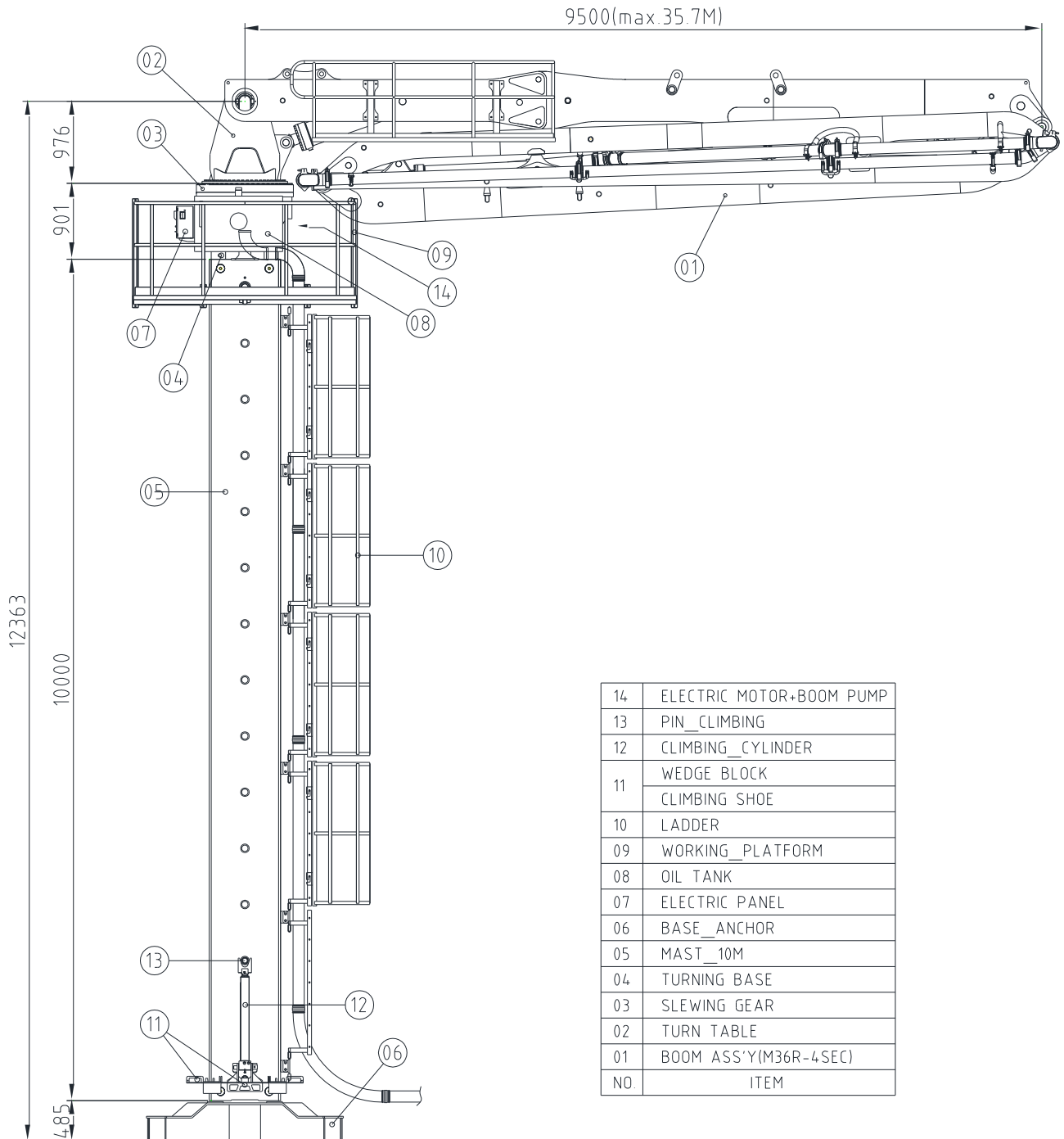


KB-M36R

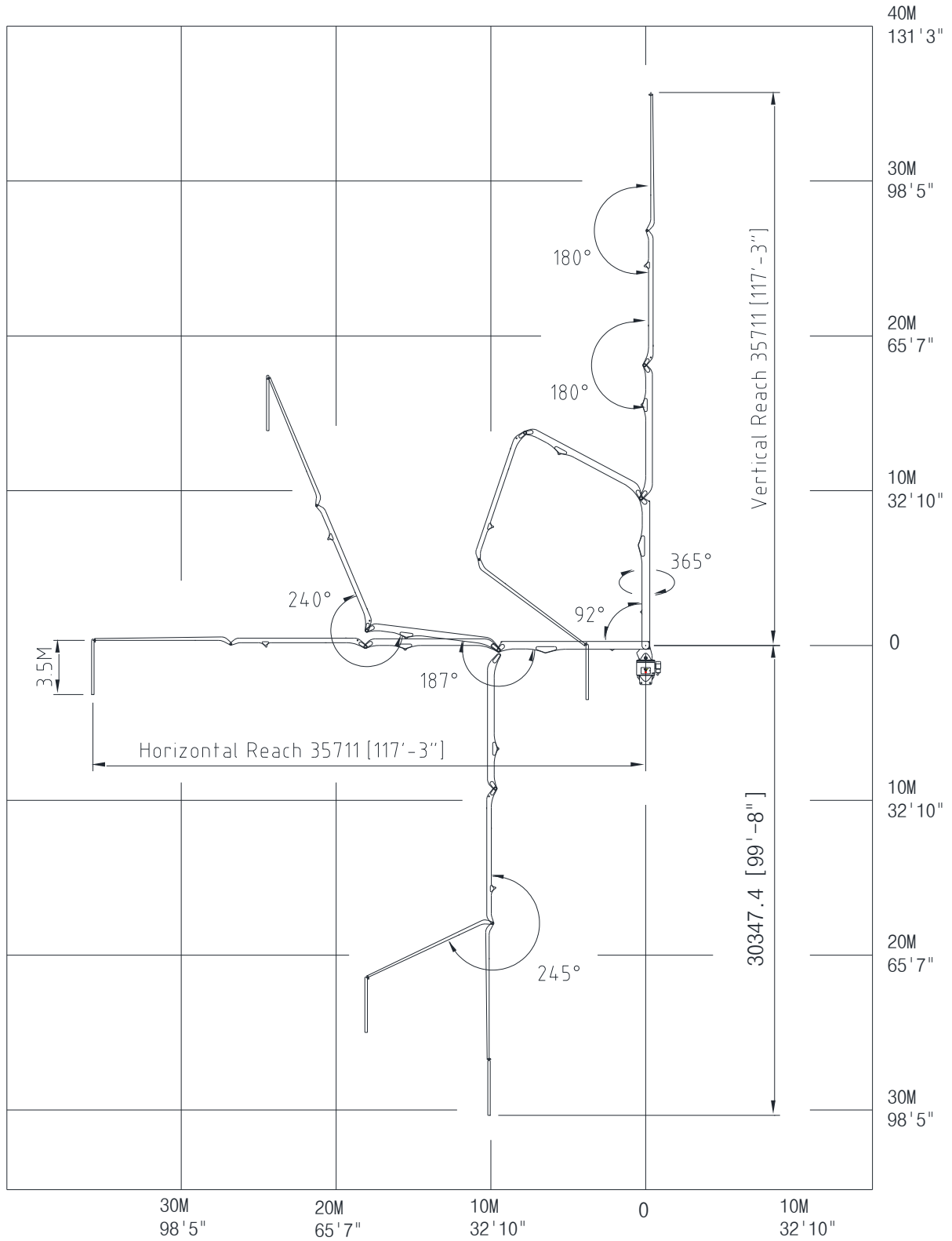
Placing Boom System _ Layout



14	ELECTRIC MOTOR+BOOM PUMP
13	PIN_CLIMBING
12	CLIMBING_CYLINDER
11	WEDGE BLOCK
	CLIMBING SHOE
10	LADDER
09	WORKING_PLATFORM
08	OIL TANK
07	ELECTRIC PANEL
06	BASE_ANCHOR
05	MAST_10M
04	TURNING BASE
03	SLEWING GEAR
02	TURN TABLE
01	BOOM ASS'Y(M36R-4SEC)
NO.	ITEM

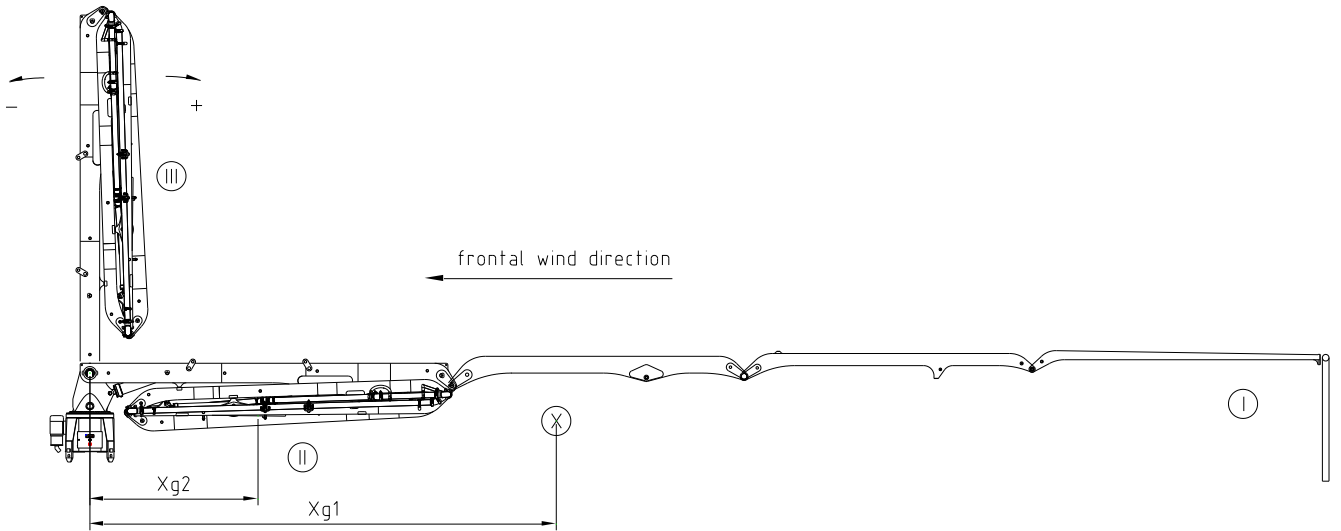
KB-M36R

Placing Boom System Working _ Working diagram



KB-M36R

Placing Boom System Technical data



MOMENT [kNm]

Position of boom	Moment(boom side) → +
I with concrete in pipe-line	→ 1088 kNm
II without concrete in pipe-line	→ 301 kNm
III without concrete in pipe-line	→ 29 kNm

Total weight [kg]– boom, table, base(with oil), motor, pump, (+concrete)

In operation	10,130 kg	Out of operation	9,080 kg
--------------	-----------	------------------	----------

Wind-exposed areas [m²]

Position of boom	Wind-exposed area	Center of gravity distance	remark
I	17.9 m ² boom-side	Xg1 = 10.9 m	Wind surface perpendicular to frontal wind
II	17.9 m ² boom-side	Xg2 = 4.5 m	
I/II	5.7 m ²	Ys = 0.5 m	Exposed area in frontal wind
III	16.8 m ²	Ys = 5.4 m	

