

D TECHNICAL DATA



USER MANUAL

818NG T

TECHNICAL DATA

D.1 CRANE'S TECHNICAL DATA

Versions			2S	3S	4S
Max. net lifting moment		$t\ m$ kNm	16.4 161	16.3 160	16.0 157
Max. dynamic moment		$daNm$ kNm	18890 189		
Capacity at min. hydraulic outreach	hook [S2]	 kg	6370	6115	5830
Max rated capacity	grab [S1]	 kg	6370	6115	5830
	min. outreach	 m	2.58	2.66	2.74
Capacity at max. hydraulic outreach	hook [S2]	 kg	2600	1855	1380
	grab [S1]	 kg	2600	1855	1380
	max. outreach	 m	6.18	8.24	10.30
Capacity of 1st man. extension	capacity	 kg	N/A	N/A	N/A
	max. outreach	 m	N/A	N/A	N/A
Max. load height above the base for the last extension	hydraulic	 m	8.3	10.4	12.4
	manual	 m	N/A	N/A	N/A
Weight of crane without stabilizers	 kg	kg	1370	1485	1575
Weight of stabilizers	ST-M	kg	250		
	EX-M	kg	340		
	EX-H	kg	375		
	SE-H	kg	410		
Weight of special attachment	 kg	kg	40	37	34
Max. working pressure	 bar	bar	290		
Max. oil flow rate	 l/min	l/min	40		
	 l/min	l/min	60		
Power needed	 kW	kW	25.1		
	 kW	kW	37.7		
Oil tank capacity	 l	l	130		
Gross slewing torque	 $daNm$ kNm	$daNm$ kNm	2170 21.7		
Slewing angle	 $^\circ$	$^\circ$	425		
Max. working heel	 $^\circ$	$^\circ$	4 $^\circ$		
	 $^\circ$	$^\circ$	3 $^\circ$		
Max boom inclination for use with CE winch	 $^\circ$	$^\circ$	75 $^\circ$		
Max. stabilizer force on the ground with stabilizers fully extended	ST	daN	9680		
	EX	daN	7400		
	SE	daN	6000		
Max. stabilizer pressure on the ground with stabilizers fully extended	ST	MPa	3.8		
	EX	MPa	2.9		
	SE	MPa	2.4		
Lifting conversion factor, k	kgm/bar	kgm/bar	64.85		
Distribution factor of dyn. moment on base, β	-	-	0.70		
Position of standard dead point (see D.6)					

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D.2 WINCH SETTINGS

TI1 - SINGLE LINE PULL

Versions			2S	3S	4S
	Max line pull	kg	1000	1000	1000

TI1 - DOUBLE LINE PULL

Versions	2S	3S	4S
 Max line pull <i>kg</i>	1000	1000	1000



When the crane is equipped with winch, the max. working pressure and the limiter setting pressure are increased by 10 bar with respect to the standard ones.

D.3 TOTAL WEIGHTS

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

kg	Crane version		
Type of stabilizers	2S	3S	4S
ST-M	1620	1735	1825
EX-M	1710	1825	1915
EX-H	1745	1860	1950
SE-H	1780	1895	1985

Additional weight for TI1 winch: 95 kg

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

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

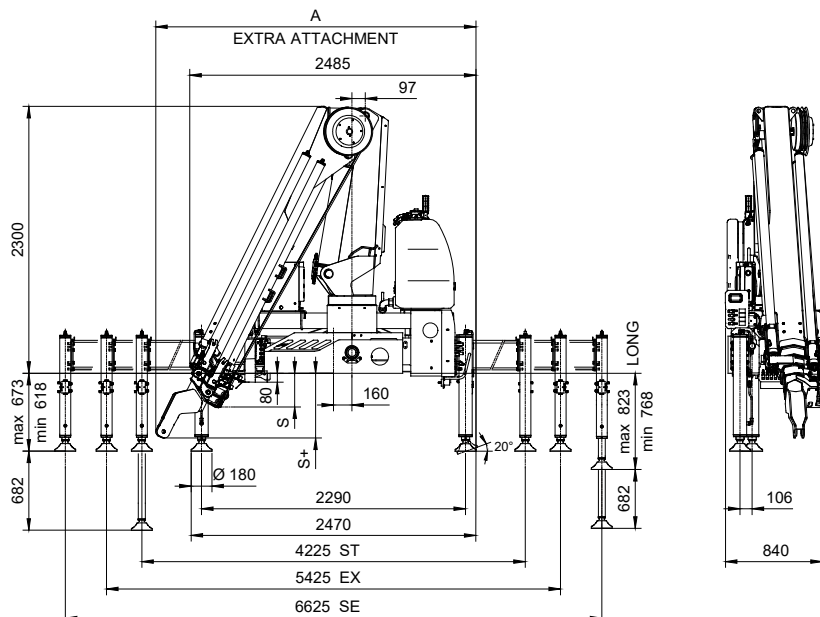
The weights may vary by $\pm 3\%$

In case of special attachment the total weights are the following:

kg	Crane version		
Type of stabilizers	2S	3S	4S
ST-M	1675	1790	1875
EX-M	1765	1880	1965
EX-H	1800	1915	2000
SE-H	1835	1950	2035

