

PALFINGER

EPSILON TIMBER & RECYCLING CRANES

TECHNICAL MANUAL OFFROAD

LIFETIME EXCELLENCE



YOUR PARTNER FOR THE FUTURE

With PALFINGER EPSILON, every product is much more than the sum of its parts. Throughout the entire company, we work to ultra-modern requirements and always aim to create durable, innovative and customized solutions for our customers. Customer satisfaction is the top priority for us. This is why you can rely on long-lasting and low-maintenance products from PALFINGER EPSILON.

We are always striving for long-term solutions. We challenge and support employees in our innovation center and, with the conversion of our corporate headquarters, we are already expanding our capacities for the future. Together with our partners, we try to provide you with the customized solution by creating innovative products.

PALFINGER EPSILON.

Product overview

Forwarder cranes

C45F	04
C50F, C60F	05
M70F, M80F, S100F, S110F	06
X120F, X140F	08

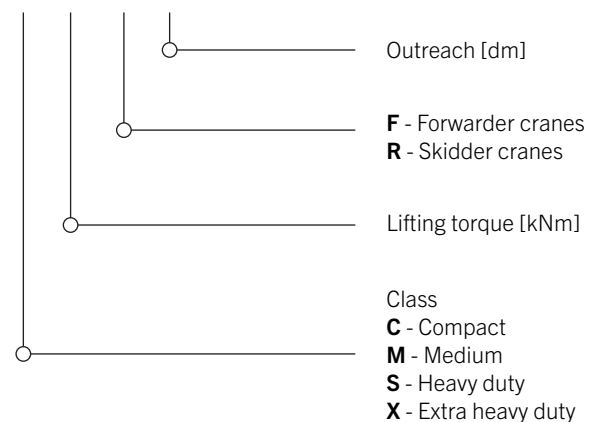
Skidder cranes

M70R, M80R, M90R, S110R, S120R	10
X130R, X150R	12

Standard equipment	13
Equipment	14
Grabs for forwarder and skidder cranes	15
Dead points	16
Special equipment	16
SMART CONTROL	18

Product name

S 110 F 86

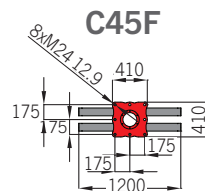
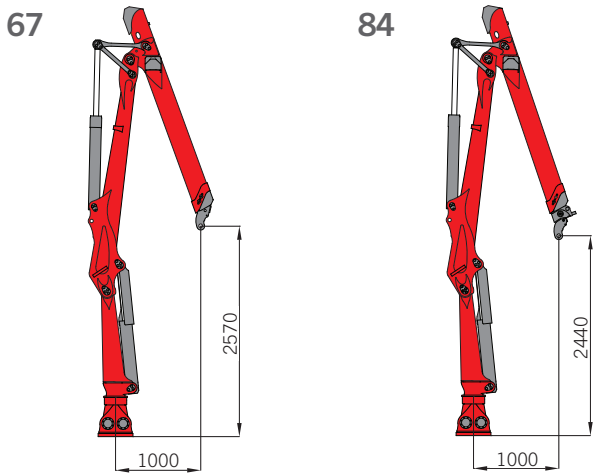
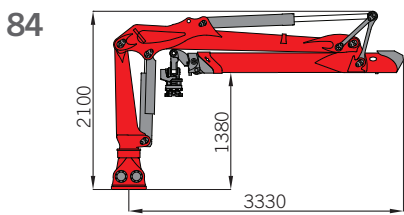
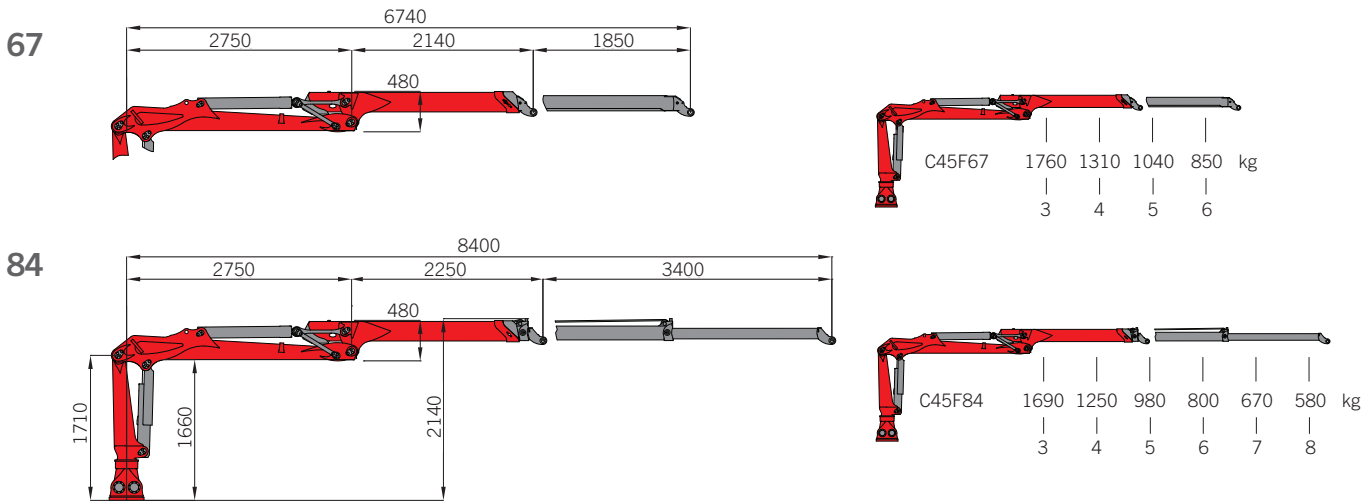


FORWARDER CRANES



FORWARDER CRANES

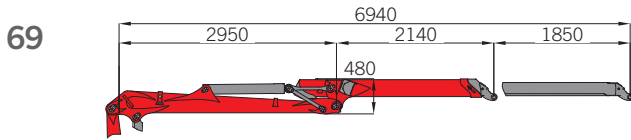
C-CLASS



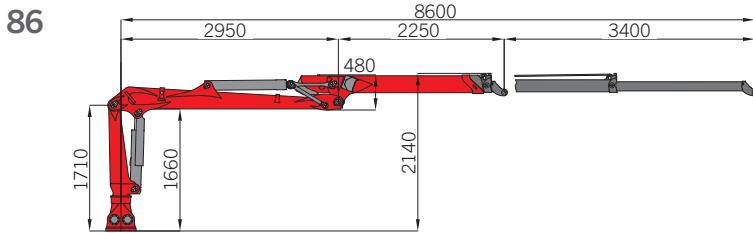
		C45F	
		67	84
Lifting moment (gross)	[kNm]	71	
Lifting moment (net)	[kNm]	53	51
Max. outreach	[m]	6.7	8.4
Slewing torque (gross)	[kNm]	18	
Slewing torque (net)	[kNm]	14	
Slewing angle	[°]	340	
Dead weight without link/rotator	[kg]	1020	1100
Operating pressure	[bar]	170	
Pump capacity (recommended)	[l/min]	100 LS	

Weight of standard crane including oil, headlight brackets and lifting cylinder protection, without link/rotator, material tolerances +/-5%; lifting capacity (net) without load-carrying equipment. Designed for interval operation up to max. 4 hours/day / 800 hours/year

