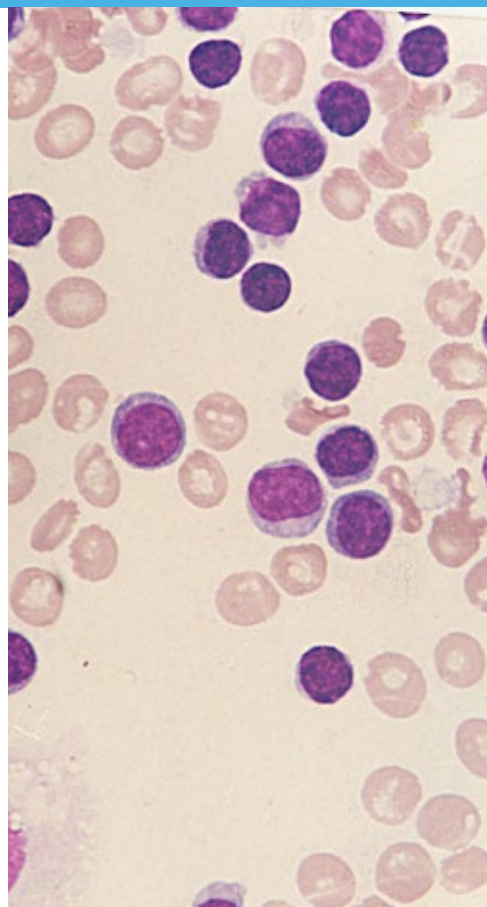
PREPARATION OF CYTOLOGY SAMPLES

MPW® MED. INSTRUMENTS

USING THE MPW CENTRIFUGE AND THE CYTO INSERT
THE MOST COMMON MISTAKES



ADVANTAGES OF THE CYTO INSERT

The CYTO INSERT is the only solution in the market to yield a smooth layer of sample cells and to recover supernatant from the same biological specimen. It was designed for use in human and veterinary medicine, as well as more broadly in biology, biochemistry, cytology and histopathology. The whole set includes a centrifuge, a horizontal, four place cytological rotor with hangers to load the cytology insert for the deposit and supernatant.

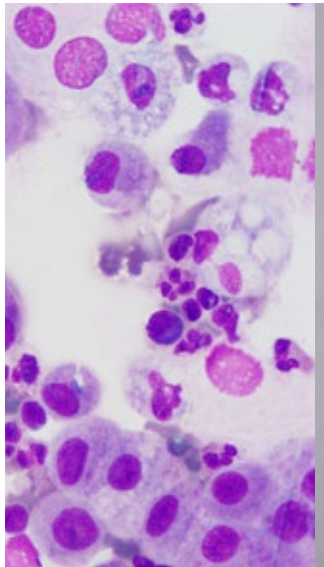
TYPES OF SUSPENSIONS TESTED:

- Natural biological fluids, such as cerebrospinal fluid, fluids from body cavities, blood, urine, synovial fluid, discharges, pus, etc.
- Isotonic suspensions of swabs, tissue punctates, sputum, bronchial washings, etc.

ADVANTAGES AND CAPABILITIES:

- Quick sedimentation of cells on microscope slides by centrifugation, with penetration of the supernatant to the filter card.
- Capable of recovering the supernatant following the deposition of cells on the microscope slide by automated draining to the tube.
- A small quantity of fluid (even several droplets) is sufficient to obtain a cell deposit.
- Protection from aerosoling by preventing the fluid from leaking to the centrifugation chamber.
- The preparation on the slide is of equal thickness in one plane, in a small surface area.
- The capability of setting up tried and tested centrifugation conditions prevents the cells in the preparation from damage or deformation.
- A very short total time to prepare the sample, even less than 45 minutes (including staining).
- Disposable parts ensure safe handling and protection against infections or contamination of personnel or the environment.

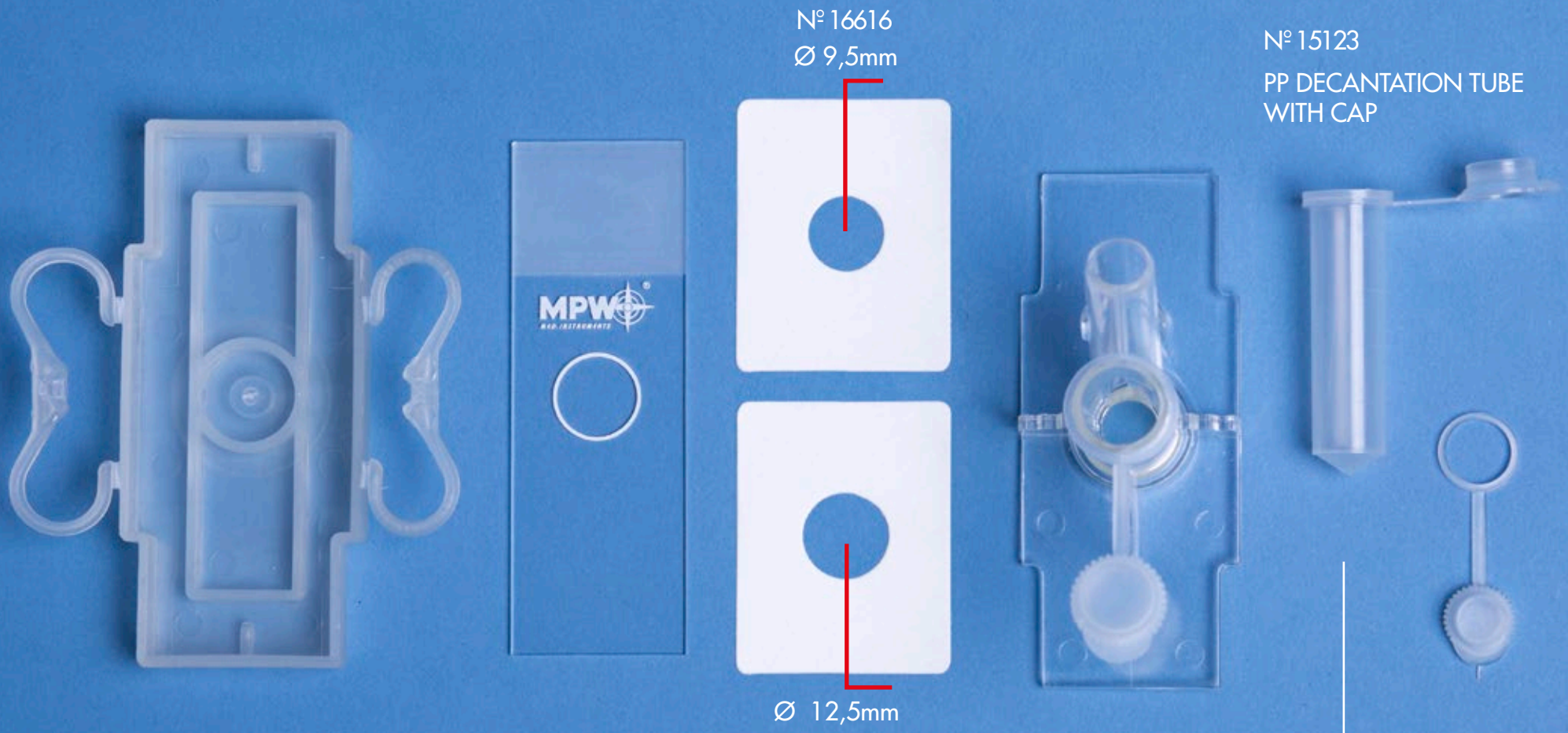
CENTRIFUGE	EQUIPMENT	No.	
M-DIAGNOSTIC MPW-352/R/RH	cytology rotor with 4 hangers	12452C	1
	EXPENDABLE MATERIALS		
	cytology insert kit	16610	100
	carrier and overlay	16611	100
	PP decantation tube with cap	15123	100
	microscope slide	16614	100
	filter card Ø 9,5mm	16616	100
	filter card Ø 12,5mm	16617	100



ADVANTAGES OF THE MPW CENTRIFUGE WITH THE CYTO INSERT

- The lowest price in the market.
- Small size and quiet operation.
- Simple and easy preparation of sample.
- Straightforward operation of centrifuge.
- Precise setup and programming. Centrifugation parameters protected with optional password.
- Capability to equip other selected MPW centrifuges (including older models) with the cyto rotor.
- MPW-352 centrifuge is also available in following versions: with refrigeration (MPW-352R) and with refrigeration and heating (MPW-352H).
- Constant access to expendable materials from the kit due to manufacturing location in Poland (Warsaw).
- Short order lead time.
- Safety of work.
- Ensured and generally available manufacturer's service in Poland.
- The preparation obtained from the cytology centrifuge is ready for staining without extra activities.

