



NGS Compact

No more manual NGS library preparation with the switch to *epMotion*®

Optimize Your NGS Library Prep

The preparation of a high-quality NGS library is a cost-, labor-, and time-intensive process which requires experience and a lot of concentration. Precious samples are often processed for several days (depending on the kit used) until the library is ready for sequencing. A whole method consists of multiple parts, each with unique precision needs and hundreds of pipetting steps. When working with low sample numbers, 1–24 samples, NGS library prep is often done manually. But this can be prone to errors and variation

amongst libraries. As pipetting precision depends on the user, variability is introduced, which negatively affects the reproducibility. A solution for reliable preparation of highly reproducible NGS libraries is automating the process. Minimal user intervention utilizing optimal pipetting precision increases your time for other tasks, such as the evaluation of the sequencing data. Your overall productivity rises and the quality of your data is improved by reduced pipetting errors, consequently leading to more consistent results.



Fitted to your needs:

Small scale NGS library prep for up to 24 samples and limited lab space is possible with the epMotion® 5073m NGS solution by intelligent accessories and optimal space usage.

All dispensing tools on deck:

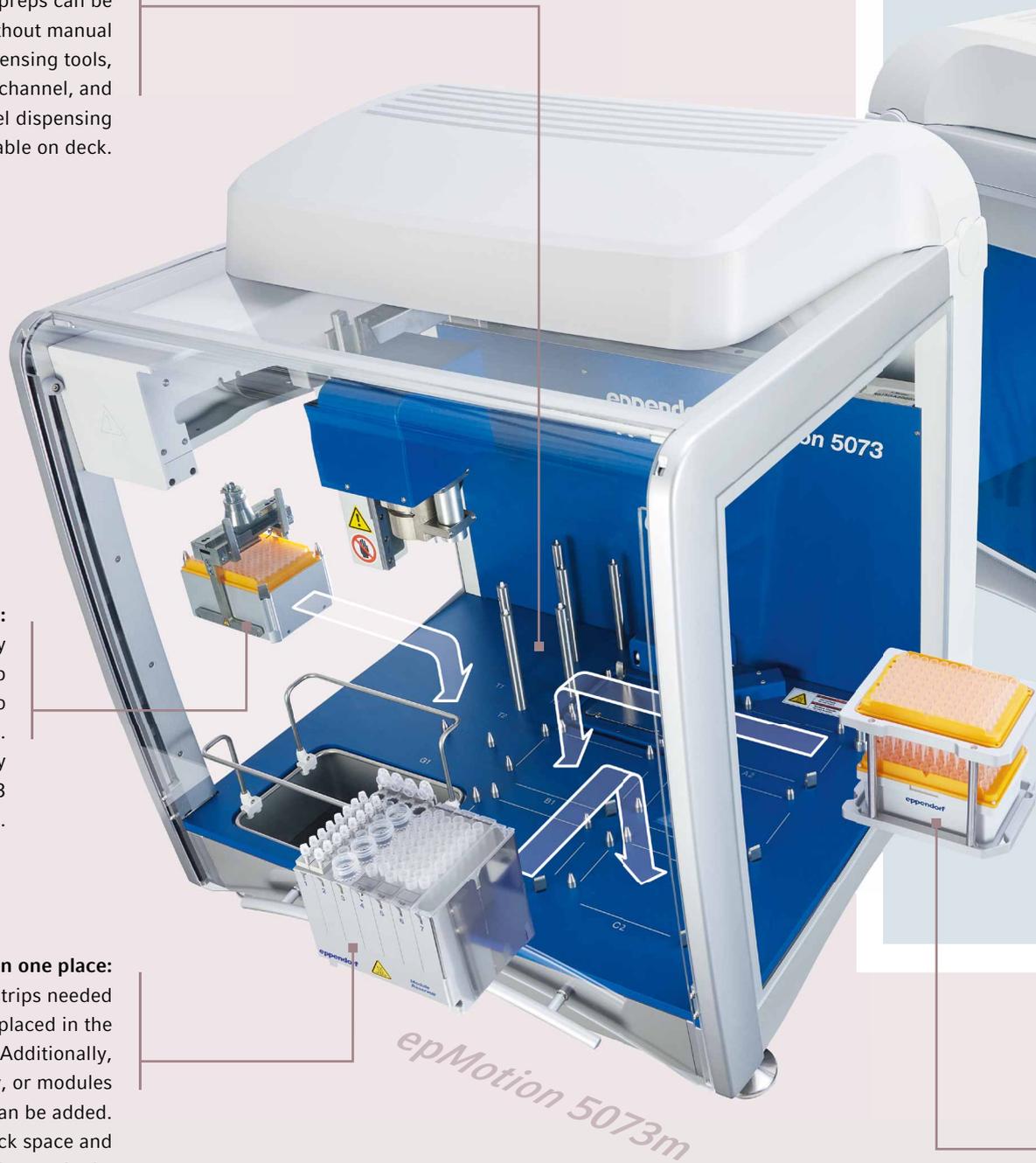
NGS library preps can be executed without manual exchange of dispensing tools, having single-channel, and eight-channel dispensing tools available on deck.

