



SPX650

Presentation

REVISION		0	
ISSUED BY	SAMUEL P.	DATE OF RELEASE	11/03/2021
REVISIONED BY	-	DATE OF REVISION	-

APPLIED TO MODELS	SPD-SERIES	☐ SPD265	☐ SPD360	☐ SPD500	☐	☐
	JF-SERIES	☐ JF30	☐ JF40	☐ JF365	☐ JF545	☐ JF990
	SPX-JUNIOR	☐ SPB209	☐ SPX312	☐ SPX424	☐ SPX429	☐
	SPX-SENIOR	☐ SPX527	☐ SPX536	☐ SPX1040	☐ SPX1275	☐
	MPK-SERIES	☐ MPK20	☐ MPK50	☐	☐	☐
	NEW SERIE	☐ SPX532	☒ SPX650	☐ SPX1280	☐	☐
	OTHERS	☐ SPK 60	☐ OTHER	☐ TOOLS	☐ INSTRUMENT	☐

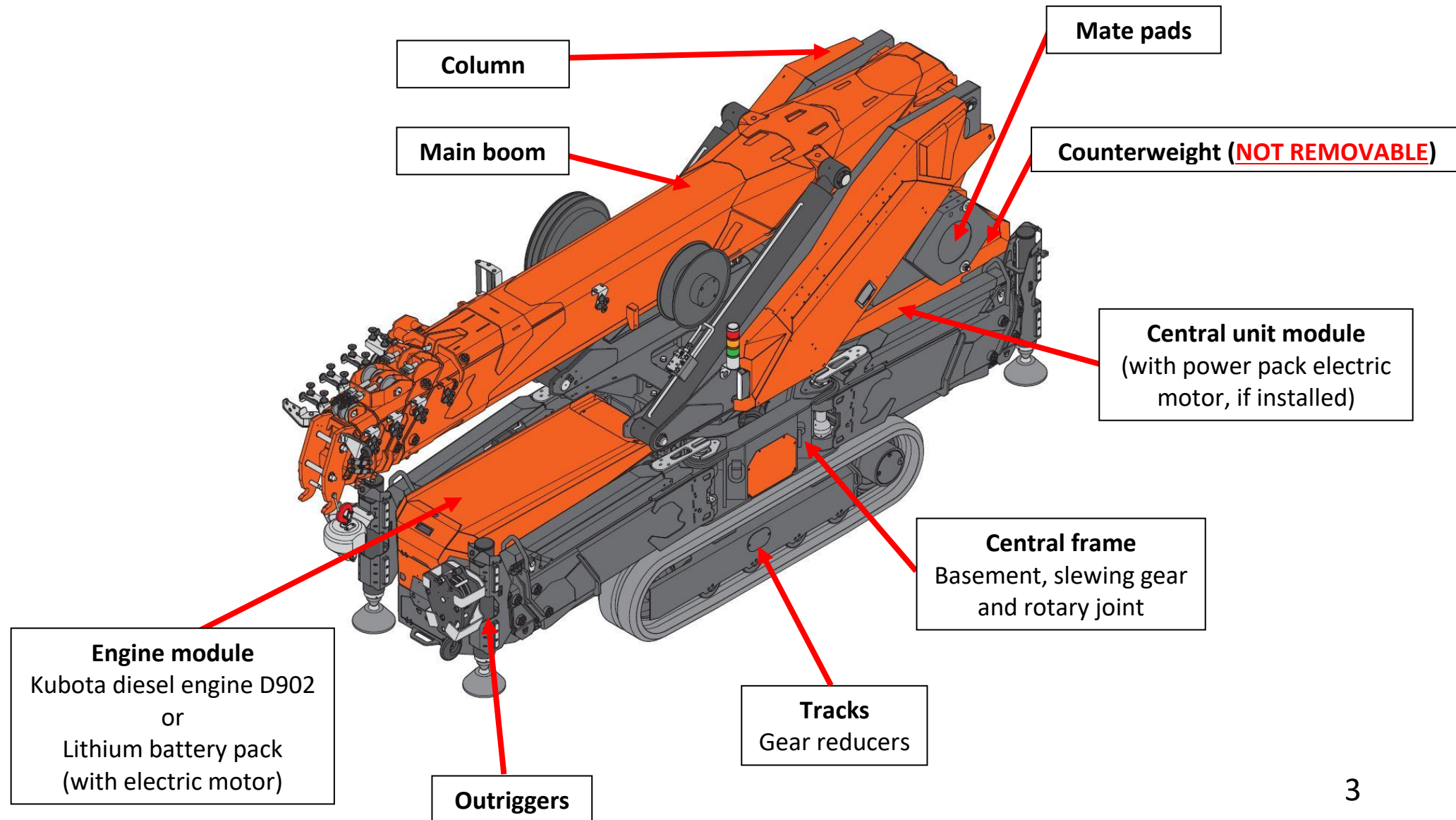


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1. MODULARITY





2. VERSIONS AVAILABLE



Machine available in 2 versions :

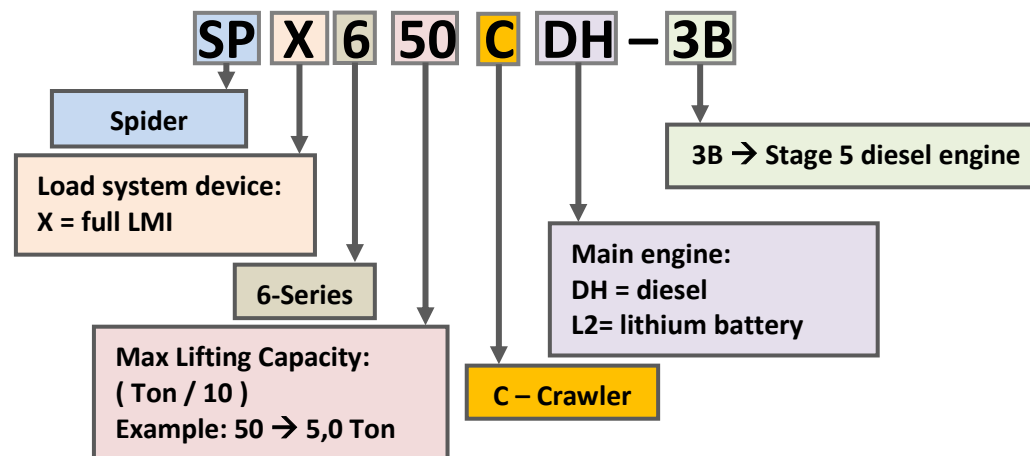
- **SPX650CDH-3B** Kubota diesel engine
- **SPX650CL** electric powered with lithium battery pack