PARTS OF THE CYTO INSERT



CARRIER – CONTAINER
Nº 16611

SLIDE
Nº 16614

FILTER CARD
Nº 16617

OVERLAY WITH SEAL
Nº 16611

CAP
Nº 16611

Nº 16610

PREPARING SPECIMENS FOR CENTRIFUGATION USING THE CYTO INSERT

TWO STAGES:

CENTRIFUGATION + DRYING UP**

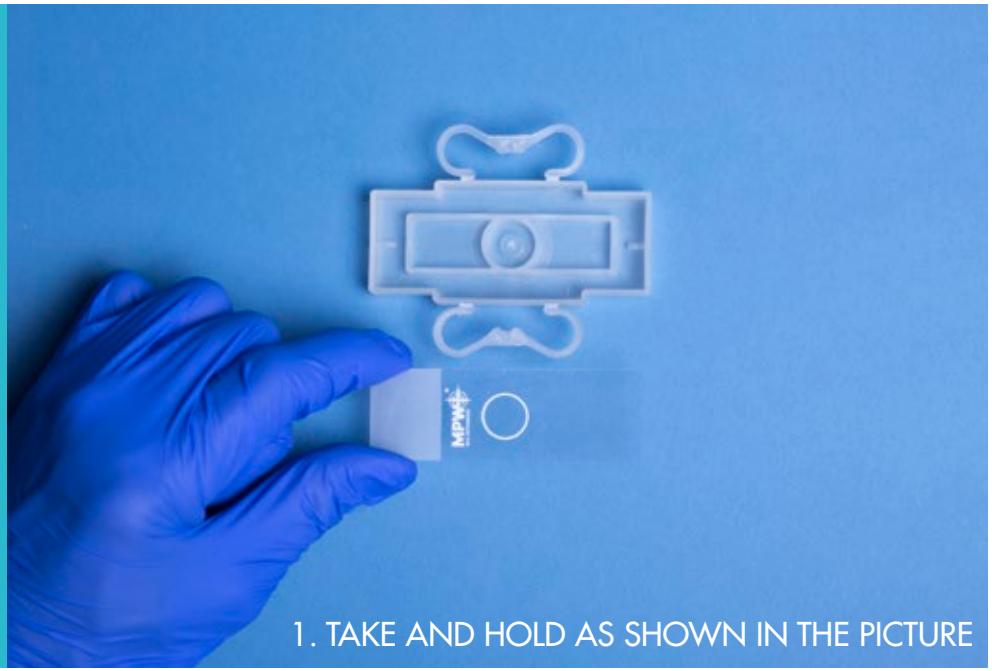
** IN CASE IF THE SPECIMEN IS DAMP AFTER REMOVING FROM A CENTRIFUGE

FIRST RUN

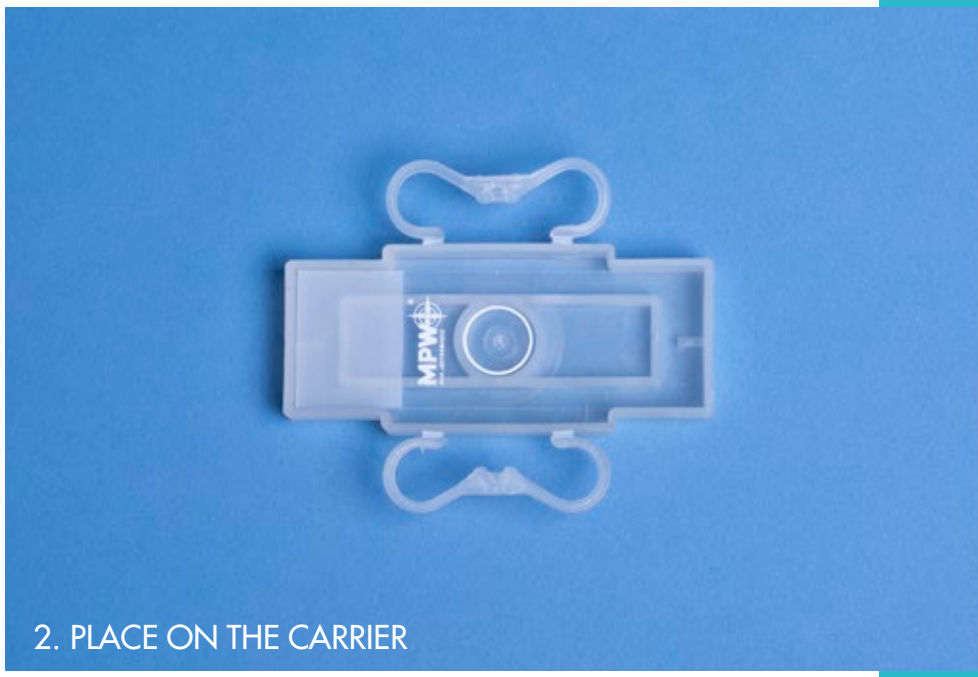
1

STEP 1

HOW TO LOAD THE SLIDE ON THE CARRIER?



1. TAKE AND HOLD AS SHOWN IN THE PICTURE



2. PLACE ON THE CARRIER

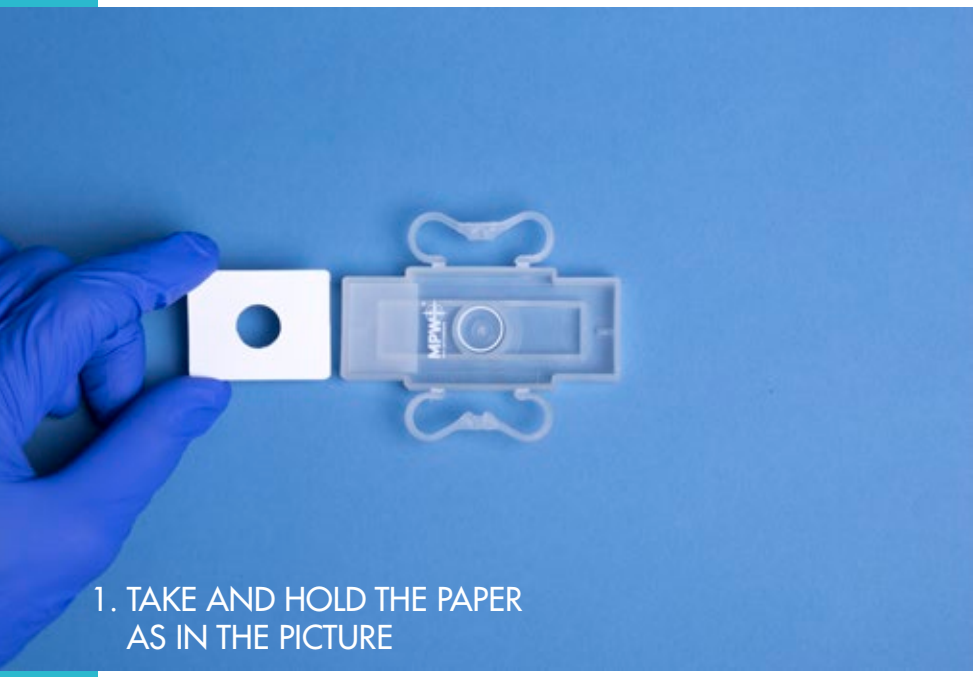
MISTAKES

- slide with no porous surface, which permits durable marking of the sample, “dirty” – not degreased slide, improperly held and loaded onto the carrier
- slide loaded upside down - with the marked field and the company logo down

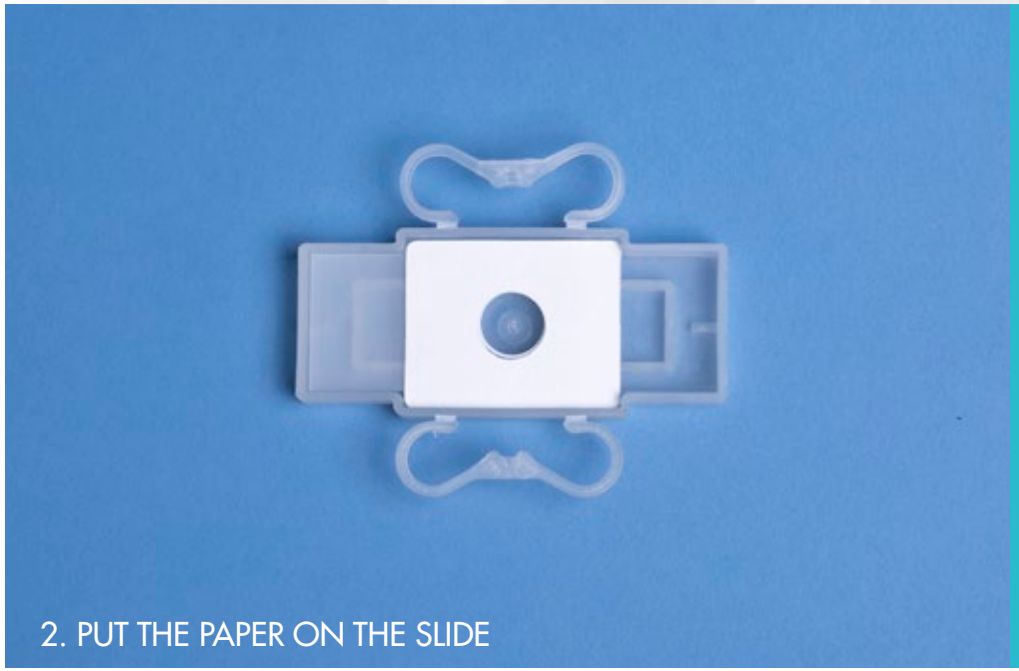
STEP 2

HOW TO LOAD THE FILTER CARD?

Ø 12,5mm filter card is intended for yielding a supernatant used in biochemical research.
Ø 9,5mm filter card (at least 2 pieces) for supernatant without biochemical research.



1. TAKE AND HOLD THE PAPER AS IN THE PICTURE



2. PUT THE PAPER ON THE SLIDE

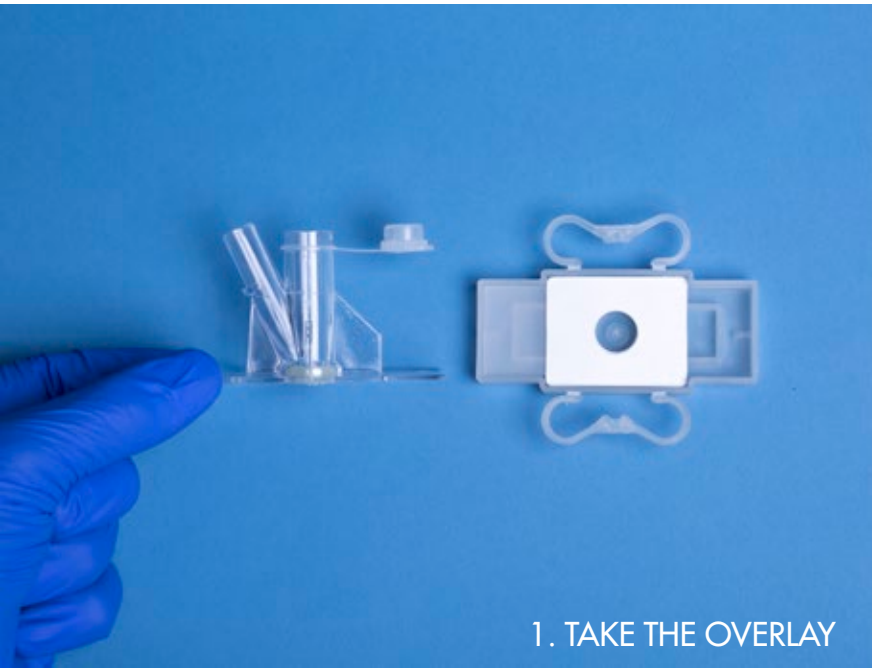
YOU CAN USE TWEEZERS OR SMALL PINCERS

MISTAKES

- filter card with improper diameter, damaged, incorrectly held and carelessly loaded onto the slide

STEP 3

HOW TO LOAD THE OVERLAY ONTO THE CARRIER?



