS

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Etienne Bernot - Jean Luc Mathey



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SUMMARY

Assembly drawing and general nomenclature
Students exercises

01
02 to 07

CD-Rom

This project's CDRom is available in the A4 Company catalogue (ref. "CD-BE1).

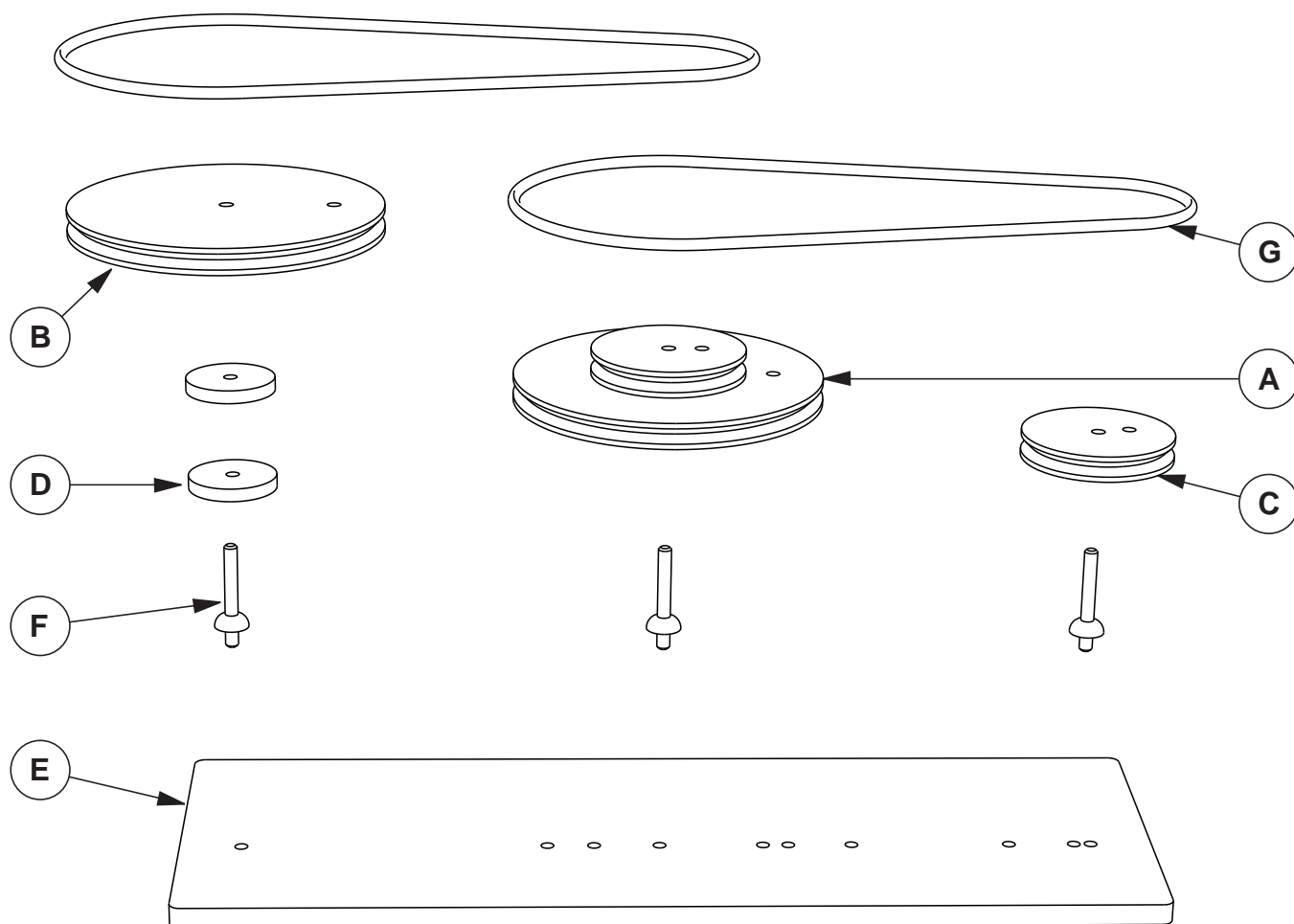
It contains :

- The FreeHand version file (editable with this software - Evaluation version included).
- The PDF version file (readable and printable with AcrobatReader software).
- **The full 3D modeling** with SolidWorks, Parasolid and eDrawings formats.