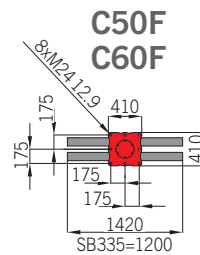
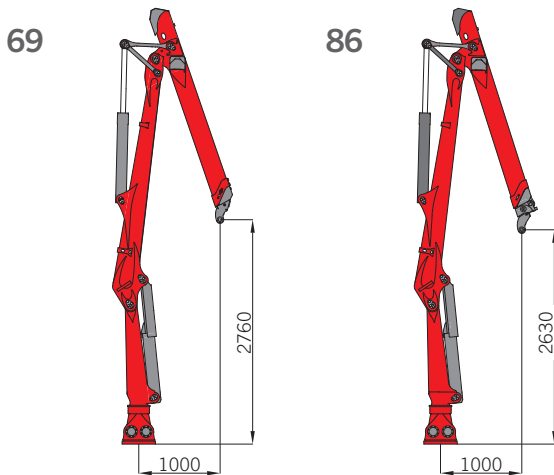
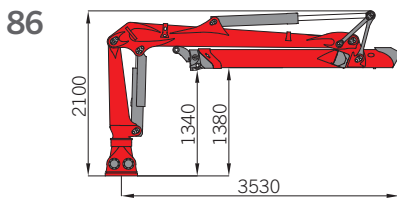
C-CLASS



C50F69	1860	1390	1110	910	kg
C60F69	2110	1580	1260	1040	kg
	3	4	5	6	



C50F86	1780	1320	1050	850	720	620	kg
C60F86	2040	1510	1200	980	830	720	kg
	3	4	5	6	7	8	

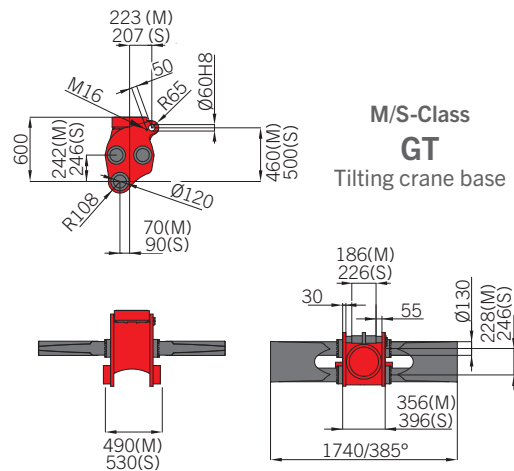
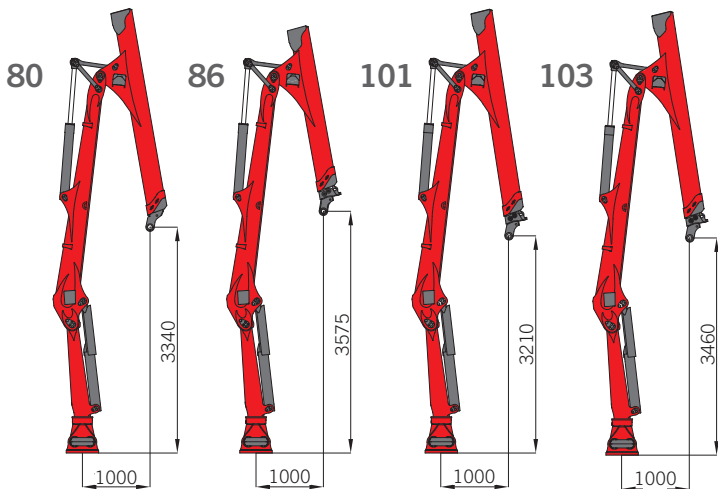
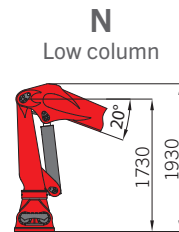
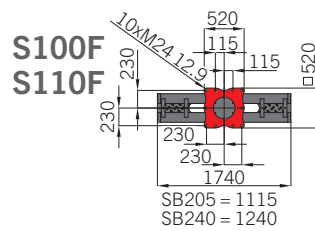
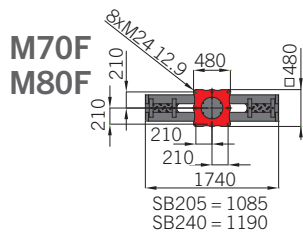
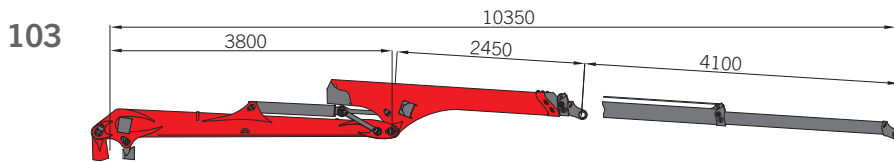
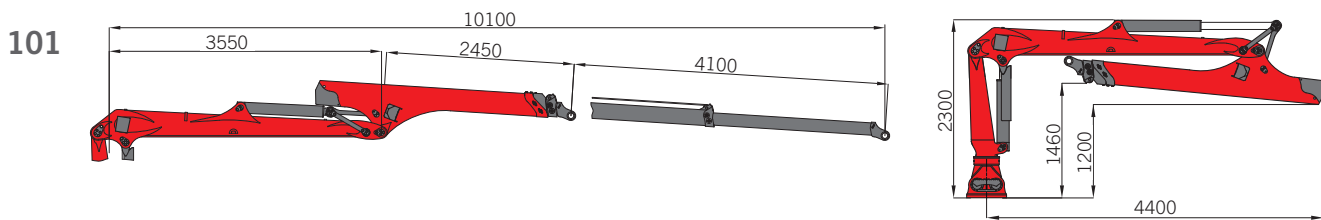
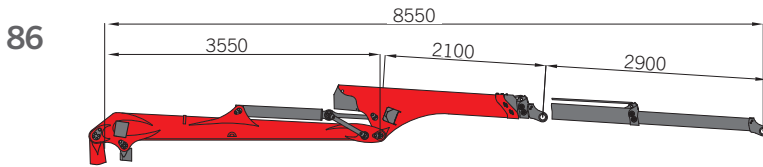
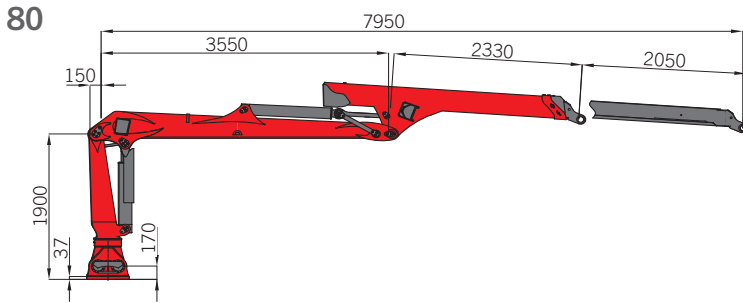


	[kNm]	C50F		C60F	
		69	86	69	86
Lifting moment (gross)		76		82	
Lifting moment (net)		56	54	63	61
Max. outreach	[m]	6.9	8.6	6.9	8.6
Slewing torque (gross)		23		25	
Slewing torque (net)		18		20	
Slewing angle	[°]	335 / 425			
Dead weight without link/rotator	[kg]	1060	1140	1090	1170
Operating pressure	[bar]	180		200	
Pump capacity (recommended)	[l/min]	120 LS		120 LS	

Weight of standard crane including oil, headlight brackets and lifting cylinder protection, without link/rotator, material tolerances +/-5%; lifting capacity (net) without load-carrying equipment