1. TAKE THE OVERLAY

2. PUT IT ON THE CARRIER

3. FASTEN THE CLASPS EVENLY

MISTAKES

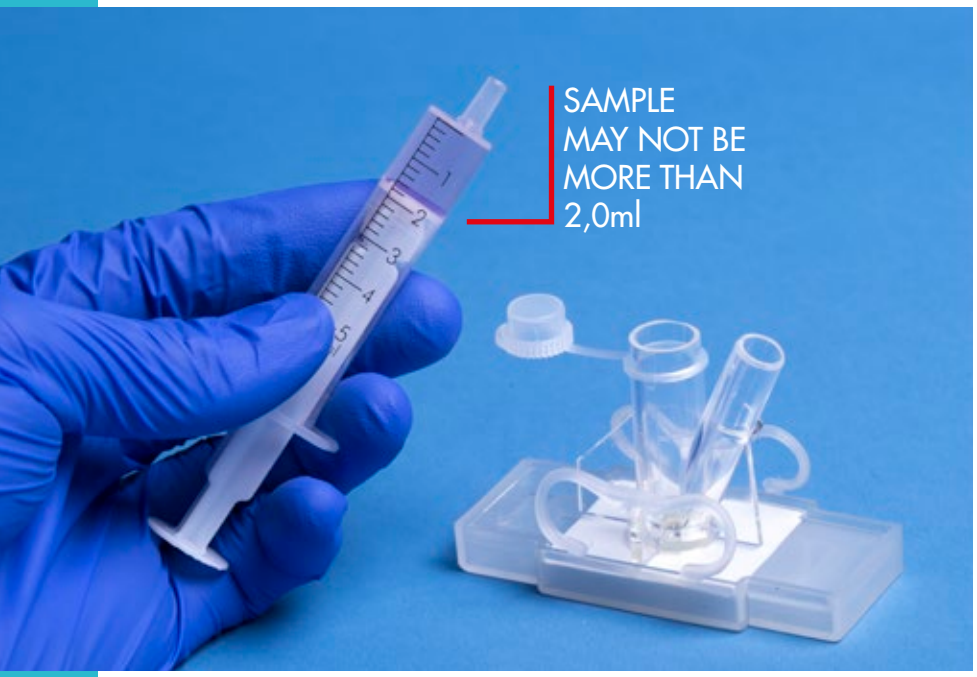
- overlay carelessly placed on the carrier with the slide and filter card
- incorrect fastening of clasps

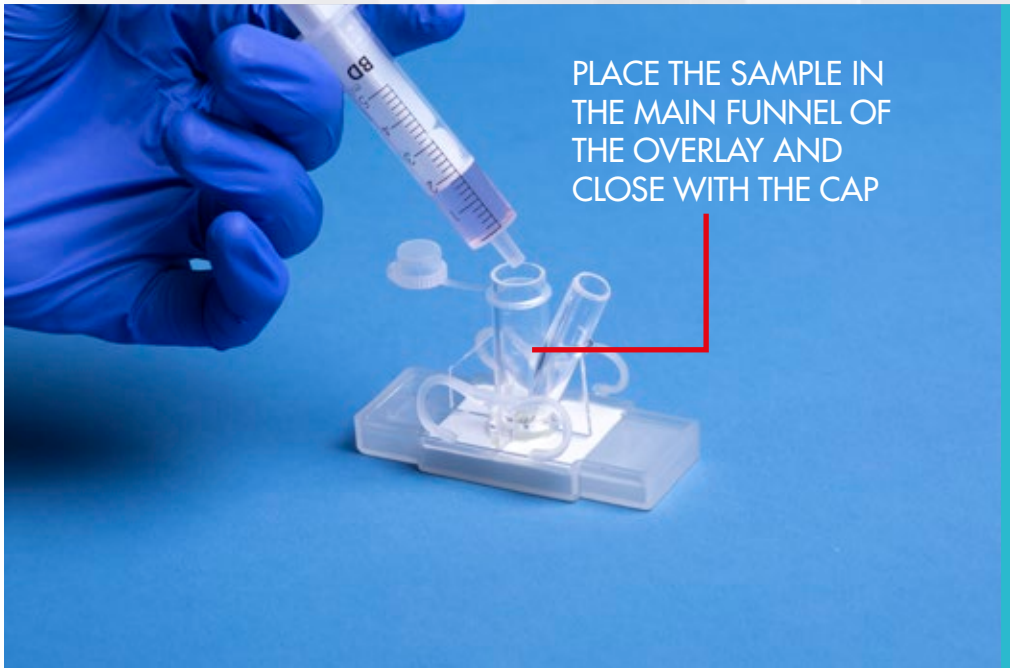
STEP 4

HOW TO LOAD THE SAMPLE?

Depending on the turbidity of a sample and if using hypercellular liquids to get a preparation, 300 to 500 µl of the tested sample are sufficient.

If using hypocellular liquids (such as cerebrospinal fluid, cell culture) you need to centrifuge a larger volume of the tested sample (maximum 2 ml).



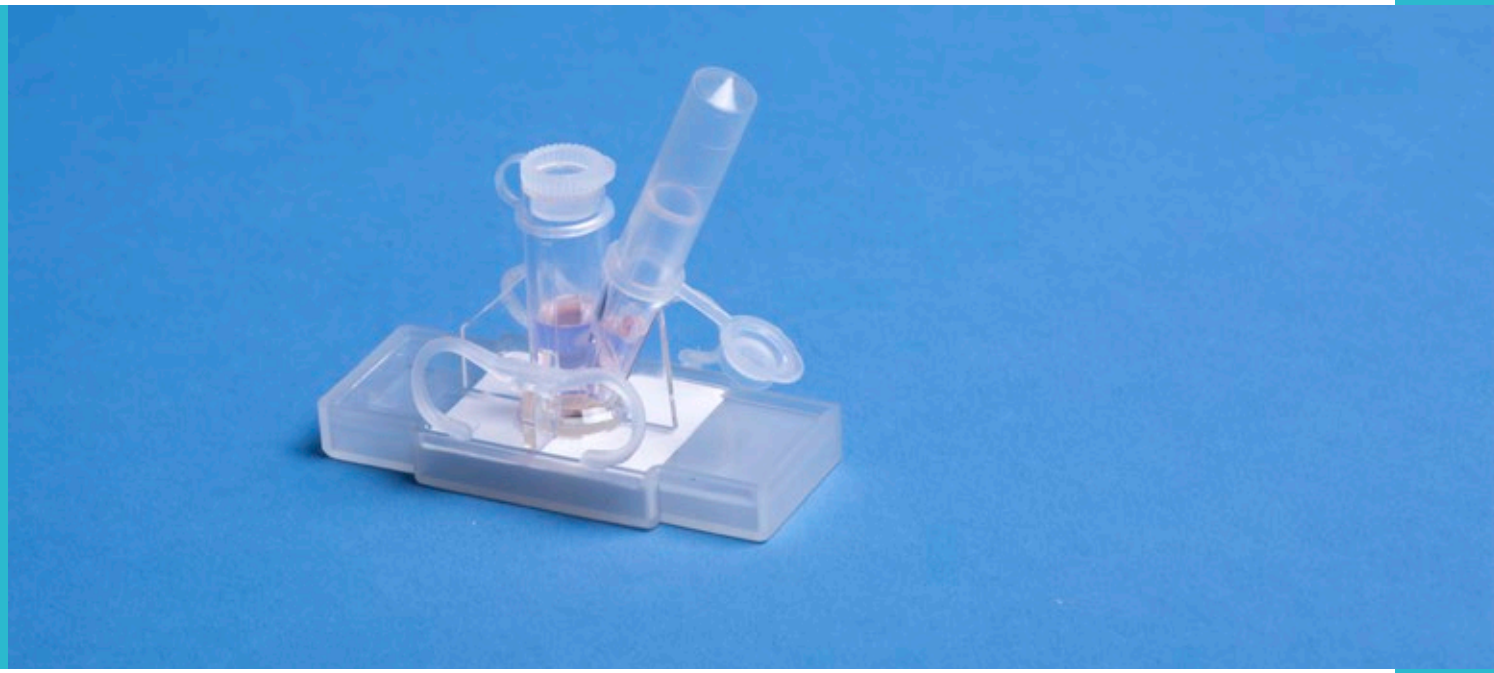


MISTAKES

- incorrect volume of the sample
- loading the sample in the side funnel instead of the main funnel
- absence of a decantation tube in the side funnel

STEP 5

HOW DOES A COMPLETE CYTO INSERT LOOK LIKE?