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G	02	Belt	Ø 5mm Polyurethane
F	03	Axle equipped with half round washer	PMMA Ø 6mm
E	01	Plate	165x460 10 mm thickness expanded PVC
D	02	Spacer	6 mm thickness expanded PVC
C	01	Ø70 mm simple pulley	6 mm thickness expanded PVC
B	01	Ø140 mm simple pulley	6 mm thickness expanded PVC
A	01	Ø70/140 mm double pulley	6 mm thickness expanded PVC
MARK	NUMBER	DESIGNATION	CHARACTERISTICS

			PROJECT	PART
	School _____ Class _____		Test Stand PULLEYS	
	Name _____ Date _____		DOCUMENT TITLE Assembly drawing General nomenclature	

Exercises on pulleys test stand

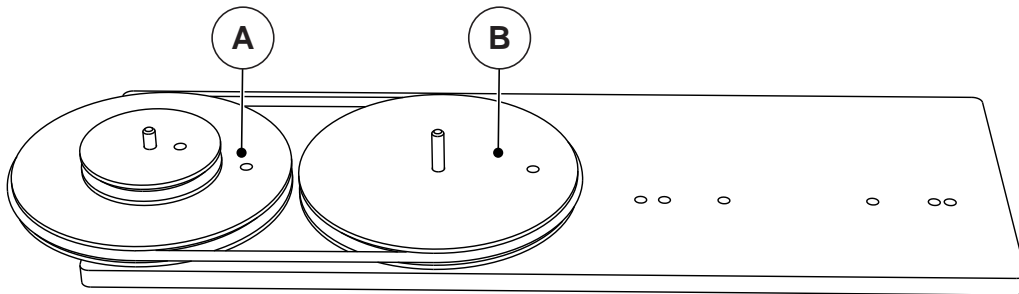
Mounting N° 1

Needed parts :

1 Ø 70/140 double pulley **A**

1 Ø140 simple pulley **B**

1 belt **E**



Turn the A pulley in one direction of rotation and note with arrows on drawing the pulleys A and B direction of rotation.

1 **A** turn = **B** turns

Conclusion :

.....

.....

MOUNTING N° 2

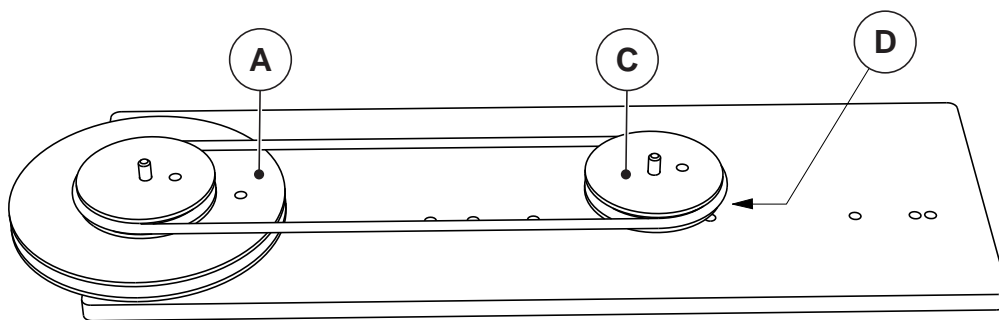
Needed parts :

1 Ø 70/140 double pulley **A**

1 Ø 70 simple pulley **C**

1 belt **E**

2 spacers **D**



Turn **A** pulley in one direction of rotation and note with arrows on drawing the direction of rotation of **A** and **C** pulleys.

