

USER MANUAL
914NG C
TECHNICAL SHEET

D TECHNICAL SHEET



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D.1 CRANE'S TECHNICAL DATA

Versions		2S	3S
Max. net lifting moment	 $t \cdot m$ kNm	12.5 123	12.2 119
Max. dynamic moment	 $daNm$ kNm	15690 157	
Capacity at min. hydraulic outreach	hook [S2]  kg	3210	3080
Max rated capacity	grab [S1]  kg	3210	3080
	min.outreach  m	3.90	3.95
Capacity at max. hydraulic outreach	hook [S2]  kg	1700	1250
	grab [S1]  kg	1700	1250
	max.outreach  m	7.10	9.15
Capacity of 1st man. extension	capacity  kg	N/A	N/A
	max.outreach  m	N/A	N/A
Max. load height above the base for the last extension	hydraulic  m	9.5	11.5
	manual  m	N/A	N/A
Weight of crane without stabilizers	 kg	1525	1625
Weight of stabilizers	ST-M  kg	210	
	EX-M  kg	270	
	EX-H  kg	305	
	SE-H  kg	360	
Weight of 1st man. extension	 kg	N/A	N/A
Max. working pressure	 bar	290	
Max. oil flow rate	 l/min	30	
	 l/min	60	
Max. power needed	 kW	18.9	
	 kW	37.7	
Oil tank capacity	 l	130	
Slewing angle	 $^{\circ}$	425 $^{\circ}$	
Gross slewing torque	 $daNm$ kNm	1420 14.2	
Max. base inclination	 $^{\circ}$	4 $^{\circ}$	
	 $^{\circ}$	3 $^{\circ}$	
Max. stabilizer force on the ground with stabilizers fully extended	ST daN	8090	
	EX daN	6180	
	SE daN	5000	
Max. stabilizer pressure on the ground with stabilizers fully extended	ST MPa	3.2	
	EX MPa	2.4	
	SE MPa	2.0	
Lifting conversion factor, k	kgm/bar	50.05	
Distribution factor of dyn. moment on base, β	-	0.70	
Position of standard dead point (see D.5)			

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D.2 TOTAL WEIGHTS

The table shows the total weights including oil inside the cylinders (fully retracted) and considering oil tank empty.

<i>kg</i>	Crane version	
Type of stabilizers	2S	3S
ST-M	1735	1835
EX-M	2005	2105
EX-H	2040	2140
SE-H	2095	2195

Additional weight of 1st extra function activated with hose reel: 20 kg

Additional weight of 2nd extra function activated with hose reel: 10 kg

The weights may vary by $\pm 3\%$

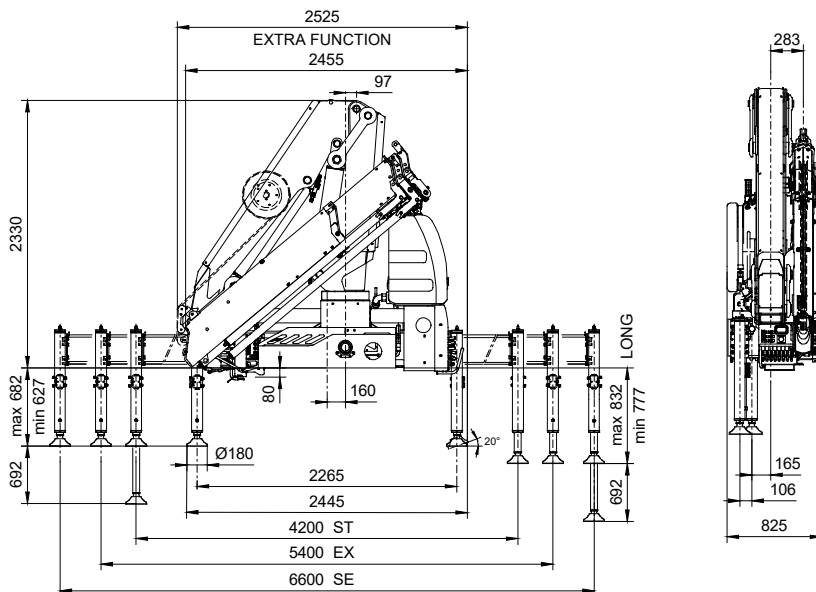
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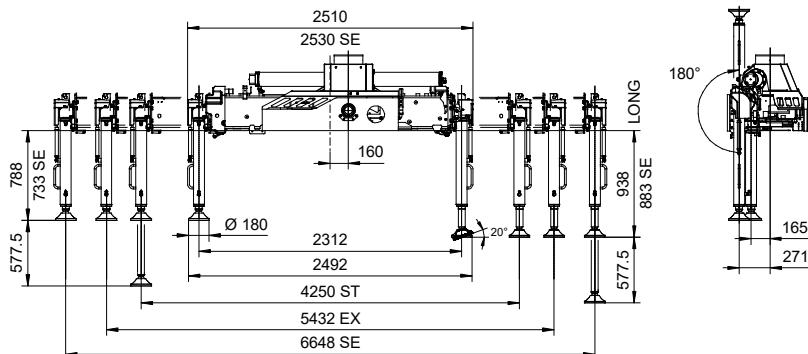
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D.3 OVERALL DIMENSIONS