Power pack available:

(optional CDH machine)

- **PP400-6.B** Three-phase electric motor (50Hz 400V-5,5kW)

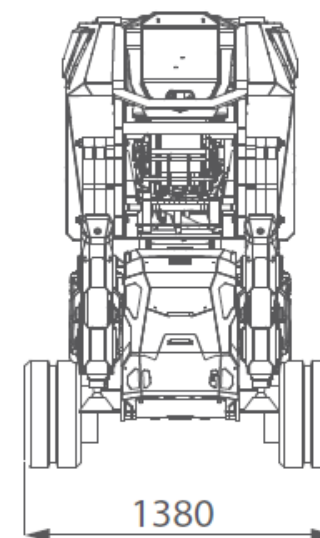
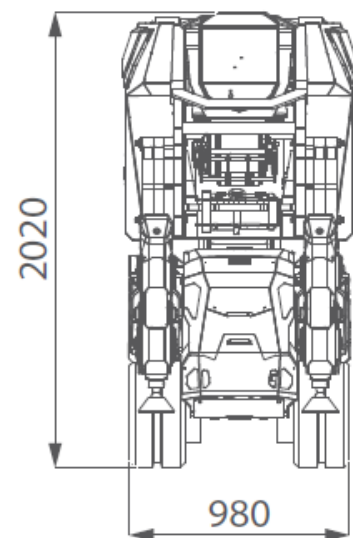
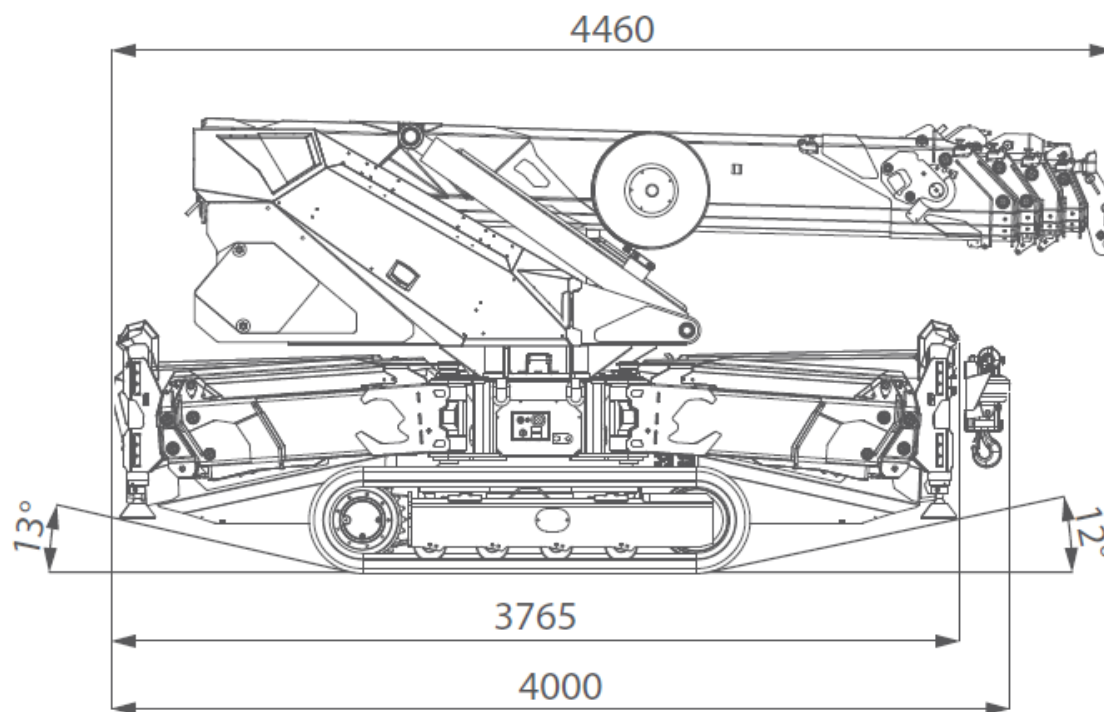
2.1. ACRONYM