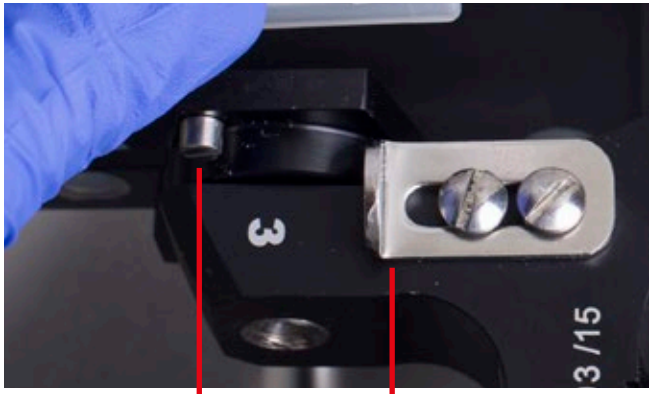
MISTAKES

- absence of any part (slide, filter card, draining tube, caps, seal)
- slide placed upside down – with the marked field and company logo down
- clasps unfastened or incompletely fastened
- the main funnel's cap not closed

STEP 6

HOW TO CORRECTLY LOAD THE CYTO INSERT WITH THE SAMPLE ON THE HANGER?

REMEMBER TO LOAD THE COMPLETE INSERT ON THE HANGER WITH THE DRAINING TUBE FACING THE ROTOR PIVOT



PROJECTION

LOCK

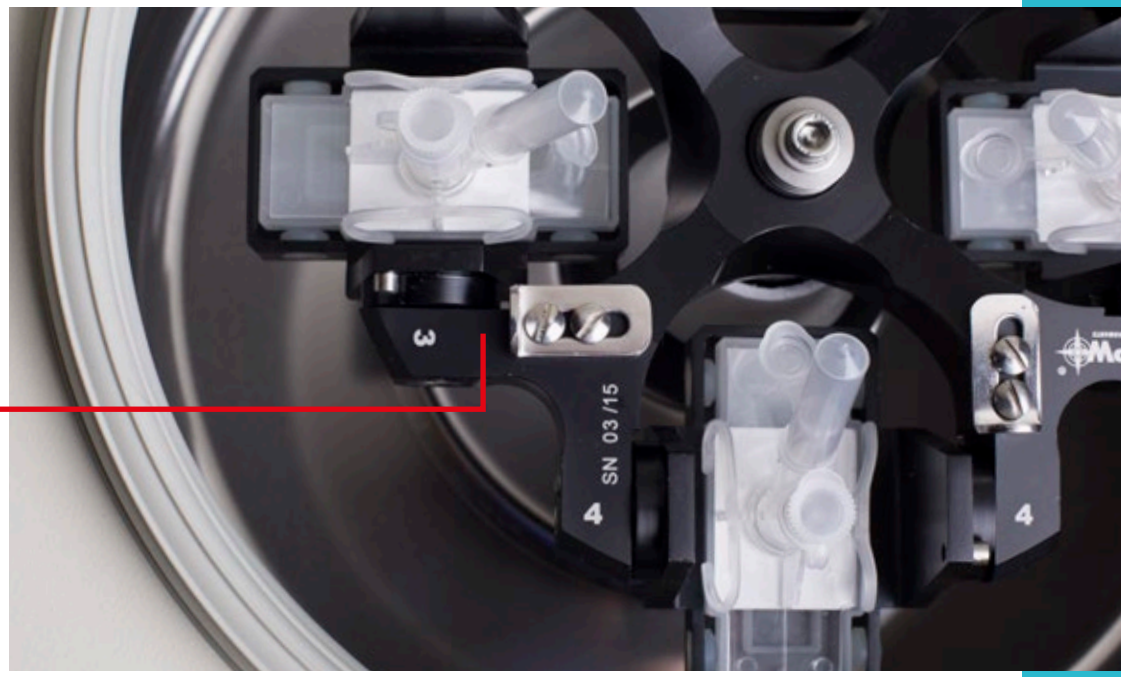
MISTAKES

- loading a complete insert with the draining tube facing the outer diameter of the rotor

STEP 7

HOW TO CORRECTLY MOUNT THE HANGER WITH THE CYTO INSERT ON THE ROTOR?

MAKE SURE THAT THE HANGER IS CORRECTLY MOUNTED ON THE ROTOR ARMS



HANGER FOLLOWING CENTRIFUGATION

MISTAKES

- incorrect placement of the hanger on the rotor arms, projection on a different side from the lock

STEP 8

HOW TO SET UP CENTRIFUGATION PARAMETERS?

NOTE! THE PARAMETERS SHOWN IN THE PICTURE ARE ONLY EXAMPLES

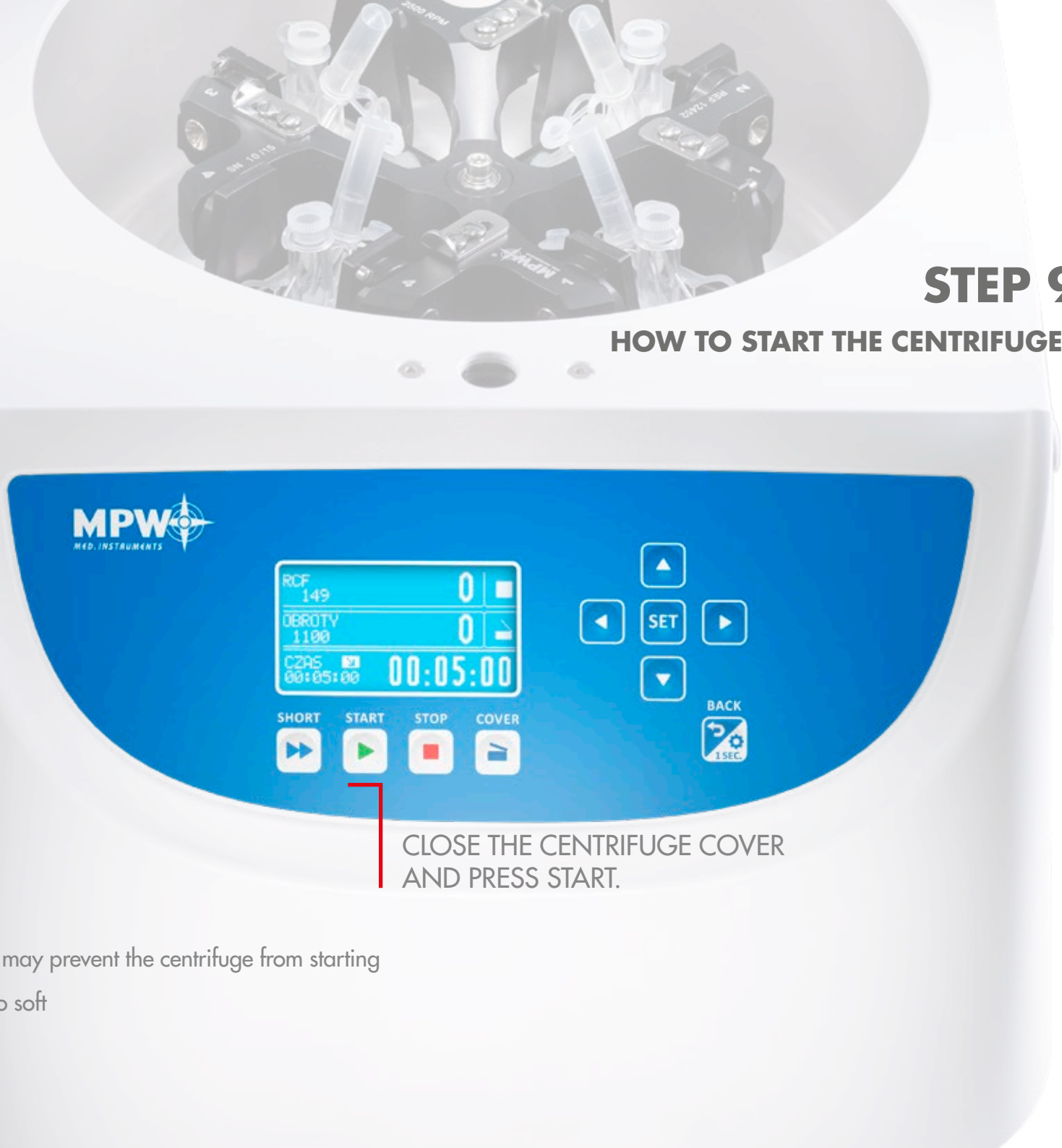
Speed can be set from 1100 RPM to 1500 RPM. Up from that speed, cells may be damaged. Users may set up centrifugation parameters according to their own tried and tested methodologies.

MISTAKES

- too high rotational speed (may damage the cells)
- too low rotational speed (it may prevent cells from sticking to the slide)

STEP 9

HOW TO START THE CENTRIFUGE?



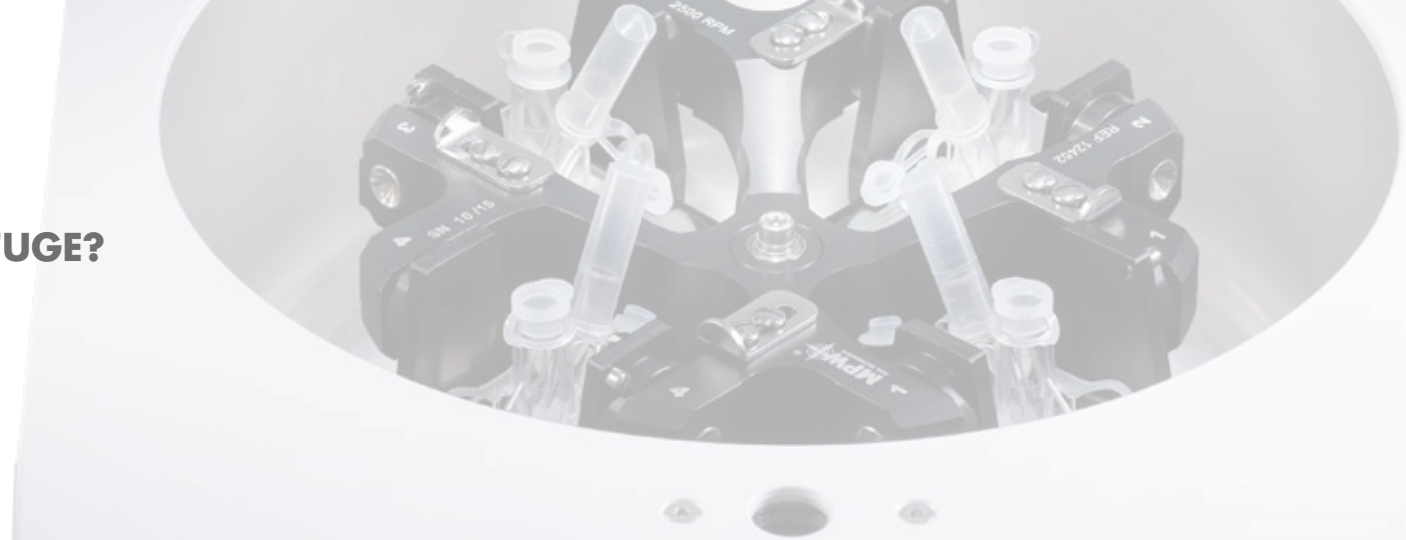
CLOSE THE CENTRIFUGE COVER
AND PRESS START.