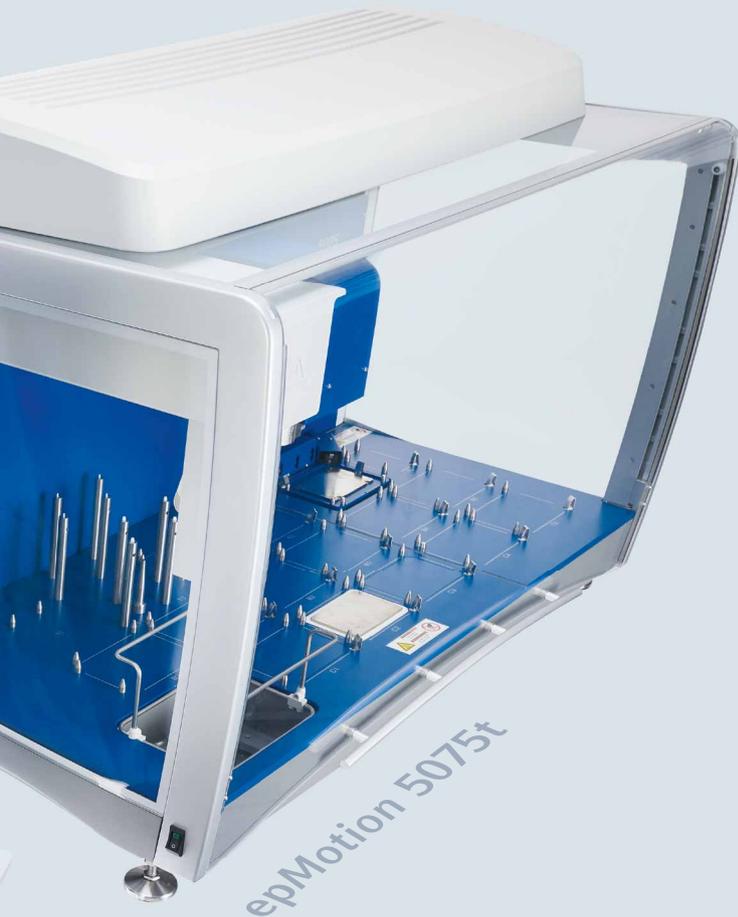
Two in one:

Increase walk-away time by placing the Gripper above a tip rack on the Gripper Tower to further increase tip capacity. This tip rack is automatically transferred to the TipHolder 73 without user intervention.

All reagents in one place:

All reagents, tubes and PCR strips needed for NGS library prep can be placed in the Reservoir Rack Module NGS. Additionally, reservoirs with larger capacity, or modules with up to 16 tips can be added. This saves precious deck space and enables more complex methods.





