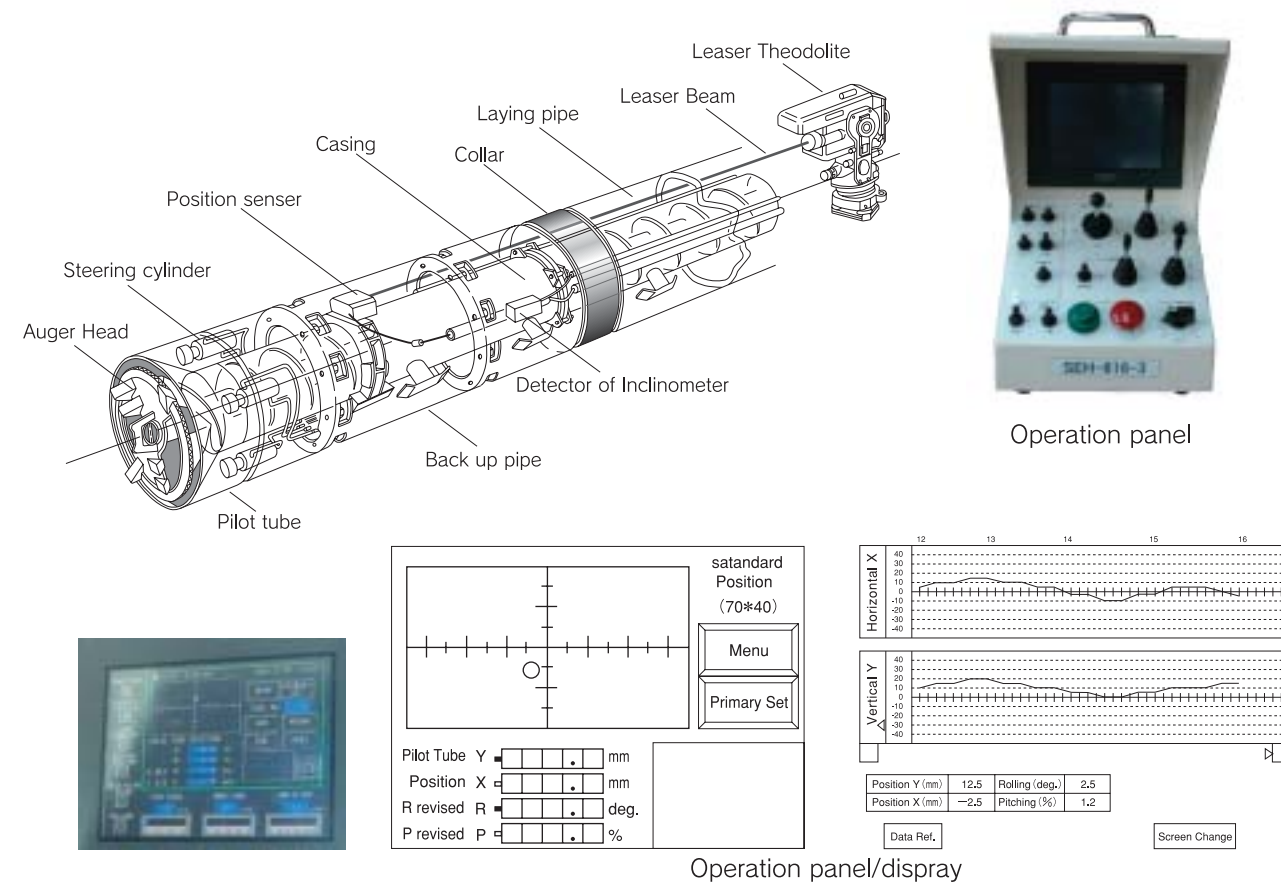


Position sensor measurement system



Auger Head

Name of Head	Applicable Soil	Type
Water-bearing layer type Head with Pinch Valve	Water-bearing Sand Layer	
Medium duty Auger Head	General soil Condition ~ Medium soil Condition	
Tungsten Carbide Tipped Bit Cutter with Bearing Adapter	Light-duty to Heavy duty area	
Roller Cutter with Bearing Adapter	Gravel, Rocky area	

Specification, Application subject to change due to improvement.