FIXED STABILIZERS LEGS

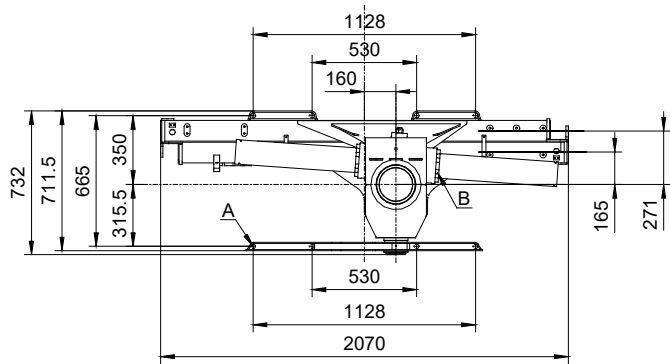


TURNING STABILIZERS LEGS



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D.4 BASE DIMENSIONS AND MOUNTING BOLTS

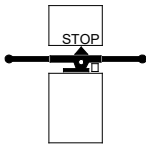
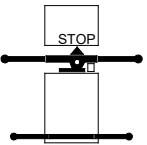
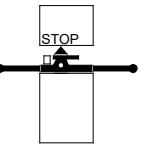
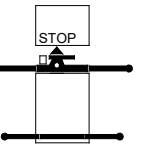
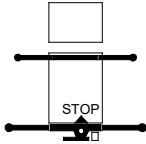
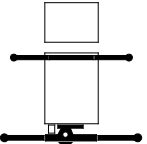
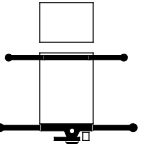
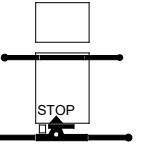
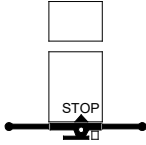
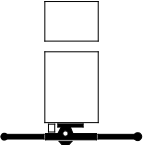
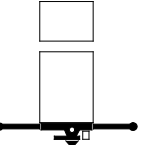
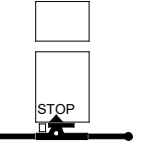
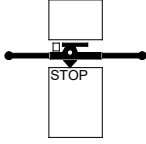
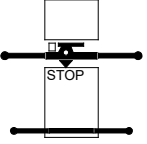
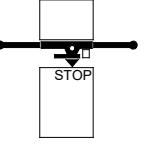
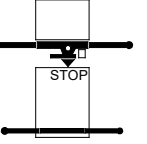


Ref.	Description	Q.ty	Material Grade	Size	Tightening torque
A	Kit with 8 crane mounting bolts	8	42CrMo4+QT EN 10083-3	M24x2 L=1100	400 Nm
	Kit with 4 crane mounting bolts	4	42CrMo4+QT EN 10083-3	M30x2 L=600	700 Nm
B	Fixing bolts for each slewing cylinder	8	8.8	M14x2 L=65	80 Nm

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D.5 INSTALLATION TYPE NUMBER

Installation types numbers (ITN) for cranes with standard dead point (STOP) toward swivel bridge.

