Turbocharge Your Sequencing

High-speed, high flexibility and ultra-high throughput

Genetic Sequencer DNBSEQ-T7*

High-speed
24 to 30 HOURS for PE150 sequencing

High-flexibility
4 FLOWCELLS, PE150 and PE100
at the same time

Ultra-high Throughput
up to 6T/DAY,
High quality data 24/7

Leading Life Science Innovation

◎ ABOUT
MGI Tech Co., Ltd.

MGI Tech Co., Ltd. (referred to as MGI) is committed to building core tools and technology to lead life science through intelligent innovation. MGI focuses on R&D, production and sales of DNA sequencing instruments, reagents, and related products to support life science research, agriculture, precision medicine and healthcare. MGI is a leading producer of clinical high-throughput gene sequencers, and its multi-omics platforms include genetic sequencing, mass spectrometry, medical imaging, and laboratory automation.

Founded in 2016, MGI has more than 1000 employees, nearly half of whom are R&D personnel. MGI operates in 39 countries and regions and has established multiple research and production bases around the world. Providing real-time, comprehensive, life-long solutions, its vision is to enable effective and affordable healthcare solutions for all.

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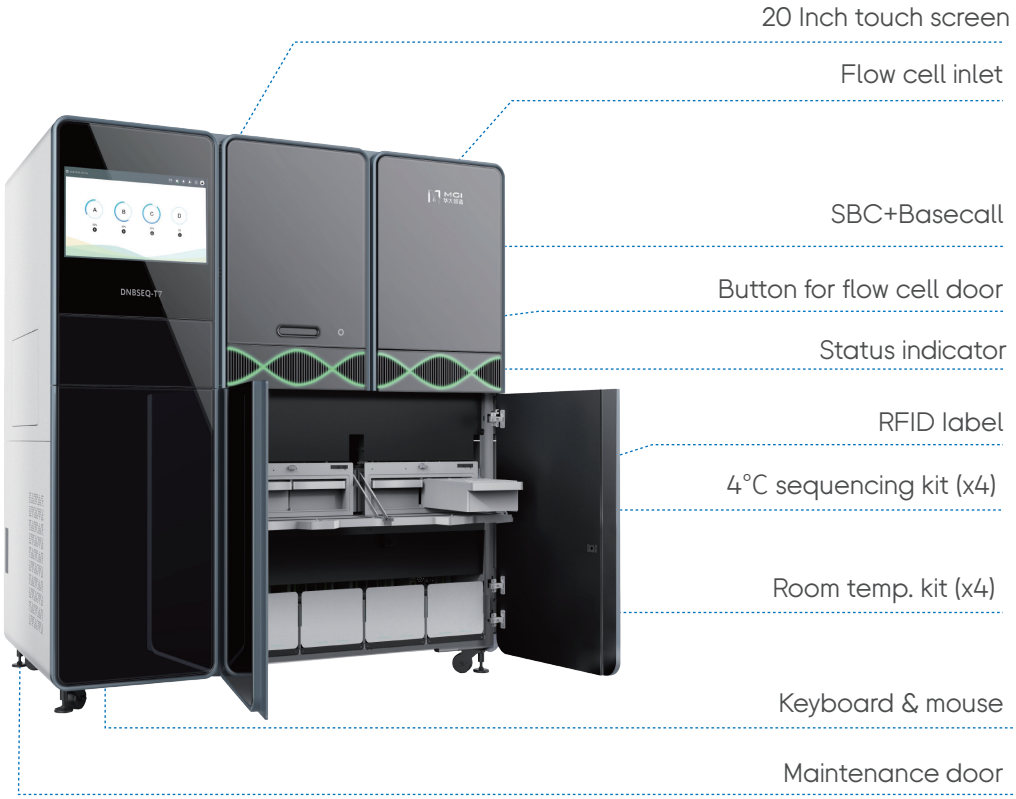
INTRODUCTION

DNBSEQ-T7

DNBSEQ-T7 can generate 1-6T of high quality data per day, for a wide range of applications including whole genome sequencing, deep exome sequencing, epigenome sequencing, transcriptome sequencing, and targeted panel projects.