Key highlights of epMotion 5073m and 5075t NGS solution:

- > Sample throughput: epMotion 5073m NGS 1–24 samples per run; epMotion 5075 NGS 96 samples per run
- > Qualified next generation sequencing library prep methods for high quality libraries
- > Outstanding pipetting accuracy (0.31 % systematic error at 1 μ L) and precision (1.97 % random error at 1 μ L), provide reproducible results
- > Optional UV decontamination and HEPA air filter to protect precious samples and avoid cross-contamination
- > Intuitive software for ease-of-use and rapid method design
- > 3D run simulation to optimize speed and efficiency of new methods
- > Intelligent accessories maximize available deck space and walk-away time
- > Integrated Eppendorf ThermoMixer® and thermal module allow for efficient mixing of magnetic beads and reliable temperature incubations on deck
- > Touchscreen MultiCon PC, or EasyCon tablet with Windows 10
- > Powerful, spring-loaded plate magnet allow bead-based purification in plate format with minimal elution volumes
- > Unique for epMotion 5073m: Integrated magnet fingers allow bead-based purification in tube format
- > Optional: Miniaturization of sample volume down to 200 nL for reagent saving is possible with the high-precision 10 μ L dispensing tool

Optimal space usage:

Improve tip availability during your application by stacking two times 96 tips in one TipHolder 73. This reduces user interventions and increases your walk-away time.

Excerpt of methods available for epMotion NGS solution:

Ampliseq® for Illumina®: Focus Panel
 Ampliseq for Illumina: Myeloid
 Illumina Nextera® XT DNA
 Illumina Nextera DNA Flex
 Illumina TruSeq® Stranded mRNA
 Illumina TruSeq Nano DNA
 Illumina 16s Metagenomic

> The complete list is available at:
www.eppendorf.com/epMotion-vip



Pain points and their solution during NGS library preparation

Issue	Potential reason	Solution
I do have very poor library yields or no libraries at all.	Inhomogeneous bead-solution to begin with and/or insufficient mixed bead-sample solution	<ul style="list-style-type: none"> > Ensure to properly mix the bead solution before adding to your samples. > Carefully mix bead solution and sample. Increase the number of mixing cycles and use around 80 % of the total volume for mixing. Solution mixing by tip mixing is preferred over shaking.
	Loss of sample during the bead washing procedure	<ul style="list-style-type: none"> > Use freshly prepared ethanol and use prewetting when pipetting ethanol. > Make sure to remove any residual ethanol during the final washing step. Use a smaller tip size for the final ethanol removal step. > Do not over-dry your beads. Always air-dry beads at room temperature do not use heat to accelerate the drying process.
	Loss of bead-sample solution	<ul style="list-style-type: none"> > Avoid the accidental aspiration of beads when removing supernatant. Use slow aspiration speed. Consider using a stronger magnet, if the problem persists. > Use slow speed and a blowout when dispensing beads. Apply tip dipping to remove droplets from the outside of the tip.
	Loss of sample during storage	<ul style="list-style-type: none"> > Avoid storage of intermediate products if possible. Do not extend the maximum storage times given in the kit protocol.
My final libraries do have the wrong size.	Insufficient enzymatic fragmentation or overfragmented samples	<ul style="list-style-type: none"> > Make sure to use the correct temperature during enzymatic fragmentation. Increase the fragmentation time if your libraries are too big, decrease it if the libraries are too small.
	False size selection	<ul style="list-style-type: none"> > Make sure that the used size selection ratio is correct. > Make sure that your sample is in the correct buffer/reagent. > Check, if the correct volumes are used. The given size selection ratios are based on volume. > Avoid evaporation during the library preparation process (e.g. by using vapor lock) to keep the volumes correct.
	PCR biased overamplification of shorter fragments	<ul style="list-style-type: none"> > Introduce a size selection step after adapter ligation, if possible. > Reduce the number of PCR cycles.
I do see a high molecular weight product during my final QC. This appears to affect my sequencing results.	Overamplification	<ul style="list-style-type: none"> > Increase the concentration of primers. Ensure that primers are intact. > Decrease the amount of input material. > Reduce the number of PCR cycles.
I do see a huge sharp peak at around 100 bp during my final QC. This appears to affect my sequencing results.	Formation of adapter dimers	<ul style="list-style-type: none"> > Lower the adapter concentration. > Do not pre-mix adapters and ligation mix. > Consider one additional bead cleanup step.

