MGI
华大智造

GENETIC SEQUENCER

DNBSEQ-T7

Turbocharge your sequencing
high-speed, high flexibility and ultra-high throughput

High-speed

24 HOURS for
PE150 sequencing

High-flexibility

4 FLOWCELLS, PE150 and
PE100 at the same time

Ultra-high Throughput

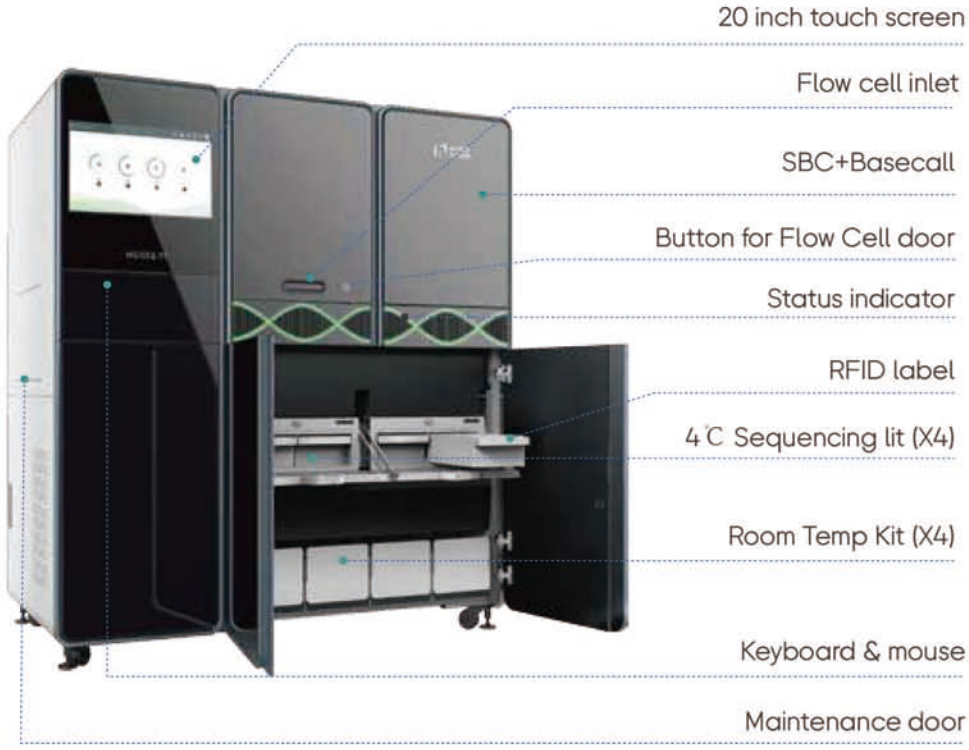
up to 6 Tb/DAY,
High quality data 24/7

INTRODUCTION

DNBSEQ-T7

DNBSEQ-T7 can generate 1-6Tb 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 pre-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 * 750 mm * 750 mm

Net Weight

81 kg

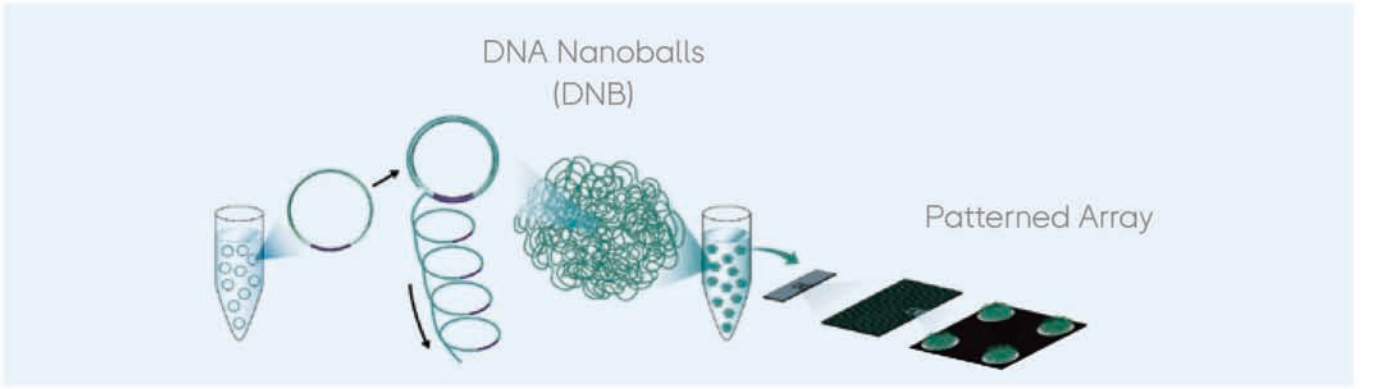
DNBSEQ-T7 Specifications

Model	DNBSEQ-T7	
No. of Flow Cell / run	4	
No. of lanes / Flow Cel	1	
Max reads / Flow Cell*	5000M	
Read lengths	PE100	PE150
Data Output	1~4T	1.5~6T
Data QualityQ30**	>85%	>80%
Run Time***	~20h	~24h

* 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 base calling.