Comment : lateral thrust due to wind is calculated according to DIN 1055

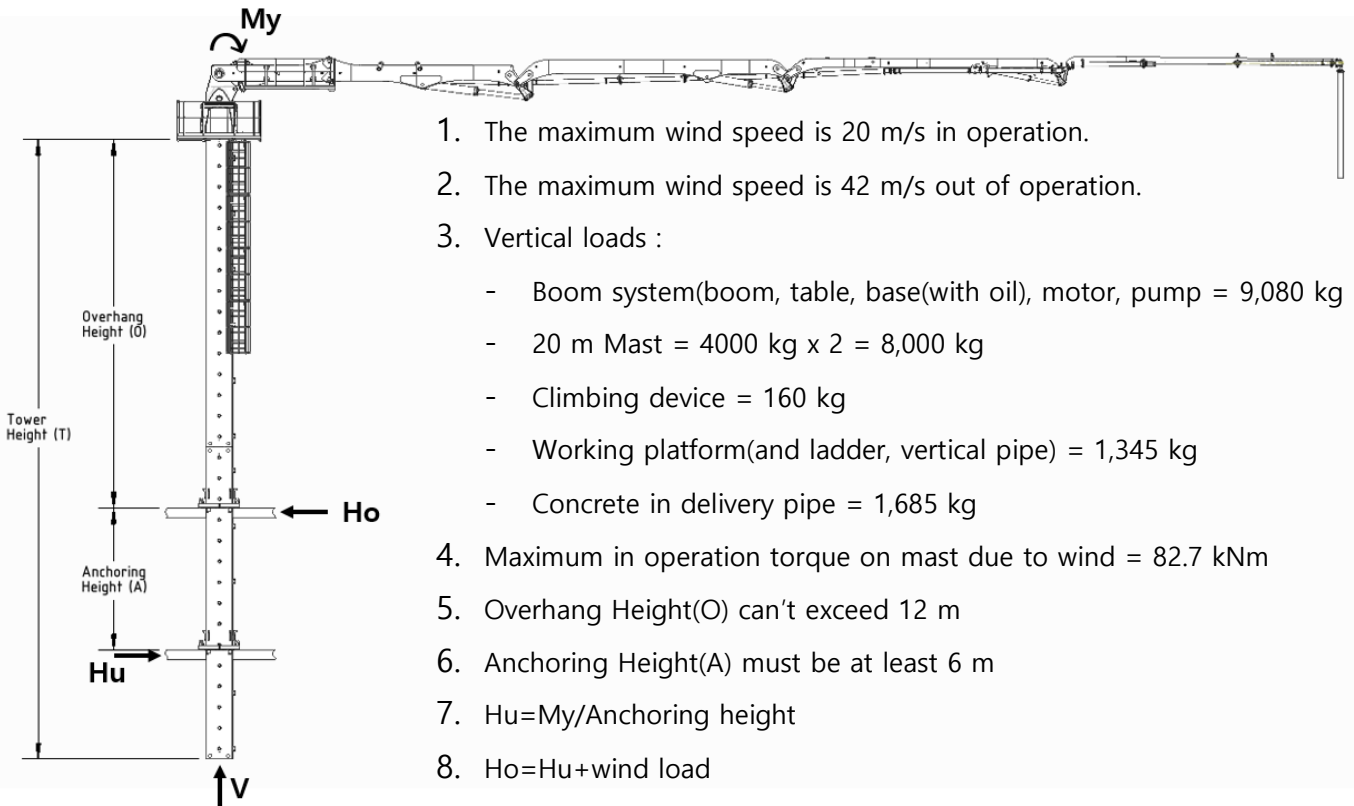
Absolute altitude [m]	0~8	8~20	20~100	Above 100
W [N/m ²]	800	1,280	1,760	2,080

$$F = W \times A$$

F : wind force	W : lateral thrust due to wind	A : wind surface area
----------------	--------------------------------	-----------------------

KB-M36R

Placing Boom System Technical data (Floor type)



Maximum Anchoing load in operation

Anchoing Height [m]	6	7	8	9	10	11	12	13	14	15	16
H_o [kN]	251	225	206	191	178	168	160	153	147	142	137

Maximum Anchoing load out of operation

Overhang Height [m]	6	6.5	7	7.5	8	9	10	11	12
H_o [kN]	164	171	178	185	192	207	222	238	254

Maximum Vertical load in operation

Tower Height [m]	6	8	10	12	14	16	18	20
V [kN]	152.9	170.5	167.7	188.6	194.4	203.4	221.0	218.2

Maximum Vertical load out of operation

Tower Height [m]	6	8	10	12	14	16	18	20
V [kN]	139.7	156.7	153.2	173.4	178.6	187.0	204.0	200.5

Maximum loads in operation

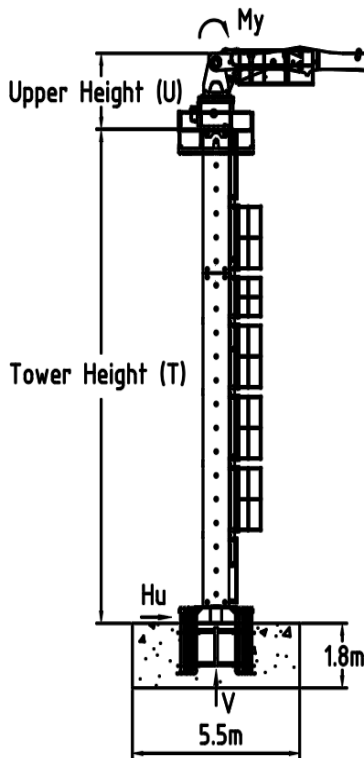
Overhang Height [m]	6	7	8	9	10	11	12
Overturn Moment [kNm]	1112.9	1118.6	1124.9	1131.7	1138.9	1146.7	1155.1

Maximum loads out of operation

Overhang Height [m]	6	7	8	9	10	11	12
Overturn Moment [kNm]	586.7	653.7	723.3	795.6	870.6	948.2	1028.5

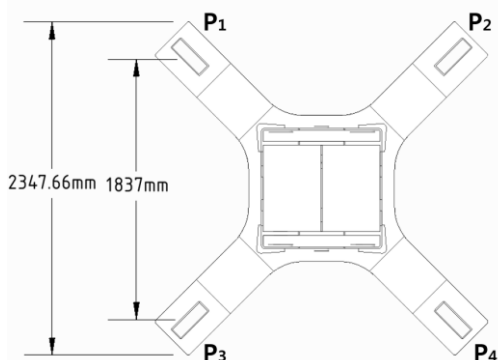
KB-M36R

Placing Boom System Technical data (Anchor type)



1. The maximum wind speed is 20 m/s in operation.
2. The maximum wind speed is 42 m/s out of operation.
3. Vertical loads :
 - Boom system(boom, table, base(with oil), motor, pump = 9,080 kg
 - 20 m Mast = 4000 kg x 2 = 8,000 kg
 - Working platform = 570 kg
 - Ladder and vertical pipe = 540 kg
 - Concrete in delivery pipe = 1505 kg
 - Anchor base = 1850 kg
4. Maximum in operation torque on mast due to wind = 82.7 kNm
5. Tower Height(T) can't exceed 20 m
6. $H_u = \frac{H_{wind}}{2} + \frac{Torque}{d}$
7. If the tower height exceeds 14 m and is not more than 20 m (corresponding to ① of the table below), the maximum wind speed shall be limited to 33 m/s during out of operation.