1 **A** turn = **C** turn (s)

Conclusion :

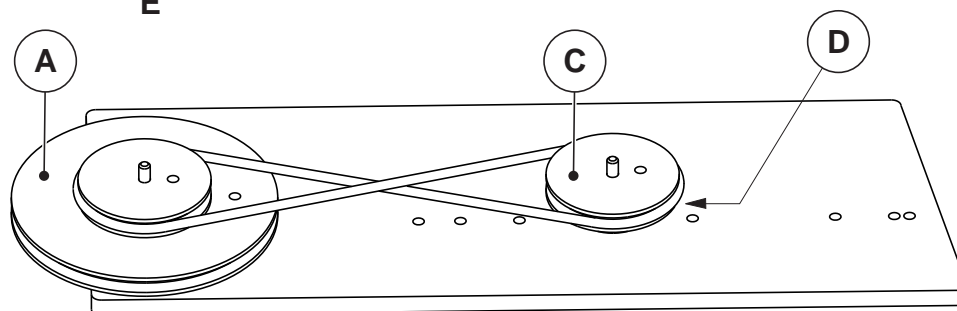
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Exercises on pulleys test stand

MOUNTING N° 3

Needed Parts :

- 1 Ø 70 /140 double pulley **A**
- 1 Ø 70 simple pulley **C**
- 2 spacers **D**
- 1 belt **E**



Turn the **A** pulley in one direction of rotation and note with arrows on drawing the direction of rotation of **A** and **C** pulleys.

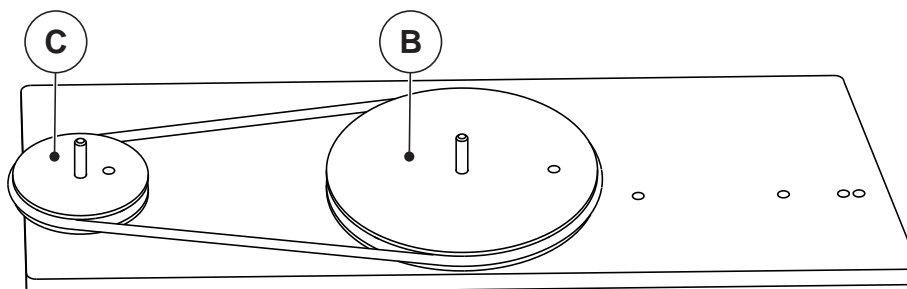
1 **A** turn = **C** turn (s)

Conclusion :

MOUNTING N° 4

Needed parts :

- 1 Ø 70 simple pulley **C**
- 1 Ø140 simple pulley **B**
- 1 belt **E**



Turn **C** pulley in one direction of rotation and note with arrows on drawing the direction of rotation of **C** and **B** pulleys.

1 **C** turn = **B** turn (s)

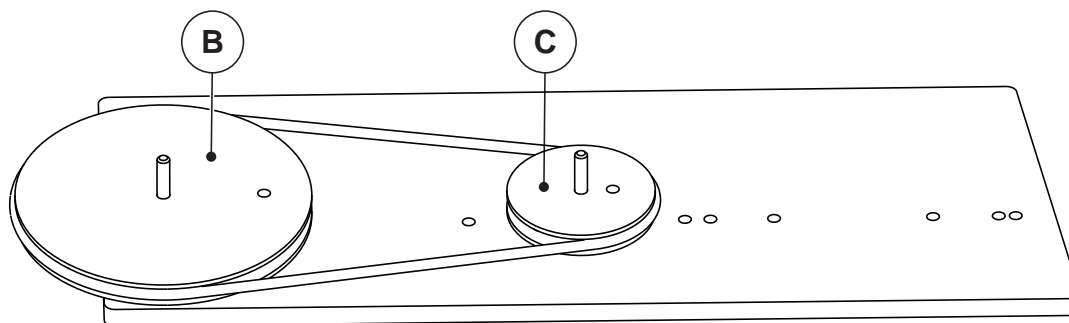
Conclusion :

Exercises on pulleys test stand

MOUNTING N° 5

Needed parts :

- 1 Ø 140 simple pulley **B**
- 1 Ø 70 simple pulley **C**
- 1 belt **E**



Turn **B** pulley in one direction of rotation and note with arrows on drawing the direction of rotation of **B** and **C** pulleys.