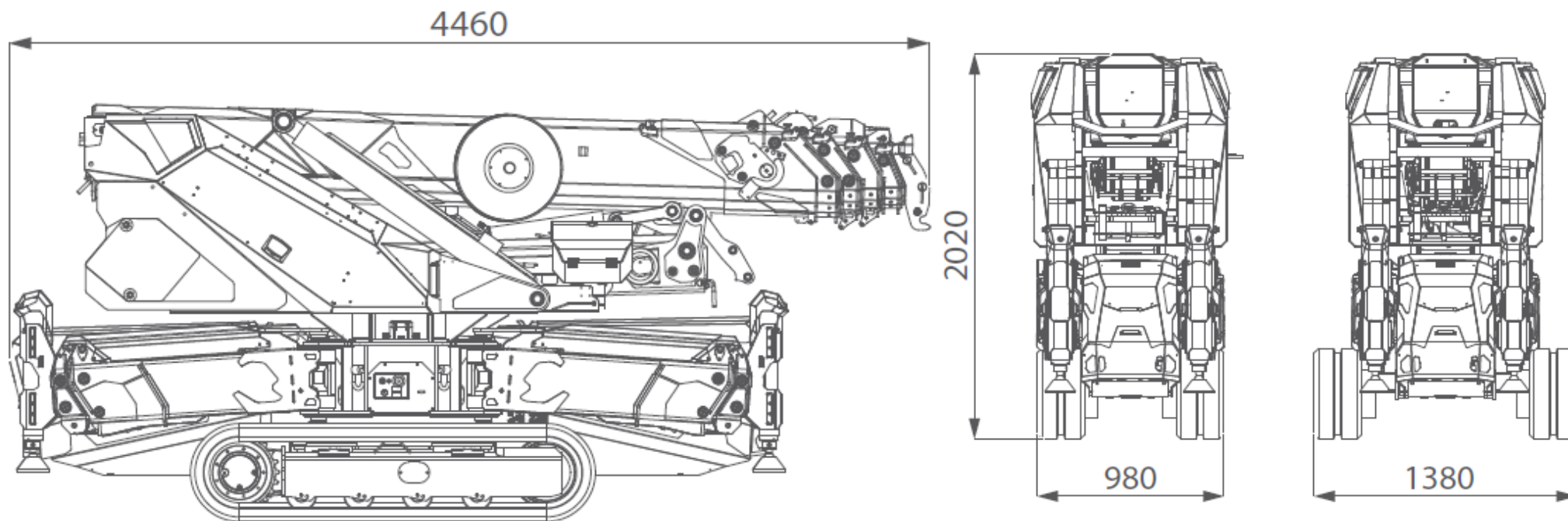
3. OVERALL DIMENSIONS

3.1. WITHOUT JIB



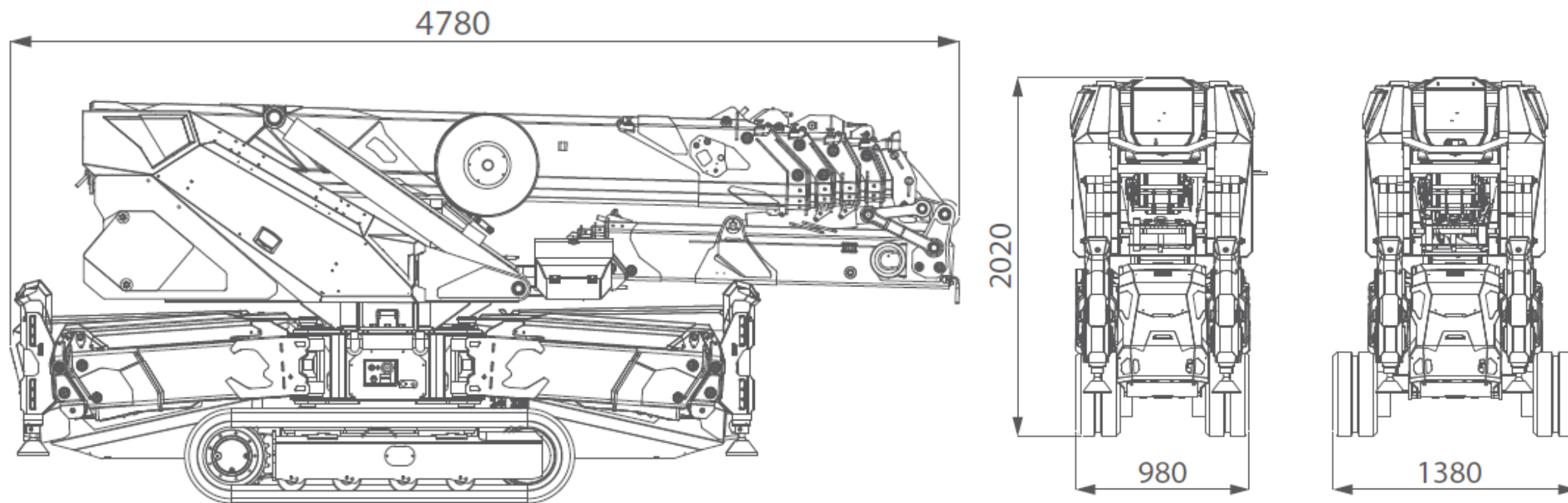


3.2. JIB PARKED UNDER THE BOOM



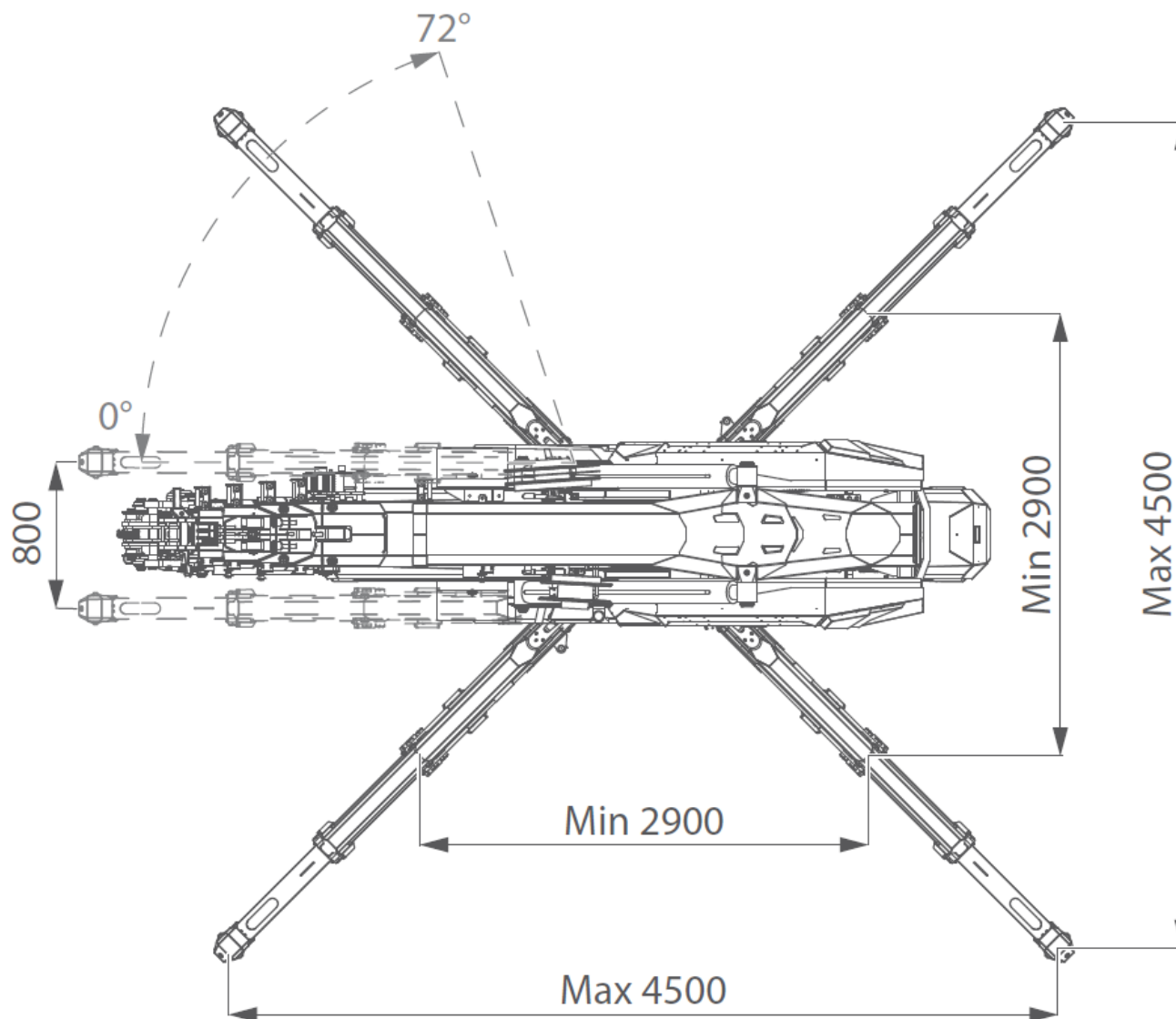


3.3. JIB INSTALLED





3.4. OUTRIGGER POSITION STABILITY





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4. OVERALL INFORMATION

ELECTRIC	Lithium Battery	48V 400Ah	
	kW Power	48V-3F 16kW / 21,5HP	
HYDRAULIC	Hydraulic Oil	ISO 6743-4:HFDU with VG46 viscosity class	
		Working temp	<70 °C
		L	80
MOVEMENTS	Travel Speed	km/h	1,5 / 2,9
	Gradeability	20° (36%) [†]	
	Track Load	kg/cm ²	0,75
			0,85
	Outrigger Load	kg	4800
	Working Angle	0°/82	
		s	35
	Slewing	360°	
		rpm	1,0
	Boom Telescoping	m	4,0 - 15,4
		s	36

	Name/ version	kg*
Crane	CL	5700
Winch	W800.6	80
Hookblock	SINGLE FALL	20
	2-3 FALLS	20
	4-6 FALLS	30
Jib	JIB2000GX	50
	JIB1200.2H1MLX	480
	PULLEY HEAD	
Outriggers mats	OM400	30
Toolboxes	TB	20

*: Dry weight

[†]: Engine working limit

[‡]: Static lifting



5. HOIST PERFORMANCE

STANDARD WINCH	Layer	Max line pull	Standard rope speed	Highest rope speed
		kg	m/min	m/min
	1	800		25
	2	745		27
	3	695		29
	4	650		31
ROPE	Wire rope	Ø	Total length	Max load
		mm	m	kg
	19x7 right lang lay Non rotating	7	81	5700

OPTIONAL WINCH	Layer	Max line pull	Standard rope speed	Highest rope speed
		kg	m/min	m/min
	1	1050*		16
	2	980*		17
	3	920*		18
	4	865*		20
ROPE	Wire rope	Ø	Total length	Max load
		mm	m	kg
	19x7 right lang lay Non rotating	7	90	5700



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HOOK BLOCK	Load	N° of		Block type
	kg	Sheaves	Lines	
	4800	3	6	Triple pulley block
	4000	2	5	
	3200	2	4	
	2400	1	3	Single pulley block
	1600	1	2	
	800	-	1	Single fall block