Maximum loads in operation	Tower Height [m] ①								
	4	6	8	10	12	14	16	18	20
Total vertical load [kN]	162.1	171.1	188.8	185.9	206.8	212.6	221.6	239.3	236.4
Overturn Moment [kNm]	1102.9	1112.9	1124.9	1138.9	1155.1	1173.2	1193.4	1215.6	1239.9
Horizontal load [kN]	46.1	46.6	47.1	47.6	48.1	48.6	49.1	49.6	50.1
Maximum loads out of operation	Tower Height [m]								
	4	6	8	10	12	14	16	18	20
Total vertical load [kN]	149.5	157.9	174.9	171.4	191.7	196.8	205.2	222.2	218.7
Overturn Moment [kNm]	444.2	570.1	706.6	853.9	1011.8	1180.4	837.0	953.7	1077.1
Horizontal load [kN]	13.2	15.9	18.5	21.2	23.8	26.5	29.2	31.8	34.5



	Corner loads at max load condition			
	P1	P2	P3	P4
Max Load [kN]	-627.2	-81.9	167.4	728.7

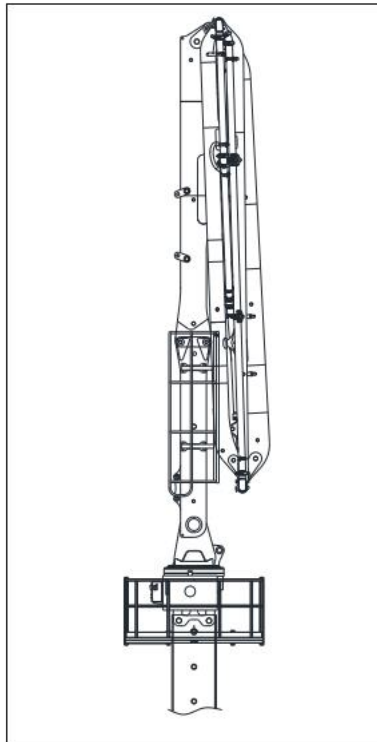
- Negative loads are tension load.

KB-M36R Placing Boom System Technical data (Anchor type & Floor Type)

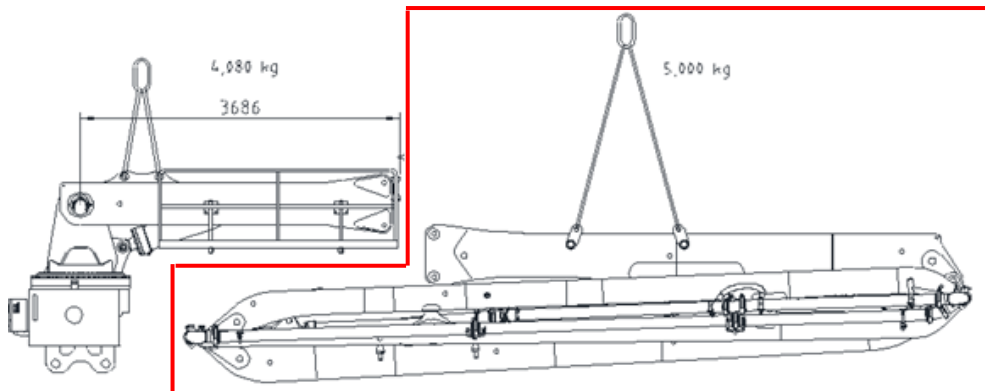
For the safety of equipment, our company limits wind speed when In operation (I/S) or out of operation (O/S), and measures for each wind speed are as follows.

1. Anchor Type

- 1) When the wind speed is more than 20m/s but less than 33m/s.
 - Work must be stopped and the boom must be stored perpendicular to the ground.

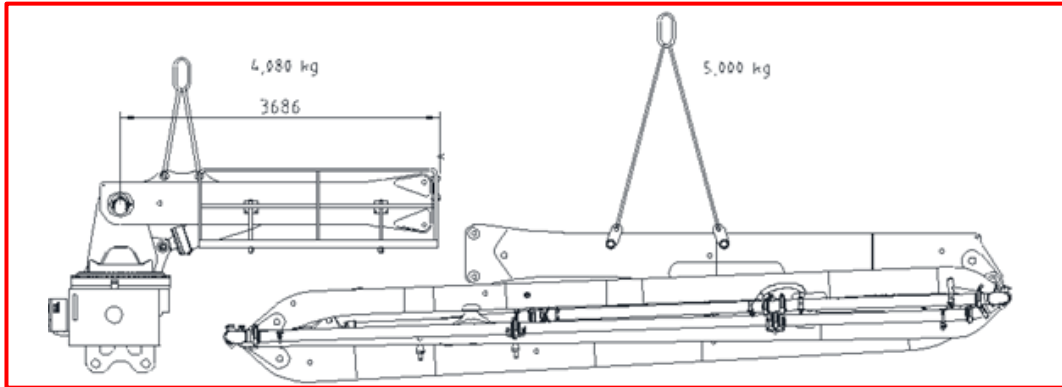


- 2) When the wind speed is more than 33m/s but less than 47m/s.
 - As shown in [Figure 1] below, Please disassemble entire booms exclude the 1st-1 boom. And store them in a stable place.



[Figure 1]

- 3) When the wind speed is more than 47m/s but less than 60m/s.
 - As shown in [Figure 2] below, Please disassemble entire boom excluding the mast. And store them in a stable place.

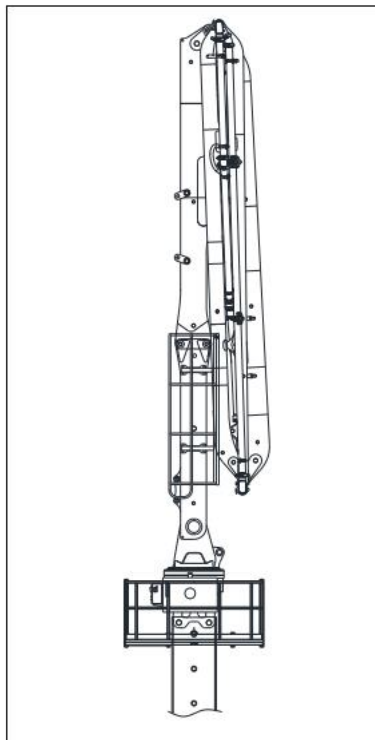


[Figure 2]

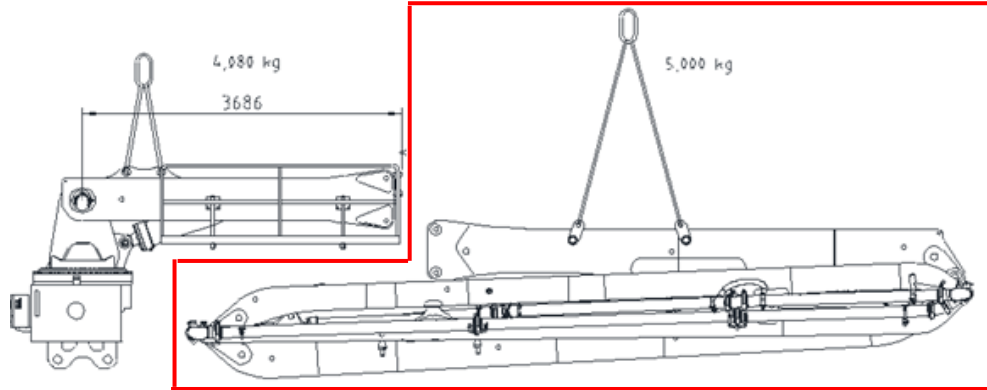
- 4) If wind speed is over 60m/s, disassemble entire Boom and mast. And store them in a stable place.