MISTAKES

- imperfectly closed cover may prevent the centrifuge from starting
- START button pressed too soft

STEP 10

HOW TO OPEN THE CENTRIFUGE?



THE CENTRIFUGE CAN BE
STOPPED WITH THE STOP BUTTON
AND EMERGENCYOPENED
AT ANY TIME

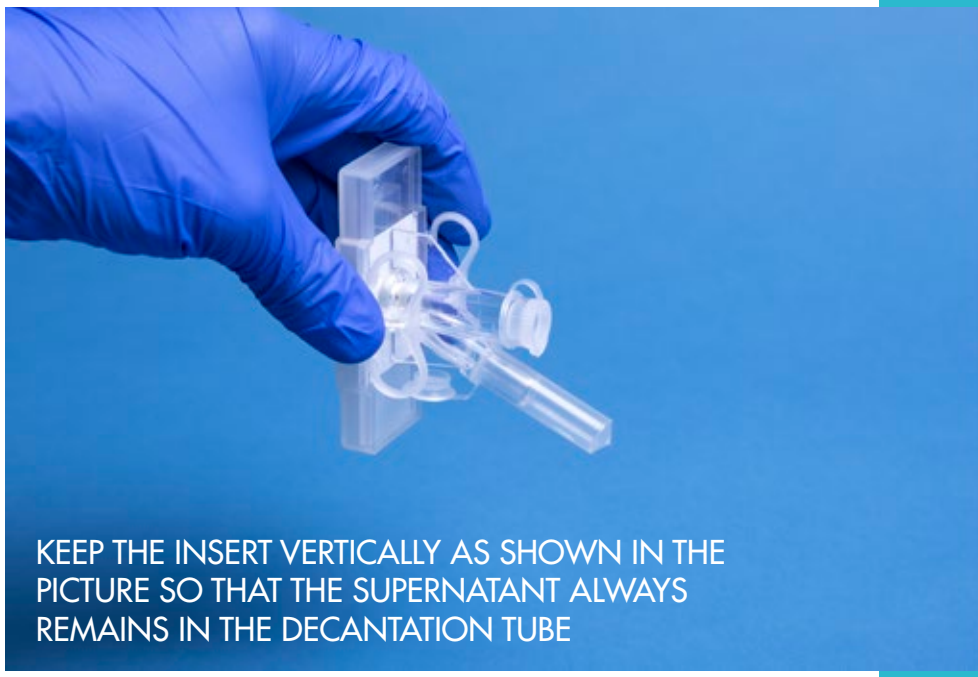
AFTER COMPLETED CENTRIFUGATION
CYCLE, OPEN UP THE CENTRIFUGE
WITH THE “COVER” BUTTON

MISTAKES

- too early attempt at opening the cover (while the rotor still in motion).
  Sound signal will notify of completed centrifugation and stopped rotor.

STEP 11

HOW TO UNLOAD THE CYTO INSERT FOLLOWING COMPLETED CENTRIFUGATION CYCLE?



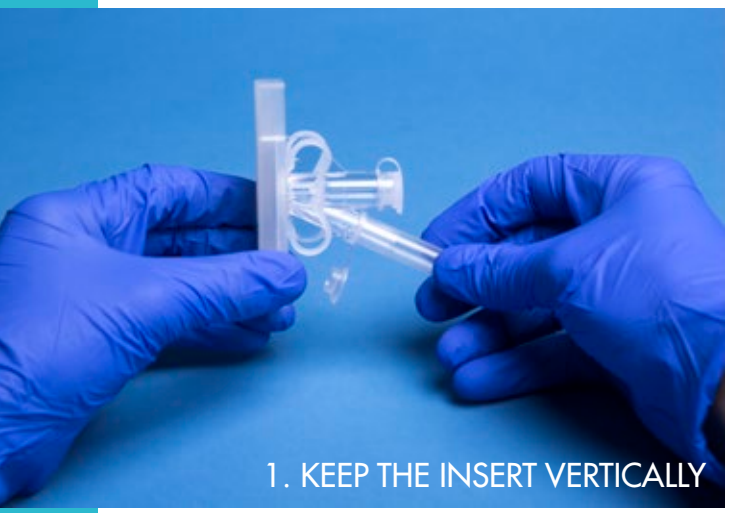
KEEP THE INSERT VERTICALLY AS SHOWN IN THE PICTURE SO THAT THE SUPERNATANT ALWAYS REMAINS IN THE DECANTATION TUBE

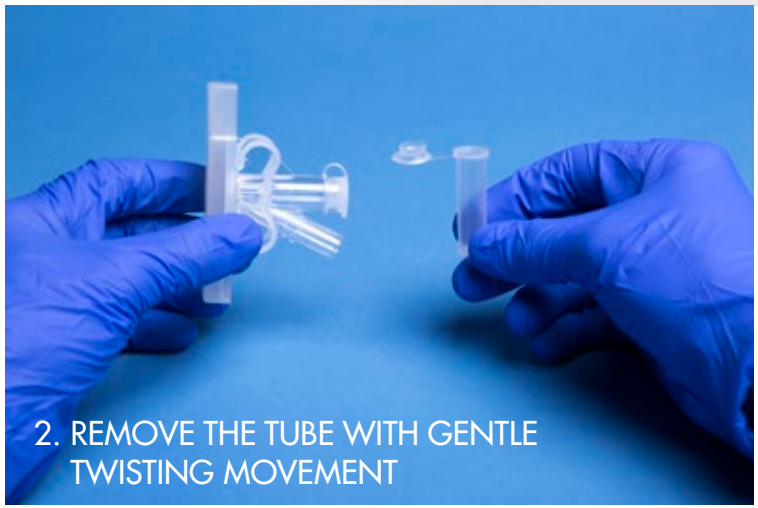
MISTAKES

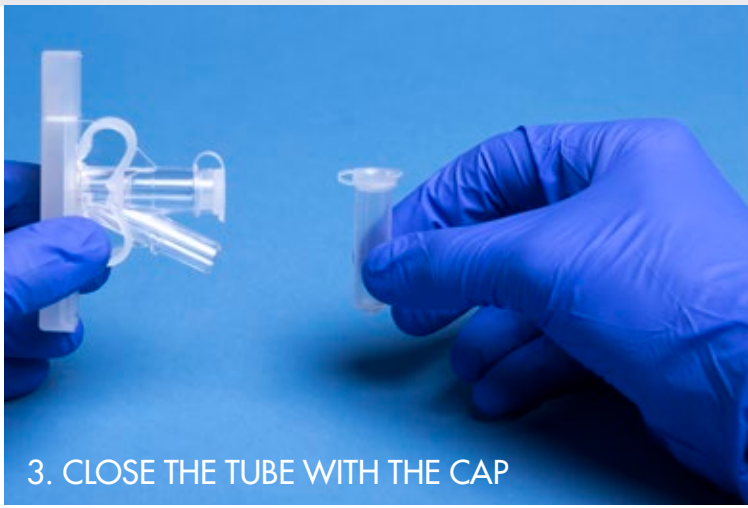
- unlock of the lock/projection and release of the hanger to the starting/horizontal position
- changing its position to the horizontal – the supernatant from the decantation tube flows back onto the slide
- too hefty and incorrect removal of the insert

STEP 12

HOW TO UNLOAD THE TUBE FILLED WITH SUPERNATANT?


1. KEEP THE INSERT VERTICALLY


2. REMOVE THE TUBE WITH GENTLE TWISTING MOVEMENT

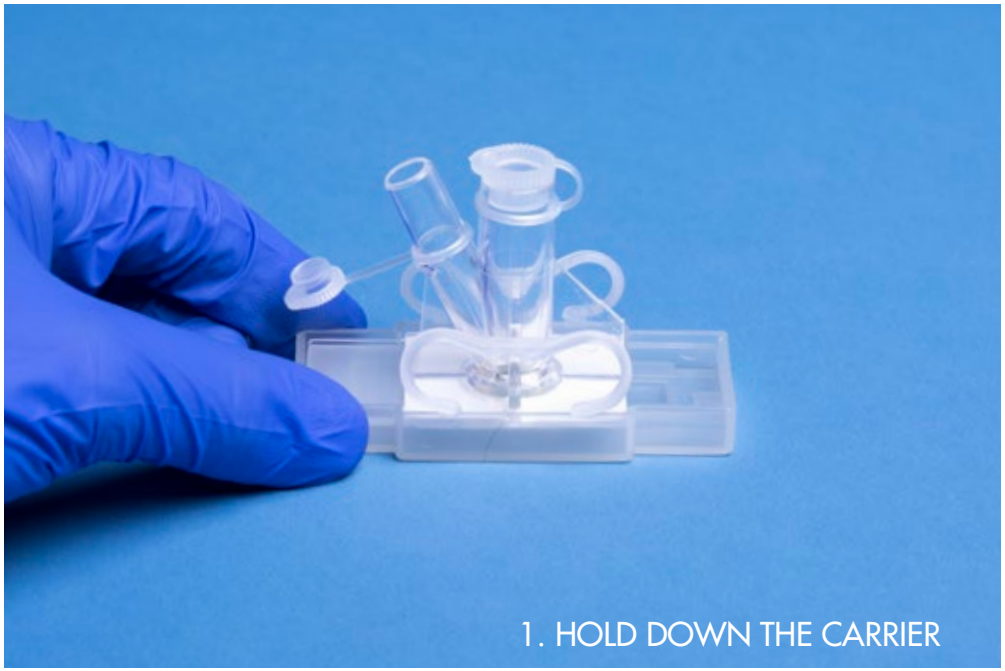

3. CLOSE THE TUBE WITH THE CAP

MISTAKES

- failure to keep the insert in the vertical position
- changing the insert's position to the horizontal one
- too hefty removal (jerking) of the tube and failure to close it with the cap

STEP 13

HOW TO OPEN UP THE OVERLAY?