Description	Ordering no.
epMotion® 5073m NGS Solution , includes EasyCon and integrated Eppendorf ThermoMixer®, Enhanced feature set 1 software upgrade, C2 thermal module, dispensing tools, plus NGS specific accessories, waste bag holder, plus NGS specific consumables to start automated library preparation, 100–240 V ±10 %/50–60 Hz ±5 %	5073 000 930
epMotion® 5073m NGS Solution , includes MultiCon PC and integrated Eppendorf ThermoMixer®, Enhanced feature set 1 software upgrade, C2 thermal module, dispensing tools, plus NGS specific accessories, waste bag holder, plus NGS specific consumables to start automated library preparation, 100–240 V ±10 %/50–60 Hz ±5 %	5073 000 949
epMotion® 5073mc NGS Solution , includes MultiCon PC and integrated Eppendorf ThermoMixer® with CleanCap, Enhanced feature set 1 software upgrade, C2 thermal module, dispensing tools, plus NGS specific accessories, waste bag holder, plus NGS specific consumables to start automated library preparation, 100–240 V ±10 %/50–60 Hz ±5 %	5073 000 965
epMotion® 5073mc NGS Solution , includes EasyCon and integrated Eppendorf ThermoMixer®, with CleanCap, Enhanced feature set 1 software upgrade, C2 thermal module, dispensing tools, plus NGS specific accessories, waste bag holder, plus NGS specific consumables to start automated library preparation, 100–240 V ±10 %/50–60 Hz ±5 %	5073 000 957
epMotion® 5075t NGS solution , package with completely contained housing, MultiCon PC, Enhanced feature set 1, C2 thermal module, dispensing tools, plus NGS specific accessories, plus NGS specific consumables to start automated library preparation, 100–240 V ±10 %/50–60 Hz ±5 %, 0.2 µL–1 mL	5075 000 969
epMotion® 5075tc NGS solution , package with CleanCap, MultiCon PC, Enhanced feature set 1, C2 thermal module, dispensing tools, plus NGS specific accessories, waste bag holder, plus NGS specific consumables to start automated library preparation, 100–240 V ±10 %/50–60 Hz ±5 %, 0.2 µL–1 mL	5075 000 970

epMotion 5073m NGS

- > Gripper with Gripper Tower
- > Two TipHolder 73
- > Thermoblock 96 OC
- > Thermoadapter for PCR 96
- > Reservoir Rack
- > Reservoir Rack Module NGS
- > Eppendorf Magnum FLX Magnet Adapter
- > Waste Bag Holder
- > 400 mL Liquid Waste Tub
- > Dispensing Tools: 50 µL & 300 µL single- and 300 µL eight-channel
- > License »Enhanced Feature Set 1«

NGS specific consumables

- > Protein LoBind, 1.5 mL tubes, PCR clean, colorless, 100 tubes (2 bags × 50 tubes)
- > Waste bags, for epMotion® 5070/5073/5075 waste position, up to 7 L volume, ideal for disposing of non hazardous waste, autoclavable, PP material, thickness 50 µm, transparent, 50 bags
- > epT.I.P.S.® Motion as Reload System, with filter, PCR clean, 50 µL & 300 µL, each volume 2,304 tips (24 trays × 96 tips)

NGS specific consumables (both systems)

- > Eppendorf twin.tec® PCR plate 96 LoBind, skirted, PCR clean, colorless, 25 plates
- > epT.I.P.S.® Motion pipette tips, with filter, PCR clean, 50 µL & 300 µL, each volume 960 tips (10 racks × 96 tips)

epMotion 5075 NGS

- > Thermomodul on C2 position
- > Gripper with holder
- > Thermoblock 96 OC
- > Thermoadapter for PCR 96
- > Reservoir Rack
- > Eppendorf Magnum FLX Magnet Adapter
- > Rack ILMN tubes
- > 400 mL Liquid Waste Tub
- > Dispensing Tools: 50 µL & 300 µL single- and 50 µL & 300 µL eight-channel
- > License »Enhanced Feature Set 1«

NGS specific consumables

- > epMotion® reservoir 30 mL, large-volume container for reagent presentation on the epMotion®, can only be inserted with the Reservoir Rack; production batch testing, certified, 30 mL, 10 × 5 reservoirs in the bag, PCR clean, polypropylene

Your local distributor: www.eppendorf.com/contact
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