2. Floor Type (Climbing Type)

- 1) When the wind speed is more than 20m/s but less than 42m/s.
 - Work must be stopped and the boom must be stored perpendicular to the ground.

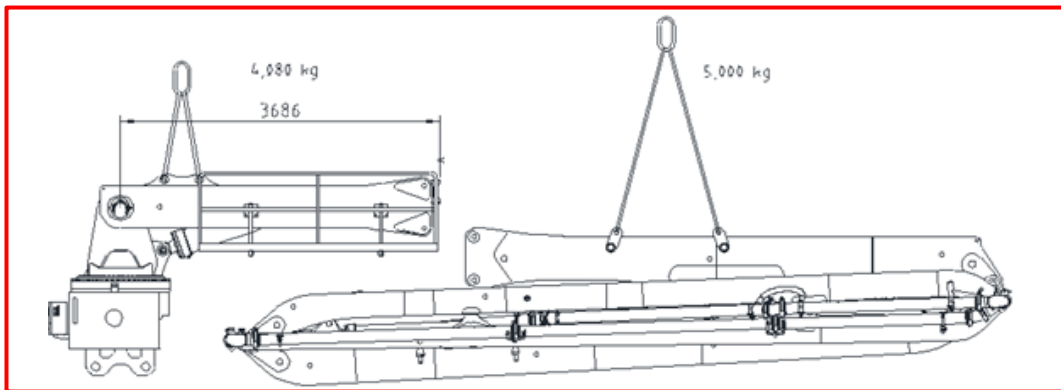


- 2) When the wind speed is more than 42m/s but less than 47m/s.
- As shown in [Figure 1] below, Please disassemble entire booms exclude the 1st-1 boom. And store them in a stable place.



[Figure 1]

- 3) When the wind speed is more than 47m/s but less than 60m/s.
- As shown in [Figure 2] below, Please disassemble entire boom excluding the mast. And store them in a stable place.

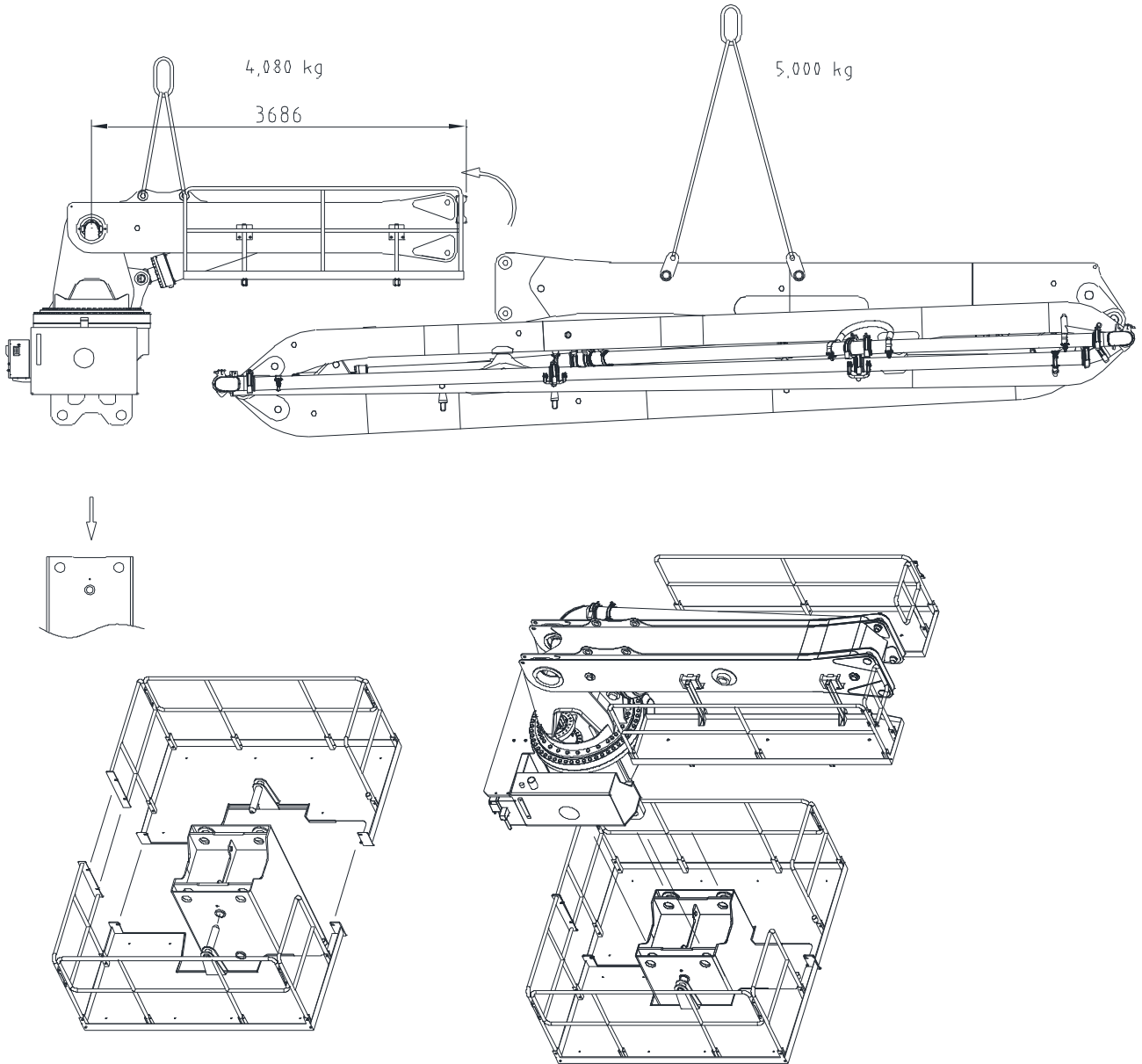


[Figure 2]

- 4) If wind speed is over 60m/s, disassemble entire Boom and mast. And store them in a stable place.

