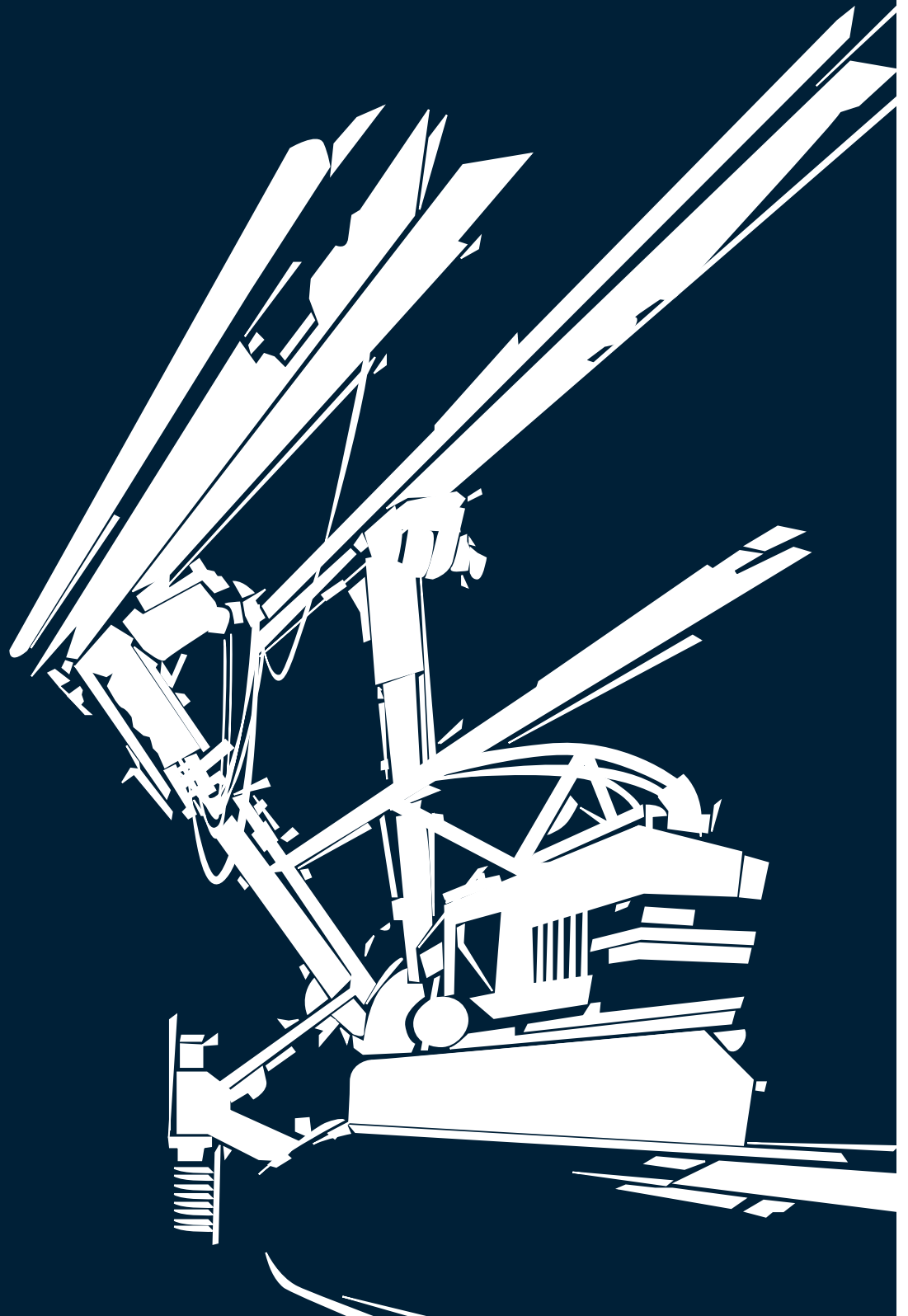


ST-20



ST-20

ROTARY EQUIPMENT FOR TUNNELLING

A new model

The main frame of the rig is of crawler type complete with 4 outriggers and sliding frame for positioning slew rings at different heights and levels to meet the requirements of the tunnel to be excavated. The mast is equipped with an hydraulic telescoping foot pad which can be placed against the excavating face. This allows the use of rope operated crowd system/pull back to be applied to drill string. Once the mast has been positioned as required, the consolidation treatment can be completed. Connected to the slew rings are the supports for the mast. This configuration allows drilling to be carried out through 180°.

The following drilling techniques can be applied using the ST-20:

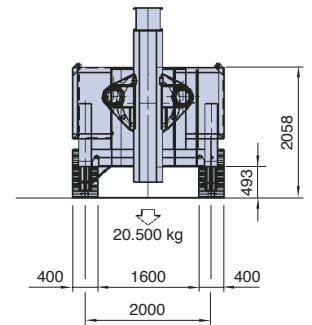
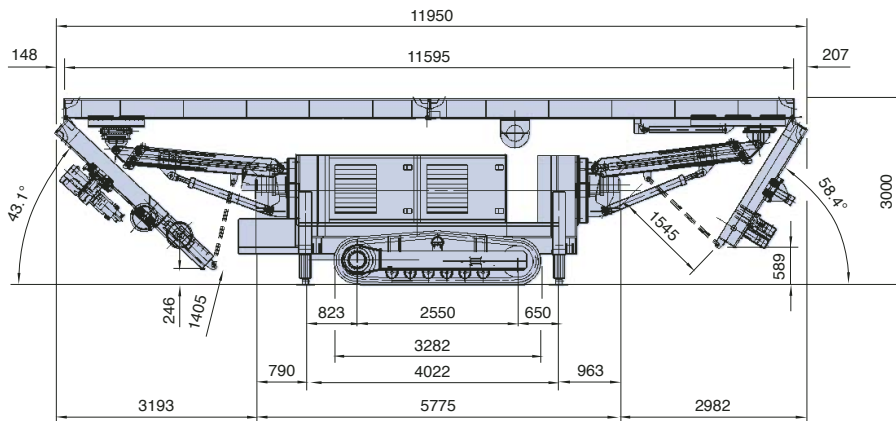
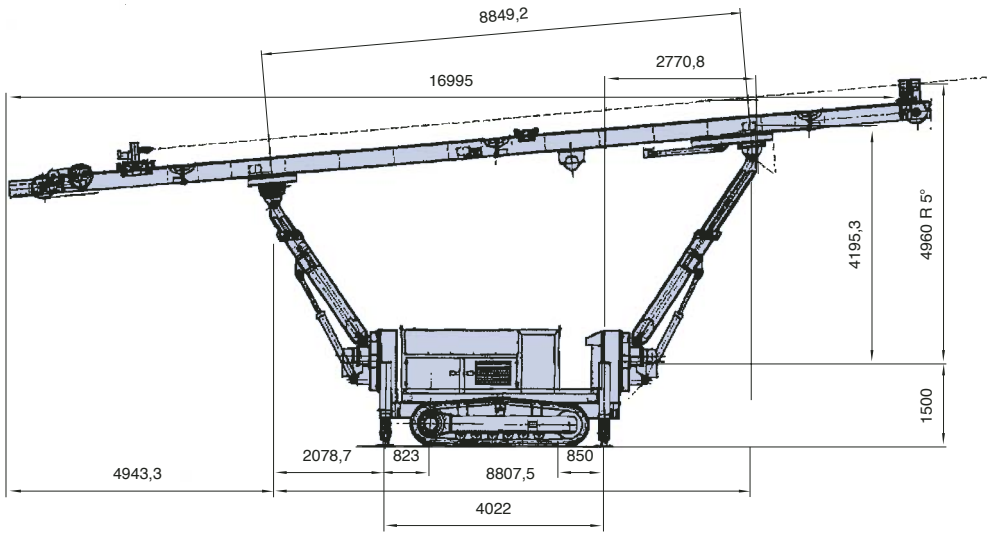
- Rotation (with or without casing)
- Rotopercussion by means of Top Hammer (with or without casing)
- Rotopercussion by means of Down the Hole Hammer (with Tubex system or without casing)

Crawler undercarriage			
Track shoe width	mm	400	
Wheel base	mm	2550	
Overall length	mm	3280	
Overall width (not extendable crawler)	mm	2490	
Retracted crawler width (extendable crawler)	mm	-	
Extended crawler width (extendable crawler)	mm	-	
Hydraulic stabilizers (retracted - extended)	mm	2000 - 3600	
Traction force	kN	158	
Travelling speed	km/h	1.63	
Average ground pressure	MPa	0.100	
Crawler undercarriage rotation degree	deg	-	
		Min	Max
Radius of consolidation treatment at 5°: min/max	mm	2.100 - 2.850	4.960
Radius of consolidation treatment at 0°: min/max	mm	1.512 - 2.010	4.696
Height from working level of slew ring rotation axis	mm	1.500 (fixed)	
Diesel engine			
Diesel Engine make and model		CUMMINS QSB5.9-30-T	
Diesel Engine installed power (ISO 3046 IFN III)		119 @ 2000 rpm	
Fuel tank capacity		220	
Electric motor			
Number of motor		1	
Diesel Engine installed power		113 (152) @ 2500 rpm	
Make and model		ABB - 4 POLI - 380-660V 50Hz	
Rated power		90 kW (125 CV)	
Hydraulic system c/w diesel engine			
Main pumps: variable displacement axial pumps	l/min	172	
Set pressure main pumps	MPa	28	
Auxiliary pumps: gear pumps	l/min	236 + 66	
Set pressure auxiliary pumps	MPa	25	
Hydraulic oil tank capacity	l	550	
		@ 50 Hz	@ 60 Hz
Main pumps: variable displacement axial pumps	l/min	111	134
Set pressure main pumps	MPa	28	28
Auxiliary pumps: gear pumps	l/min	152 + 42	184 + 51
Set pressure auxiliary pumps	MPa	25	25
Hydraulic oil tank capacity	l	550	550
Standard rotary head			
Gear box ratios		3	
Max. nominal torque (31.5 MPa)	daNm	1350 @ 48 rpm	
Maximum drilling speed	rpm	460	
Double rotary head			
Gear box ratios		1	
Max. nominal torque (31.5 MPa)	daNm	852 @ 76 rpm	
Hoist & feed system tunnel			
Rod length type (c/w one rotary head)	m	13	15
Feed type		Winch type	Winch type
Feed stroke	mm	14.200	16.000
Maximum hoist pull	kN	67	-
Maximum feed force	kN	67	-
Maximum speed (fast/low operation)	m/min	32 - 9	
Clamp & hydraulic joint breaker			
Nominal size	mm	60-225	-
Maximum clamping force (28 MPa)	kN	159	-
Maximum breaking torque	daNm	3830	-
Service winch			
Maximum line pull (1st layer)	kN	-	-
Maximum rope speed (5th layer)	m/min	-	-
Rope diameter	mm	-	-
Rope capacity / Rope fitted	m	-	-
Rod carousel			
Rod diameters	mm	114	90
Rod length	mm	13.000	15.000

(*) All technical data are purely indicative and subject to change without notice. Nominal value is referred to total efficiency 100%.

ST-20

ROTARY EQUIPMENT FOR TUNNELLING



SOILMEC distributes machinery and structures all over the world, supported by SOILMEC subsidiary companies and representative offices as:

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