1. HOLD DOWN THE CARRIER

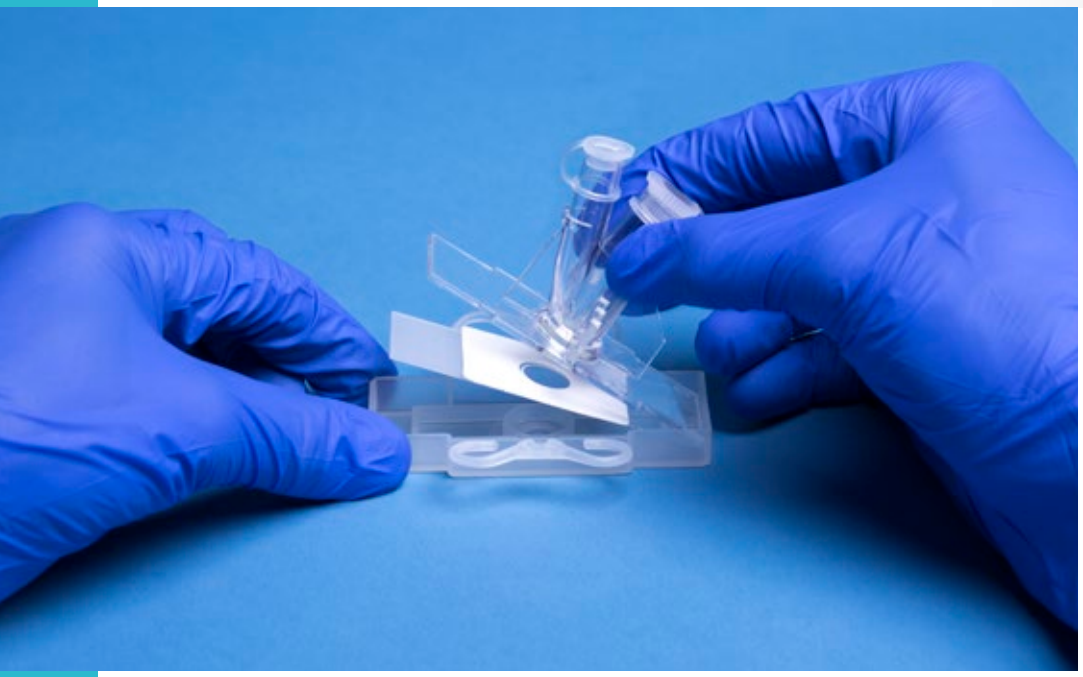
2. UNFASTEN THE CLASPS EVENLY

MISTAKES

- unbalanced opening of the clasps may shift the overlay and the filter and disturb the cell deposit

STEP 14

HOW TO OPEN UP THE INSERT TO RELEASE THE SLIDE AND FILTER CARD?



MISTAKES

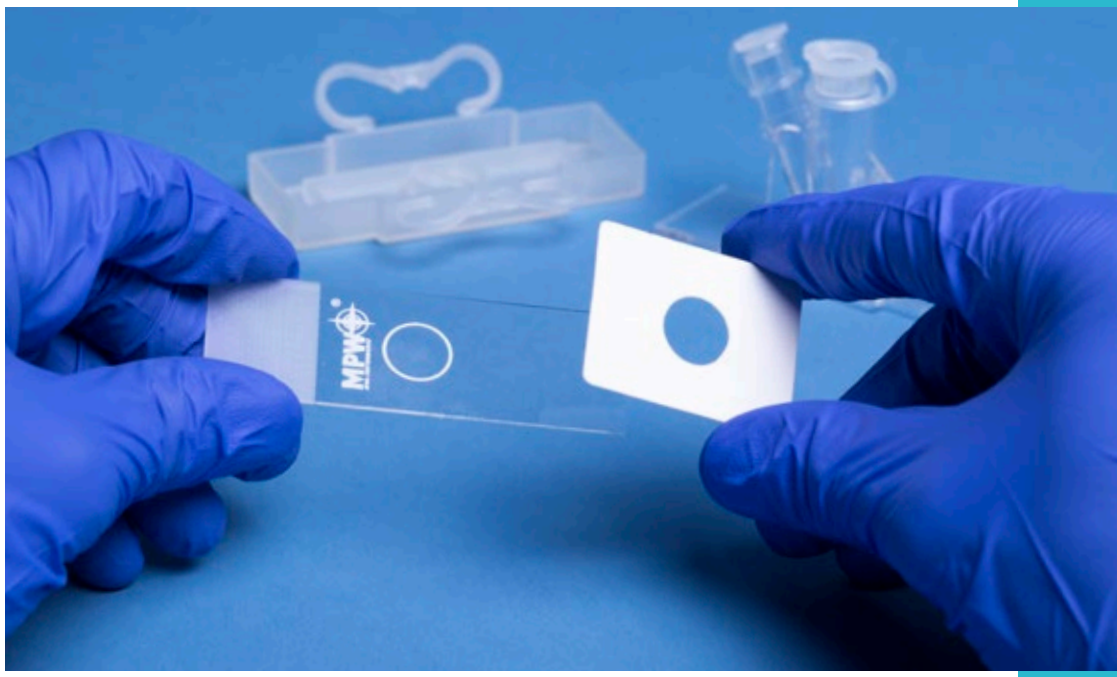
- too hefty opening up of the insert and shifting the filter card may damage the cell deposit and destroy the preparation

PRESS GENTLY BUT FIRMLY TO RAISE THE OVERLAY TO 45° AND RELEASE THE SLIDE WITH THE CENTRIFUGED PREPARATION

STEP 15

HOW TO REMOVE THE FILTER CARD?

REMEMBER TO DRY UP, FIX (E.G. CYTOFIX) AND STAIN THE DEPOSIT WITH YOUR PREFERRED TECHNIQUE



YOU CAN USE TWEEZERS OR SMALL PINCERS

MISTAKES

- too hefty removal of the filter card may disturb he deposited cells and destroy the preparation

SECOND RUN - DRYING UP OF THE SAMPLES **

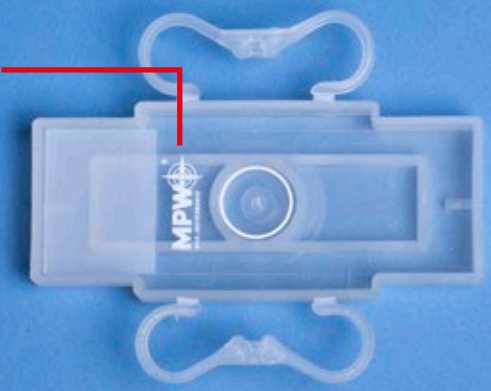
2

** IN CASE IF THE SAMPLE IS DAMP AFTER BEING REMOVED FROM A CENTRIFUGE

STEP 1

HOW TO LOAD THE SLIDE WITH THE CENTRIFUGED PREPARATION IN THE CARRIER FOR THE SECOND RUN?

PLACE THE SLIDE WITH THE CENTRIFUGED PREPARATION IN THE CARRIER OF THE INSERT WITH THE PROPER SIDE UP – WITH THE MARKED FIELD AND LOGO UP

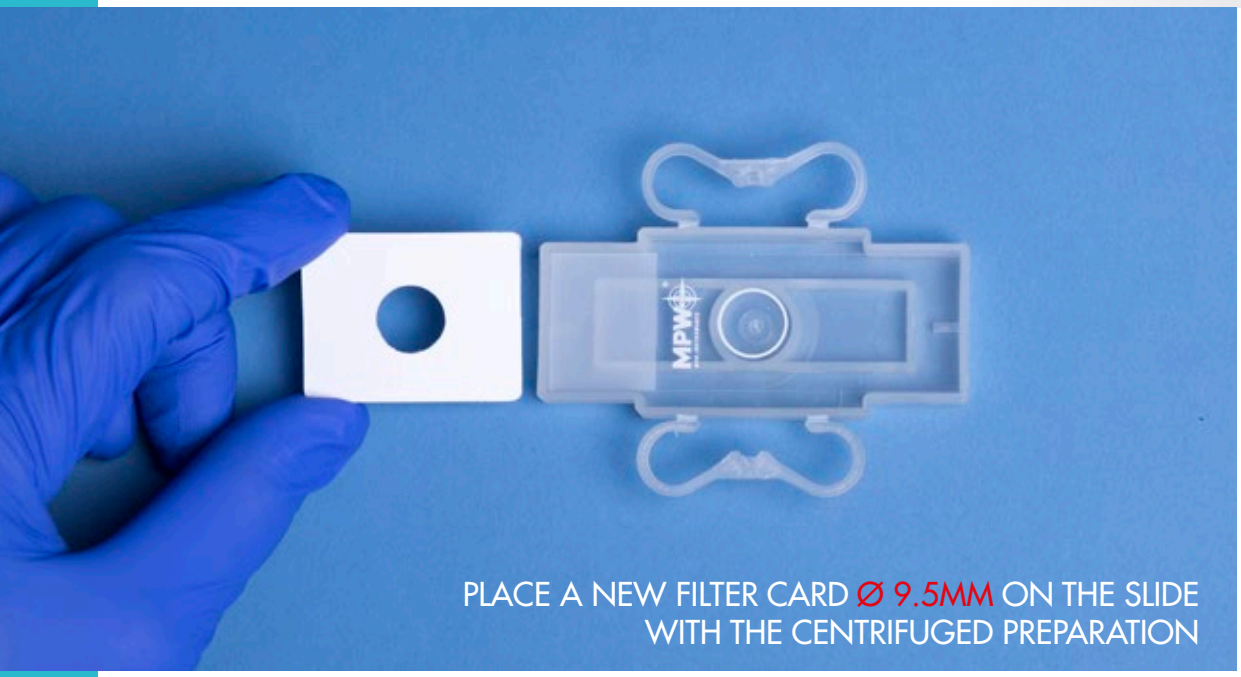


MISTAKES

- slide with centrifuged preparation incorrectly held down and loaded to the carrier, i.e. upside down (with the preparation facing down)
- use of a new slide (with no preparation on it) with no porous surface which permits durable marking of the sample, “dirty” - not degreased slide

STEP 2

HOW TO LOAD A NEW FILTER CARD ON THE SLIDE?



