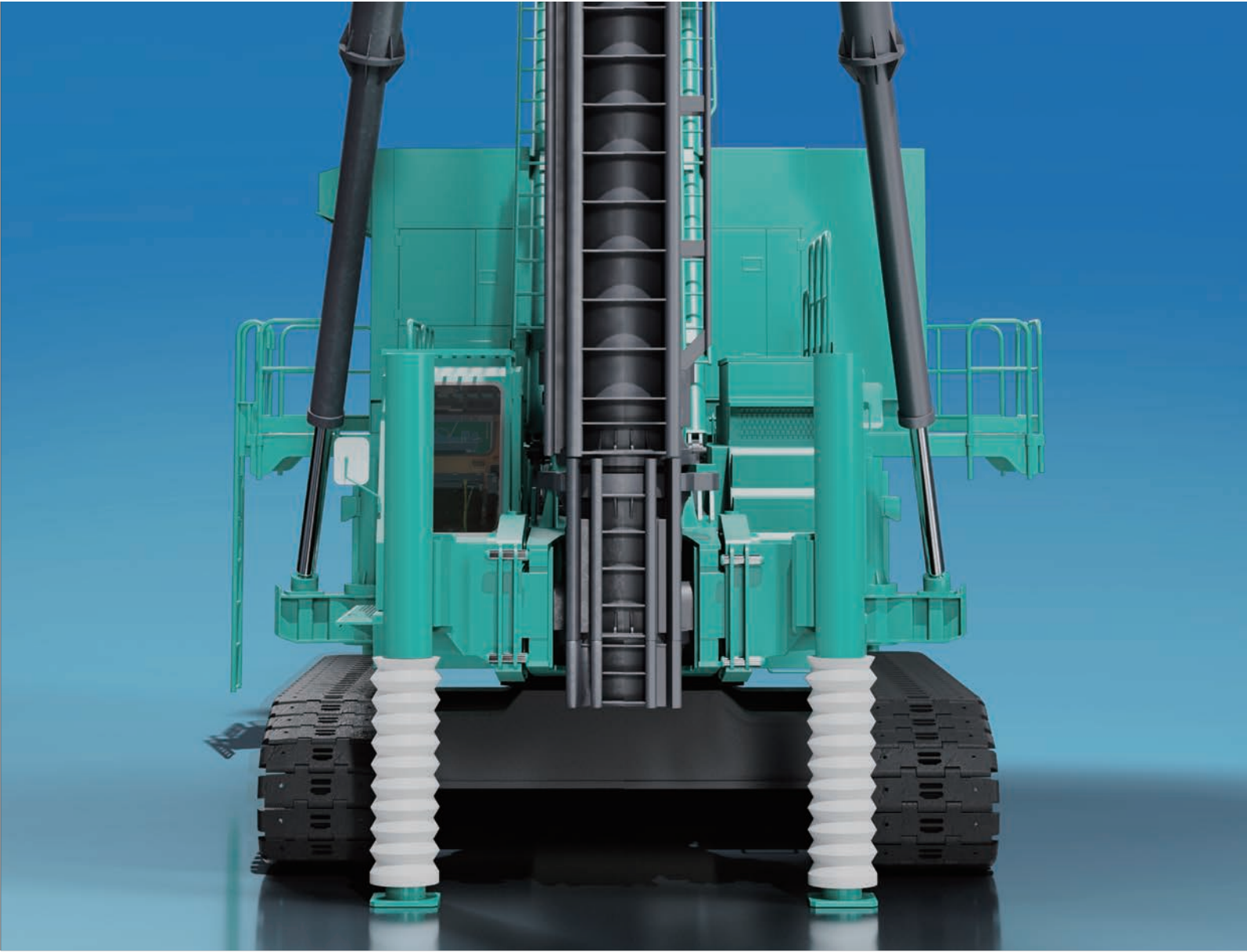


Precast Pile / Soil Mixing / Obstruction Drilling

DH658-135M-8T
DH688-145M-8T

Large Pile Driver



NIPPON SHARYO

Standard equipment	Main unit related			Safety devices	
	Drums (main drum, aux. drum, 3rd, hoist)			Gate lock lever	
	Fine speed control			Engine emergency stop switch (inside operator's cab and rear left of main unit)	
	Travel motor external piping			Engine speed changeover switch for accelerator malfunction	
	Travel 2nd-speed			Automatic brake mode - key switch	
	OK display			Operation lever lock	
	10-valve control valve & 8-valve front piping			→Main drum/aux. drum/3rd/4th (optional)/leader hoist/travel	
	LED headlights (2 locations)			Swing warning lamp & buzzer	
	LED interior light			Swing travel voice alarm	
	Air conditioner (with heater function)			Swing brake & warning lamp (inside operator's cab)	
	USB charging port			Swing lock & warning lamp (inside operator's cab)	
	Cigarette lighter socket (24 V DC)			Brake pedal disengagement prevention alarm (in operator's seat)	
	AM/FM radio with clock			Each drum mode select & check lamp	
	Fan			→Automatic brake/free fall	
	Spirit level			Each drum pawl lock	
	Rear-view mirrors (1 each, left and right)			Drum lock indicator lamp (in operator's seat)	
	Floor mat			Drum lock external indicator light	
	House lifting ladder (1 each, left and right)			Automatic over-winding stop (when using main drum 600 guide)	
	Non-slip sheet (upper house surface)			Load meter with inclinometer function [°]	
	Side frame access step			Roof guard (heavy-duty type)	
Optional equipment	Operator's cab storage shelf			Main drum monitoring mirror	
	Tool storage box				
	Counterweight (18.5 t)			Front attachment	
	Outrigger cylinder			21 m & 21 m stay	
	3rd drum gantry sheave			Front jack (with bellows, with lifting brackets)	
	Control panel mount (upper left inside operator's cab)			Leader single lifting bracket & stay single lifting bracket	
	Included tools				
	Window washer			Transport and disassembly equipment	
	Undercover			Transport parts	
	Gantry lifting ladder				