OPPOSITE DEAD POINT		STANDARD DEAD POINT	
1 	2 	3 	4 
5 	6 	7 	8 
9 	10 	11 	12 
13 	14 	15 	16 

Legend:

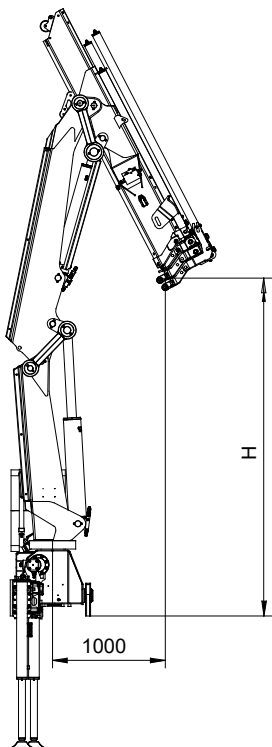
- ▲ : position of dead point (STOP)
- : position of main manual controls (on column side)

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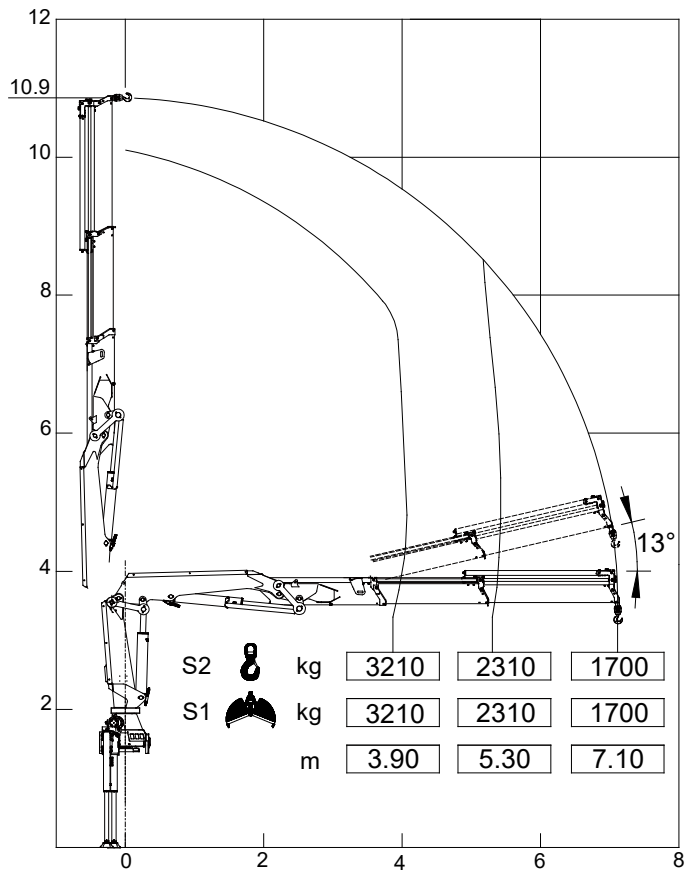
D.6 LIFTING HEIGHT CLOSE TO THE COLUMN



Version	H mm
2S	3000
3S	2915

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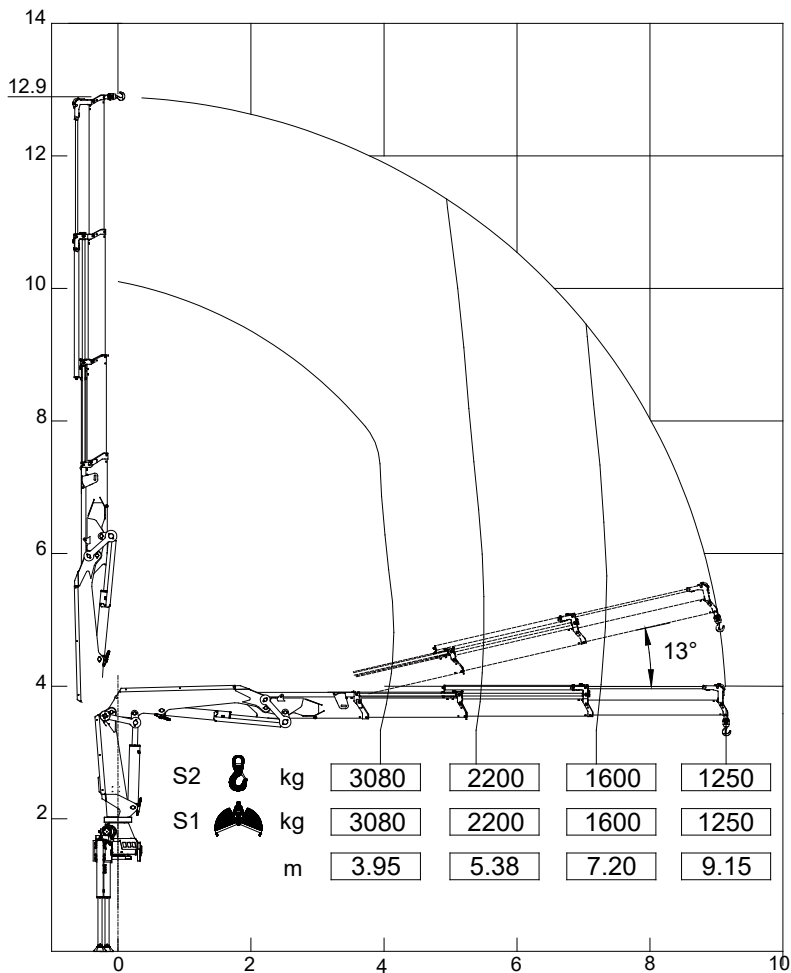
D.7 LOAD CHARTS FOR USE WITH HOOK/TOOL
914NG C 2S