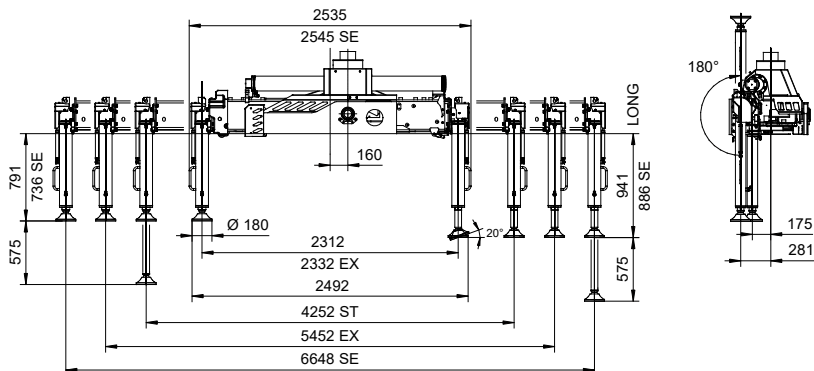
D.4 OVERALL DIMENSIONS

FIXED STABILIZERS LEGS



	2S	3S	4S
A (mm)	2670	2725	2780
S (mm)	160	225	290
S+ (mm)	430	495	560

TURNING STABILIZERS LEGS

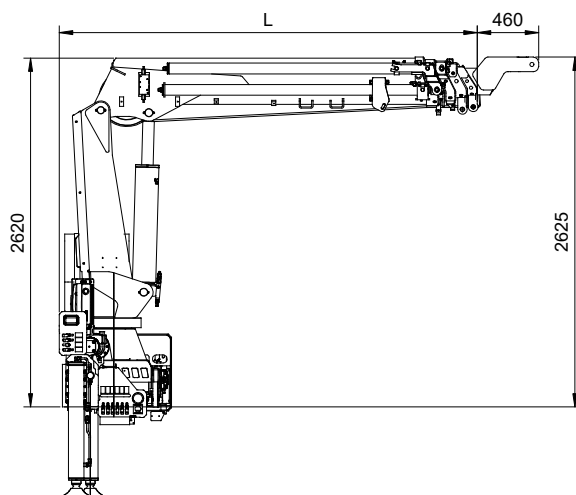


USER MANUAL

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OVERALL DIMENSIONS



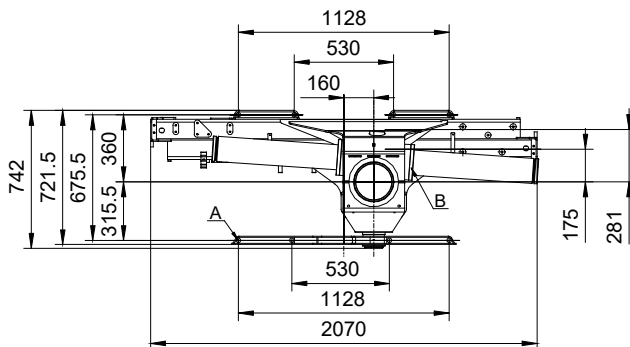
Version	L mm
2S	2970
3S	3050
4S	3130

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D.5 BASE DIMENSIONS AND MOUNTING BOLTS

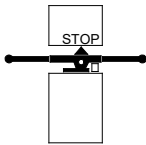
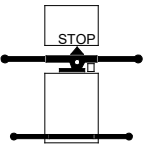
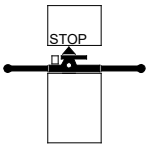
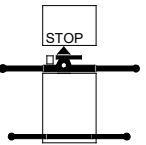
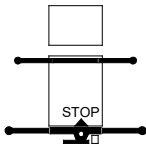
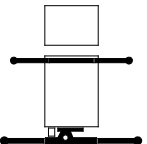
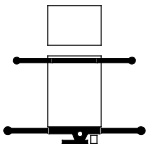
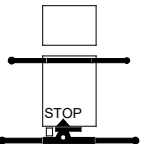
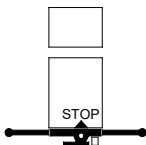
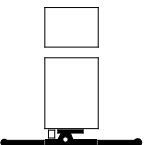
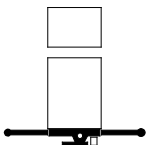
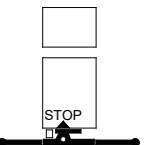
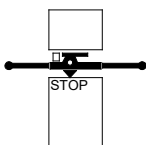
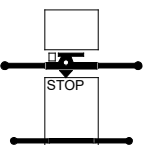
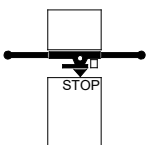
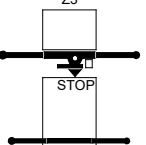


Ref.	Description	Q.ty	Material Grade	Size	Tightening torque
A	Kit with 8 crane mounting bolts	8	42CrMo4+QT EN 10083-3	M24x2 L=1100	400 Nm
	Kit with 4 crane mounting bolts	4	42CrMo4+QT EN 10083-3	M30x2 L=600	700 Nm
B	Fixing bolts for each slewing cylinder	10	8.8	M14x2 L=65	80 Nm

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D.6 INSTALLATION TYPE NUMBER