[*]Indicates mutually exclusive options

Optional equipment	Main unit related			Front attachment	
	4th drum			Cabtyre cable hanging	
	3rd & 4th drum half-clutch			Top sheave for various construction methods	
	Both/Single fine speed select switch			Front jack open/close device	
	Ultra-fine speed control			Leader, middle 3 m (including stay and pendant rope)	
	Piling work management machine (Seko Master III) [*]			Leader, middle 6 m (including stay and pendant rope)	
	Foot heater			Leader optional lock (for multi-axis construction method)	
	Microphone & speaker			Press-fit brackets for various construction methods	
	Aux. drum and 3rd lever interchange			LG200T lifting work surface	
	Inner excavation method air piping			LG200T-L lifting work surface	
	Side steps (folding type)			Top sheave for separate auger	
	Generator mount			Simple back tensioner	
	Hydraulic unit mount			Weight balanced back tensioner	
	Auger control panel mount			Load meter for separate auger	
	Sun visor				
	NH hydraulic hammer hydraulic source outlet			Safety devices	
	Hydraulic auger hydraulic source outlet			Upper house handrail	
	Inner excavation method press-fit cylinder hydraulic source outlet			Leader fall protection device pole	
				Rear monitoring camera	
				Transport and disassembly equipment	
				Pin joint	
				Trans jack	

NISSHA construction equipment operation management system “Kadokari” installed

Operation information is collected in the cloud and can be viewed through a web browser

Kadokari-kun

Main management items

- Operation information
- Location information
- Maintenance information
- Piling work information (Seko Master III)
- Various error information, etc.

DH658・DH688 capacity table (for two-row entries, upper row is DH658, lower row is DH688)

Hammer				Auger					Leader	Pile		Straight pile driving stability				Total machine weight		Average ground pressure		Maximum ground pressure	
Type (Class)	Weight	Cap weight	Pile center distance	Drilling mechanism		Screw		Drilling center distance	Length	Length	Weight	Straight pile driving stability				Total machine weight		Average ground pressure		Maximum ground pressure	
				Type (Class)	Weight	Length	Weight					Pile		Pile		Pile		Pile			
	With (when working)	Without (when traveling)	With					Without	With	Without	With	Without									
	t	t	mm					t	m	t	t	m	m	t	Front-back	Left-right	Front-back	Left-right	t	kPa	kPa
NH-150B	33.5	4.5	1050	—	—	—	—	—	21	11	10	5.5° 5.9°	16.6° 17.0°	15.3° 16.0°	30.3° 30.9°	143.2 144.6	133.2 134.6	179.0 164.4	166.5 153.1	585.1 521.5	438.6 395.2
NH-115B	27.5	3.5	950	—	—	—	—	—	27	17	10	5.6° 5.9°	13.1° 13.4°	15.0° 15.6°	25.2° 25.7°	139.8 141.2	129.8 131.2	174.7 160.6	162.2 149.2	490.9 441.0	367.3 332.1
NH-100	22.5	3.5	800	—	—	—	—	—	33	23	10	5.4° 5.7°	10.8° 11.1°	13.7° 14.2°	20.6° 21.1°	138.1 139.5	128.1 129.5	172.6 158.6	160.1 147.3	434.6 392.0	321.8 290.8
MH80B	19.2	4.0	900	—	—	—	—	—	33	25	10	5.7° 5.9°	10.7° 11.0°	14.4° 14.8°	20.4° 20.9°	134.9 136.3	124.9 126.3	168.7 155.1	156.2 143.7	407.6 368.0	293.2 266.2
MH72B	18.4	3.0	900	—	—	—	—	—	36	28	10	5.5° 5.8°	10.1° 10.4°	13.8° 14.2°	19.1° 19.5°	134.3 135.7	124.3 125.7	167.9 154.4	155.4 143.0	396.4 358.0	282.9 257.1
—	—	—	—	NAD150	11.1	25.8	☆20.4	655	30	23	10	5.7° 6.0°	12.5° 12.8°	7.7°*** 8.0°***	12.9° 13.2°	143.7 145.1	133.7 135.1	179.6 165.0	167.1 153.7	482.5 434.2	368.6 333.4
—	—	—	—	NAT240	12.5	25.1	18.3	900	30	—	—	—	—	7.6°*** 7.9°***	13.4 13.7	—	134.1 135.5	—	167.6 154.1	—	383.8 346.8
NH-70	14.3	0.5	750	NAS120	7.6	28.8	6.6	655	33	27	10	5.3° 5.5°	9.5° 9.8°	9.8° 10.1°	13.3° 13.6°	142.8 144.2	132.8 134.2	178.6 164.1	166.1 152.7	434.3 391.9	322.5 292.5
NH-70	14.3	0.5	750	NAS200	9.9	23.3	10.3	655	27	21	10	5.7° 6.0°	10.9° 11.2°	9.8° 10.2°	14.7° 15.0°	145.5 146.9	135.5 136.9	181.9 167.1	169.4 155.7	472.2 425.5	359.8 325.6

- Handling cautions**

The handling cautions listed in this catalog are excerpts from the instruction manual for this series. Please be sure to read the instruction manual for details.
1. This table shows the capacity with standard counterweights installed on horizontal firm ground. The leader is vertical specification. Please contact Nippon Sharyo for working conditions other than those in this table or for special construction method work.