If an additional lifting tool is mounted, the rated capacities shall be reduced by the tool's weight

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LOAD CHART FOR USE WITH HOOK/TOOL
914NG C 3S



If an additional lifting tool is mounted, the rated capacities shall be reduced by the tool's weight

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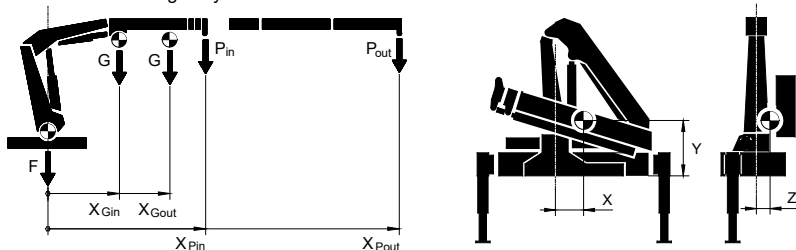
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D.8 CENTERS OF GRAVITY AND TEST LOADS

This annex contains the data needed for the stability test in accordance with EN 12999.

Loads and centers of gravity



Hooking point for the test load



Key:

F = weight of fixed parts (stabilizers, base, column, 1st boom cylinder)

G = weight of booms

X_G = distance between G and column axis

P = rated capacity

X_P = distance between P and column axis

TL = test load, to be hooked to the last hydraulic extension

X, Y, Z = coordinates of center of gravity for whole crane folded in transport position (EX-H version)

in = configuration with all hydraulic extensions fully retracted

out = configuration with all hydraulic extensions fully extracted

WEIGHTS AND CENTERS OF GRAVITY

914NG C	F kg	G kg	X_G in / out m	P in / out kg	X_P in / out m	TL kg	X	Y	Z
							mm		
2S	ST-M : 1185 EX-M : 1245	550	2.07 2.85	3210 1700	3.90 7.10	2125	226	737	15
3S	EX-H : 1280 SE-H : 1335	650	2.18 3.61	3080 1250	3.95 9.15	1563	224	753	32

The data are relating to crane configuration with horizontal booms.

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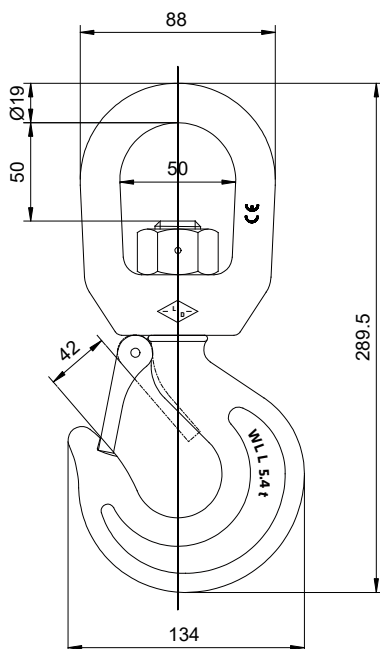
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D.9 HOOK DATA