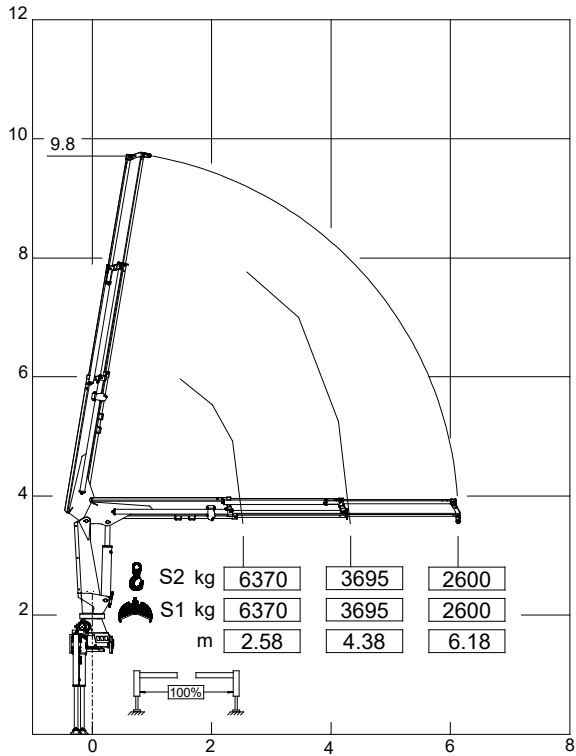
Installation types numbers (ITN) for cranes with standard dead point (STOP) toward swing bridge.

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)

USER MANUAL **818NG T** **TECHNICAL DATA**

D.7 LOAD CHARTS FOR USE WITH HOOK/TOOL **818NG T 2S**



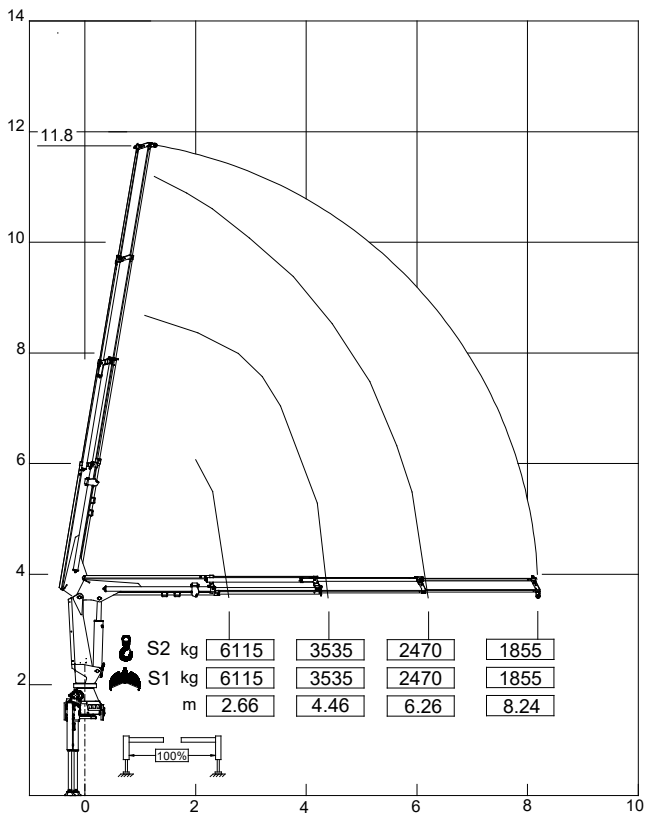
If an additional lifting tool is mounted, the rated capacities are reduced by the tool's weight.

USER MANUAL

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TECHNICAL DATA

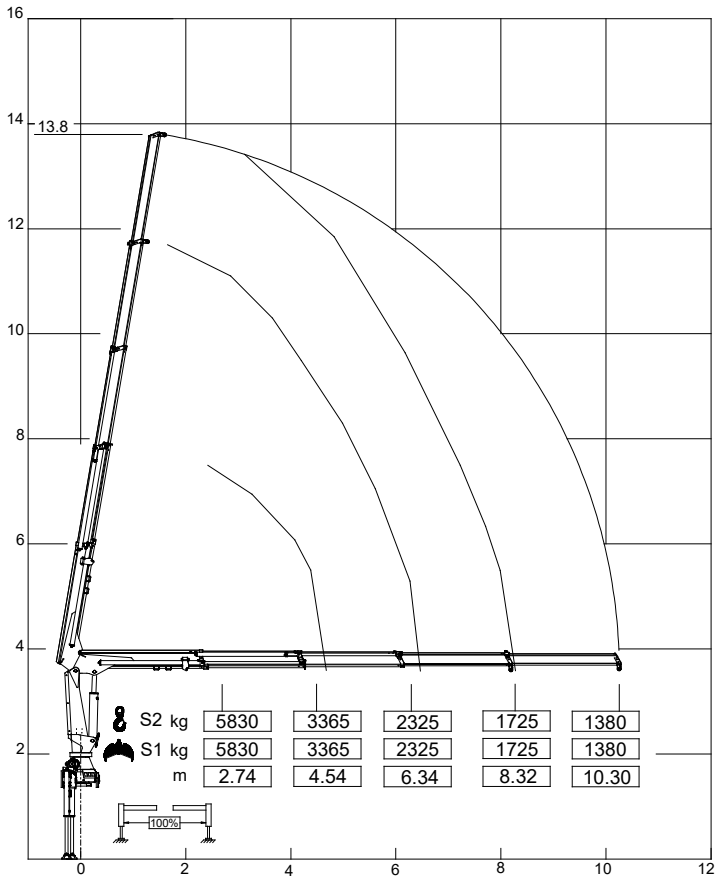
LOAD CHARTS FOR USE WITH HOOK/TOOL 818NG T 3S