Powered by DNBSEQ™ Technology, DNBSEQ-T7 makes sequencing more efficient and productive with advances in biochemical, fluidics, and optical systems.



MGIDL-T7

MGIDL-T7 is an essential auxiliary product for DNBSEQ-T7. The device is used to prepare sequencing Flow Cells by loading the prepared DNB (DNA Nanoball) and/or reagent to a Flow Cell. It loads one or two Flow Cells in less than 2 hours.

Dimensions	430 mm x 750 mm x 750 mm
Net Weight	81 kg

DNBSEQ-T7 Specifications

4 Flow Cells/run, **1** lane/Flow Cell, **5000M** max reads/Flow Cell*.

Read lengths	PE100	PE150
Data Output	1-4 T	1.5-6 T
Q30**	>85%	>80%
Run Time***	20-22 hrs	**24-30 hrs** ▲

▲ Performance highlights

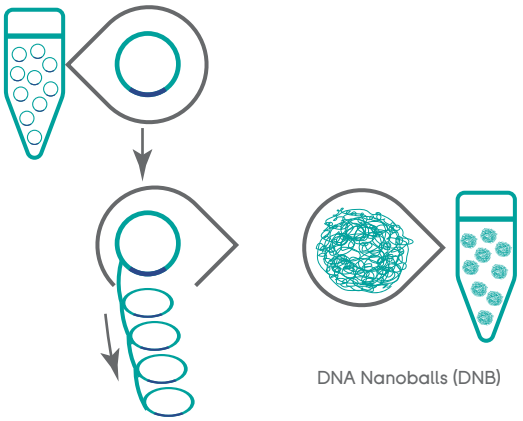
* The maximum number of effective reads are based on the sequencing of an internal standard library. Actual output may vary depending on sample type and library preparation method.

** The percentage of base above Q30 is the average of an internal standard library over the entire run. The actual performance is affected by factors such as sample type, Library quality, and insert fragment length.

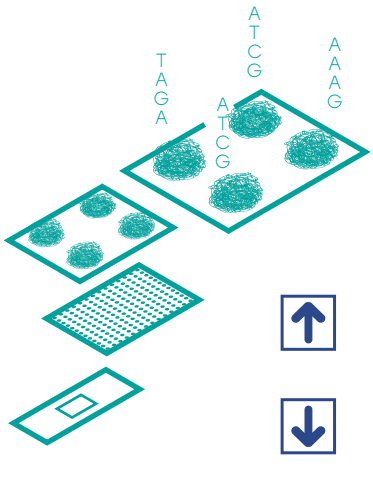
*** Run time includes Flow Cell loading, sequencing, and outputting cal. File. Cal. is a binary file format generated by MGI sequencer basecall software.

MGI'S PROPRIETARY

DNBSEQ™ TECHNOLOGY



DNA Nanoballs (DNB)



Patterned Array

- INCREASED ACCURACY
- DECREASED DUPLICATES
- REDUCED INDEX HOPPING

WGS Total Solution

STEP 1

Sample pretreatment & preparation

STEP 2

High-throughput sequencing

STEP 3

Bioinformatics analysis

MGISP series

MGI series include MGISP-100 and MGISP-960, the throughput is 16 samples/run and 96 samples/run respectively, which can perform nucleic acids extraction and library preparation.

MGIDL-T7

MGIDL-T7 is an essential auxiliary product for DNBSEQ-T7, it loads DNB and/or reagents onto the flow cell to complete the preparation of sequencing.

DNBSEQ-T7

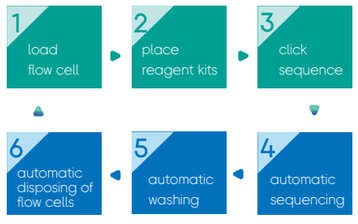
Sequencing operation contains two main steps. Including manual operation and automatic operation.