HOOK MOUNTED ON STANDARD BOOM
VERSIONS: 2S, 3S

DIMENSIONS



TECHNICAL PROPERTIES

Working load limit (WLL) : 5400 kg

Material: alloy steel

Weight: 3.2 kg

Swivel hook

Reference standard: DIN 15401

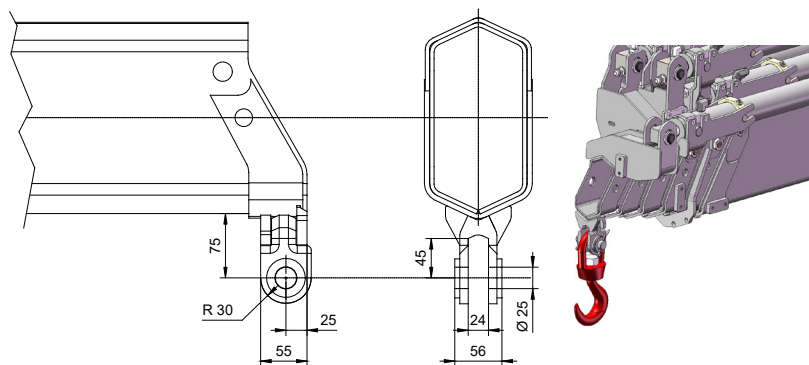
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D.10 LOAD ATTACHMENT

ATTACHMENT FOR HOOK



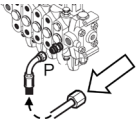
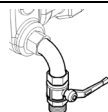
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D.11 HYDRAULIC SYSTEM

FITTINGS FOR CONNECTION TO PUMP

914NG C	NO RDC	RDC
Control valve pressure line	 M 7/8"-14 JIC	 M 3/4"-16 GAS
Tank suction line	 M 1"1/2 BSP	 M 1" 1/2 BSP

EXTENSION TIMES FOR HYDRAULIC CYLINDERS

914NG C	Extension time s	Retraction time s
Slewing (180°)	20	20
1.boom cylinder	19	20
2.boom cylinder	22	20
boom extension 1S (SGS active)	4	7
boom extension 2S (SGS active)	9	12
boom extension 3S (SGS active)	14	19

Times are indicative and referring to the following operating conditions:

- unloaded crane operated with a single control lever
- oil flow rate recommended for RDC crane
- ISO VG 46 oil at a temperature of 50°C

MAX. ALLOWABLE SINK RATE FOR THE LOAD

The sink rate is the uncontrolled descent of the load in a given time interval due to internal leakage of hydraulic components. The table below shows the maximum permitted descent of the rated load, at the max. hydraulic outreach and in the given time interval.

914NG C	Time interval min.	Max. load descent mm
2S	10	355
3S	10	457

CAPACITY OF HYDRAULIC SYSTEM

914NG C	Cylinders extended t	Cylinders retracted t
2S	49	34
3S	55	39

Capacities do not include the oil tank.

ADDITIONAL CAPACITY FOR HYDRAULICALLY OPERATED STABILIZER EXTENSIONS

EX-H	+4.0	+2.5
SE-H	+5.5	+3.5

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D.12 OIL COOLER



TECHNICAL SPECIFICATIONS

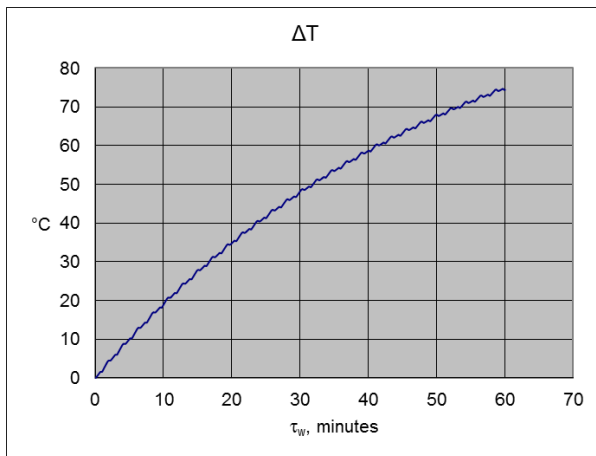
Heat transfer coefficient: 235 W/K (oil flow rate of 40 l/min)

Activation temperature: 48 °C

Weight: 13.5 kg

Capacity: 4 l

For a crane without oil cooler performing a sequence of standard work cycles, the difference in temperature between the oil and the environment is shown in the graph below.