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

USER MANUAL
818NG T
TECHNICAL DATA

LOAD CHARTS FOR USE WITH HOOK/TOOL
818NG T 4S



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

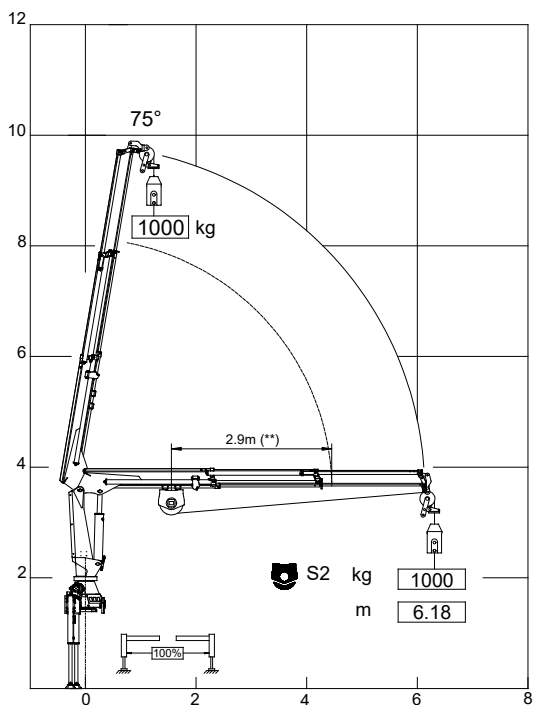
USER MANUAL

818NG T

TECHNICAL DATA

D.8 LOAD CHARTS FOR TC1 WINCH IN SINGLE LINE

818NG T 2S + TC1 SINGLE LINE



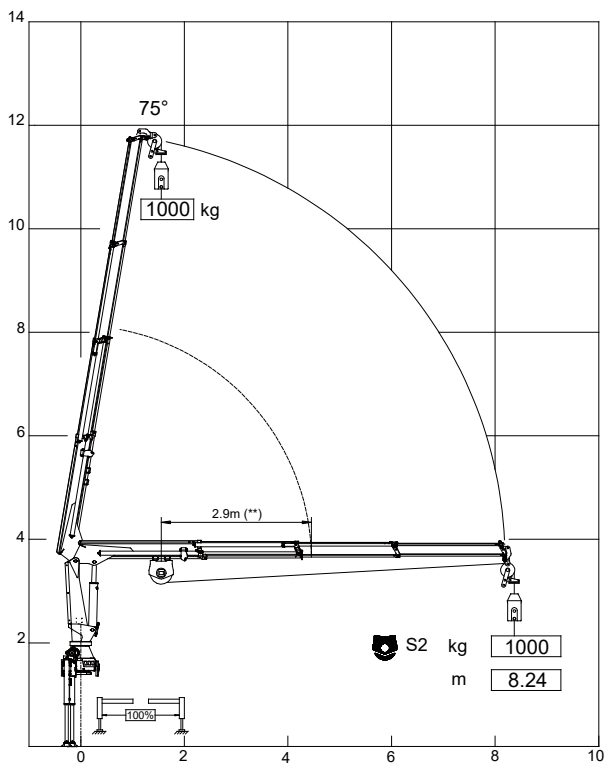
(**) Minimum distance winch - pulley
Winch max. pull: 1000 kg

USER MANUAL

818NG T

TECHNICAL DATA

LOAD CHART FOR WINCH TC1 IN SINGLE LINE 818NG T 3S + TC1 SINGLE LINE



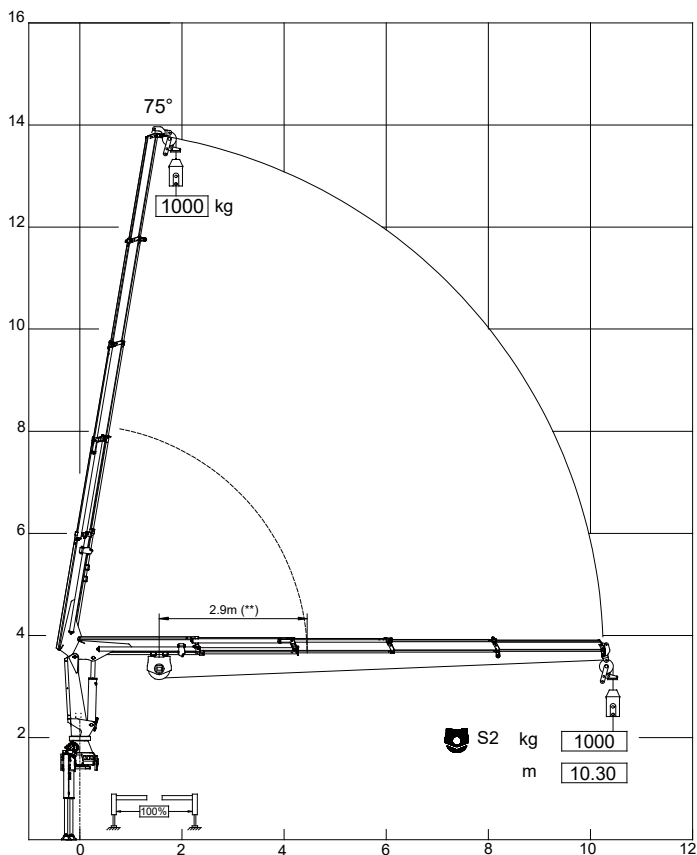
(**) Minimum distance winch - pulley
Winch max. pull: 1000 kg