*: LMI limited at 800 kg

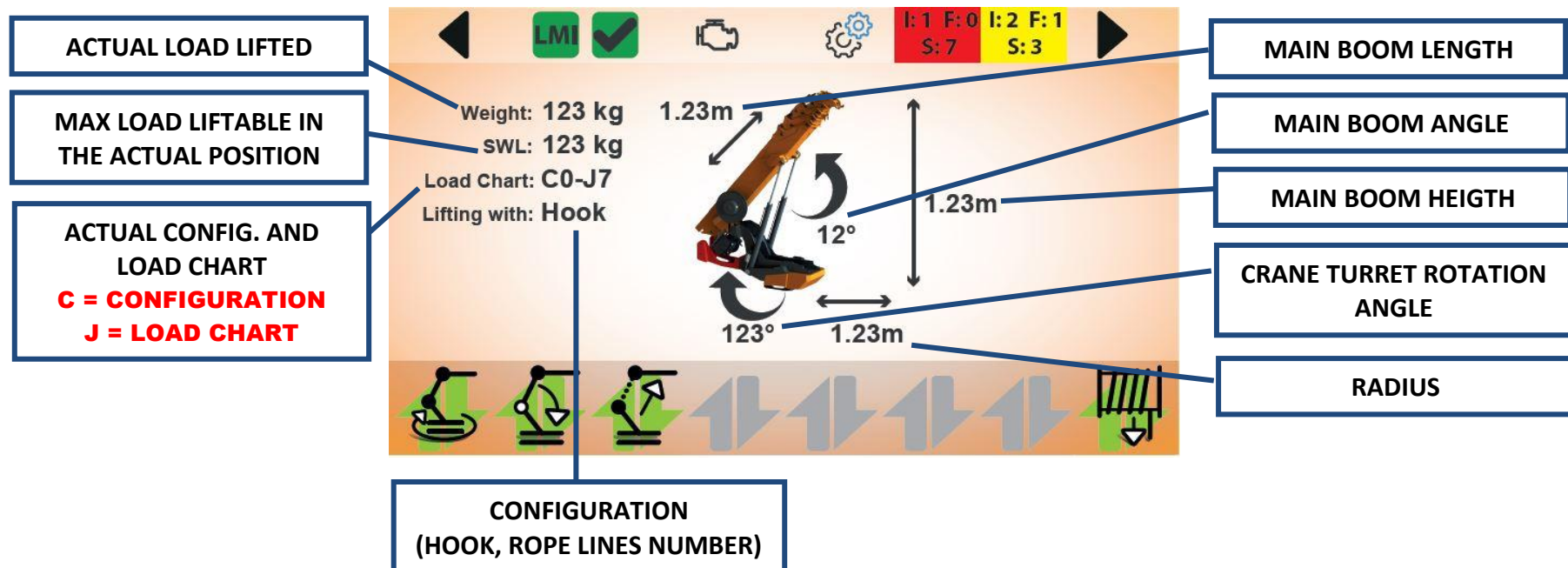


6. MAIN FEATURES

6.1. LMI (Load Moment Indicator)

It's the load safety system of the machine, which shows in real time:

- **Crane geometrical info:** length, angle, radius, height, crane turret rotation angle;
- **Weight:** load applied to the tip of crane in real time;
- **SWL (safe working load):** maximum lifting capacity of the crane in the actual position
- **Load chart:** actual configuration of the machine and load chart;
- **Lifting with:** hook or rope lines/falls number.

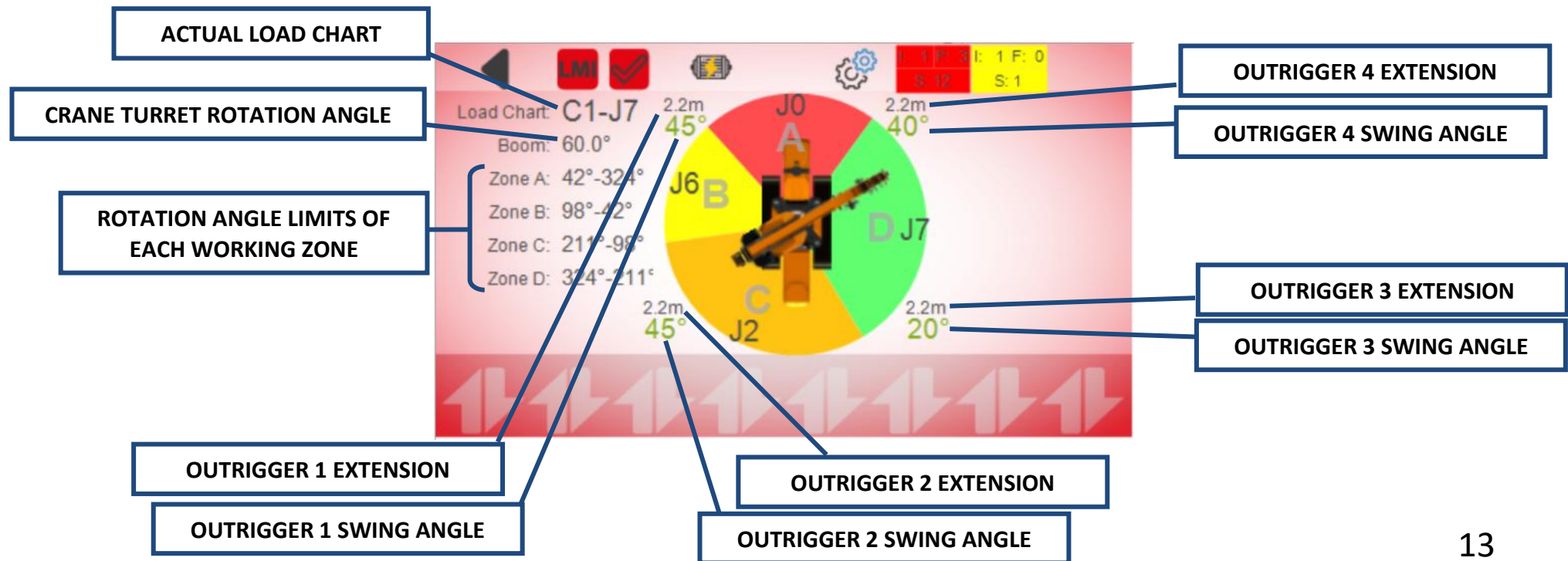




6.2. GSC (Geometrical Stability Control)

It's the stability system of the machine, which shows in real time:

- **Load chart:** actual configuration of the machine and load chart (according to actual turret rotation angle);
- **Boom:** it is the actual crane turret rotation angle;
- **Zones:** these are the angle values that delimit the working area;
- **Outriggers length extension values:** length extension of each outrigger
- **Outriggers swing rotation angles:** opening angle of each outrigger.