MGI DNBSEQTM Technology highlights

INCREASED ACCURACY

No PCR amplification required. Our unique Rolling Circle Replication (RCR) technology employed in DNBSEQ™ library construction eliminate errors associated with PCR. Only the original template DNA is used to generate copies and therefore amplification errors do not accumulate, resulting in greater accuracy for detection of significant mutations such as indels and SNPs.

DECREASED DUPLICATES

Optimized Patterned Array ensures that only a single DNB is attached at each spot, which results in greater saturation of DNB on the Flow Cell with unprecedented uniformity. This enables an industry-leading detection capability and an average duplicate rate below 3%.

REDUCED INDEX HOPPING

MGI platform's unique library prep and RCR amplification results in much lower index hopping rates compared with other platforms, at a rate of just of 0.0001%~0.0004%.

Whole Genome Sequencing (WGS) Data Performance

- **Sample**
  Human Cell Line
- **Kit**
  MGIEasy PCR-free DNA Library Prep Set
- **Sequencing**
  High-throughput Sequencing Set(PE100)
- **Data analysis**
  MegaBOLT

Sample	NA12878	NA24385	NA24631	NA24694
Mapping rate (%)	98.33	98.46	98.39	98.44
Mismatch rate (%)	0.95	0.87	0.92	0.9
Average sequencing depth (X)	42.35	42.4	42.45	42.05
Coverage (%)	99.33	99.95	99.93	99.93
Coverage at least 4X (%)	99.13	99.88	99.86	99.86
Coverage at least 10X (%)	98.94	99.63	99.53	99.47
SNP_Precision	0.9994	0.9992	0.9989	0.9991
SNP_Sensitivity	0.9911	0.9904	0.9917	0.9923
INDEL_Precision	0.9937	0.9951	0.9949	0.9947
INDEL_Sensitivity	0.986	0.9856	0.9856	0.9857

Sample Throughput Guidance for Key Applications*

No. of Flow Cell /run	1	2	3	4
Human Genomes per Run	10～15	20～30	30～45	40～60
Exomes per Run	64～100	128～200	192～300	256～400
Transcriptomes per Run	～100	～200	～300	～400

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

WGS total solution

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 and Library preparation system, DNB loading system, Sequencing and Data Analysis System（MegaBOLT）, making WGS based on DNBSEQ-T7 easy and accessible. Zebra LIMS (Laboratory Information Management System) enables real-time sample tracking throughout the workflow, offer an end-to-end solution from sample to sequencing report.

ZLIMS

	Apparat us	MGISP-960	MGISP-100	MGIDL-T7	DNBSEQ-T7	MegaBOLT	ZLIMS	Server	UPS
Setup Case 1	No.	1	1	1	1	2	1	Upon user's choice	
Setup Case 2	No.	2	1	3	3	6	1		
Summary	**Setup Case 1** Can process 60 samples of human 30x WGS per run, with an annual processing capacity of up to 21600 samples; **Setup Case 2** Can process 180 samples of human 30x WGS per run ,with an annual processing capacity of up to 64800 samples.								

MGISP series

MGIDL-T7

SAMPLE PRETREATMENT & PREPARATION

Provides various sample preparation protocols, supports multiple library preparation strategies, and suitable for prefabricated library preparation kits

DNBSEQ-T7

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

Manual operation: (*user login and choose sequencing mode) load flowcell- place reagent kits- click sequence

Automatic operation : automatic sequencing--automatic wash --automatic dispose of flowcells

MANUAL OPERATION

User Login and Choose Sequencing Mode

AUTOMATIC WORKFLOW

1 LOAD FLOWCELL → 2 PLACE REAGENT KITS → 3 CLICK SEQUENCE → 4 AUTOMATIC SEQUENCING → 5 AUTOMATIC WASH → 6 AUTOMATIC DISPOSE OF FLOWCELLS

DNBSEQ-T7

Storage server

ANALYSIS REPORT

MegaBOLT bioinformatics analysis accelerator; Cloud: BGI Online

MegaBOLT

WFQ and Bioinformatics Analysis Server

DNBSEQ-T7 configurations

	Model	Intended Market
Model*	DNBSEQ-T7	IVD
	DNBSEQ-T7RS	RUO
Dimensions	903mm*1656mm*1815mm	
Net Weight	765Kg	
Power	Type	200~240V, 50/60Hz, 30A
	Rated Power	3000VA
Operating Environment Requirements**	Temperature	19~25℃, < 2°C change per hour
	Relative Humidity	30%RH ~ 80%RH, non-condensing
	Atmospheric Pressure	80kPa~106kPa
	Waterproof Rating	IPX0
	Altitude	Below 2000 meters
Floor bearing capacity***	≥650 Kg/m^2	
Control Computer Configurations****	CPU	Intel CORE I7-7700 4Core*2 3.6GHz
	Internal Storage	16 GB RAM
	HDD	1TB
	SSD	128G
	Operating System	Windows 10
Bandwidth for Network Connection	300 MB/s	For local storage network uploads
	4000 MB/s	For Fastq computing uploads
	500 MB/s	For Data analysis uploads