SANWA KIZAI BORING MACHINE FAMILY



EARTH AUGER MACHINE K-SERIES



SUPER HEAVY DUTY ROCKY SOIL BORING MACHINE RODAM RS-200H



SOIL IMPROVEMENT BORING MACHINE EARTH KIDS TSR-15

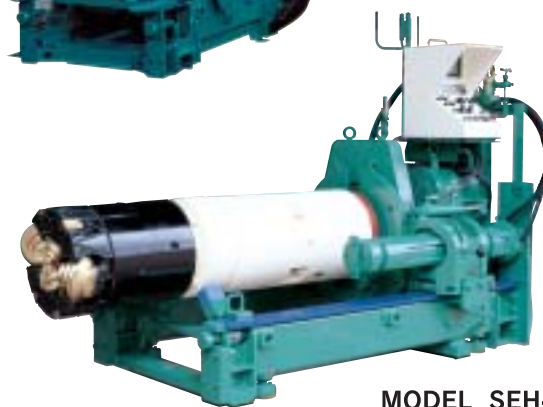
SANWA KIZAI PIPE JACKING EQUIPMENT FAMILY



MODEL SH-253



MODEL SH-456



MODEL SEH-508



MODEL SEH-616

*The right is reserved to change the specification without notice due to continuous improvement.

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Distributor

SANWA KIZAI MICROTUNNELLING MACHINE



SANWA KIZAI PIPE JACKING EQUIPMENT SERIES

MODEL

SH-456
SEH-508
SEH-616
SEH-823



SEH-508

SANWA KIZAI CO.,LTD

ALWAYS ONE STEP AHEAD

PIPE JACKING OR MICROTUNNELLING to lay the sewer pipe underground without digging has been proceeding not only in urban area but in medium size area worldwide. Now, it's essential to increase sewerage line occupancy rate as a modern city or as a sanitary city.

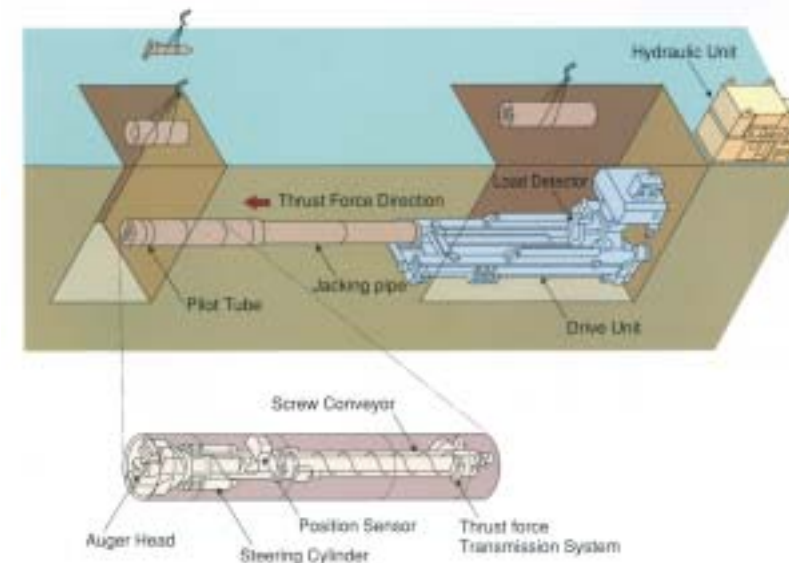
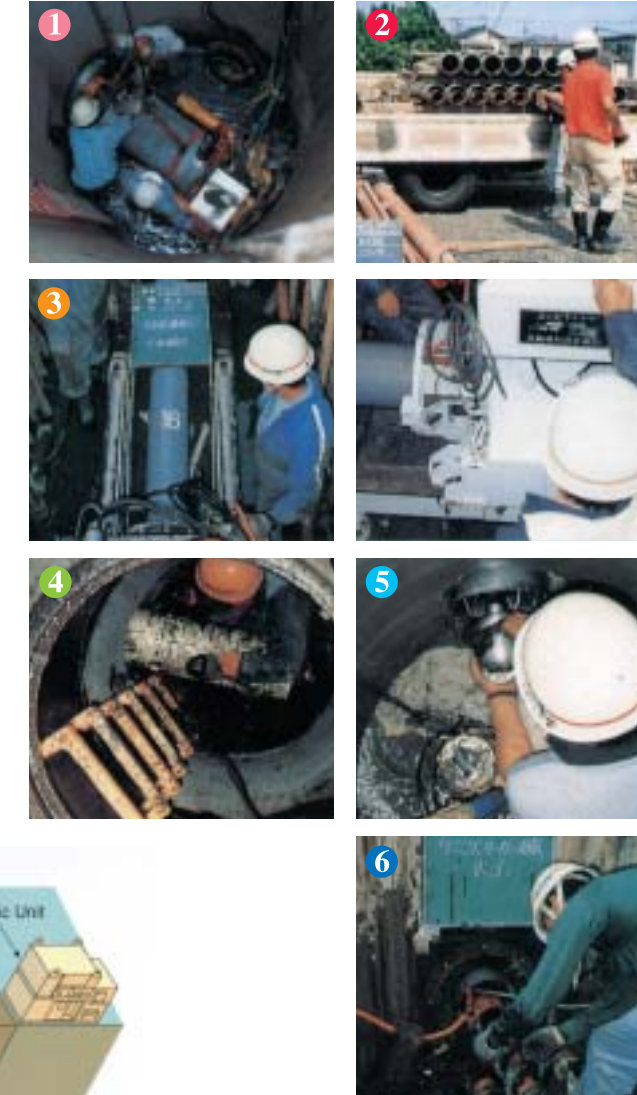
SANWA KIZAI PIPE JACKING EQUIPMENT OR MICROTUNNELLING MACHINES have been contributing to lay the sewer pipes underground by their unique design to minimize machine size and by reliable target inspection system to react by laser spot discharged equipped inside of the Pilot Tube.