6.3.P&C (Pick & Carry)

The SPX650 can operate pick & carry (**J1 load chart**) in many versatile ways:

- **with main boom:** it allows to operate at 360° with turret rotation (tracks extended)
- **with JIB2000GX:** it allows to operate only at 0° or 180° (tracks extended)

*Pick & carry with main boom
(J1 load chart – hook mode)*

CRANE PERFORMANCE: J1			
L →	4,0 ⁺	5,4	6,4
1	0,80	0,80	0,60
2	0,70	0,70	0,60
3		0,55	0,50
4		0,32	0,30
5			0,15
↑R	[ton]		

LC650_V101_0321_BP_GANCIO_J1

*Pick & carry with JIB2000GX
(J1 load chart – hook mode)*

CRANE PERFORMANCE: J1			
L →	5,0	6,4	7,4
1	0,8	0,8	0,6
2	0,7	0,7	0,6
3	0,6	0,55	0,5
4		0,32	0,3
5			0,15
↑R	[ton]		

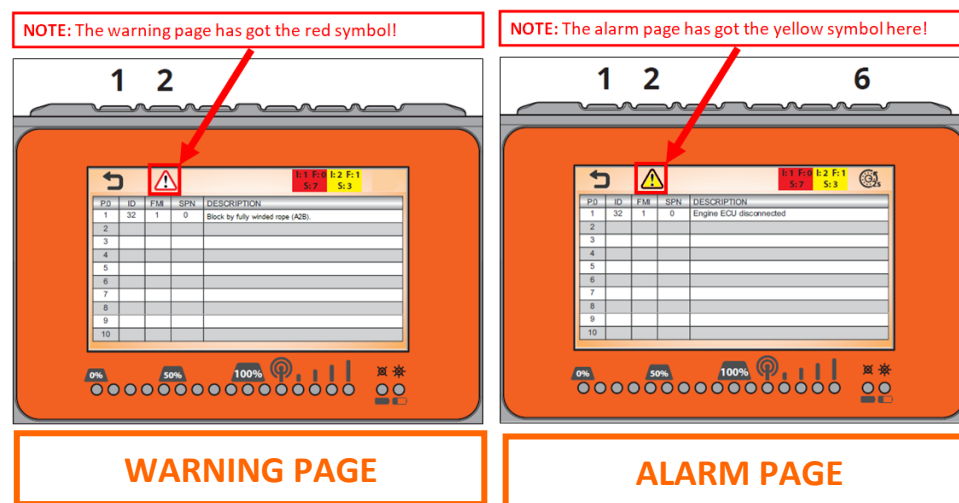
LC650_V101_0321_RUNNER_GANCIO_J1



6.4.DTC (Diagnostic Trouble Codes)

All warning & alarm codes are listed in a document, which makes troubleshooting service easier and faster.

Moreover, on the remote control screen, there are two pages to display active alarms and active warnings: this helps the operator to understand and possibly solve by himself the block/faults.



ALARM & WARNING CODES:

Each alarm or warning code is composed by:

- **ID:** is the can bus unit/electronic device involved (example: 1 = SPN06)
- **FMI:** is the family/group;
- **SPN:** a generic progressive number; each family (FMI) has its own list which could restart from 1 or not.

For further information, please check the SPX650 Quickstart Guide or the Alarms list table.

6.5. PLUG & PLAY ATTACHMENT

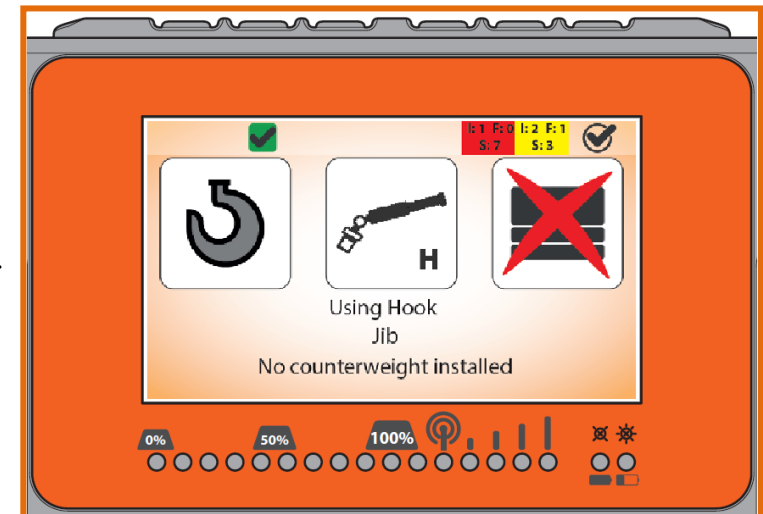
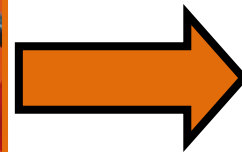
All the available attachments for the crane once installed and connected hydraulically and electrically to the main boom plug are self-detected by the LMI.

The operator only have to confirm/set the working configuration (hook or winch mode).

By connecting the “TOOL” plug on tip of main boom, the system will recognize automatically the jib installed and ask for configuration confirmation on the remote control display.