The oil cooler is recommended when

$$T_{\text{env}} + \tau_w > 57$$

where:

T_{env} : temperature of the environment (°C)

ΔT : difference in temperature between the oil and the environment (°C)

τ_w : working time (minutes)

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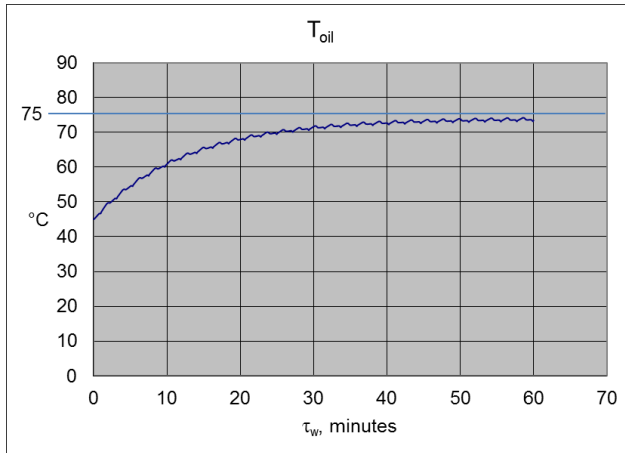
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However, when a crane equipped with oil cooler carries out a sequence of standard work cycles, the oil temperature exceeds 75 °C after the following working times:

T_{env} (°C)	τ_w to exceed 75 °C (minutes)
45	no limit
48	35
50	25
52	20
54	15

The graph below shows the temperature trend (T_{oil}) with oil cooler when $T_{env} = 45$ °C.



Notes:

The max recommended oil temperature is 75°C (at 80°C you must stop working)

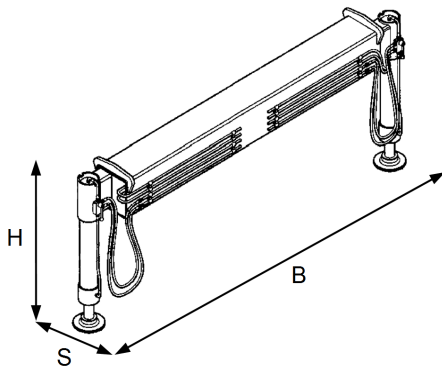
The calculation of the oil temperature is purely indicative and depending on several variables (e.g. working cycle, wind, humidity, weather, etc.)

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D.13 ADDITIONAL STABILIZERS



Additional stabilizers must be chosen so that:

- the installation is stable (see Installer Manual)
- the max. force acting on the additional stabilizers, F_s , is lower than the max. load allowed by the stabilizers itself, R_{max} .

$$F_s = M_{dyn} / X_s \quad F_s \geq 0.6 F_{sg}$$

where:

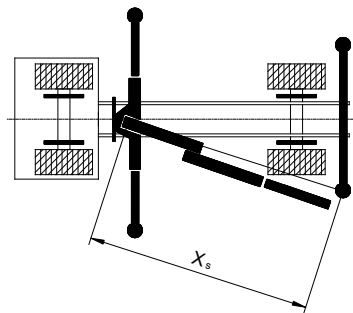
M_{dyn} : max. dynamic moment of the crane

X_s : distance between column axis - stab. cylinder

F_{sg} : max force on stabilizer leg

Check that: $F_s \leq R_{max}$

R_{max} is given in the technical specifications of the additional stabilizers.



- In addition, CE additional stabilizer must be equipped with safety devices integrated with the crane's stability control system. Therefore we recommend to install the following models designed by crane's manufacturer.

Code	Spread (m)	Weight (kg)	R_{max} (kg)	Overall dimensions BxHxS (mm)
7850088	2.00	155	6250	2160x770x190
7850086	3.32	220	6250	2285x780x240
7850087	3.32	235	6250	2285x780x240

For further information see the User Manual for outriggers.