USER MANUAL

818NG T

TECHNICAL DATA

LOAD CHART FOR WINCH TC1 IN SINGLE LINE 818NG T 4S + TC1 SINGLE LINE



(**) Minimum distance winch - pulley
Winch max. pull: 1000 kg

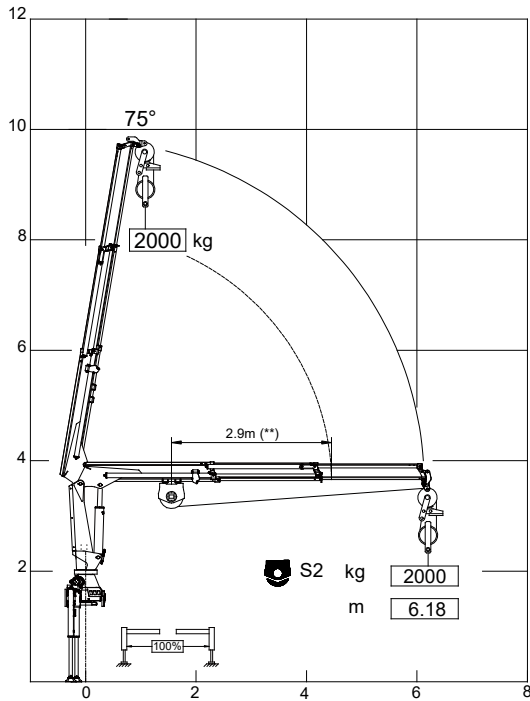
USER MANUAL

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TECHNICAL DATA

D.9 LOAD CHARTS FOR TC1 WINCH IN DOUBLE LINE

818NG T 2S + TC1 DOUBLE LINE



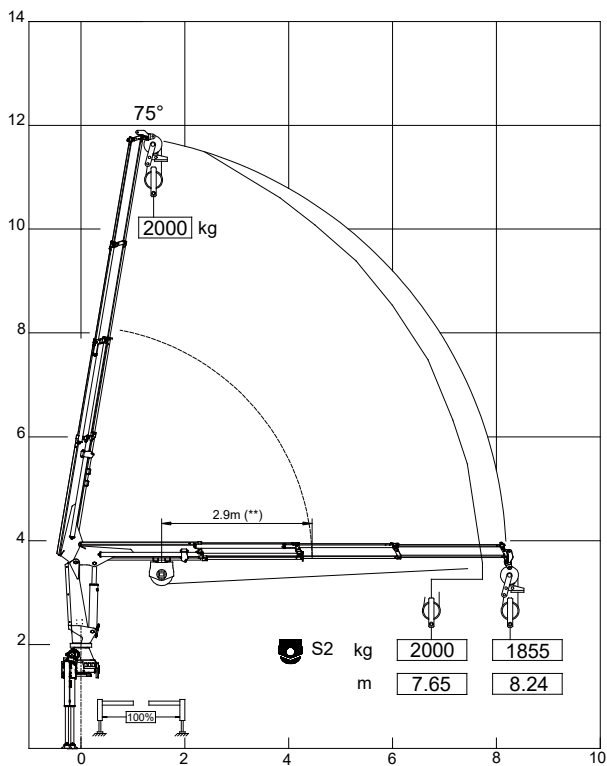
(**) Minimum distance winch - pulley
Winch max. pull: 1000 kg

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818NG T

TECHNICAL DATA

LOAD CHART FOR WINCH TC1 IN DOUBLE LINE 818NG T 3S + TC1 DOUBLE LINE



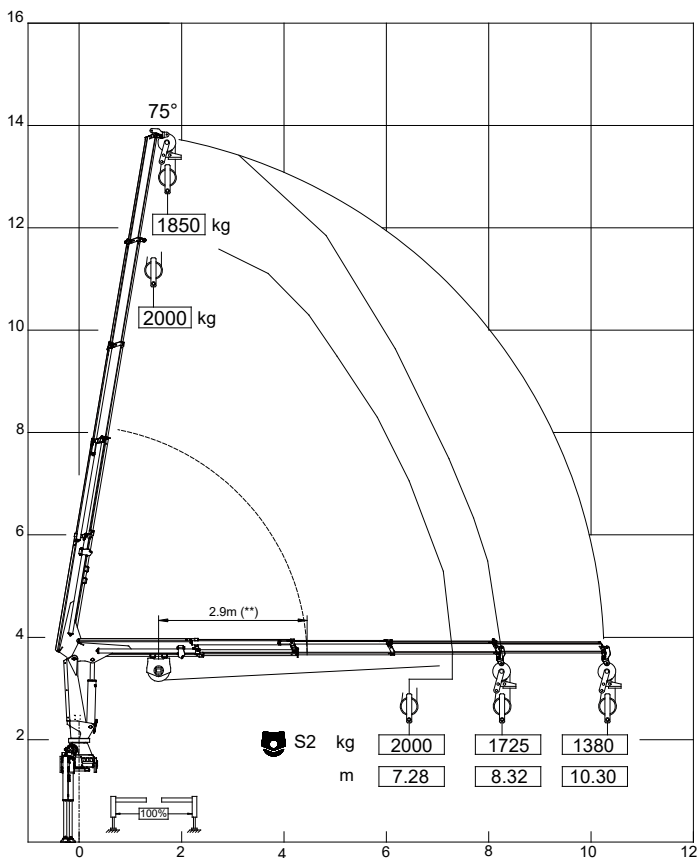
(**) Minimum distance winch - pulley
Winch max. pull: 1000 kg