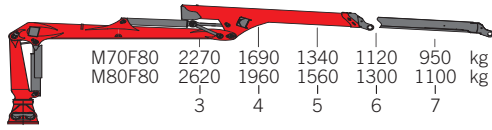
FORWARDER CRANES

M-CLASS / S-CLASS

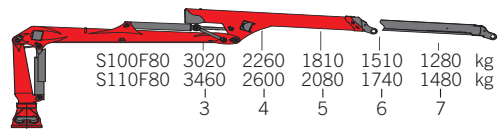


M-CLASS / S-CLASS

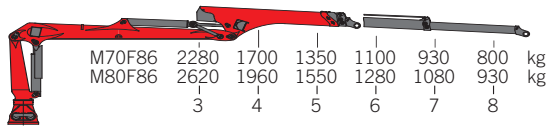
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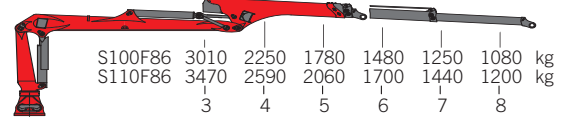
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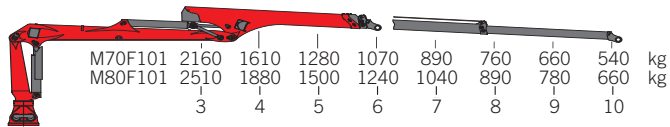
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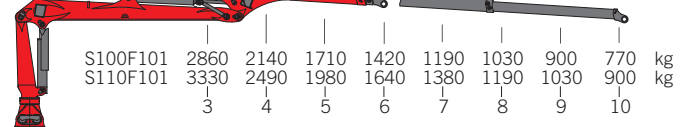
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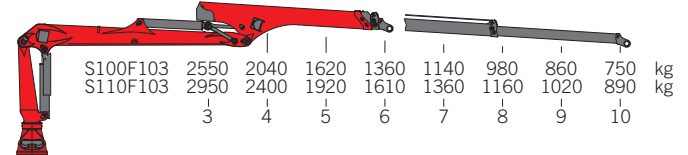
101



101



103

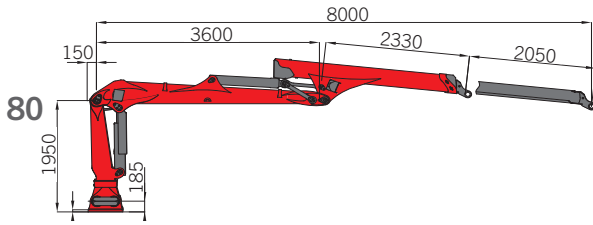


		M70F			M80F			S100F				S110F			
		80	86	101	80	86	101	80	86	101	103	80	86	101	103
Lifting moment (gross)	[kNm]	102			114			128				143			
Lifting moment (net)	[kNm]	68	68	65	79	79	75	91	90	86	82	104	104	100	96
Max. outreach	[m]	8.0	8.6	10.1	8.0	8.6	10.1	8.0	8.6	10.1	10.3	8.0	8.6	10.1	10.5
Slewing torque (gross)	[kNm]	31			35			40				44			
Slewing torque (net)	[kNm]	26			29			33				36			
Slewing angle	[°]	205 / 240 / 385													
Dead weight without link/rotator	[kg]	1590	1650	1730	1620	1680	1760	1750	1800	1890	1915	1780	1830	1920	1945
Operating pressure	[bar]	215			240			215				240			
Pump capacity (recommended)	[l/min]	130 LS						150 LS							

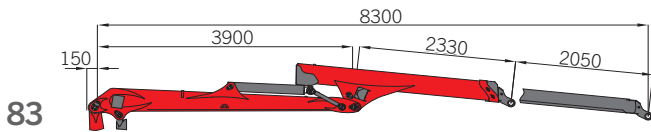
Weight of standard crane including oil, headlight brackets and lifting cylinder protection, without link/rotator, material tolerances +/-5%; lifting capacity (net) without load-carrying equipment

FORWARDER CRANES

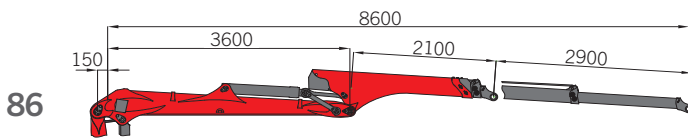
X-CLASS



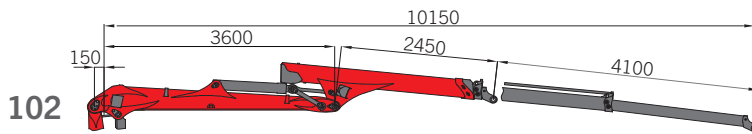
X120F80	3700	2770	2210	1840	1570	1360	kg
X140F80	4110	3090	2470	2050	1750	1520	kg
	3	4	5	6	7	8	



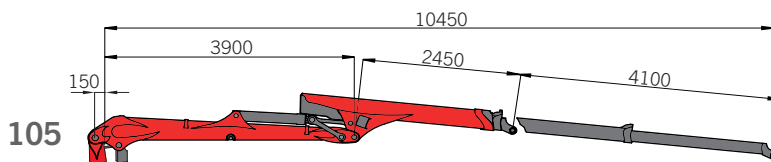
X120F83	3670	2750	2200	1840	1560	1350	kg
X140F83	4070	3050	2450	2040	1740	1500	kg
	3	4	5	6	7	8	



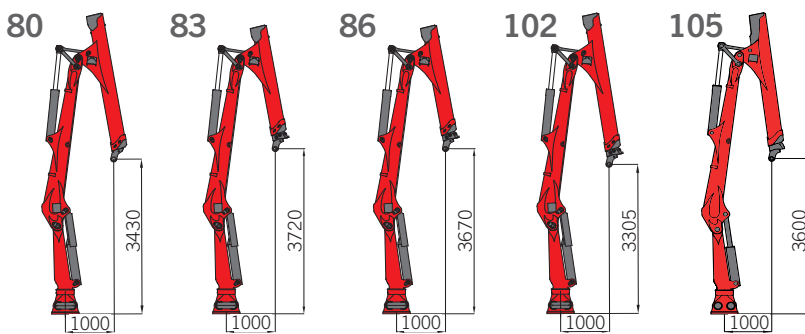
X140F86	3650	2730	2170	1790	1520	1320	kg
X140F86	4060	3040	2420	2000	1700	1480	kg
	3	4	5	6	7	8	



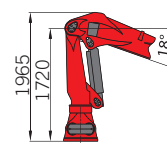
X120F102	3550	2650	2100	1740	1460	1260	1110	980	kg
X140F102	3950	2960	2350	1940	1640	1420	1250	1100	kg
	3	4	5	6	7	8	9	10	



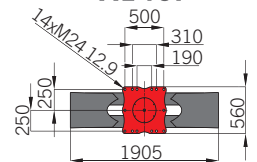
X120F105	3470	2600	2060	1710	1430	1240	1090	970	kg
X140F105	3920	2940	2310	1920	1620	1400	1230	1100	kg
	3	4	5	6	7	8	9	10	



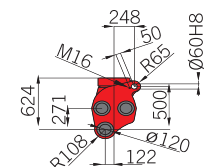
N
Low column



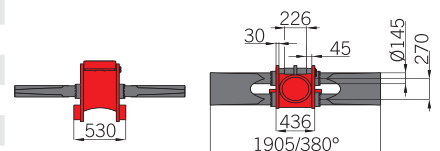
X120F
X140F



	X120F					X140F				
	80	83	86	102	105	80	83	86	102	105
Lifting moment (gross)	[kNm] 159					[kNm] 173				
Lifting moment (net)	111	110	110	107	104	123	122	122	119	118
Max. outreach	8.0	8.3	8.6	10.2	10.5	8.0	8.3	8.6	10.2	10.5
Slewing torque (gross)	[kNm] 45					[kNm] 49				
Slewing torque (net)	[kNm] 40					[kNm] 43				
Slewing angle	[°] 200 / 240 / 380									
Dead weight without link/rotator	2090	2110	2140	2220	2240	2120	2140	2170	2250	2270
Operating pressure	[bar] 230					[bar] 250				
Pump capacity (recommended)	[l/min] 150 LS									