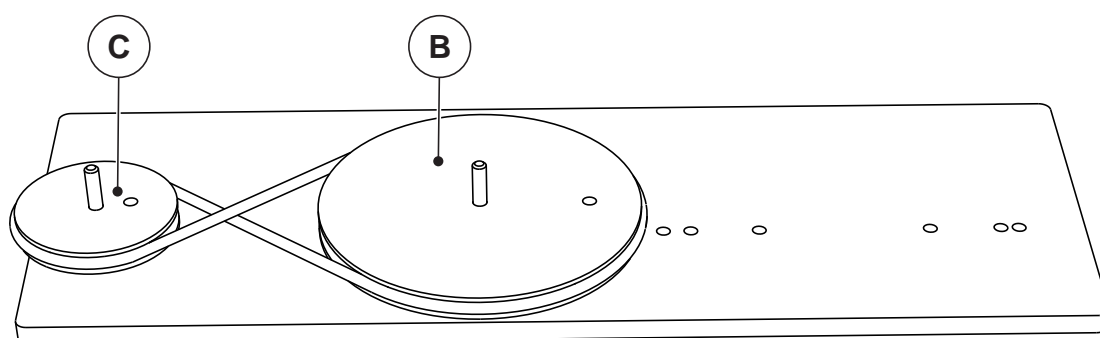
1 **B** turn = **C** turn (s)

Conclusion :

MOUNTING N° 6

Needed parts :

- 1 Ø 140 simple pulley **B**
- 1 Ø 70 simple pulley **C**
- 1 belt **E**



Turn **C** pulley in one direction of rotation and note on drawing the direction of rotation of **C** and **B** pulleys.

1 **C** turn = **B** turn (s)

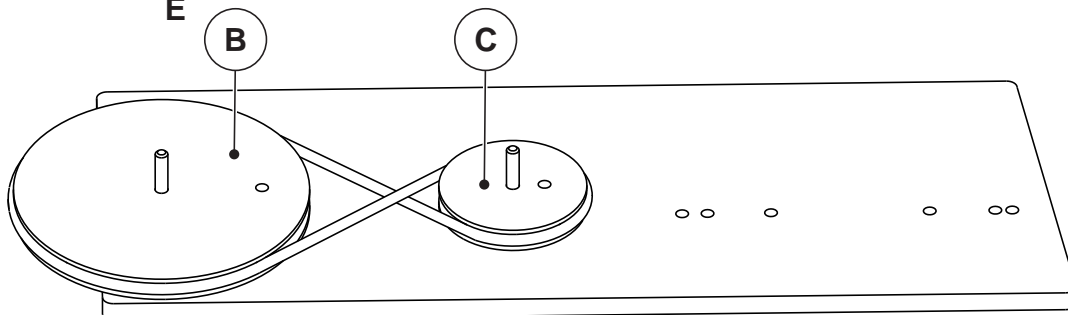
Conclusion :

Exercises on pulleys test stand

MOUNTING N° 7

Needed parts :

- 1 Ø 140 simple pulley **B**
- 1 Ø 70 simple pulley **C**
- 1 belt **E**



Turn **B** pulley in one direction of rotation and note with arrows on drawing the direction of rotation of **B** and **C** pulleys.

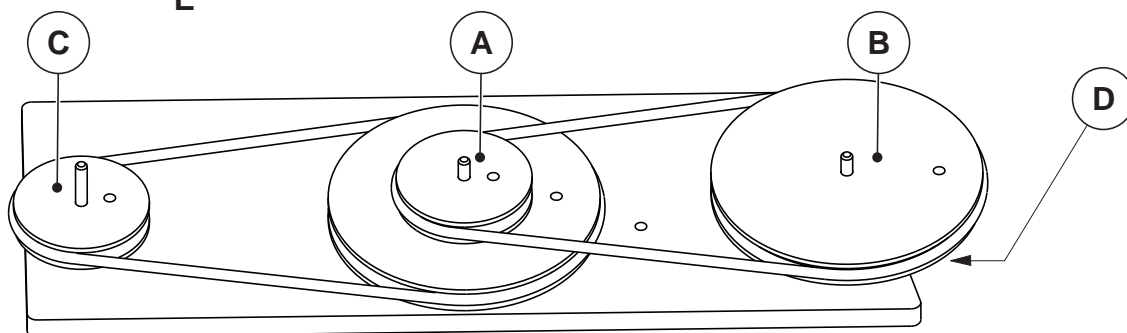
1 **B** turn = **C** turn(s)