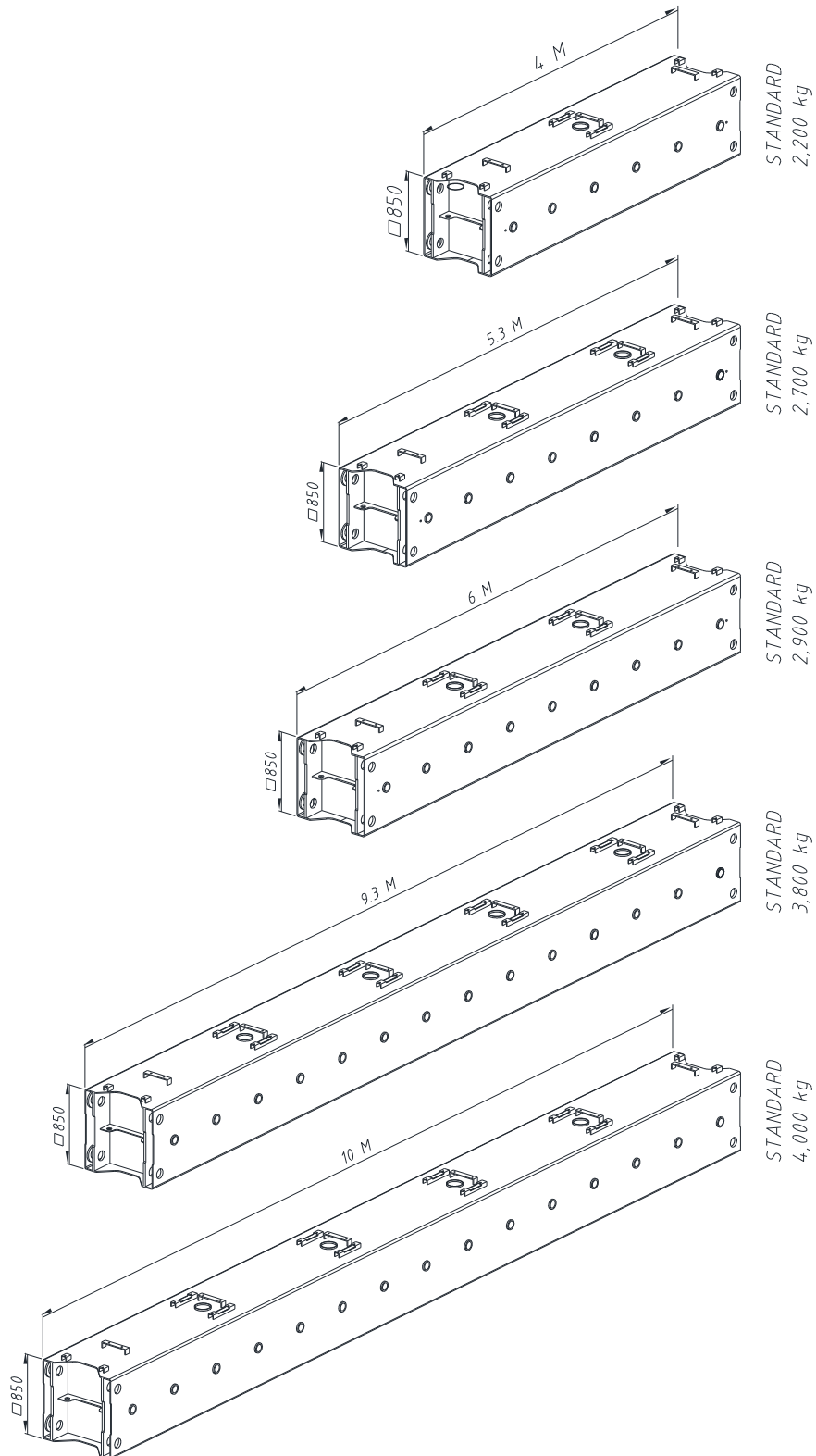
KB-M36R

PLACING BOOM SYSTEM ----- [BOOM ASS'Y & UPPER PARTS]



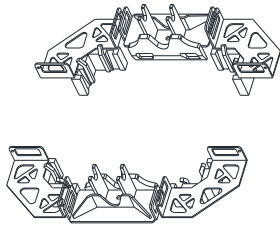
KB-M36R

PLACING BOOM SYSTEM ----- [MAST]

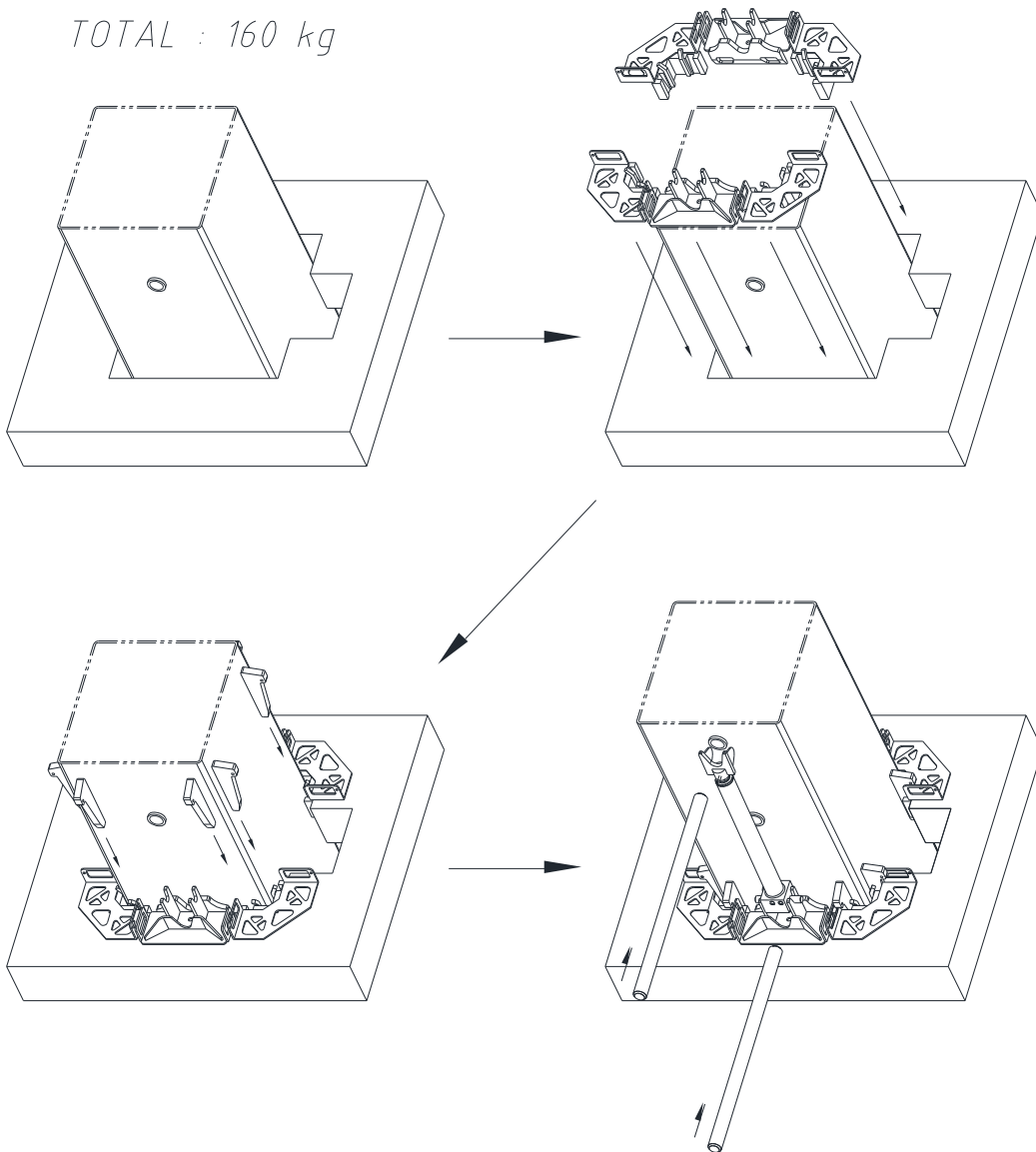
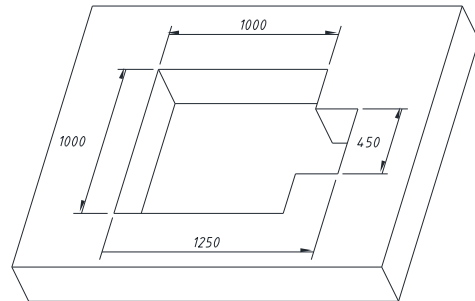