2. The weight marked with ☆ in the auger screw column includes casing.

3. Working conditions marked with *** in the pile-free (during travel) stability column should be traveled with the leader tilted backward to ensure travel stability.
[* * Tilt leader back by 2-3 degrees]

4. The allowable total weight during travel is maximum 136 t for DH658 and maximum 145 t for DH688.

5. The torque of mountable augers is maximum 245 kN-m (25 tf-m).

6. Please use auger and other lifting ropes with a safety factor of 6 or more. (Example: With ø20 mm rope (IWRC6×FI(29)C type) 12-line rigging, 588 kN (60 tf) is maximum.)

7. A pile lifting rope can lift piles up to 5 t with ø20 mm×1 line and up to 10 t with 2 lines. This must be observed. For other rope diameters or when using 3 or 4 lines, please contact Nippon Sharyo.

8. Leader self-standing when using front jacks is possible up to 27 m leader length for standard specification and simple back tensioner specification, and up to 24 m leader length for load balanced type back tensioner specification. For raising and lowering work with leaders longer than the above, crane hoist assistance is required. (For auxiliary lifting capacity, please refer to the instruction manual)

9. Allowable auger extraction load (load applied to leader) is maximum 637 kN (65 tf) for standard specification and simple back tensioner specification, and maximum 883 kN (90 tf) for load balanced type back tensioner specification. Auger extraction load includes the weight of the front attachment related to the auger, soil, and extraction resistance, etc. To protect the machine, always use the front jacks if the auger extraction load exceeds 510 kN (52 tf). Allowable auger extraction load may be limited below the above maximum values depending on leader length and drilling center distance. (For details refer to "Allowable Auger Extraction Load Nameplate" and the operation manual.)

MASTERPIECE

Powered by Next-Generation Engines
in the DH658 and DH688 Series

Environmentally Responsible
Machines for a New Era



Operator's cab

In operator's seat

OK display

The following vehicle information is displayed:

Fuel gauge / DEF(Diesel Exhaust Fluid) meter / Hydraulic oil temperature gauge / Control hydraulic pressure / Cooling water temperature gauge / Warning light / Warning message / Fault code / Engine speedometer / Hour meter / Time



Load meter with inclinometer function

Detects tilt angles of main unit and leader and warns of rollover danger with alarm. Also detects auger extraction load and warns of allowable extraction load with alarm. Automatically stops lowering when wire tension is released during throttle-down operation to prevent irregular winding with the “slack prevention function.”

Note: Automatic stop function is for main drum only



Piling work management machine “Seko Master III” can be installed

NEW

OPTIONAL

Equipped with a large 12.1-inch display with increased piling work information display items. Newly adopted blue-based color scheme creates a clear design renewal, improving visibility and operability. Piling work records are constantly backed up and can be restored in case of data loss.



*Machine images include some options.

Each-One* method lever system is adopted for pile drivers with many drums, reducing winch system operation levers.

Also, frequently used stay levers are placed in front of the operator's seat, and various cylinder operations for pile drivers are arranged on the side stand to ensure forward visibility from the operator seat. Furthermore, option-related switches are arranged on the center panel at the front of the operator's cab to ensure easy operability and less fatigue during a long-time operation, resulting in a spacious operator's cab.

**Each-One* is Nippon Sharyo's unique designation for the function that performs high/low speed control, hoisting, stopping (selectable automatic brake or free fall), and lowering with one operation lever for each drum.

Fine speed control

The fine speed switch on the left side stand changes rope hoisting/lowering and travel speed to fine speed control. Fine speed knob allows adjustment to any speed (approximately 10-100%) and supports various auger construction methods according to work content.

Travel 2nd-speed select switch

The switch on the left side stand switches to travel 2nd speed.

Gate lock lever

Prevents erroneous operations when boarding or leaving the operator's seat.

Engine emergency stop switch

In case of emergency, press the engine emergency stop switch to stop the engine. There are two switches, one in the operator's cab and one at the left rear of the main unit.



Rear left of main unit



In operator's cab

Gantry cylinder switch

Gantry cylinder hoist operation is performed with the switch on the left side stand.

USB charging port

The left side stand is equipped with a USB port* that can charge mobile phones, etc.

*Specification 2.1 A/5 V

Various hydraulic source outlets

OPTIONAL

NH-70 and press-fit machine hydraulic source outlets are from the standard pump, and NH-100 and inner excavation press-fit hydraulic sources can secure necessary pressure and oil volume by installing a dedicated pump.

LG200T/LG200T-L lifting work surface

OPTIONAL

Can be attached to the ø70x330 mm guide pipe side for attachment/detachment and inspection work of work equipment and setup work for various foundation construction methods (screw joint, pile guidance, etc.). (Compliant with Kishu No. 12)



▲LG200T lifting work surface

For the next generation

Next-generation engine

Equipped with a next-generation engine that clears “EU Stage V,” the world’s strictest exhaust gas regulation aimed at protecting the global environment for future generations

Note: Compliant with the Act on Regulations for Emissions from Non-road Vehicles 2014 (Small-lot special exception)



AdBlue®

AdBlue® is a registered trademark of the German Association of the Automotive Industry (VDA).

AdBlue® is high-grade urea water exclusively for urea SCR systems, used to reduce nitrogen oxides (NOx) contained in exhaust gas.