USER MANUAL

818NG T

TECHNICAL DATA

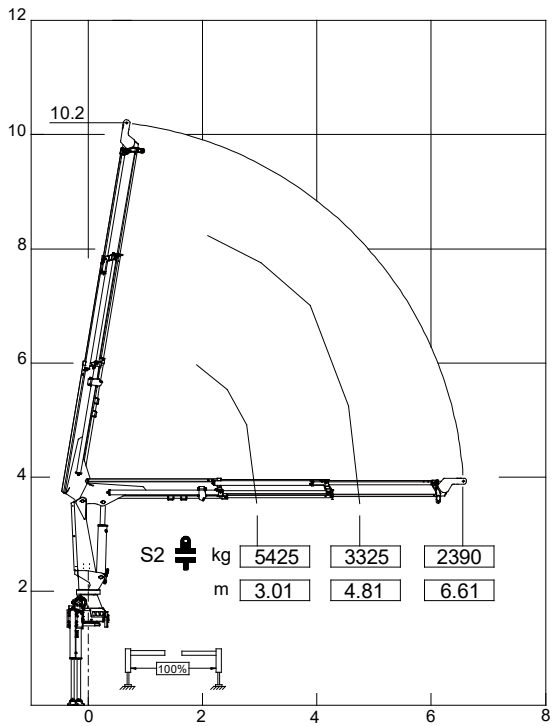
LOAD CHART FOR WINCH TC1 IN DOUBLE LINE 818NG T 4S + TC1 DOUBLE LINE



(**) Minimum distance winch - pulley
Winch max. pull: 1000 kg

USER MANUAL
818NG T
TECHNICAL DATA

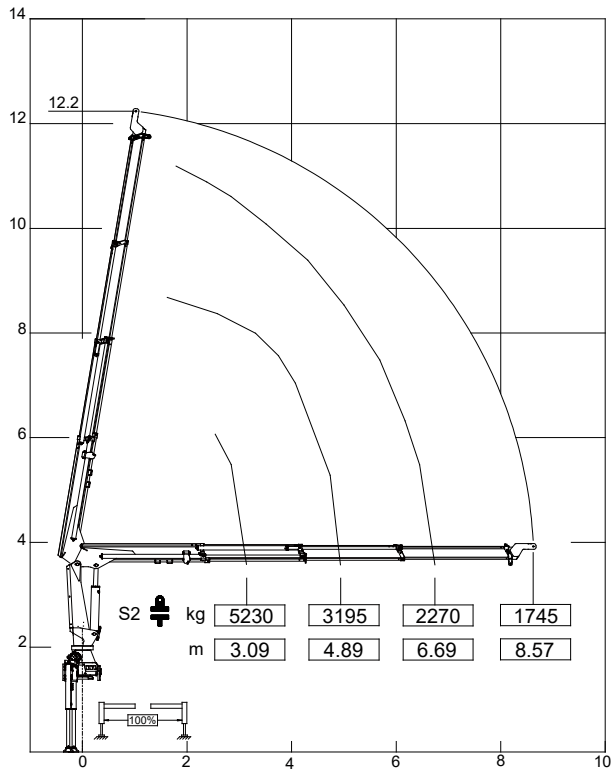
D.10 LOAD CHARTS FOR USE WITH SPECIAL ATTACHMENT
818NG T 2S



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

USER MANUAL
818NG T
TECHNICAL DATA

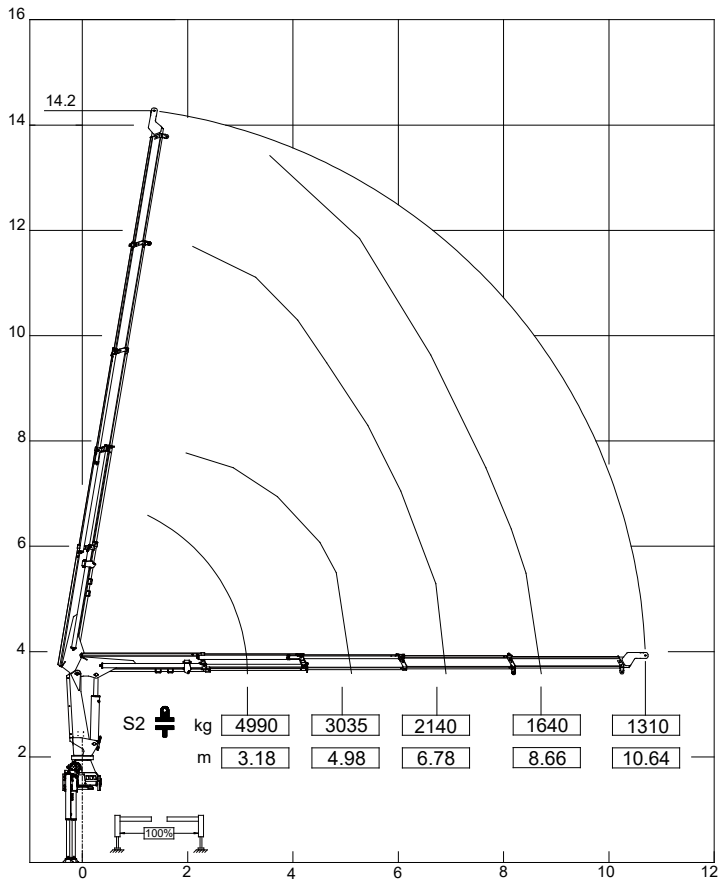
LOAD CHARTS FOR USE WITH SPECIAL HOOK
818NG T 3S