KB-M36R

PLACING BOOM SYSTEM ----- [FRAME _ CLIMBING, CLIMBING_CYLINDER]

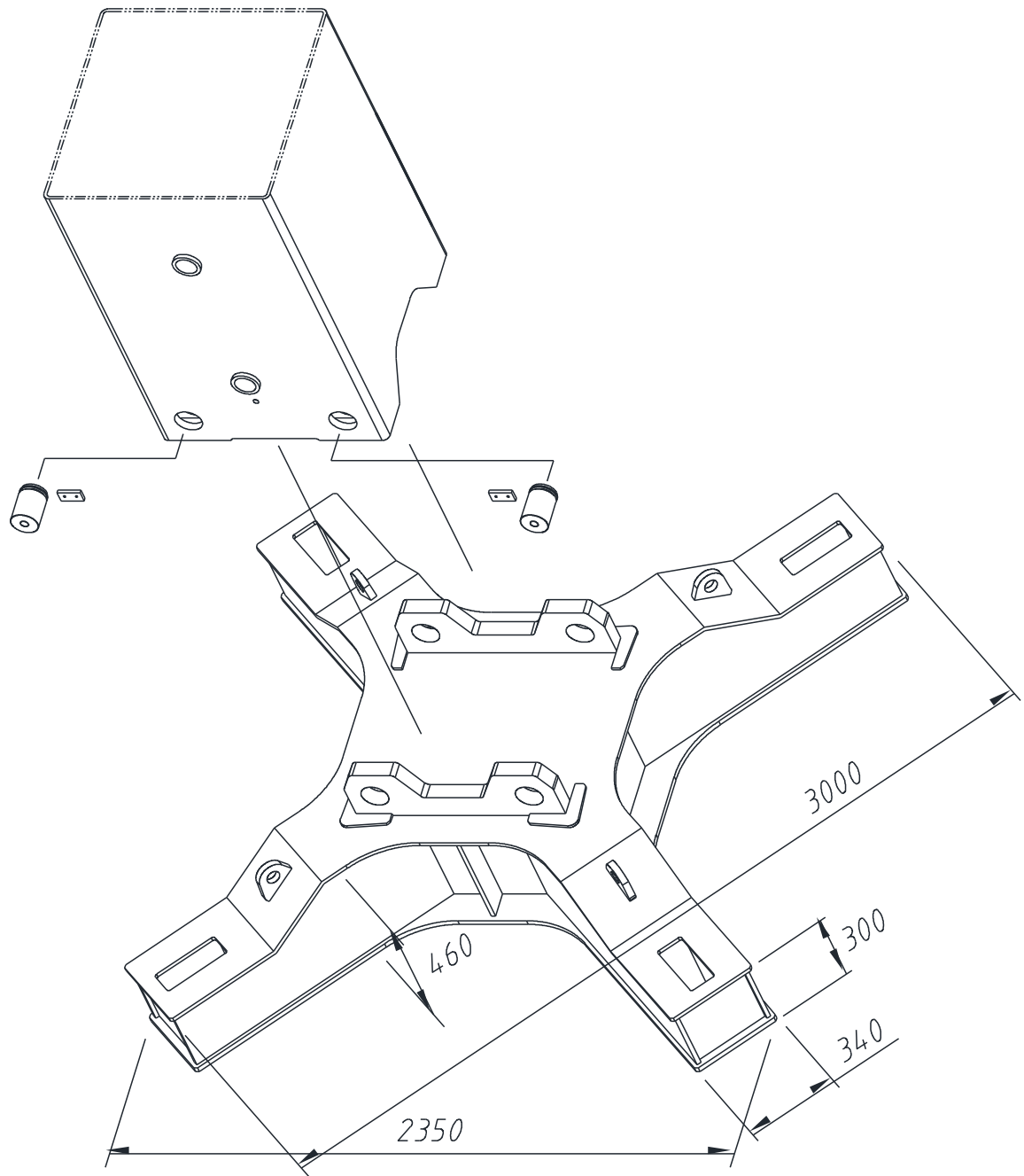


WEDGE BLOCK
CLIMBING SHOE
TOTAL : 160 kg



KB-M36R

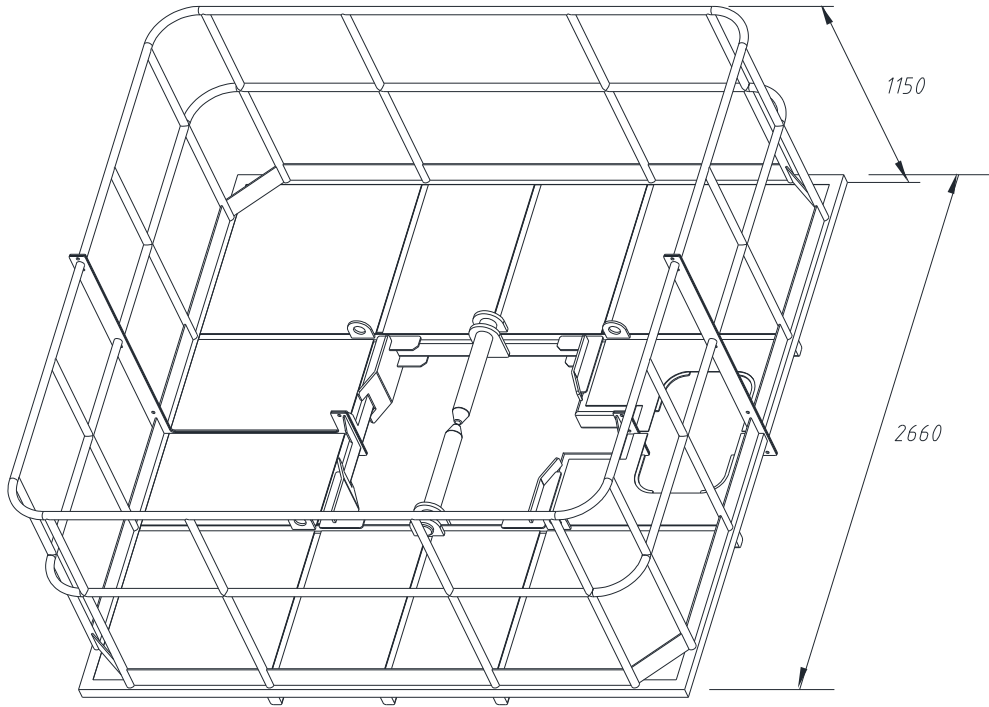
PLACING BOOM SYSTEM ----- [BASE_ANCHOR]



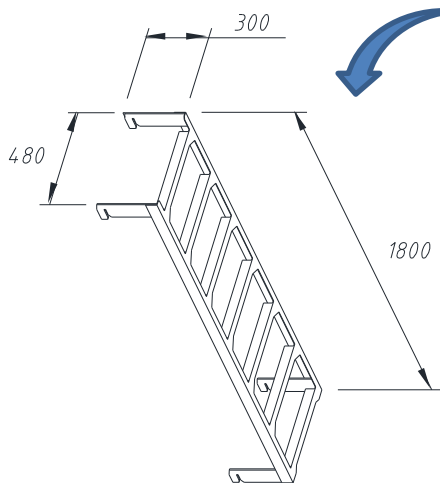
BASE ANCHOR
1,850 kg