Compliant with 2014 exhaust emission standards (Small-lot special exception)

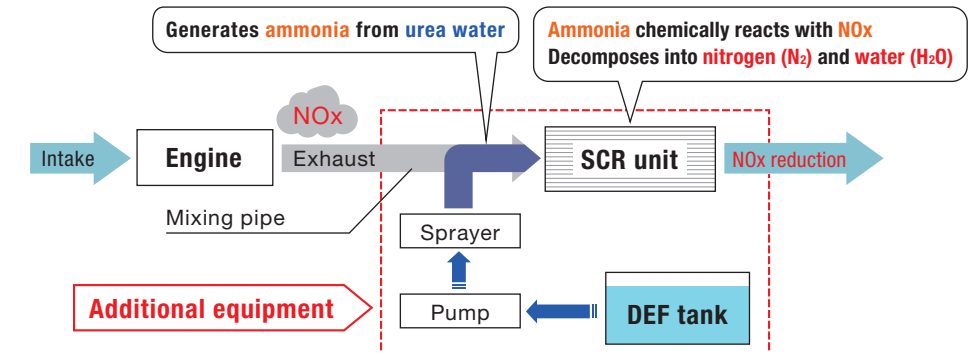


Certified as low-noise construction machinery

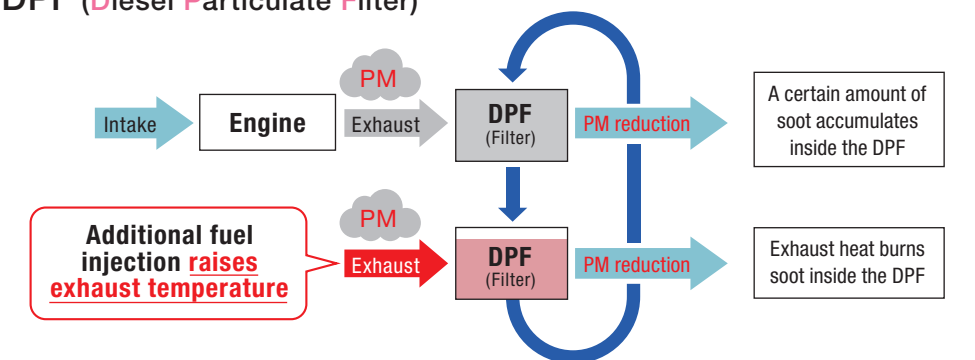
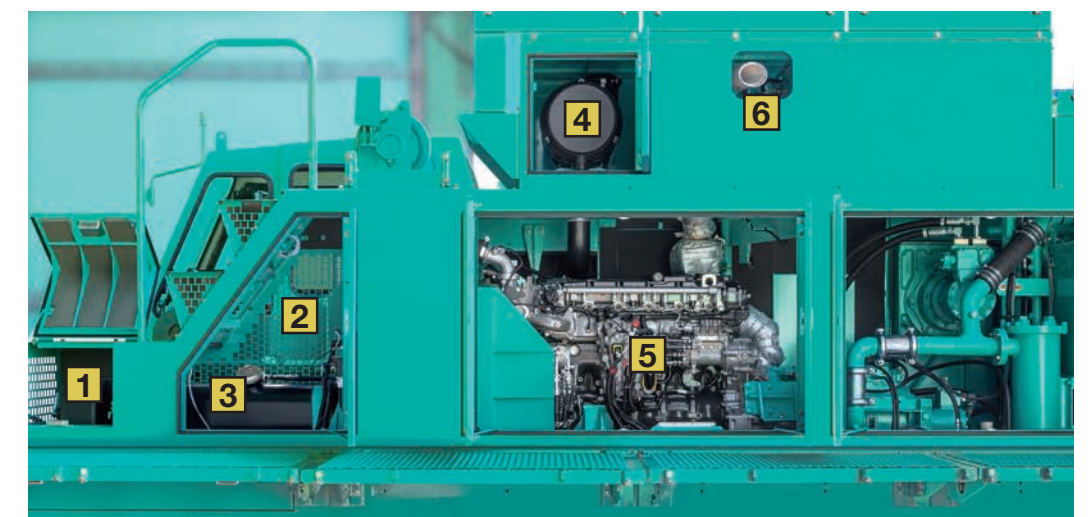
Environmentally friendly clean exhaust Urea SCR system & DPF system

Adopts “urea SCR system” that chemically reacts ammonia generated from urea water with harmful NOx contained in exhaust gas in the SCR unit and decomposes it into harmless nitrogen and water, and “DPF system” that collects and burns particulate matter (PM) in exhaust gas

Urea SCR (Selective Catalytic Reduction)



DPF (Diesel Particulate Filter)



- 1 DEF tank
- 2 Radiator
- 3 Fuel tank
- 4 Air cleaner
- 5 Engine (Please use manufacturer-specified engine oil and antifreeze)
- 6 Exhaust gas after-treatment device

Concept and characteristics

Machine Features (M95D-2)

Highly reliable M95D-2 leader

Nippon Sharyo leaders are manufactured with extensive experience and long-cultivated technology, providing ease of use and large working capacity. The M95D-2 leader is a high-performance type with rings provided on the inside. It has high reliability.