PLACE A NEW FILTER CARD Ø 9.5MM ON THE SLIDE
WITH THE CENTRIFUGED PREPARATION

YOU CAN USE TWEEZERS
OR SMALL PINCERS

MISTAKES

- filter card of incorrect diameter
- imprecise (careless) placement of the filter on the slide (e.g. on the centrifuged preparation)

STEP 3

HOW TO LOAD THE OVERLAY AND CLOSE THE FUNNELS?

1. LOAD THE OVERLAY ON THE CARRIER AND FASTEN THE CLASPS EVENLY

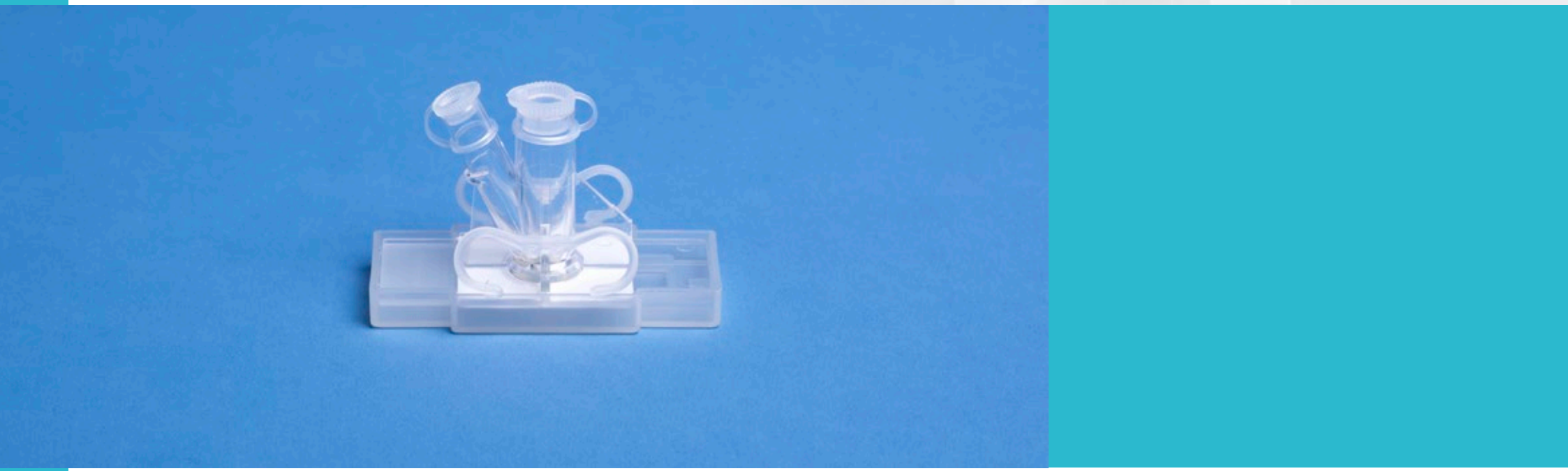
2. CLOSE THE FUNNELS WITH CAPS

MISTAKES

- overlay carelessly placed on the carrier with the slide and filter card
- absence of seal under the overlay
- incorrect fastening of clasps
- failure to close or incomplete closure of the cap on the funnels

STEP 4

HOW DOES A CYTO INSERT LOOK LIKE WHEN IS READY FOR DRYING UP THE PREPARATION?



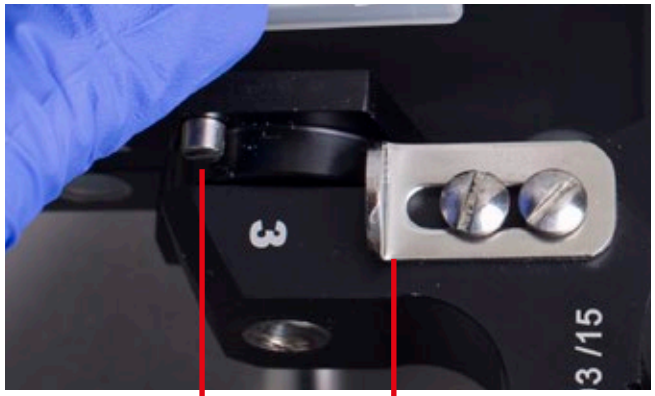
MISTAKES

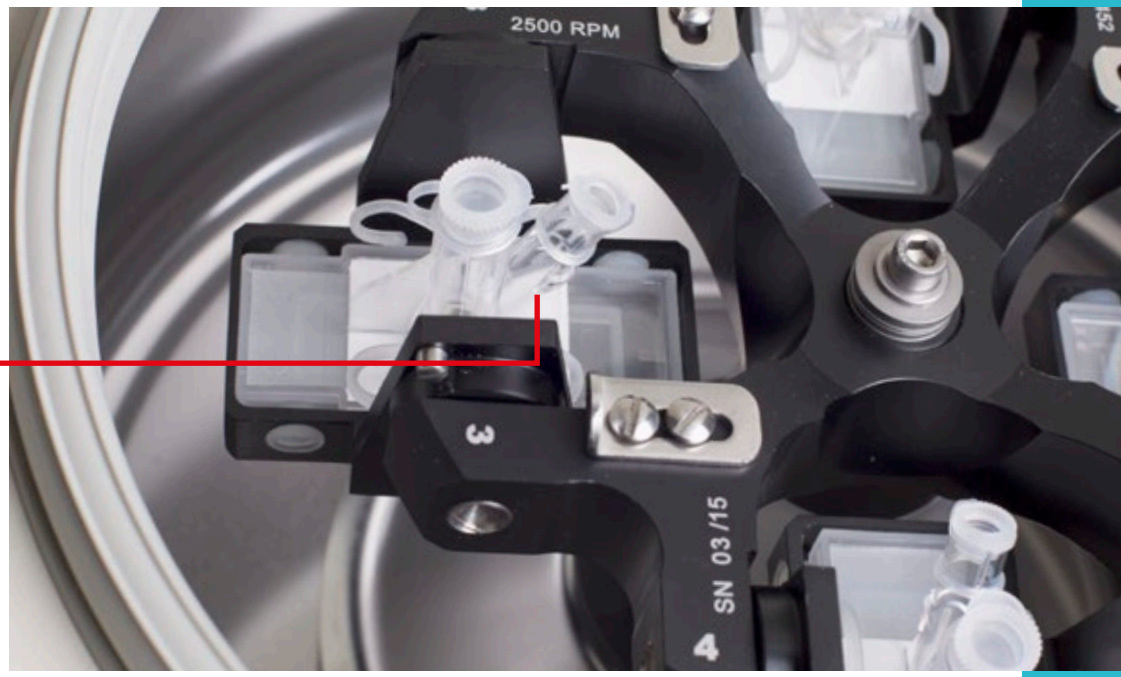
- absence of any part (slide, filter card, caps, seal)
- unfastened clasps, incompletely closed caps

STEP 5

HOW TO LOAD A COMPLETE CYTO INSERT ON A HANGER?

THE CLOSED SIDE FUNNEL FACING THE CENTRIFUGE PIVOT





PROJECTION

LOCK

MISTAKES

- placing a complete insert with the side funnel facing the outer diameter of the rotor

STEP 6

HOW TO SET UP CENTRIFUGATION PARAMETERS?

NOTE! THE PARAMETERS SHOWN IN THE PICTURE ARE ONLY EXAMPLES

Speed can be set from 1100 RPM to 1500 RPM. Up from that speed, cells may be damaged. Users may set up centrifugation parameters according to their own tried and tested methodologies.

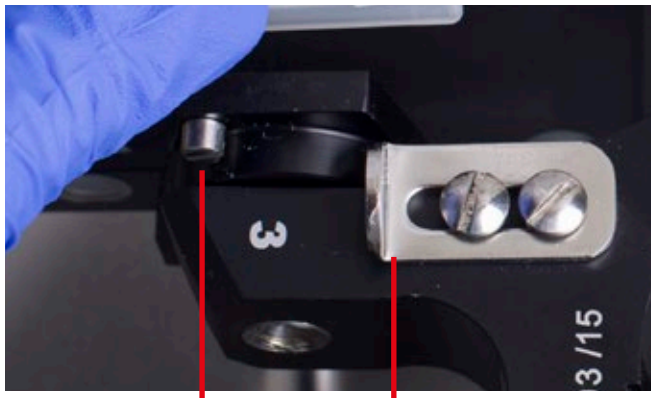
MISTAKES

- too high rotational speed (may damage the cells)
- too low rotational speed may prevent cells from being sticked to the slide

STEP 7

HOW DOES THE HANGER LOOK LIKE DURING CENTRIFUGATION?