X-Class
GT
Tilting
crane base



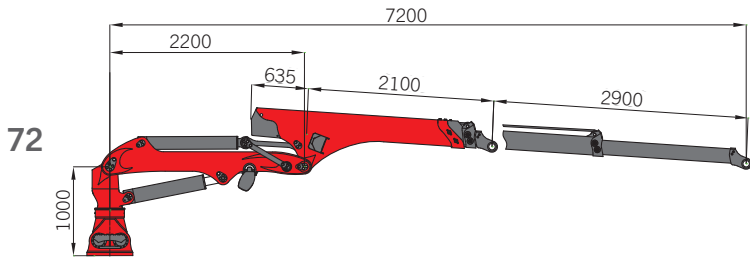
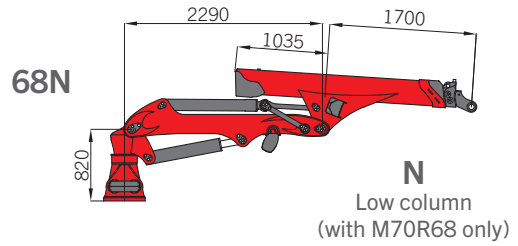
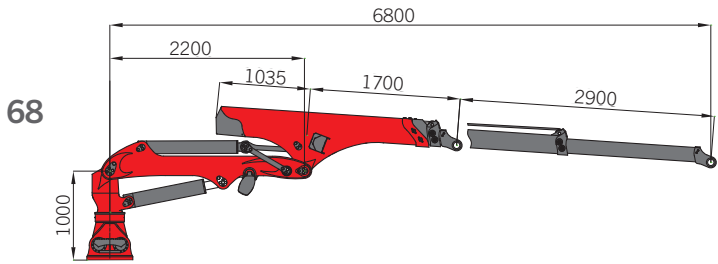
Weight of standard crane including oil, headlight brackets and lifting cylinder protection, without link/rotator, material tolerances +/-5%; lifting capacity (net) without load-carrying equipment

SKIDDER CRANES

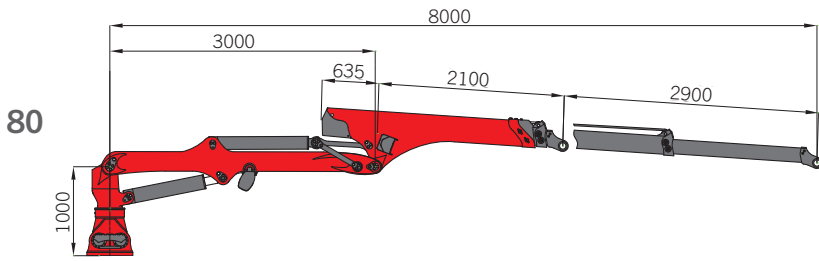
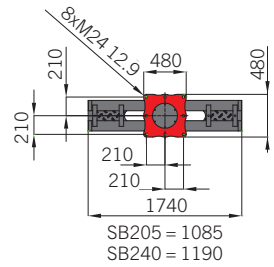


SKIDDER CRANES

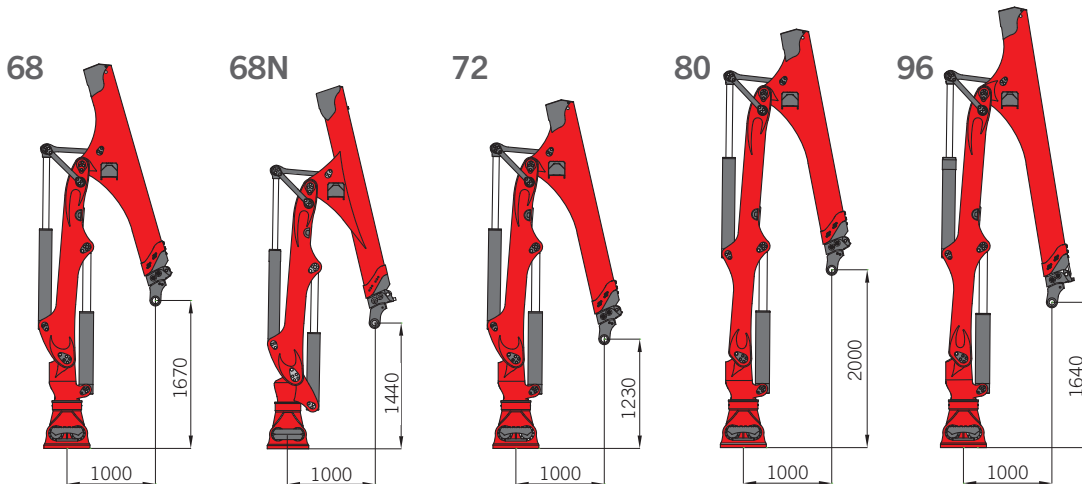
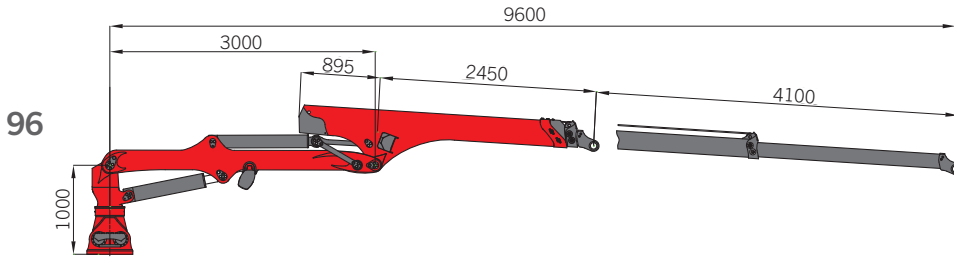
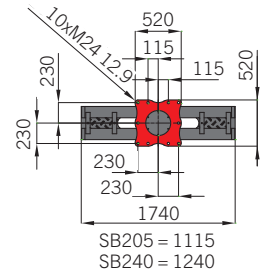
M-CLASS / S-CLASS