Front type	M95D-2
Maximum leader length	m36
Allowable auger torque	kN·m(tf·m)245(25)
Maximum extraction load	kN(tf)*637(65)
Leader rotation angle	degrees135

*Drilling center: 0.8 m, Leader length: 27 m
*Limitations exist based on leader length and drilling center

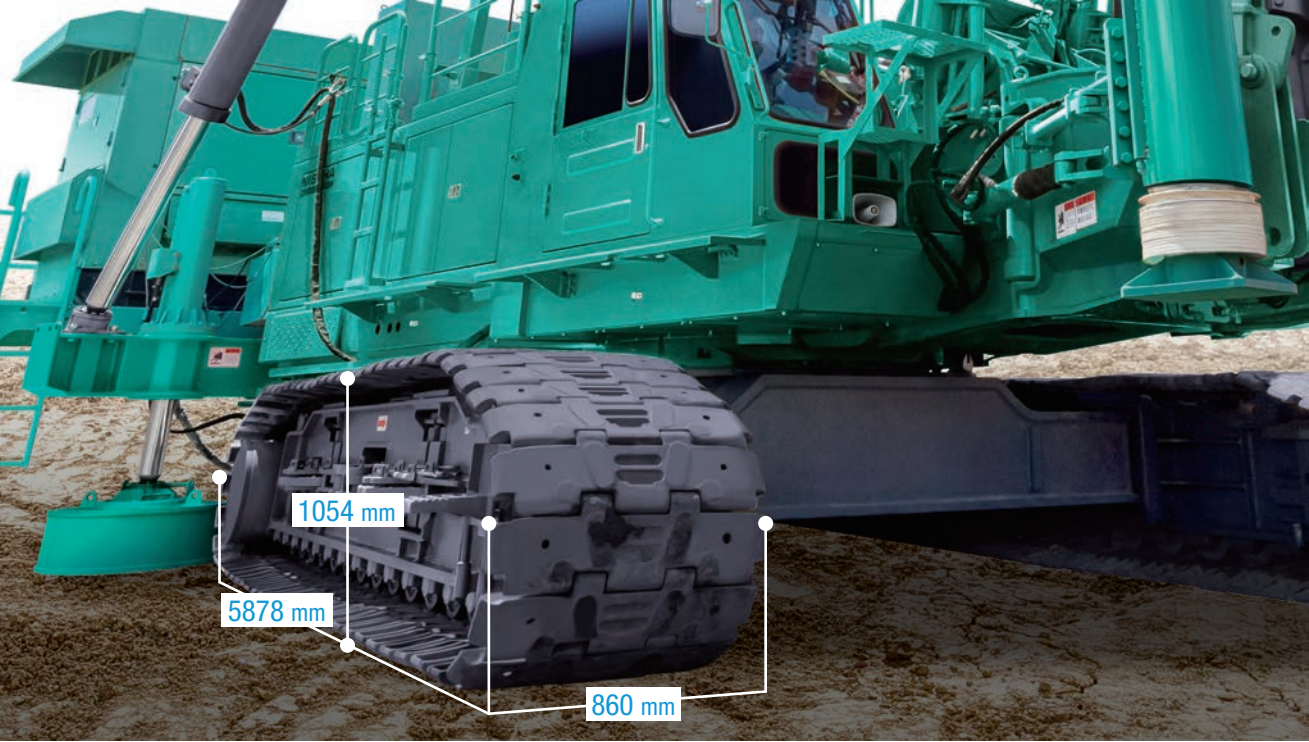


M95D-2 front configuration table

Leader length (m)	Front configuration
21 (Standard specification)	Pendant ø37.5 Leader Stay Diagram showing dimensions: 7.0, 1.3, 3.0, 3.0, 3.81, 3.0, 5.8, 1.1, 0.4, 5.0, 4.33, 1.15, 2.8 st. cylinder
24	Diagram showing dimensions: 7.0, 1.3, 3.0, 3.0, 3.0, 3.81, 3.0, 5.8, 1.1, 0.4, 5.0, 4.33, 2.89, 1.15, 2.8 st. cylinder
27	Diagram showing dimensions: 7.0, 1.3, 3.0, 3.0, 3.0, 3.0, 3.81, 3.0, 5.8, 1.1, 0.4, 5.0, 4.33, 2.89, 2.89, 1.15, 2.8 st. cylinder
30	Diagram showing dimensions: 7.0, 1.3, 3.0, 6.0, 3.0, 3.0, 3.81, 6.0, 5.8, 1.1, 0.4, 5.0, 4.33, 5.9, 2.89, 1.15, 2.8 st. cylinder
33	Diagram showing dimensions: 7.0, 1.3, 3.0, 6.0, 3.0, 3.0, 3.0, 3.81, 6.0, 5.8, 1.1, 0.4, 5.0, 4.33, 5.9, 2.89, 2.89, 1.15, 2.8 st. cylinder
36	Diagram showing dimensions: 7.0, 3.0, 1.3, 3.0, 6.0, 3.0, 3.0, 3.0, 3.81, 6.0, 5.8, 1.1, 0.4, 5.0, 4.33, 5.9, 2.89, 2.89, 1.15, 2.8 st. cylinder

Concept and characteristics

Machine Features (DH688)



Expanded and strengthened DH658 undercarriage with 860 mm shoes and dedicated side frame, upgraded to maximum travel weight of 145 t with further improved stability

		DH658-135M-8T	DH688-145M-8T
Total length of crawler	mm	5760	5878
Crawler height	mm	1027	1054
Tumbler center distance	mm	4900	5010
Overall width (extended/retracted)	mm	4600/3300	4720/3420
Shoe width	mm	800	860
Maximum travel weight	t	136	145
Minimum ground clearance	mm	348	371
Cab height	mm	3292	3315
Gantry height (working/stored)	mm	7345/3299	7368/3322

Concept and characteristics

Standard specification (DH658, DH688)

Aluminum undercover

The adoption of lightweight aluminum undercovers makes attachment and removal easy during maintenance.