Manual operation: (*user login and choose sequencing mode)
automatic sequencing – automatic washing – automatic disposing of flow cells

Automatic operation: load flow cell – place reagent kits – click sequence

Manual operation
*user login and choose sequencing model

Automatic operation



A High-Throughput Sequencer Buddy ZTRON

ZTRON, a Genomics Data Center Appliance: provides edge computing and storage solutions. ZTRON executes bioinformatics analysis, data governance and data delivery. Data generated by DNBSEQ-T7 can be automatically uploaded to ZTRON and generate reports.

MegaBOLT-Pro

MegaBOLT-Pro bioinformatics analysis accelerator focuses on high performance data generation for ultra-high throughput sequencers, which accelerates the calculation up to 100 times, and completes the 30X WGS analysis within 0.5 h, realizing the significant optimization of calculation cost and efficiency.

MGI provides a total solution for whole genome sequencing. DNBSEQ-T7 is compatible with a variety of products covering the whole processes from sample pretreatment, library preparation, DNB loading, sequencing and data analysis (MegaBOLT), making WGS easy and accessible.

ZLIMS

Zebra LIMS (Laboratory Information Management System) enables real-time sample tracking throughout the workflow, offering an total solution from sample to sequencing report.

DATA PERFORMANCE

Whole Genome Sequencing (WGS) Data Performance

Reagent	DNBSEQ-T7RS High-throughput Sequencing Set (FCL PE100)
Sample	Human Cell Line
Prep Set	MGIEasy PCR-Free DNA Library Prep Set
Data analysis	MegaBOLT

Sample	NA12878
Mapping rate (%)	99.73
Duplicate rate (%)	0.55
Mismatch rate (%)	0.52
Average sequencing depth (X)	30.80
Coverage (%)	99.23
Coverage at least 4X (%)	99.03
Coverage at least 10X (%)	98.61
SNP_ Precision	0.9992
SNP_ Sensitivity	0.9910
Indel _ Precision	0.9894
Indel _ Sensitivity	0.9776

Reagent	DNBSEQ-T7RS High-throughput Sequencing Set (FCL PE150)
Sample	Human Cell Line
Prep Set	MGIEasy FS PCR-Free DNA Library Prep Set
Data analysis	BWA+GATK

Sample	NA12878
Mapping rate (%)	100
Duplicate rate (%)	1.61
Mismatch rate (%)	0.78
Average sequencing depth (X)	30.57
Coverage (%)	99.16
Coverage at least 4X (%)	99.00
Coverage at least 10X (%)	98.59
SNP_ Precision	0.9993
SNP_ Sensitivity	0.9970
Indel _ Precision	0.9895
Indel _ Sensitivity	0.9827

Sample Throughput Guidance for Key Applications

Flow Cell per run	1	2	3	4
WGS samples/run	10～15	20～30	30～45	40～60
WES samples/run	64～100	128～200	192～300	256～400
Transcriptomes samples/run	～100	～200	～300	～400

* Human Genomes assumes > 100Gb of data per sample to achieve 30× genome coverage. Exome assumes ~15Gb/100×. Transcriptomes assumes ≥ 50M reads. Throughput may vary based on library preparation kit used.

Apparatus		MGISP-960	MGISP-100	MGIDL-T7	DNBSEQ-T7	MegaBOLT-Pro	ZTRON (Including ZLIMS)	Server	UPS
Setup Case1	No.	1	1	1	1	1	1	Optional	
Setup Case2	No.	2	1	3	3	3	1		

Summary

Setup Case 1 **On average** can process **48** samples of human 30×WGS per run, with an annual processing capacity of up to 14400 samples.

Setup Case 2 **On average** can process **144** samples of human 30×WGS per run, with an annual processing capacity of up to 43200 samples.