Features;

- In order to minimize public inconvenience along the roads; Main unit design is compact to place in minimum size launching shaft
- In order to increase one machine's efficiency; Various size jacking pipes in scope can be laid by one machine with the various size Pilot Tubes.
- In order to increase job performance; Mobilization to start microtunnelling and disassembling to shift to next microtunnelling span is easier and faster than conventional jacking systems.
- If you face difficulty to jack in small existing manhole; Unique design of the Pilot Tube will solve your problem.
- If you have to lay rather soft pipes such as uPVC or ABS pipes; Our system can be changed to unique thrusting system to protect such pipes from being damaged, of which original idea won No-Dig award in 1987.
- If soil condition is water bearing sandy layer; You can select the Pilot Tube equipping Pinch Valve inside and Auger Head to apply such a layer as an option and unique design of the Pilot Tube allows the Target to react by laser spot when first section of the Pilot Tube plunges into soil around the launching shaft.
- If soil condition is hard and rocky; You can select the Bearing Support system with Roller Cutter or Bit Type Auger Head as an option.
- In order to keep microtunnelling accuracy during laying pipes; Sanwa unique Position Sensor solves problem as a target equipped inside of the Pilot Tube, which reacts by laser spot to inform and to record position(x, y), rolling and pitching value digitally to the screen of the Operation Panel.
- When you face over-deviation during microtunnelling; Pilot Tube can be extracted by retracting force of the thrust cylinders.