Installation of high-precision filters

High-precision filters are provided to reduce hydraulic equipment troubles caused by extremely small foreign matter.



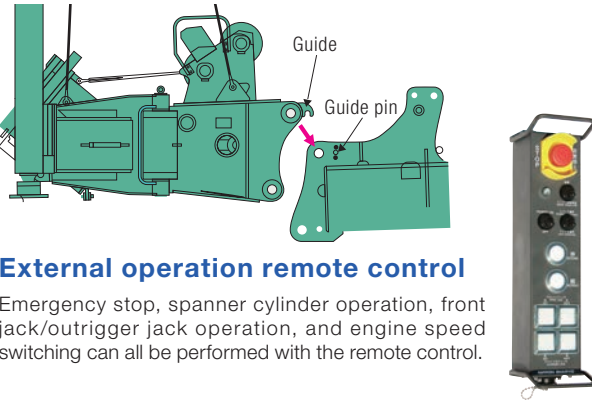
Travel motor external piping

Hydraulic piping extracted from the center of the track frame improves workability for side frame attachment and detachment.



Leader bracket

By placing the leader bracket guide on the main frame guide pin, positioning to the foot pin hole is easy, improving leader bracket assembly.

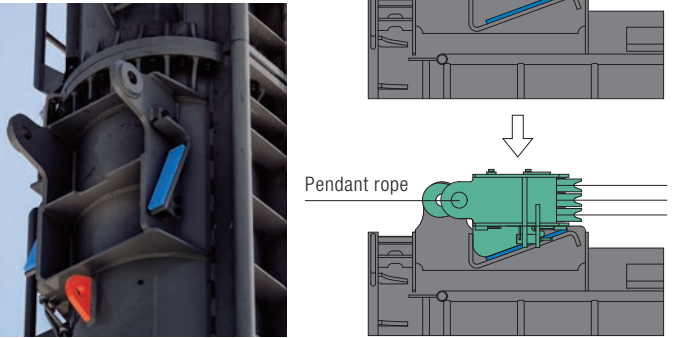


External operation remote control

Emergency stop, spanner cylinder operation, front jack/outrigger jack operation, and engine speed switching can all be performed with the remote control.

Middle sheave guide

Assembly of the middle sheave to the basic leader is improved by positioning guides.



Main unit specifications

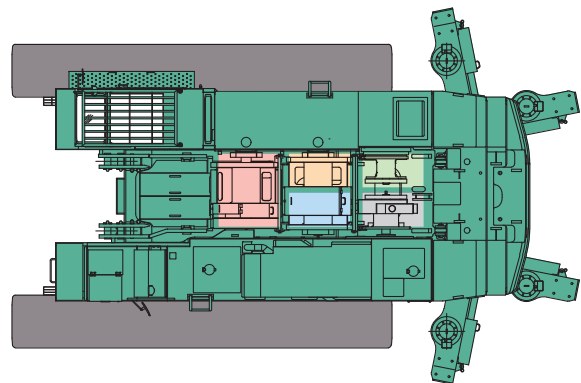
			DH658-135M-8T	DH688-145M-8T
Main unit related	Main drum, aux. drum, and 3rd rope hoisting speed *	(Low speed) m/min	36(3.1)	36(3.1)
		(High speed) m/min	73(6.2)	73(6.2)
	Main drum, aux. drum, 3rd rope lowering speed	(Low speed) m/min	36(3.1)	36(3.1)
		(High speed) m/min	73(6.2)	73(6.2)
	4th rope hoisting speed (optional) *	m/min	48(4.0)	48(4.0)
	4th rope lowering speed (optional)	m/min	48(4.0)	48(4.0)
	Leader rope hoisting speed *	m/min	50(4.2)	50(4.2)
	Leader rope lowering speed	m/min	50(4.2)	50(4.2)
	Swing speed	min ⁻¹	2.8	2.8
	Travel speed *	(Low speed) km/h	1.0(0.08)	1.0(0.08)
		(High speed) km/h	1.5(0.13)	1.5(0.13)
	Climbing ability (main unit only)	%	40	40
	Machine weight (dry, no counterweight)	t	48.1	49.5
	Counterweight	t	18.5	18.5
	Standard leader (maximum length)	m	36	36
	Maximum weight of all equipment (travel limit)	t	136	145
	Ground contact area	cm ²	78400	86172
	Ground pressure (at full equipment weight)	kPa(kgf/cm ²)	170(1.73)	165(1.68)
	Engine manufacturer		Daimler Truck AG	Daimler Truck AG
	Engine manufacturing type		OM936LA.E5-4	OM936LA.E5-4
Engine sales company		Rolls-Royce Solutions Japan	Rolls-Royce Solutions Japan	
Engine sales type		6R1000 C31	6R1000 C31	
Engine rated output	kW	205	205	
	min ⁻¹	2000	2000	
Fuel tank capacity	PS	279	279	
	ℓ	250	250	
DEF tank capacity	ℓ	40	40	

Values marked with * vary depending on the load.
The figures in parenthesis indicate the minimum value of fine speed control.