Conclusion :

MOUNTING N° 8

Needed parts :

- 1 Ø 70 /140 double pulley **A**
- 1 Ø 140 simple pulley **B**
- 1 Ø 70 simple pulley **C**
- 2 spacers **D**
- 2 belts **E**



Turn **C** pulley in one direction of rotation and note with arrows on drawing the direction of rotation of **C**, **A**, **B** pulleys.

1 **C** turn = **A** turn (s) = **B** turn (s)

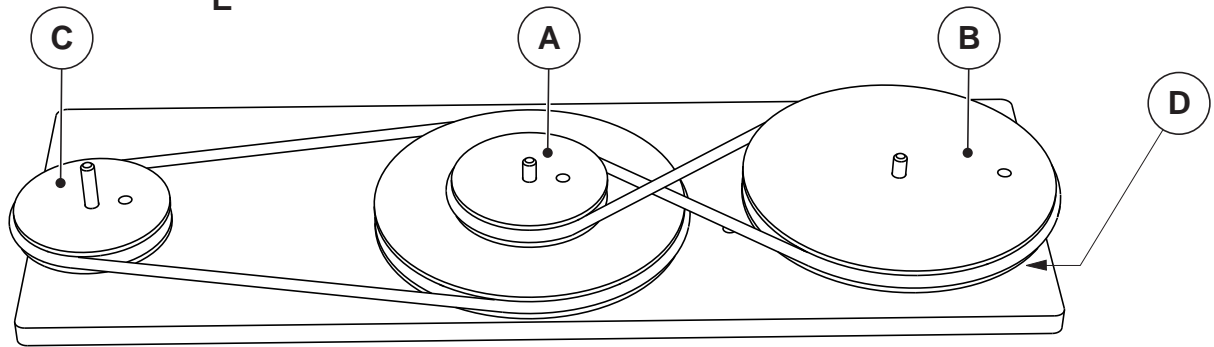
Conclusion :

Exercises on pulleys test stand

MOUNTING N° 9

Needed parts :

- 1 Ø 70 /140 double pulley **A**
- 1 Ø 140 simple pulley **B**
- 1 Ø 70 simple pulley **C**
- 2 spacers **D**
- 2 belts **E**



Turn **C** pulley in one direction of rotation and note with arrows on drawing the direction of rotation of **C**, **A**, **B** pulleys.

1 **C** turn = **A** turn (s) = **B** turn (s)

Conclusion :

.....

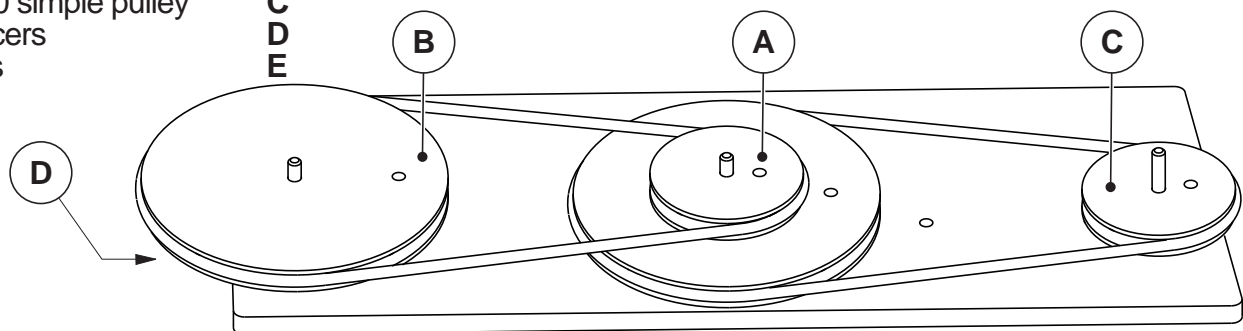
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MOUNTING N° 10