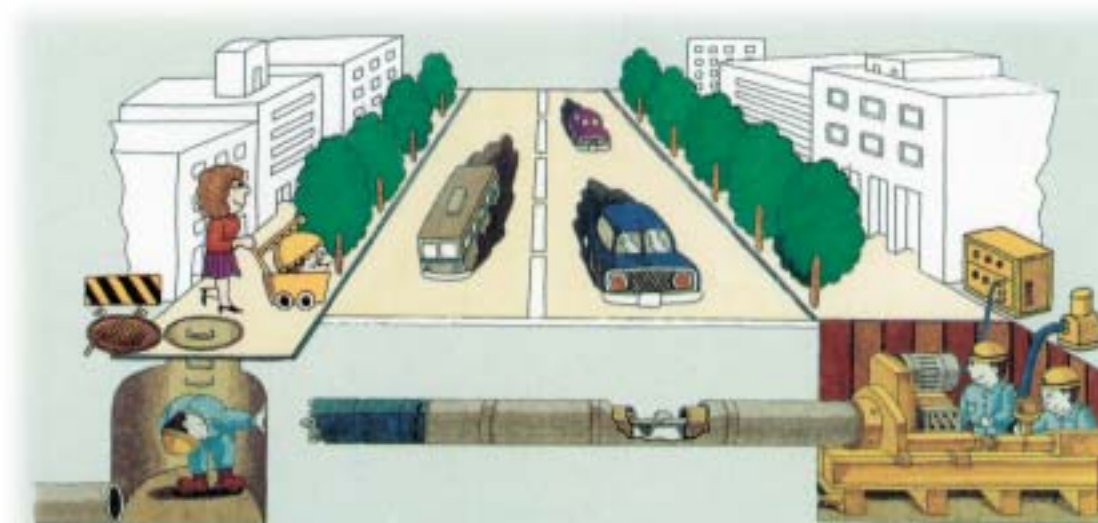
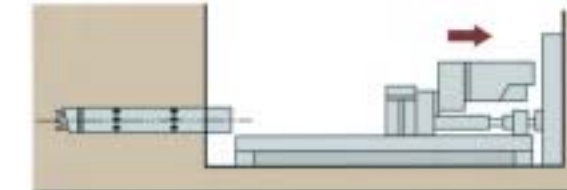
Procedure of microtunnelling

- Place the guide frame in the launching shaft, and set the main unit & the pilot tube.
- Insert the liner casing and auger flight into the laying pipe for preparation before microtunnelling.
- Thrust the laying pipe one by one while detecting and steering the thrust direction.
- Repeat Item 2, 3 until the pilot tube arrives at the arriving shaft.
- After the pilot tube arrives at the arriving shaft, collect the auger head and pilot tube from arriving shaft.
- Collect the cables, hoses, the liner casings and auger flights from the launching shaft.