“TOOL” plug on tip of the main boom

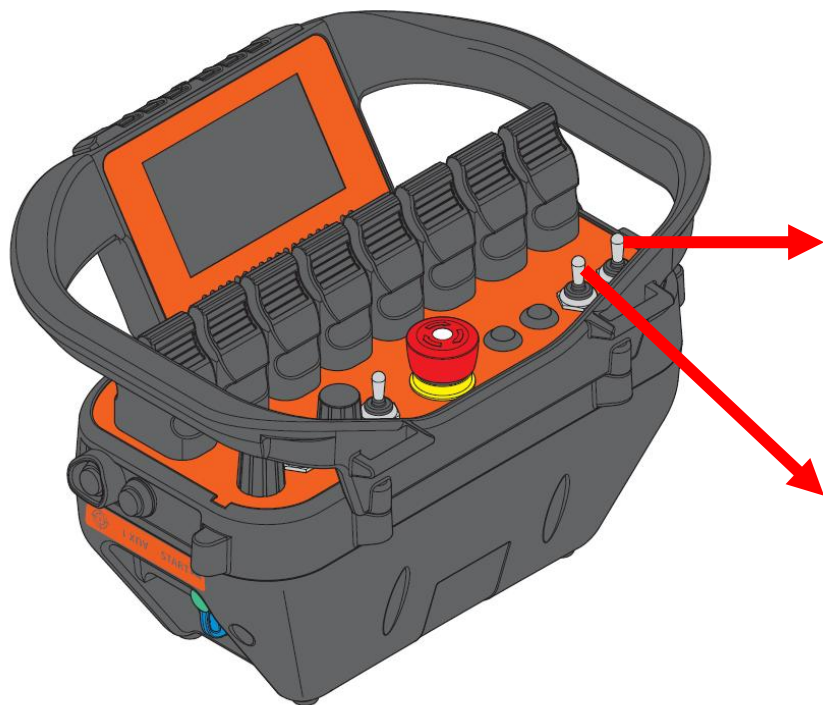


LMI screen on the remote control display

6.6. SPEED REDUCTION

On the remote control there are two selectors fully dedicated to the speed reduction of:

- winch and tracks functions;
- all crane functions (included winch).



**Increase speed of all crane functions
(winch included)**



**Reduce speed of all crane functions
(winch included)**



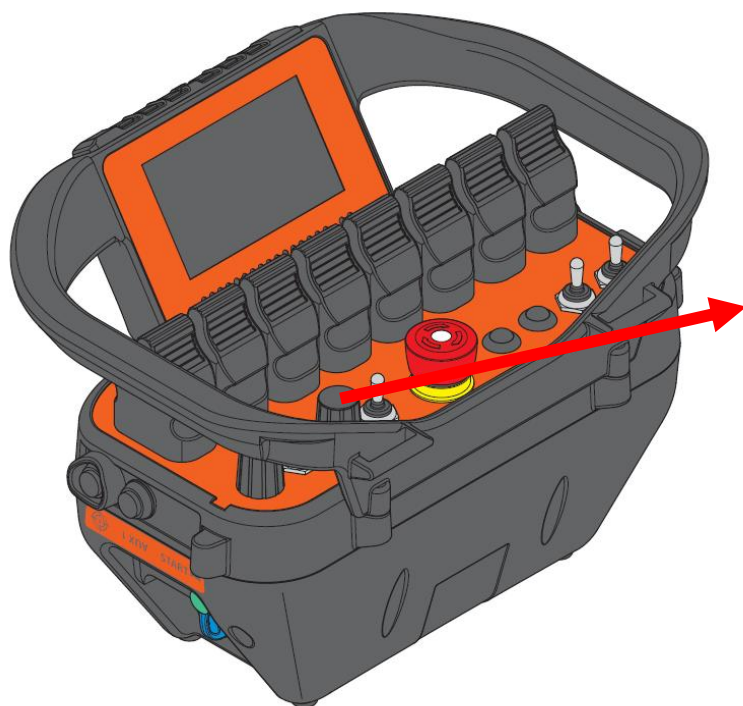
Increase winch/tracks speed



Reduce winch/tracks speed

6.7. POWER MODES OF THE ENGINE

The operator can select the engine power mode by rotating the **Engine power mode selector** on the remote control: the power modes adjust the working pressure (force), the oil displacement (speed) and therefore the performance of the crane.



-  Minimum engine power
-  Slow engine power
-  Fast engine power
-  Maximum engine power
-  Automatic engine power

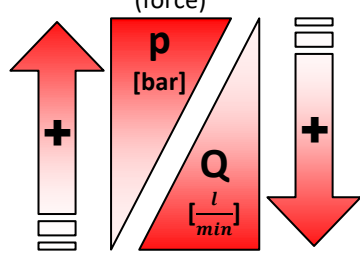
$$P [W] = p [bar] \times Q \left[\frac{l}{min} \right]$$

Pressure (force)

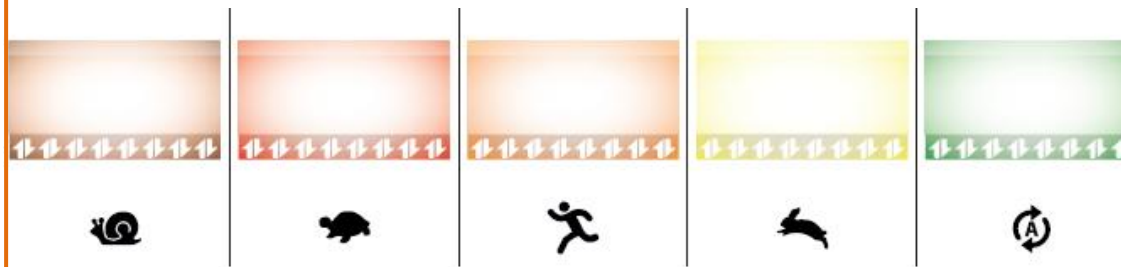
$p [bar]$

$Q \left[\frac{l}{min} \right]$

Displacement (speed)



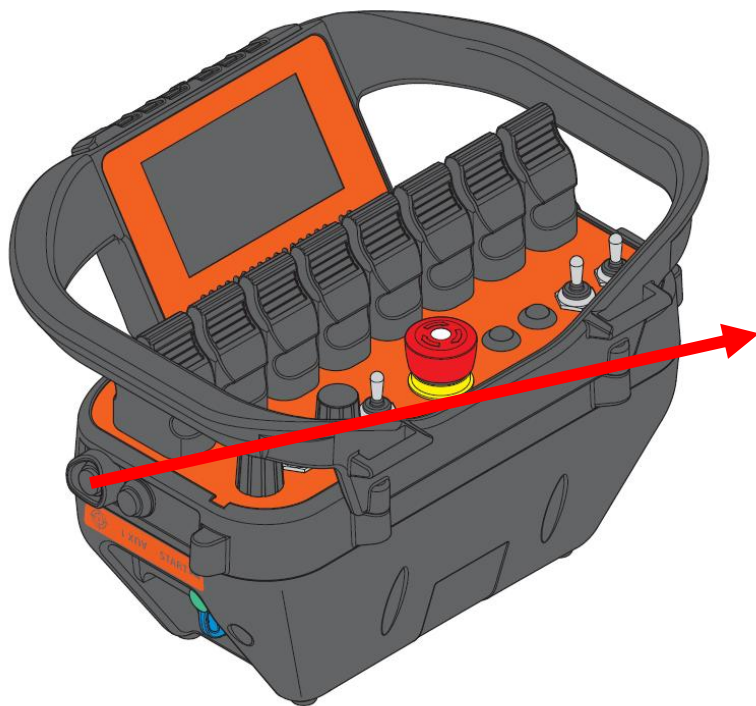
According to the power mode selected, the background color of the remote control screen will change.