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

USER MANUAL
818NG T
TECHNICAL DATA

LOAD CHARTS FOR USE WITH SPECIAL HOOK
818NG T 4S

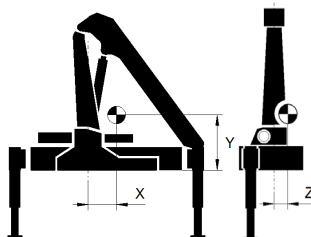
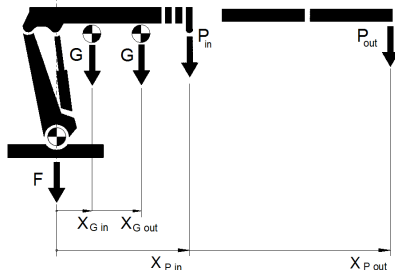


If an additional lifting tool is mounted, the rated capacities are reduced by the tool's weight.

D.11 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: STANDARD CRANE

818NG T	F Kg	G Kg	X_G in / out m	P in / out kg	X_P in / out m	TL (TL2) kg	X	Y	Z
2S	ST-M : 1160	460	1.36 2.83	6370 2600	2.58 6.18	3250	242	707	-32
3S	EX-M : 1250 EX-H : 1285	575	1.39 3.58	6115 1855	2.66 8.24	2319	283	717	-17
4S	SE-H : 1320	665	1.43 4.33	5830 1380	2.74 10.30	1725	312	722	-5

WEIGHTS AND COG: CRANE WITH SPECIAL ATTACHMENT

818NG T	F kg	G kg	X_G in / out m	P in / out kg	X_P in / out m	TL kg	X	Y	Z
2S	ST-M : 1160	515	1.36 2.83	5425 2390	3.01 6.61	2988	241	592	-51
3S	EX-M : 1250 EX-H : 1285	630	1.39 3.58	5230 1745	3.09 8.57	2181	294	605	-36
4S	SE-H : 1320	715	1.43 4.33	4990 1310	3.18 10.64	1638	317	586	-24

The data are relating to crane configuration with horizontal booms.

USER MANUAL

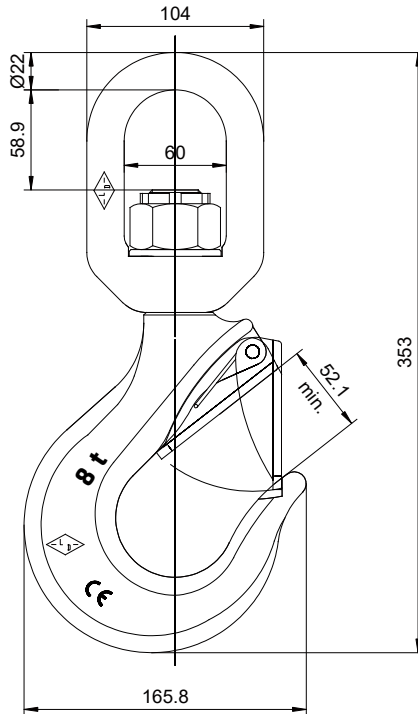
818NG T

TECHNICAL DATA

D.12 HOOK DATA

HOOK MOUNTED ON STANDARD BOOM
VERSIONS: 2S, 3S, 4S

DIMENSIONS



TECHNICAL PROPERTIES

Working load limit (WLL) : 8000 kg

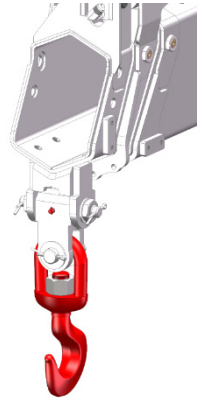
Material: alloy steel

Weight: 6.2 kg

Swivel hook

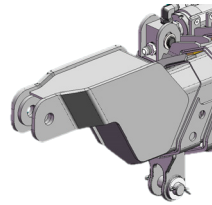
Reference standard: DIN 15401

D.13 LOAD ATTACHMENT



Technical drawing of a mechanical part, likely a nozzle or probe, showing three views: front, side, and end view. The dimensions are as follows:

- Front View (Left):** Shows a symmetrical profile with a total width of 43 mm at the top.
- Side View (Middle):** Shows the profile with a total length of 128 mm.
- End View (Right):** Shows a circular cross-section with an outer diameter of $\varnothing 30.5$ mm and an inner diameter of 42 mm. The distance from the center to the outer edge is 55 mm.



AMCO / VEBA
LIFTING BEYOND HORIZONS

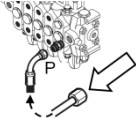
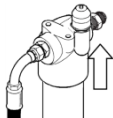
USER MANUAL

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D.14 HYDRAULIC SYSTEM

FITTINGS FOR CONNECTION TO PUMP

818NG T	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 OF HYDRAULIC CYLINDERS

818NG T	Extension time s	Retraction time s
Slewing (180°)	20	20
2.boom cylinder	17	30
boom extension 1S	5	7
boom extension 2S	10	13
boom extension 3S	14	18
boom extension 4S	20	25

Times are indicative and referring to the following operating conditions:

- unloaded crane operated with a single control lever
- oil flow rate recommended for NO 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.