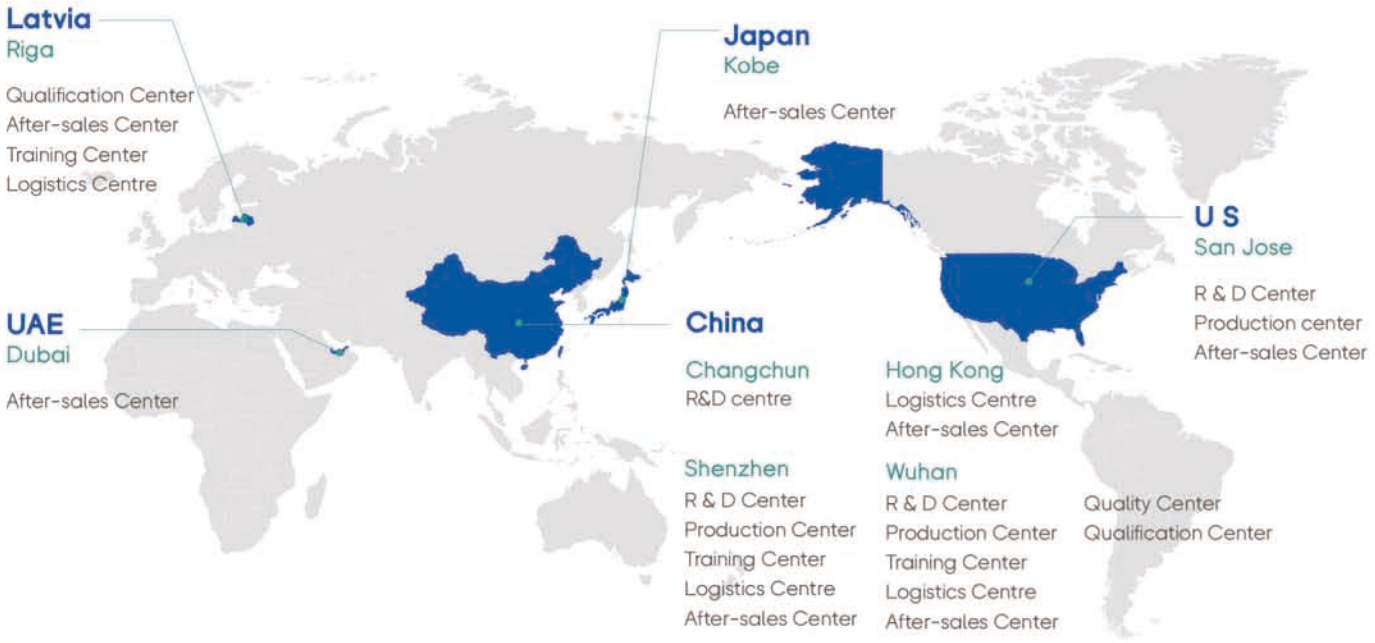
* Only for model classification

** For indoor use only, the Flow Cell can be stored and transported at room temperature. No liquid medium id 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) (9:00AM-12:00PM,13:00PM-18:00PM, 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 (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.

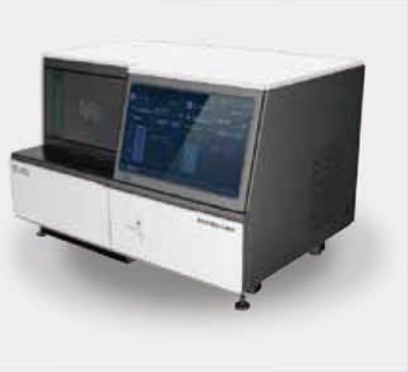
	Ordering Information		
Product	Lab Setup Choice	Supplier	Part. No.
MGIDL-T7RS	Essential	MGI	900-000134-00
DNBSEQ-T7RS	Essential	MGI	900-000128-00
MGISP-100RS	Optional	MGI	900-000051-00
MGISP-960RS	Optional	MGI	900-000152-00
MegaBOLT	Optional	MGI	510-000306-00
ZLIMS	Optional	MGI	970-000004-00
Server	Optional	/	It is recommended to have capacity≥1Pb, which stores at least 2 months total data generation
UPS	Optional	/	It is recommended to have Rated Power≥5000VA

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

DNBSEQ-G50

- integrated solution for small scale genome sequencing

DNBSEQ-G400



- A core platform for large and medium scale genome sequencing, flexible and stable.

DNBSEQ-T7

- A ultra-high throughput sequencer in the world and the best choice for large scale genome sequencing

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https://twitter.com/MGI_BGI

website