Drum capacity

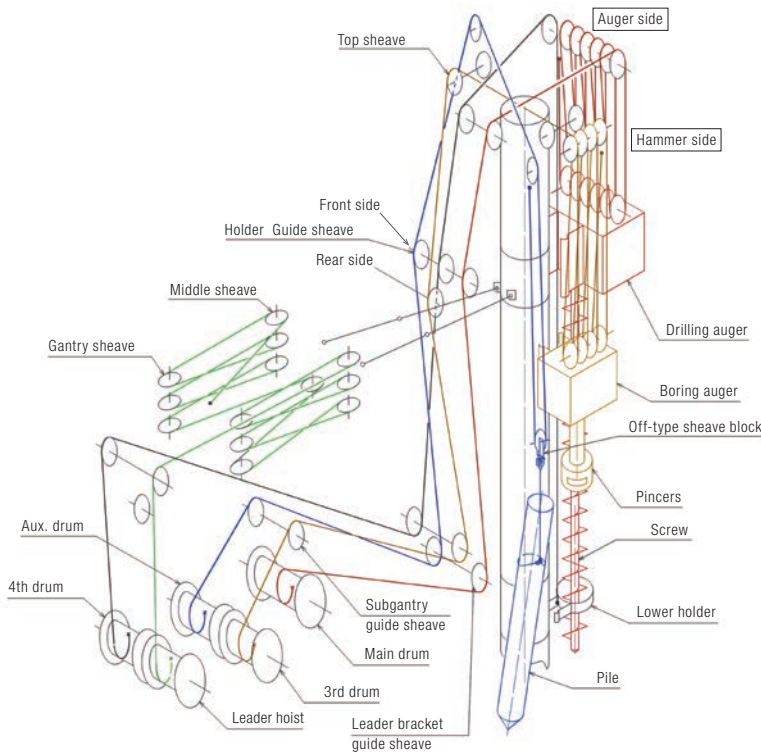
Drum capacity

Drum name	Rope diameter (mm)	Maximum rope length (m)	Rope specification
Main drum	ø20 ø18	569 677	IWRC6×Fi (29) Class C from bare normal Z
Aux. drum	ø20 ø18	145 169	IWRC6×Fi (29) Class C from bare normal Z
3rd drum	ø20 ø18	390 471	IWRC6×Fi (29) Class C from bare normal Z
4th drum	ø20 ø18	122 153	IWRC6×Fi (29) Class C from bare normal Z
Leader rising drum	ø16	210	XP IWRC6 × WS (31) Class C from bare normal Z



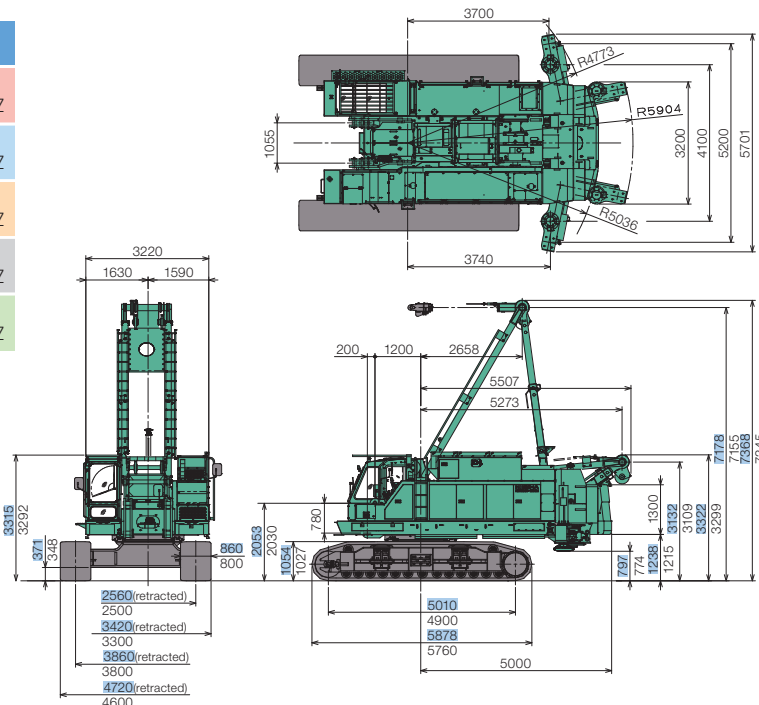
Wiring

Wiring



Dimensions

External dimensions (main unit)