Needed parts :

- 1 Ø 70 /140 double pulley **A**
- 1 Ø 140 simple pulley **B**
- 1 Ø 70 simple pulley **C**
- 2 spacers **D**
- 2 belts **E**



Turn **B** pulley in one direction of rotation and note with arrows on drawing the direction of rotation of **B**, **A**, **C** pulleys.

1 **B** turn = **A** turn (s) = **C** turn (s)

Conclusion :

.....

.....

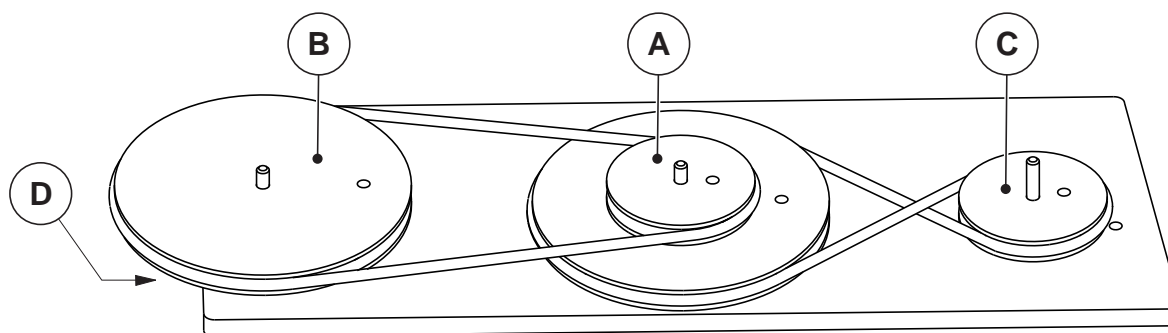
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Exercices on pulleys test stand

MOUNTING N° 11

Needed parts :

- 1 Ø 70 /140 double pulley **A**
- 1 Ø 140 simple pulley **B**
- 1 Ø 70 simple pulley **C**
- 2 spacers **D**
- 2 belts **E**



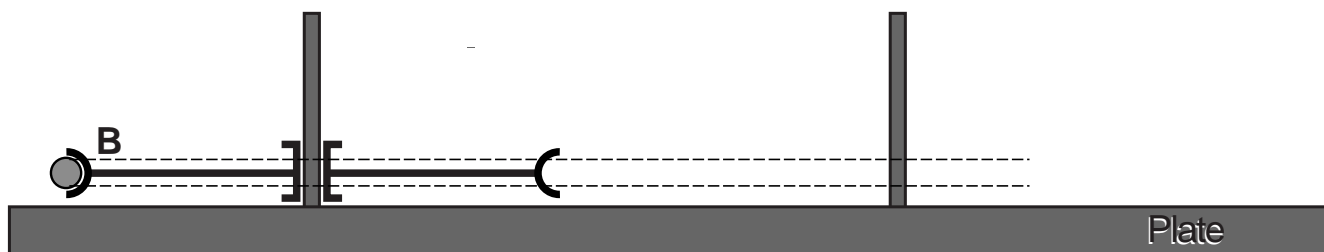
Turn **B** pulley in one direction of rotation and note with arrows on drawing the direction of rotation of **B**, **A**, **C** pulleys.

1 **B** turn = **A** turn (s) = **C** turn (s)

Conclusion :

Mounting N° 12

Using three A, B and C pulleys, realize a multiplication per 4 with only two axes of the plate.
Complete the mounting drawing below.



QUESTION N° 13

Name technical objects containing pulleys :

Exercises on pulleys test stand - CORRECTING

Mounting 1 - 1 A turn = 1 B turn.