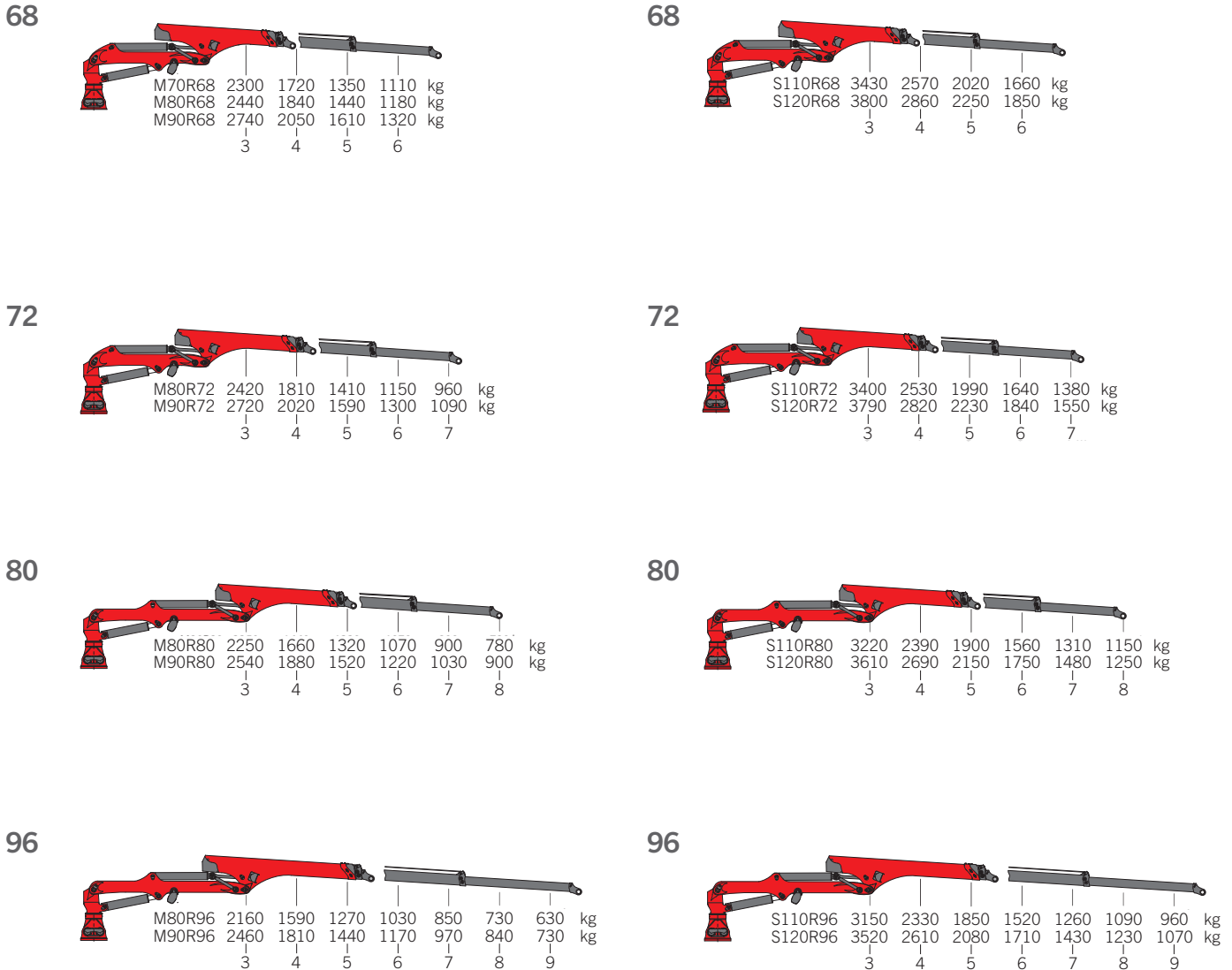
M70R
M80R
M90R



S110R
S120R



M-CLASS / S-CLASS

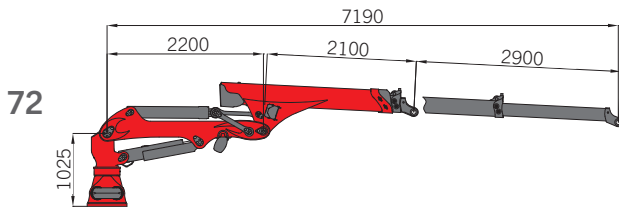


	M70R		M80R			M90R				S110R				S120R			
	68	68	72	80	96	68	72	80	96	68	72	80	96	68	72	80	96
Lifting moment (gross) [kNm]	90		95			104				126				139			
Lifting moment (net) [kNm]	69	73	73	68	65	82	82	76	74	103	102	97	95	114	114	108	106
Max. outreach [m]	6.8	6.8	7.2	8.0	9.6	6.8	7.2	8.0	9.6	6.8	7.2	8.0	9.6	6.8	7.2	8.0	9.6
Slewing torque (gross) [kNm]	30		31			35				40				44			
Slewing torque (net) [kNm]	25		26			29				33				36			
Slewing angle [°]	205 / 240 / 385																
Dead weight without link/rotator [kg]	1430	1450	1450	1490	1620	1480	1480	1520	1650	1580	1580	1630	1730	1610	1610	1660	1760
Operating pressure [bar]	190		200			220				205 / 260 Tele				225 / 280 Tele			
Pump capacity (recommended) [l/min]	130 LS									150 LS							

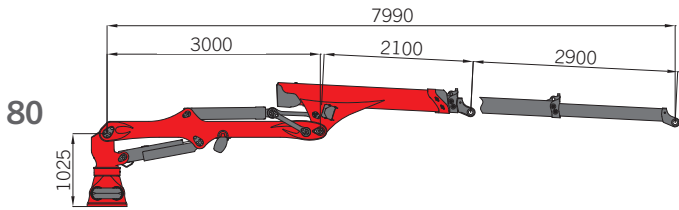
Weight of standard crane including oil, headlight brackets and lifting cylinder protection, without link/rotator, material tolerances +/-5%; lifting capacity (net) without load-carrying equipment

SKIDDER CRANES

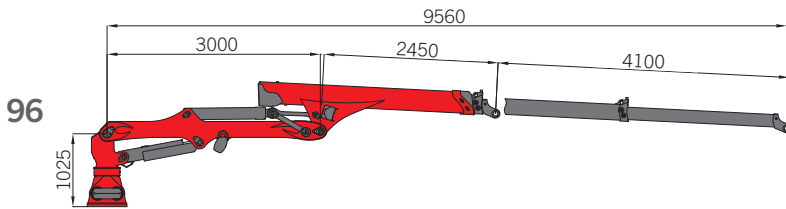
X-CLASS



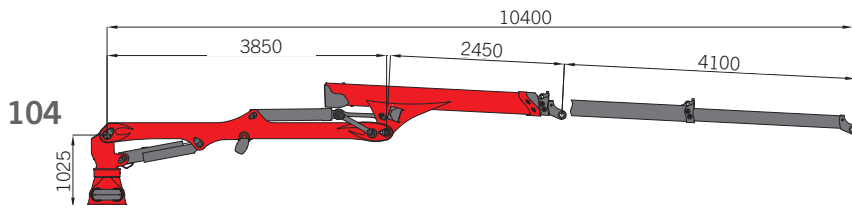
X130R72	4230	3140	2480	2050	1740	kg
X150R72	4670	3480	2750	2270	1930	kg
	3	4	5	6	7	



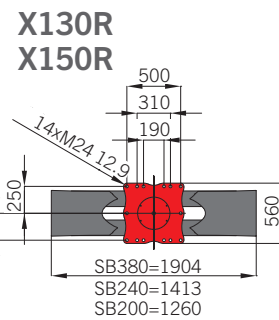
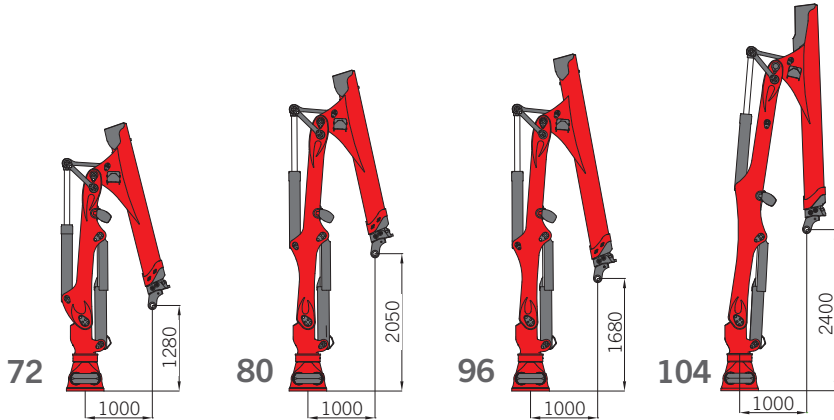
X130R80	4010	2980	2350	1930	1640	1410	kg
X150R80	4470	3300	2620	2160	1830	1580	kg
	3	4	5	6	7	8	



X130R96	3930	2900	1760	1870	1570	1360	1190	kg
X150R96	4370	3220	2550	2090	1760	1530	1350	kg
	3	4	5	6	7	8	9	



X130R104	3680	2700	2130	1740	1460	1260	1100	980	kg
X150R104	4120	3040	2390	1960	1650	1430	1250	1100	kg
	3	4	5	6	7	8	9	10	

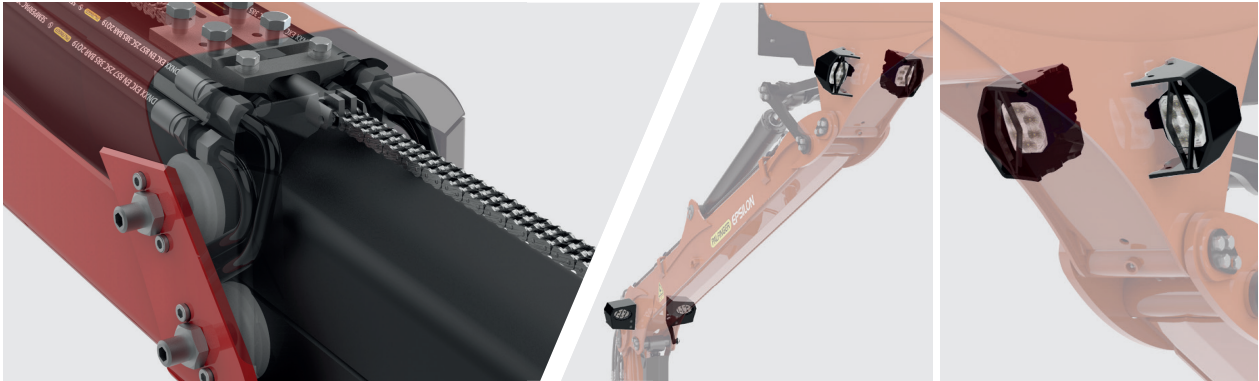


	X130R				X150R			
	72	80	96	104	72	80	96	104
Lifting moment (gross)	156				170			
Lifting moment (net)	127	120	118	110	140	134	131	124
Max. outreach	7.2	8.0	9.6	10.4	7.2	8.0	9.6	10.4
Slewing torque (gross)	57				62			
Slewing torque (net)	47				52			
Slewing angle	200 / 240 / 380							
Dead weight without link/rotator	1940	2020	2110	2180	1970	2050	2140	2210
Operating pressure	220				240			
Pump capacity (recommended)	150 LS							