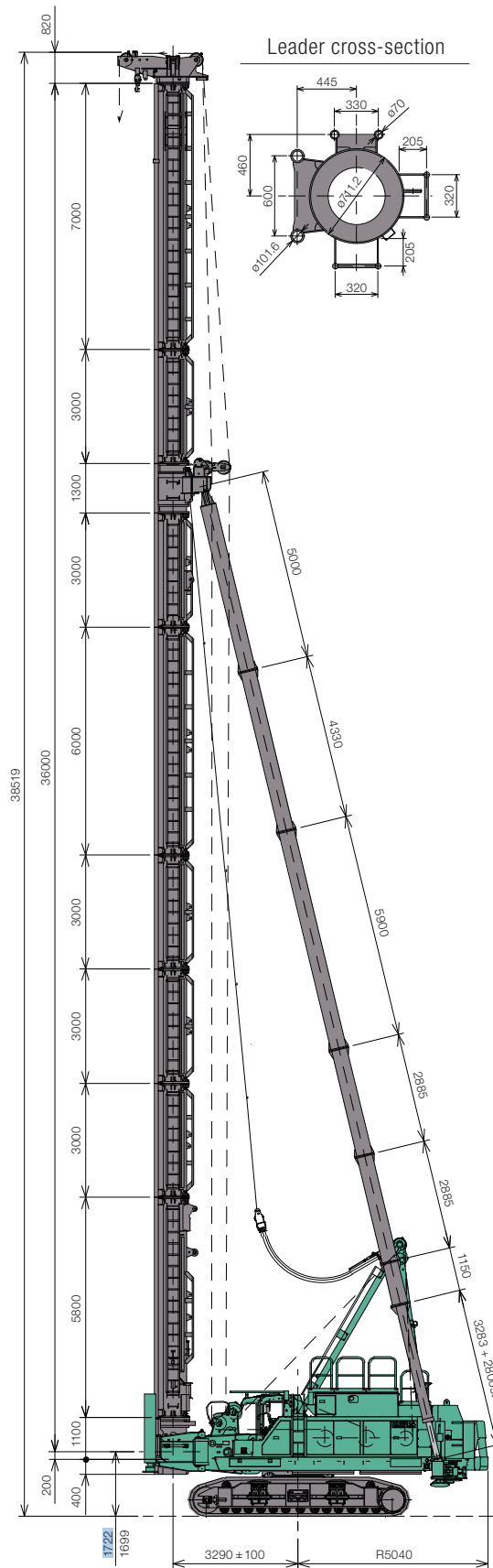
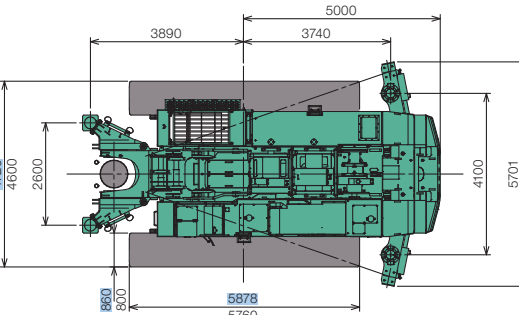


Note: Blue shaded areas show DH688 dimensions.

Dimensions

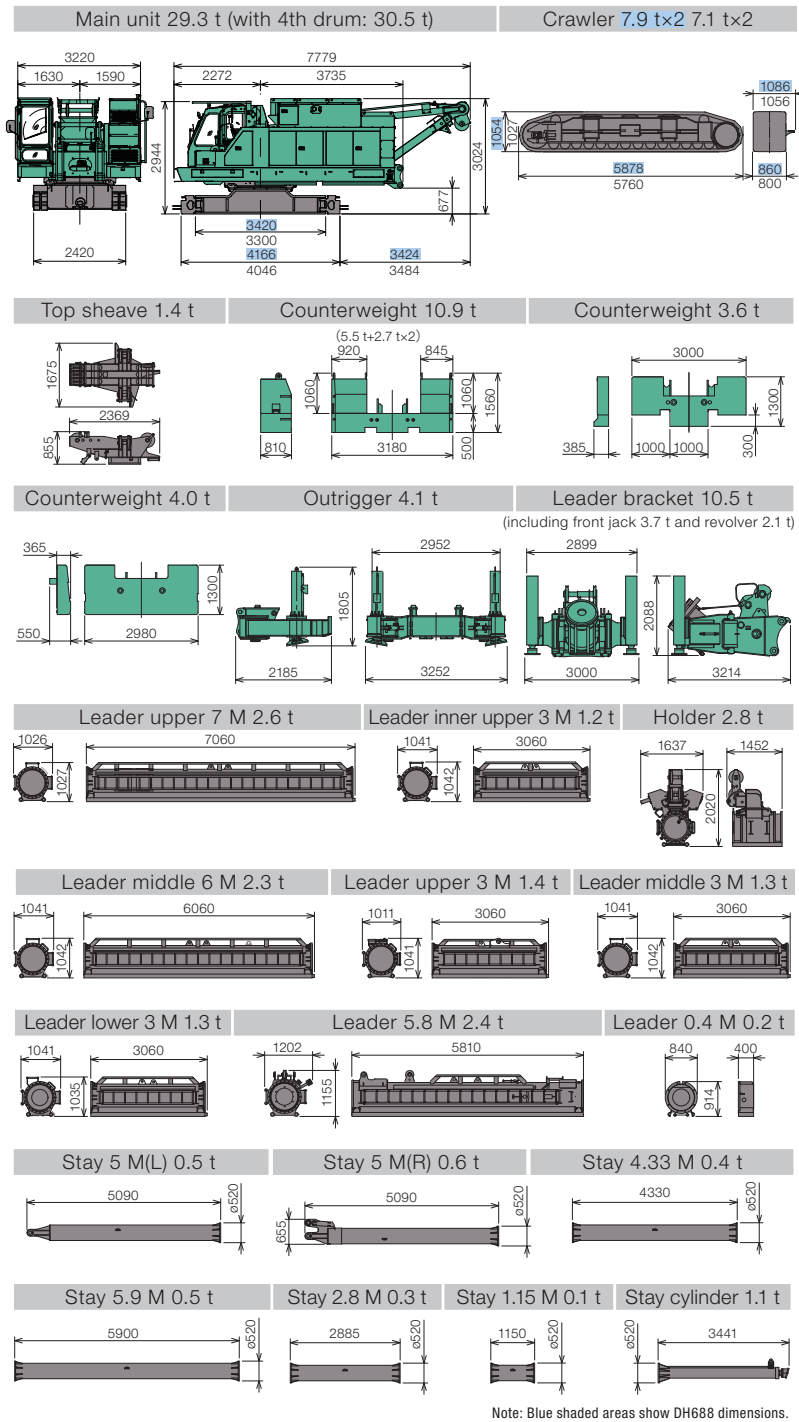
Main unit and front attachment

M95D-2 type overall view



Transport dimensions and weights

Transport condition diagram



Note: Blue shaded areas show DH688 dimensions.