The two pulleys are identical in diameter and forward movement without modify it : identical direction of rotation and speed.
It's a direct transmission.

Mounting 2 - 1 A turn = 1 C turn.

The two pulleys are identical in diameter and forward movement without modify it : identical direction of rotation and speed.
It's a direct transmission.

Mounting 3 - 1 A turn = 1 C turn.

The two pulleys are identical in diameter and forward movement without modify the speed. Direction of rotation is reversed by the fact of the cross belt.
It's a reversed transmission.

Mounting 4 - 1 C turn = 1/2 B turn.

The two pulleys have different diameter. The driving C pulley is twice smaller than the driven B pulley. Speed rotation is divided by two.
It's a reduced transmission.

Mounting 5 - 1 B turn = 2 C turns.

The two pulleys have different diameter. The driving B pulley is twice larger than the driven C pulley. Speed rotation is multiplied by two.
It's a multiplied transmission.

Mounting 6 - 1 C turn = 1/2 B turn.

The two pulleys have different diameter. The driving C pulley is twice smaller than the driven B pulley. Speed rotation is divided by two.
The direction of rotation is reversed by the fact of the cross belt.
It's a reduced and reversed transmission.

Mounting 7 - 1 B turn = 2 C turns.

The two pulleys have different diameter. The driving B pulley is twice larger than the driven C pulley. Speed rotation is multiplied by two.
The direction of rotation is reversed by the fact of the cross belt.
It's a multiplied and reversed transmission.

Mounting 8 - 1 C turn = 1/2 A turn = 1/4 B turn

It's a two stages reduced transmission.
The 1st reduction stage (C and A pulleys) reduce movement by two.
The 2nd reduction stage (A and B pulleys) reduce movement by two.
The two reduction stages combination is the same as a reduction by 4.

Mounting 9 - 1 C turn = 1/2 A turn = 1/4 B turn

It's a two stages reduced transmission.
The 1st reduction stage (C and A pulleys) reduce movement by two.
The 2nd reduction stage (A and B pulleys) reduce movement by two.
The two reduction stages combination is the same as a reduction by 4.
The final direction of rotation is reversed by the fact of the cross belt.

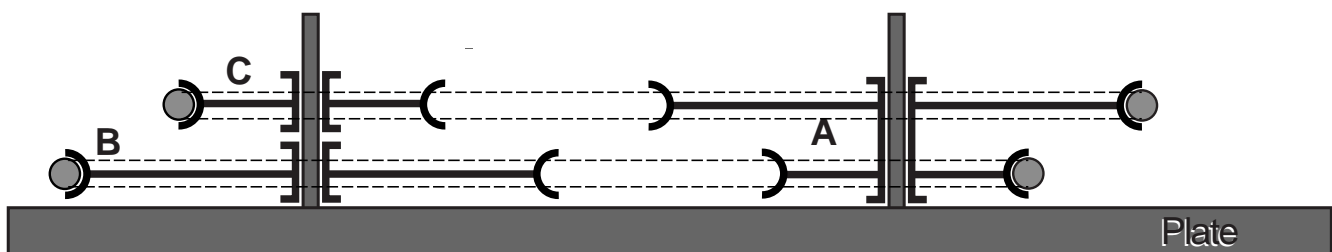
Mounting 10 - 1 B turn = 2 A turns = 4 C turns.

It's a two stages multiplied transmission.
The 1st multiplication stage (B and A pulleys) multiply movement by two.
The 2nd multiplication stage (A and C pulleys) over multiply movement by two.
The two multiplication stages combination is the same as a multiplication by 4.

Mounting 11 - 1 B turn = 2 A turns = 4 C turns.

It's a two stages multiplied transmission.
The 1st multiplication stage (B and A pulleys) multiply movement by two.
The 2nd multiplication stage (A and C pulleys) over multiply movement by two.
The two multiplication stages combination is the same as a multiplication by 4.
The final direction of rotation is reversed by the fact of the cross belt.

Mounting 12



Question 13 - Objects containing pulleys : drill of workshop, motors belt drive,