Weight of standard crane including oil, headlight brackets and lifting cylinder protection, without link/rotator, material tolerances +/-5%; lifting capacity (net) without load-carrying equipment

STANDARD EQUIPMENT

	Forwarder cranes				Skidder cranes		
	C	M	S	X	M	S	X
EPSCOBE double telescopic boom system, all parts protected and mounted inside	•	•	•	•	•	•	•
EPSLIGHT EPSILON light package mounted and wired	•	•	•	•	•	•	•
Main boom with solid boom strap below	-	•	•	•	-	-	-
Main cylinder protection	•	•	•	•	•	•	•
Double slewing system	•	•	•	•	•	•	•



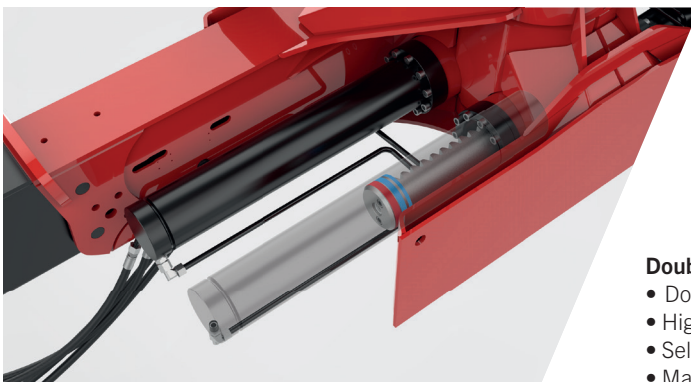
EPSCOBE double telescope system with internal hoses and internal push cylinder

EPSLIGHT latest LED technology: The headlights are significantly smaller and protected by a cover (4x on forwarder crane, 2x on skidder crane)



Main boom with solid boom strap below (no cover required)

Main cylinder protection



Double rack slewing system

- Double slewing system with end position damper
- High-precision toothed rack slewing system
- Self-aligning roller bearing running in an oil bath
- Maximum slewing capacity

EQUIPMENT

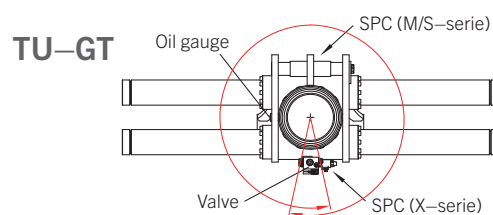
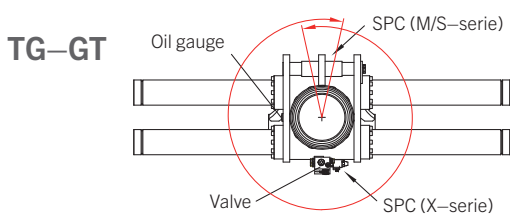
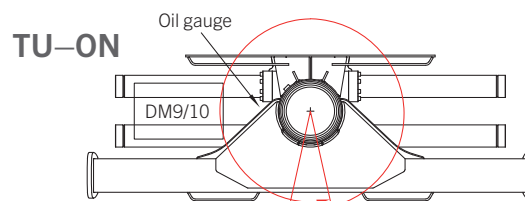
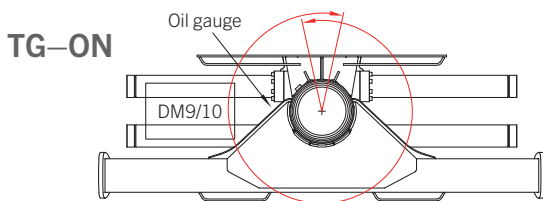
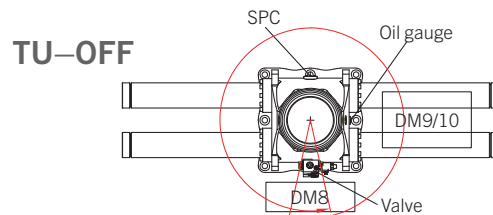
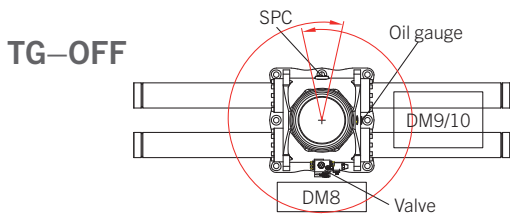
		Forwarder cranes					Skidder cranes		
		C45F	C50F C60F	M70F M80F	S100F S110F	X120F X140F	M70R M80R M90R	S110R S120R	X130R X150R
Control type									
DM8H_1	Danfoss PVG32 load sensing, 8 sections, without controller	○	○	–	–	–	–	–	–
DM9L_1	Danfoss PVG32 load sensing, 9 sections, without controller (not available in combination with SB205 or SB240)	–	○	○	○	–	–	–	–
DM10L_1	Danfoss PVG32 load sensing, 10 sections, without controller (not available in combination with SB205 or SB240)	–	○	○	○	–	–	–	–
WCT_1	Without control type	○	○	○	○	○	○	○	○
Standard									
NCE_1	Not CE	●	○	○	○	●	●	●	●
NCEV_1	CE pre-installation including hose rupture valves, main boom control and outrigger monitoring	–	○	○	○	–	–	–	–
Mode of operation									
JEPROF_1	Prof1 Danfoss joysticks (versions 162F1128 and 162F1112, cabled), only in connection with DM8H, DM9L or DM10L	○	○	○	○	–	–	–	–
Crane hydraulics									
1K-PVG32E_1	Danfoss PVG32 KP (electric)	○	○	○	○	–	–	–	–
LS-PVG32E_1	Danfoss PVG32 VP (electric)	○	○	○	○	–	–	–	–
Crane base and dead center									
TG-OFF_1	Off-road flange crane base TOG	○	○	○	○	○	○	○	○
TU-OFF_1	Off-road flange crane base TOU	○	○	○	○	○	○	○	○
TG-ON_1	On-road crane base TOG	–	○	○	○	–	–	–	–
TU-ON_1	On-road crane base TOU	–	○	○	○	–	–	–	–
TG-GT_1	Off-road tilting crane base TOG	–	–	○	○	○	–	–	–
TU-GT_1	Off-road tilting crane base TOU	–	–	○	○	○	–	–	–
TOS_1	Special dead center	○	○	○	○	○	○	○	○
Slewing angle									
SB200_1	Slewing angle 200°	–	–	–	–	○	–	–	○
SB205_1	Slewing angle 205°	–	–	○	○	–	○	○	–
SB240_1	Slewing angle 240°	–	–	○	○	○	○	○	○
SB335_1	Slewing angle 335°	–	○	–	–	–	–	–	–
SB340_1	Slewing angle 340°	●	–	–	–	–	–	–	–
SB380_1	Slewing angle 380°	–	–	–	–	○	–	–	○
SB385_1	Slewing angle 385°	–	–	○	○	–	○	○	–
SB425_1	Slewing angle 425° with M- and S-Class with TG or TU-ON	–	○	○	○	–	–	–	–
Stabilizers									
RX41C_1	Outrigger 4.1 m, classic	–	○	–	–	–	–	–	–
RX39C_1	Outrigger 3.9 m, classic	–	–	○	○	–	–	–	–
SFD38_1	Flap-down stabilizer with 4,280 mm support width (loose)	○	○	○	–	–	–	–	–
Outrigger control									
AX1_1	Parallel hydraulic extendable outriggers	–	○	○	○	–	–	–	–
Tilting up the stabilizer rams									
AS00_1	Rigid stabilizer, non-tiltable	–	○	○	○	–	–	–	–
Stabilizer plates									
TP_1	Tilting plates 12°	–	○	○	○	–	–	–	–
TS_1	Rigid plate	–	○	○	○	–	–	–	–
TVP_1	Tilting plates, extended by 170 mm	–	○	○	○	–	–	–	–
TVS_1	Rigid plate, extended by 170 mm	–	○	○	○	–	–	–	–
Headlights									
LED4_1	4x LED headlights, 1,000 lumens each (2x main boom and 2x knuckle boom)	–	–	○	○	○	–	–	–
LED2_1	2x LED headlights, 1,000 lumens each (knuckle boom)	○	○	–	–	–	○	○	○
LEDX4_1	4x LED headlights, 3,000 lumens each (2x main boom and 2x knuckle boom)	–	–	○	○	○	–	–	–
LEDX2_1	2x LED headlights, 3,000 lumens each (knuckle boom)	○	○	–	–	–	○	○	○
Crane electrical systems									
24V_1	24 V	○	○	○	○	○	○	○	○
12V_1	12 V	○	○	○	○	○	○	○	○
Oil									
MO_1	Mineral oil	○	○	○	○	○	○	○	○
BO_1	Bio oil	○	○	○	○	○	○	○	○
Color									
STD_1	RAL 3020 Epsilon red	○	○	○	○	○	○	○	○
RAL_1	Bio oil	○	○	○	○	○	○	○	○
Special equipment									
SC_1	Smart Control	–	–	–	○	○	–	–	–
C5C	Cable till boom tip for CAN-Bus	–	–	–	○	○	–	–	–
HAA_1	Crane support pre-installation	–	–	○	○	○	–	–	–
HND_1	Lifting cylinder, low pressure (max. 200 bar) for M70F	–	–	○	–	–	–	–	–
KM_1	Stem support	–	–	○	○	○	○	○	○
N_1	Low crane column (not in combination with TG or TU-ON for S-Class)	–	–	○	○	○	–	–	–
N_1	Low crane column (for M70R68)	–	–	–	–	–	○	–	–
SLP_1	Replacement hose package (4x telescopic, 4x link/rotator)	○	○	○	○	○	○	○	○
SPC_1	Slewing angle position monitoring pre-installation (in combination with SB380/385)	–	–	○	○	○	○	○	○
STV_1	Float position valve for slewing system (not in combination with DM9L or DM10L)	–	–	○	○	○	○	○	○
VKH_1	Shortened elbow lever on knuckle boom	–	–	○	○	–	–	–	–