APPENDIX

DNBSEQ-T7 Configurations

	Model	Intended Market
Model*	DNBSEQ-T7	IVD
	DNBSEQ-T7RS	RUO
Dimensions	903 mm x 1656 mm x 1815 mm	
Net Weight	765 Kg	
Power	Type	200~240 V, 50/60 Hz, 30 A
	Rated Power	3000 VA
Operating Environment Requirements**	Temperature	19~25 °C,<2 °C change per hour
	Relative Humidity	30%RH ~ 80%RH, non-condensing
	Atmospheric Pressure	80 kPa~106 kPa
	Waterproof Rating	IPX0
	Altitude	Below 2000 meters
Floor bearing capacity***	≥650 Kg/m^2	
Control Computer Configurations****	CPU	Intel CORE I7-7700 4Core x2 3.6GHz
	Internal Storage	16 GB RAM
	HDD	1 TB
	SSD	128 GB
	Operating System	Windows 10
Bandwidth for Network Connection	300 MB/s	For local storage network uploads
	1000 MB/s	For Fastq computing uploads

* Only for model classification.

** For indoor use only, the Flow Cell can be stored and transported at 0~30 °C. No liquid medium is needed.

*** Please install DNBSEQ-T7 above the bearing beam.

**** Supporting the computer configurations and system updates.

MGI GLOBAL PRESENCE

Technical Support Globally

The technical support team has a complete global coverage including technical services centers and multiple locations in major international regions to maximize customer satisfaction.

Multiple local technical support centers around the world provide timely and effective technical support and training

Spare part centers in Shenzhen, Wuhan, Qingdao, Tianjin, Hong Kong (China); Brisbane (Australia); and Riga (Latvia), to ensure sufficient supply of parts for machine maintenance;

Online technical support accessible worldwide, with a fully functioning call center (Toll-Free Hotline: 4000-966-988) (9:00-12:00,13:00-18:00, Beijing time, workday) and multi-language online training courses coming soon

Comprehensive Instrument Service and Warranty Plans Globally

Warehouses in Shenzhen, Wuhan, Qingdao, Tianjin, Hong Kong, Taipei, Bangkok (Thailand,Asia-Pacific); Brisbane (Australia, Oceania); Riga (Latvia, Europe); and San Jose (the USA, Americas) are established to ensure sufficient supply of maintenance parts for major regions.

Free installation and system verification services (including the QC reagents and consumables) are provided to turn your investment into production quickly.

MGI is responsible for any manufacturing defects or faults on the system within the warranty. Warranty covers labor, parts and travel charges.

One Free instrument preventive maintenance provided with warranty, along with a variety of available extended warranty support plans.

Ordering Information

Model	Supplier	Part No.
MGIDL-T7RS	MGI	900-000261-00
DNBSEQ-T7RS	MGI	900-000128-00
MGISP-100RS	MGI	900-000206-00
MGISP-960RS	MGI	900-000152-00
MegaBOLT-Pro	MGI	970-000112-00
ZLIMS	MGI	970-000004-00
ZTRON	MGI	970-000119-00
UPS	/	It is recommended to have Rated Power ≥5000VA.

For more ordering information, please contact your local sales representative.

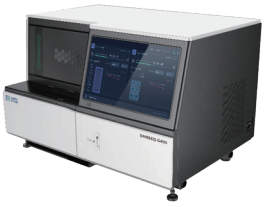
*Unless otherwise informed, All sequencers and sequencing reagents are not available in Germany, the US, Spain, the UK, HKSAR and Sweden.

All products

High, medium and low throughput, all included

DNBSEQ-G50

Compact and flexible sequencers for small whole genome and targeted sequencing offered as part of total solutions.



DNBSEQ-G400

Stable and flexible sequencer, for medium to large genome sequencing projects.

DNBSEQ-T7

Fast and flexible ultra-high-throughput sequencer, for large genome sequencing projects and population studies.

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