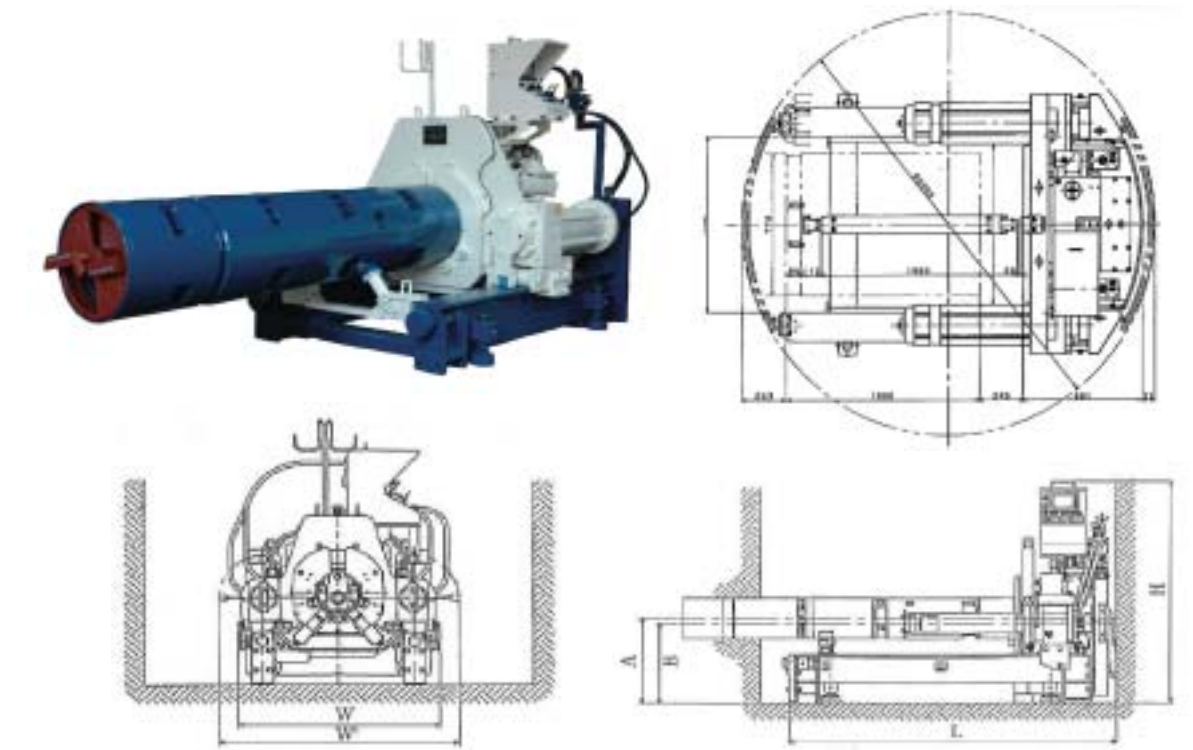


☆Emergency extraction

In case pilot tube is extremely out of planned jacking course, caused by such as very soft strata or some obstacles. SANWA machine can extract laying pipes and re-start jacking with suitable re-reinforcement method.



Machine



General Specification

Discription/Model	SH-456	SEH-508	SEH-616-2	SEH-823
Launching Shaft Size Pipe Length 1M	φ 2 M	φ 2 M	φ 2.5M	φ 2.5M
Applied Jacking Pipe Internal Diameter Outer Diameter	Minimum φ 200 Maximum φ 580	Minimum φ 200 Maximum φ 600	Minimum φ 250 Maximum φ 774	Minimum φ 250 Maximum φ 874
Applied Jacking Pipe Kinds	PVC Pipe, ABS Pipe, Clay Pipe, RCP Pipe, Steel Pipe			
Auxiliary method Water Injection Lubricant Injection Pinching Valve adoption	Water injection during jacking is applicable through swivel system. Lubricant injection is applicable from pilot tube. Pinching valve system applicable with extra attachment.			
Deviation Inspection	by Position sensor system or by visual inspection			
Power Source Diesel Electric Generator 50/60hz, 200/200V or 400/440V	75 KVA or more	75 KVA or more	90 KVA or more	90 KVA or more

Mechanical Specification

Discription/Model	SH-456	SEH-508	SEH-616-2	SEH-823
Main Unit Driven Pipe Length 1M Dimension(L×W×H) approx.(mm) Weight approx.(kg)	Hydraulically 1,800×1,015×1,320 1,100	Hydraulically 1,830×1,060×1,585 1,400	Hydraulically 2,030×1,470×1,590 3,000	Hydraulically 2,060×1,655×1,725 5,000
Auger Rotation Torque (Max) Rotation Speed	7.4kNm 5 - 30 min ⁻¹	10kNm 5 - 30 min ⁻¹	20kNm 5 - 24 min ⁻¹	30kNm 5 - 22 min ⁻¹
Thrusting Jack Thrust Force/Retract Force Stroke	588 / 235 kN 675 mm	800 / 300 kN 675 mm	1,600 / 580 kN 675 mm	2,300 / 700 kN 675 mm
Thrust Speed (Theoretical) Low Speed Thrust/Retract High Speed Thrust/Retract	195 / 500 mm/min 595 / 1500 mm/min	305 / 850 mm/min 580 / 1600 mm/min	200 / 550 mm/min 625 / 1730 mm/min	150 / 360 mm/min 610 / 1480 mm/min
Hydraulic Unit & Electric Control Panel Dimension(L×W×H) approx.(mm) Weight approx. (kg)	1,420×1,000×1,200 1,300	1,420×1,100×1,400 1,500	1,840×1,300×1,500 2,400	1,840×1,300×1,500 2,400

Specification, Application subject to change due to improvement.



Sister Machine ART-series
Art column driver machine for Launching and arriving shaft



MODEL SEH-508