● Standard equipment ○ Special equipment – Not available

	Forwarder cranes					Skidder cranes		
	C45F	C50F C60F	M70F M80F	S100F S110F	X120F X140F	M70R M80R M90R	S110R S120R	X130R X150R
Link/rotator								
BK087_1	EPSLINK + Indexator GV6 (6 t)	○	○	–	–	–	–	–
BK092_1	EPSLINK + Indexator G121 (10 t) + pendulum brake	–	–	○	–	–	○	–
BK118_1	EPSLINK + Indexator G121 (10 t) for C-Class + pendulum brake	○	○	–	–	–	–	–
BK120_1	EPSLINK + Indexator G121 (10 t) for C-Class	○	○	–	–	–	–	–
BK260_1	EPSLINK + Indexator G141 (10 t) + pendulum brake	–	–	–	○	○	○	○
BK264_1	EPSLINK + Indexator G171 (10 t) + pendulum brake	–	–	–	○	○	–	○
Spare parts catalog								
EKAT_1	Spare parts catalog, printed	○	○	○	○	○	○	○
ACCESSORIES								
Crane attachment								
YBK005A	U-bolt set, 8x M24x1000 in combination with TG or TU-ON	–	○	○	–	–	–	–
YBK013A	U-bolt set, 8x M30x1200 in combination with TG or TU-ON	–	–	–	○	–	–	–
YBK040	Attachment screws, 8x M24x100 (DIN 931/12.9) in combination with TG or TU-OFF	○	○	○	–	–	○	–
YBK041	Attachment screws, 10x M24x100 (DIN 931/12.9) in combination with TG or TU-OFF	–	–	–	○	–	–	○
YBK117	Set of bolts, 1x diameter 120, 2x diameter 60 in combination with TG or TU-GT, without locknuts	–	–	○	○	○	–	–
YBK175	Attachment screws, 14x M24x100 (DIN 931/12.9) in combination with TG or TU-OFF	–	–	–	–	○	–	○
Grabs								
FG27	Timber grabs 0.26m ²	○	○	○	–	–	○	–
FG37	Timber grabs 0.36m ²	○	○	○	–	–	○	–
FG43S	Timber grabs 0.4m ²	–	–	○	○	○	○	○
FG57X	Timber grabs 0.55m ²	–	–	–	○	○	–	○
FG27R	Residual timber grabs 0.24m ²	○	○	○	○	–	–	–
FG31R	Residual timber grabs 0.36m ²	–	–	○	○	○	–	–

● Standard equipment ○ Special equipment – Not available

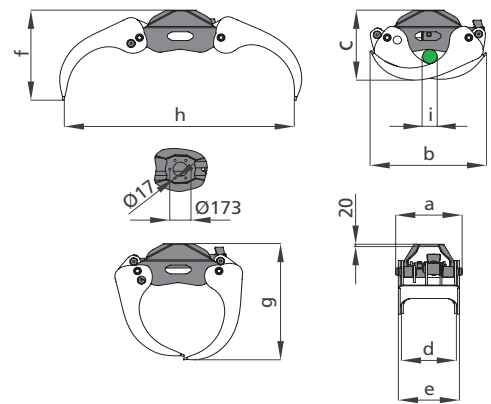
DEAD POINTS



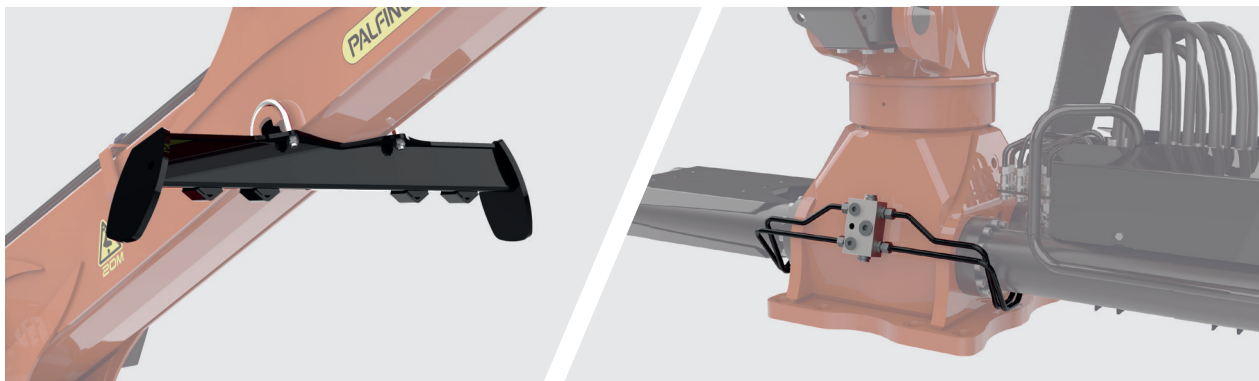
GRABS FOR FORWARDER AND SKIDDER CRANES



		FG27	FG37	FG43S	FG57X	FG27R	FG31R
Grab capacity	[m ²]	0.26	0.36	0.4	0.5	0.32	0.36
Max. load	[kg]	4000	4000	6000	9000	4000	4000
Max. operating pressure	[MPa]	25	25	24	27	25	25
Closing force	[kN]	14.1	13.1	19.7	23.3	14.1	14.1
Weight	[kg]	170	180	260	320	205	200
a	[mm]	470	470	540	540	475	470
b	[mm]	820	930	950	1160	830	895
c	[mm]	540	570	600	690	546	575
d	[mm]	390	390	460	460	391	390
e	[mm]	440	440	520	520	469	470
f	[mm]	760	800	770	980	722	765
g	[mm]	860	920	1000	1150	876	910
h	[mm]	1480	1570	1880	2030	1571	1580
i	[mm]	100	100	120	130	64	105