6.8. OUTRIGGERS SELF-LEVELING

Thanks to the new hydraulic system design and to the carrier inclination sensor, the SPX650 can be stabilized automatically by holding the *Self-leveling button* on the remote control (if the conditions are satisfied).



NOTE:

The self-leveling function will operate only outriggers down maneuvers (LIFTING UP THE MACHINE) and it stops when you release the button or when carrier's inclination is 0° on both axes.

The self-leveling function is possible even if some outriggers are extended and some outriggers are retracted.

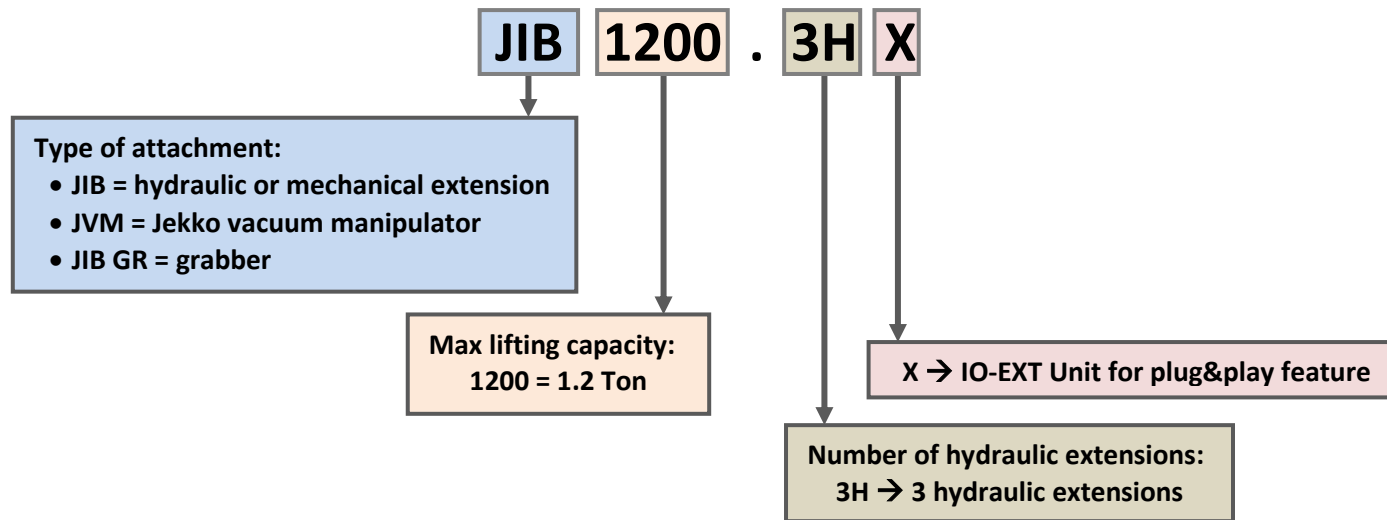
CONDITIONS:

Self-leveling function can be operated only if the following conditions are respected:

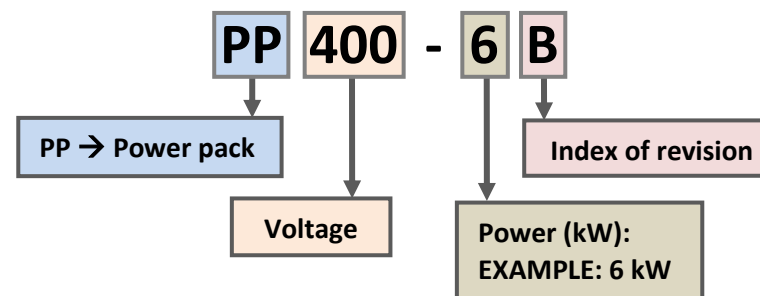
- All outriggers swing angles are >15° (16° minimum acceptable angle)
- All outriggers swing angles are similar ($\pm 4^\circ$)



6.9. JIB ACRONYMS



6.10. POWER PACK ACRONYMS





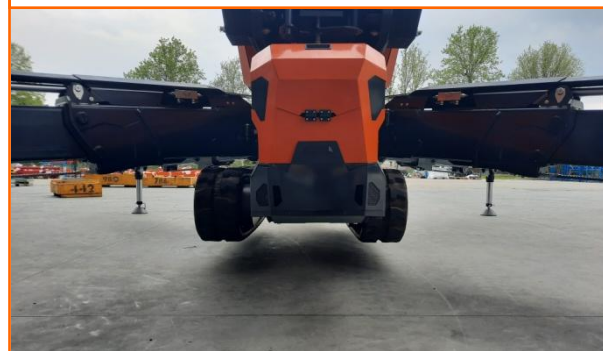
6.11. EXTENDABLE TRACKS

The extendable tracks make it easier climbing on ramps due to the improved ground clearance. Moreover, they can be helpful to drive the machine on steep terrain. It is possible to extend only one track to drive in particular conditions.

Tracks retracted



Only left track extended



Tracks extended



Only right track extended