KB-M36R

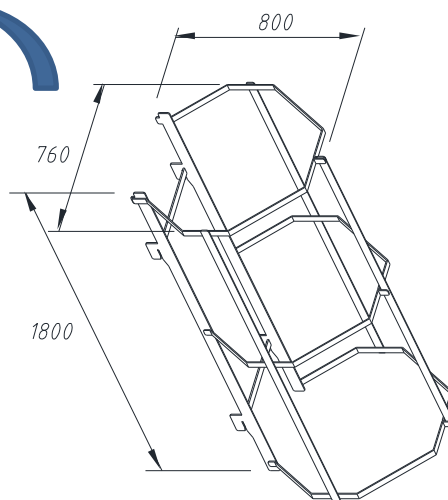
PLACING BOOM SYSTEM ----- [WORKING PLATFORM & LADDER]



WORKING PLATFORM
570 kg

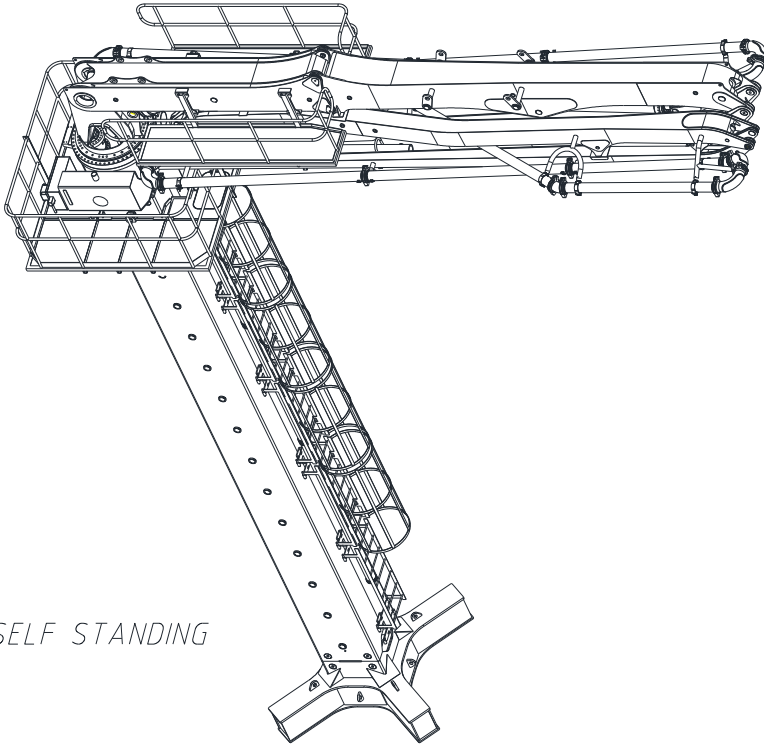


LADDER STD - 2m
15 kg

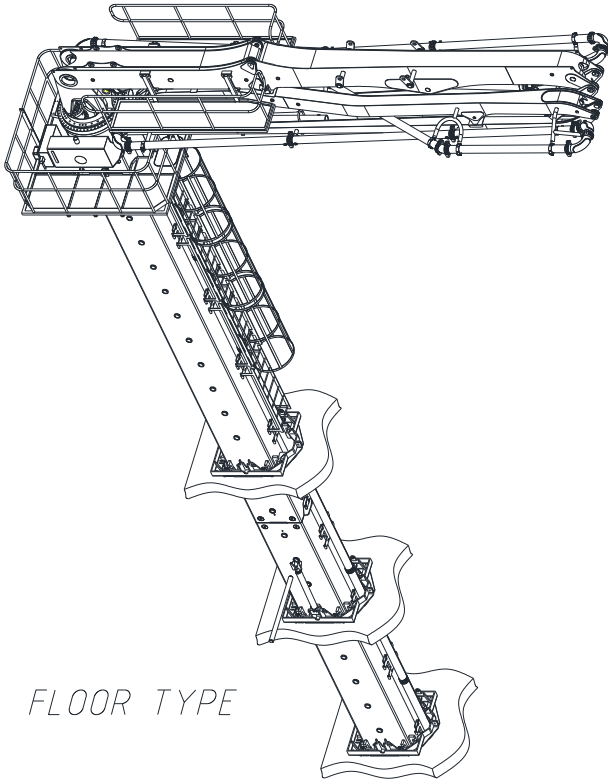


PROTECTOR FOR LADDER - 2m
25 kg

KB-M36R TYPE



SELF STANDING



FLOOR TYPE