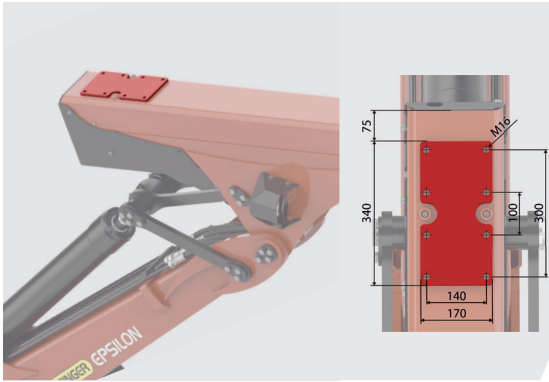


SPECIAL EQUIPMENT

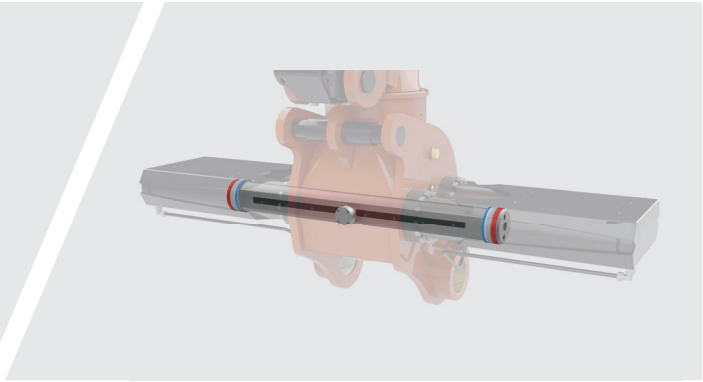


KM fixed heel

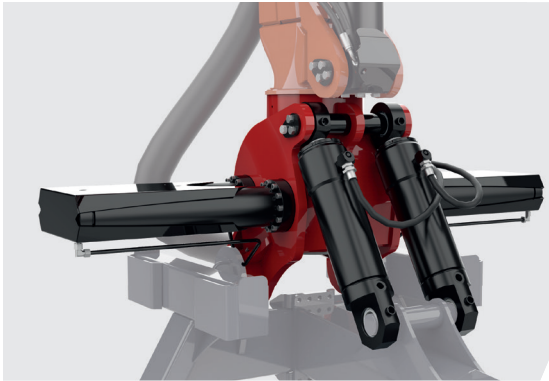
STV Float position valve for slewing system (not in combination with DM9L or DM10L)



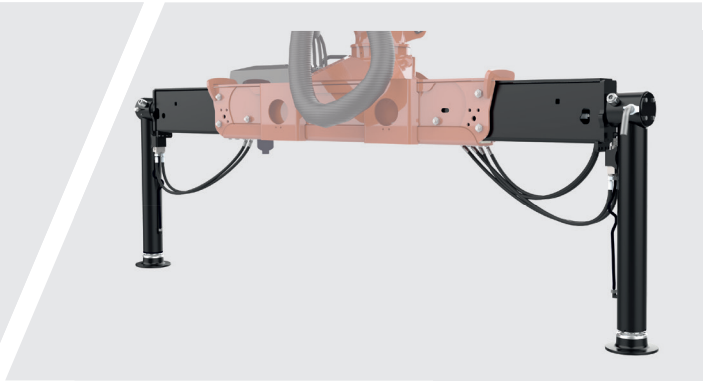
HAA_1 Crane support pre-installation



SPC_1 Slewing angle position monitoring pre-installation



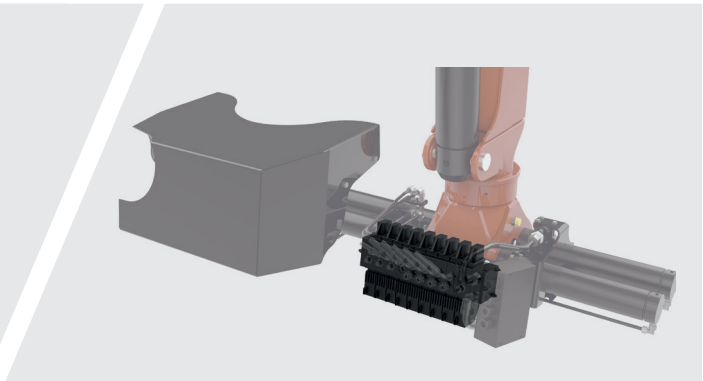
GT Tilting crane base



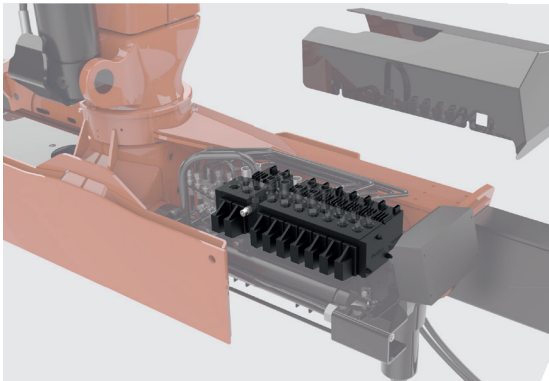
RX39C_1 Outriggers 3.9 m, classic
RX41C_1 Outriggers 4.1 m, classic



BK EPSLINK kits + rotator
 (alternatively with pendulum brake)



DM8H_1 Danfoss PV32 load sensing, 8 sections
 (installed and connected to hydraulics)



DM9L_1 / DM10L_1 Danfoss PVG32 load sensing,
 9-10 sections (installed and connected to hydraulics)



JEPROF_1 Prof1 Danfoss Joysticks
 (versions 162F1128 and 162F1112, cabled)

SMART CONTROL



EASY TO OPERATE - THE NEW SMART CONTROL

The new PALFINGER SMART CONTROL assistance system enables even faster and more intuitive crane operation. The location of the sensors have already been taken into account when designing the cranes so they are fully integrated into the overall system. The Smart Control sensors enable operators to concentrate fully on the crane tip. This makes it much easier to control the crane, minimizes fatigue and significantly reduces the time it takes to train new operators.



HIGHLIGHTS

- **Maximum power**
Maximum possible lifting power in every situation
- **Optimized oil flow**
Smooth movements, lower energy consumption and wear of the main components
- **Low accident risk**
The operator's mental fatigue is reduced
- **Increased efficiency**
Smart Control allows the crane's physical capability to be utilized to the full in every situation
- **High serviceability**
Optimized design ensures the easy replacement of electrical/electronic components and sensors

KP-PR046M3+EN 05/2022

KP-PR046 is designed for use all over the world. Standard and special equipment and the availability of some models may vary from country to country. EPSILON reserves the right to modify designs and technical implementation at any time and without advance notice without being obligated in any way to transfer these changes to units that have already been purchased. Specifications, descriptions and illustrations are up to date at the time of going to print but may also be modified without advance notice. Images may show particular designs for specific countries, special equipment or incomplete standard designs. Dimensions may vary. Load representations are standardized figures and do not correspond to the optimum boom position in which the maximum lifting capacity can be achieved.