818NG T	Time interval min.	Max. load descent mm
2S	10	307
3S	10	410
4S	10	513

CAPACITY OF HYDRAULIC SYSTEM

818NG T	Cylinders extended ℓ	Cylinders retracted ℓ
2S	53	37
3S	60	42
4S	68	47

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.15 OIL COOLER



TECHNICAL SPECIFICATIONS

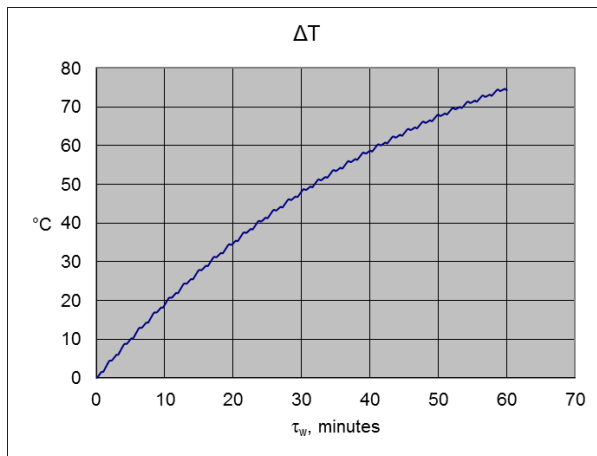
Heat transfer coefficient: 235 W/K (oil flow rate of 40 l/min)

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

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

where:

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

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

τ_w : working time (minutes)

USER MANUAL

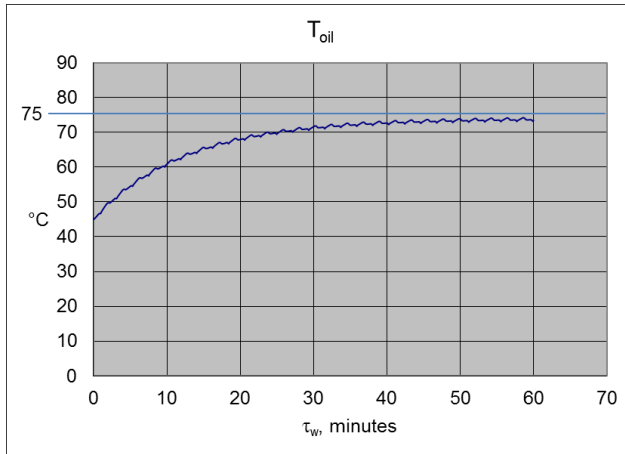
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However, when a crane equipped with oil cooler carries out a sequence of standard work cycles, the oil temperature exceeds 75 °C after the following working times:

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.



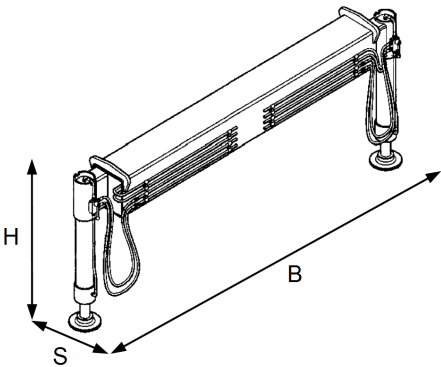
Notes:

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.16 ADDITIONAL STABILIZERS



Additional stabilizers must be chosen so that:

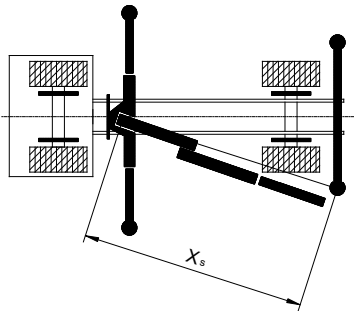
- the installation is stable (see Installer Manual)
- the max. force acting on the additional stabilizers, F_s , is lower than the max. load allowed by the stabilizers itself, R_{max} .

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

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 the 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.

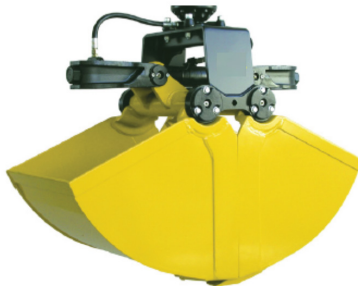
USER MANUAL

818NG T

TECHNICAL DATA

D.17 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	2600	H605-650	410	650	975	2190	53%	100%
3S	1855	H605-650	410	650	975	1445	75%	100%
		H605-550	375	550	825	1480	65%	100%
4S	1380	H605-450	340	450	675	1040	74%	100%
		H604-350	240	350	525	1140	55%	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

USER MANUAL

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TECHNICAL DATA

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	2600	H653-4 large	435	500	750	2165	46%	100%
3S	1855	H653-4 large	435	500	750	1420	64%	100%
4S	1380	H653-4 large	395	350	525	985	67%	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	2600	H634-0,25	170	4000	2430	100%	61%
3S	1855	H634-0,25	170	4000	1685	100%	42%
4S	1380	H634-0,25	170	4000	1210	100%	30%

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

USER MANUAL

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TECHNICAL DATA

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	2600	H332-850	245	2200	2355	94%	100%
3S	1855	H332-850	245	2200	1610	100%	73%
4S	1380	H332-850	245	2200	1135	100%	52%

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	2600	H415 1500-500	135	1500	2465	63%	100%
3S	1855	H415 1500-500	135	1500	1720	88%	100%
4S	1380	H415 1500-500	135	1500	1245	100%	83%

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