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D.14 RECOMMENDED ADDITIONAL LIFTING TOOLS

CLAMSHELL BUCKET



Crane version	Gross load kg ⁽¹⁾	Data of recommended tool				Payload kg ⁽³⁾	Load ratio	
		HYVA model	weight kg	volume dm ³	capacity kg ⁽²⁾		crane ⁽⁴⁾	tool ⁽⁵⁾
2S	1700	H605-650	410	650	975	1290	81%	100%
3S	1250	H605-650	410	650	975	840	100%	86%
		H605-550	375	550	825	875	96%	100%

Notes

⁽¹⁾ The gross load is the load capacity of crane at maximum hydraulic outreach

⁽²⁾ The tool's load capacity is calculated multiplying the volume by a density of 1.5 kg/dm³

⁽³⁾ The payload is the gross load of crane minus the tool's weight

⁽⁴⁾ The crane's load ratio is the percentage value of the liftable load with respect to the gross load

⁽⁵⁾ The tool's load ratio is the percentage value of the liftable load with respect to tool's capacity

Stress history class: S1

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RECOMMENDED ADDITIONAL LIFTING TOOLS ORANGE PEEL GRAPPLE



Crane version	Gross load kg ⁽¹⁾	Data of recommended tool				Payload kg ⁽³⁾	Load ratio	
		HYVA model	weight kg	volume dm ³	capacity kg ⁽²⁾		crane ⁽⁴⁾	tool ⁽⁵⁾
2S	1700	H653-4 large	435	500	750	1265	70%	100%
3S	1250	H653-4 large	435	500	750	815	95%	100%

Notes

⁽¹⁾ The gross load is the load capacity of crane at maximum hydraulic outreach

⁽²⁾ The tool's load capacity is calculated multiplying the volume by a density of 1.5 kg/dm³

⁽³⁾ The payload is the crane's gross load minus the tool's weight

⁽⁴⁾ The crane's load ratio is the percentage value of the liftable load with respect to the gross load

⁽⁵⁾ The tool's load ratio is the percentage value of the liftable load with respect to tool's capacity

Stress history class: S1

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RECOMMENDED ADDITIONAL LIFTING TOOLS LOGGING GRAPPLE



Crane version	Gross load kg ⁽¹⁾	Data of recommended tool			Payload kg ⁽²⁾	Load ratio	
		HYVA model	weight kg	capacity kg		crane ⁽³⁾	tool ⁽⁴⁾
2S	1700	H634-0,25	170	4000	1530	100%	38%
3S	1250	H634-0,25	170	4000	1080	100%	27%

Notes

⁽¹⁾ The gross load is the load capacity of crane at maximum hydraulic outreach

⁽²⁾ The payload is the gross load of crane minus the tool's weight

⁽³⁾ The crane's load ratio is the percentage value of the liftable load with respect to the gross load

⁽⁴⁾ The tool's load ratio is the percentage value of the liftable load with respect to tool's capacity

Stress history class: S1

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RECOMMENDED ADDITIONAL LIFTING TOOLS BRICK STACK GRAPPLE



Crane version	Gross load kg ⁽¹⁾	Data of recommended tool			Payload kg ⁽²⁾	Load ratio	
		HYVA model	weight kg	capacity kg		crane ⁽³⁾	tool ⁽⁴⁾
2S	1700	H332-1300	265	1600	1435	100%	90%
3S	1250	H332-1300	265	1600	985	100%	62%

Notes

⁽¹⁾ The gross load is the load capacity of crane at maximum hydraulic outreach

⁽²⁾ The payload is the gross load of crane minus the tool's weight

⁽³⁾ The crane's load ratio is the percentage value of the liftable load with respect to the gross load

⁽⁴⁾ The tool's load ratio is the percentage value of the liftable load with respect to tool's capacity

Stress history class: S2

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RECOMMENDED ADDITIONAL LIFTING TOOLS PALLET FORK



Crane version	Gross load kg ⁽¹⁾	Data of recommended tool			Payload kg ⁽²⁾	Load ratio	
		HYVA model	weight kg	capacity kg		crane ⁽³⁾	tool ⁽⁴⁾
2S	1700	H415 2000-500	155	2000	1545	100%	77%
3S	1250	H415 1500-500	135	1500	1115	100%	74%

Notes

⁽¹⁾ The gross load is the load capacity of crane at maximum hydraulic outreach

⁽²⁾ The payload is the gross load of crane minus the tool's weight

⁽³⁾ The crane's load ratio is the percentage value of the liftable load with respect to the gross load

⁽⁴⁾ The tool's load ratio is the percentage value of the liftable load with respect to tool's capacity

Stress history class: S2