MAKE SURE THAT THE HANGER IS CORRECTLY MOUNTED ON THE ROTOR ARMS



PROJECTION

LOCK

MISTAKES

- incorrect placement of the hanger on the rotor arms (projection on a different side from the lock)
- incorrect placement of the insert on the hanger

STEP 8

HOW TO UNLOAD THE CENTRIFUGED CYTO INSERT FOLLOWING COMPLETED CENTRIFUGATION CYCLE?

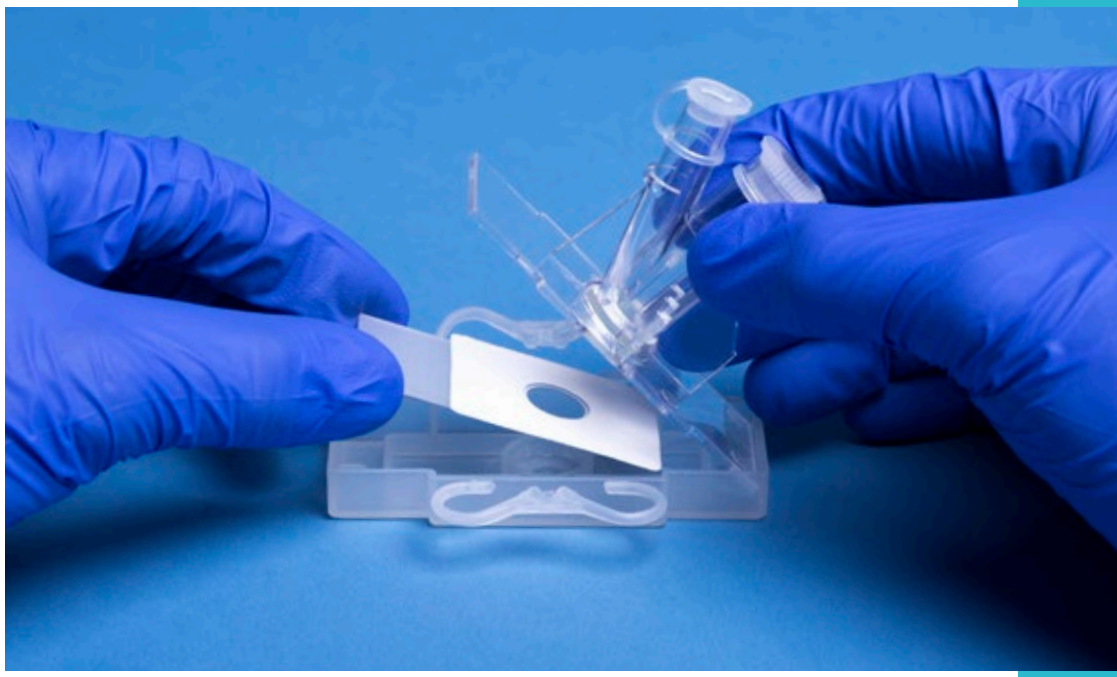
MISTAKES

- too hefty and incorrect removal of the insert

STEP 9

HOW TO REMOVE THE FILTER CARD?

PRESS GENTLY BUT FIRMLYTO RAISE THE OVERLAYTO 45° ANDRELEASE THE SLIDE WITHTHE CENTRIFUGED PREPARATION

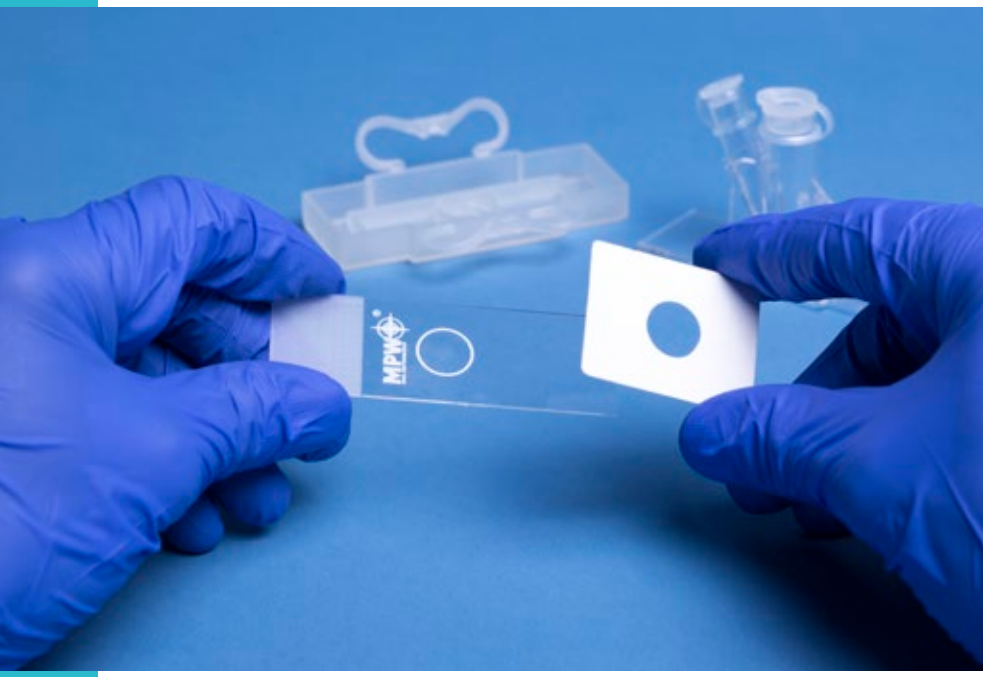


MISTAKES

- too hefty opening up of the insert and shifting the filter card may damage the cell deposit and destroy the preparation

STEP 10

HOW TO REMOVE THE FILTER CARD?

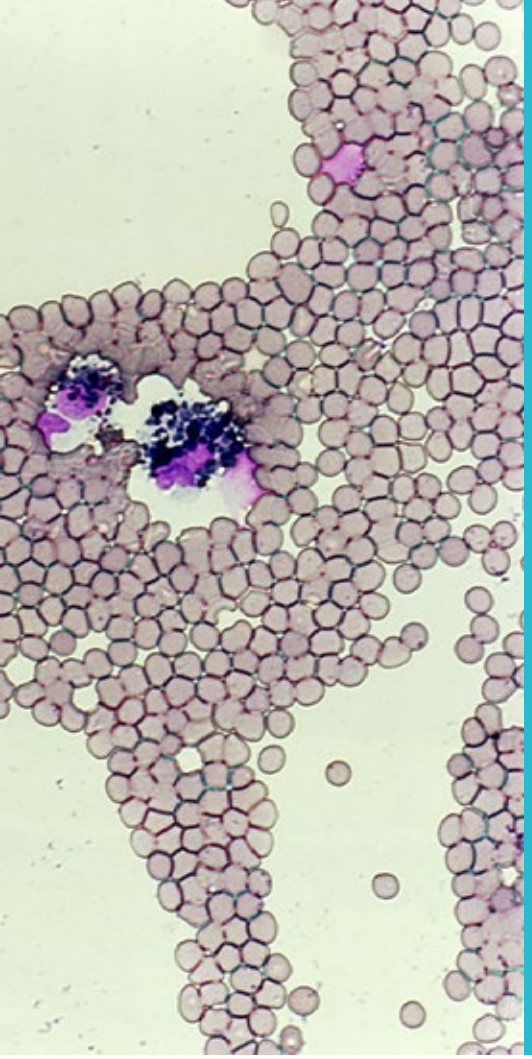


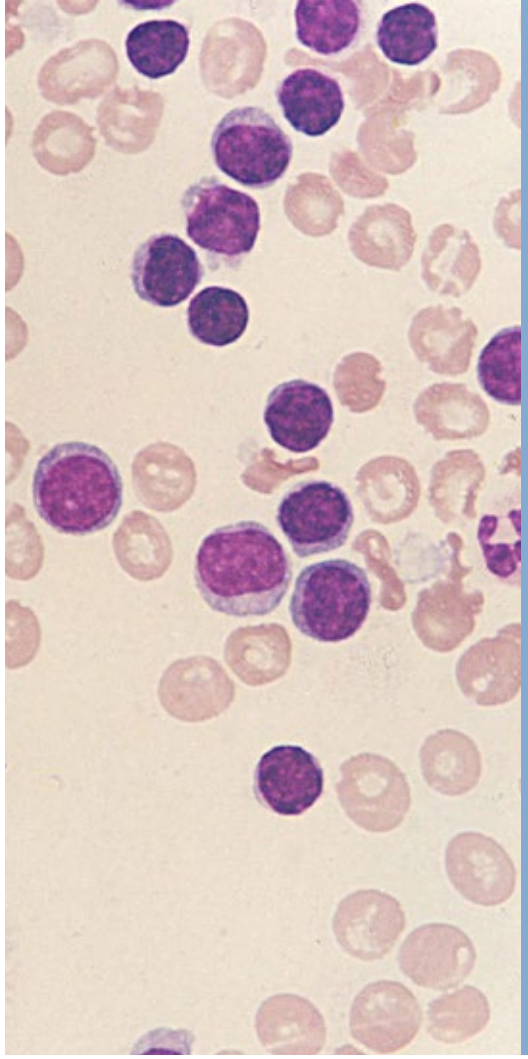
REMEMBER TO DRY UP, FIX (E.G. CYTOFIX) AND STAIN THE PREPARATION WITH YOUR PREFERRED TECHNIQUE

YOU CAN USE TWEEZERS OR SMALL PINCERS

MISTAKES

- too hefty removal of the filter card may disturb the cell deposit and destroy the preparation





M-DIAGNOSTIC

MPW- 352/R/RH

MPW MED. INSTRUMENTS
46 Boremlowska Street
04-347 Warsaw
Poland

SALES
phone: +48 22 610 56 67
+48 22 740 20 25
fax: +48 22 610 81 01
mpw@mpw.pl

SERVICE
phone: +48 22 610 81 07
+48 22 610 50 14
fax: +48 22 610 55 36
service@mpw.pl

ISO 9001 ISO 13485 IVD CE MADE IN POLAND

www.mpw.pl

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