

## 타워 크레인 (고정식) 설계조건

항 목	내 용				
1. 정격하중 (Rated Load)	(Max. Load) 2.5ton , (Tip Load) 1.9ton @ 30m				
2. 주권의 달기구	종 류	Single Hook			
	자체 중량	152 kg			
3. 작업반경 (Working Radius)	3.5m ~ 30m @ 30m ( 기복각도 : 15° ~ 83° )				
4. 타워 설치 높이 (Tower Height)	(Free Standing) 30.79m, (Max.) 90.79m				
5. 양정 (Lifting Height)	H.U.Hook (m) @ FREE STANDING	Jib Length	30M	25M	20M
		$\alpha = 15^\circ$	37.2	35.9	34.6
	$\alpha = 83^\circ$	60.3	55.3	50.4	
	H.U.Hook (m) @ MAX. STANDING	$\alpha = 15^\circ$	97.2	95.9	94.6
$\alpha = 83^\circ$		120.3	115.3	110.4	
6. 속도	권상 (Hoisting)  11 kW	Gear	1	2	
		Speed (m/min)	0 ~ 21.7		0 ~ 43.4
		Load (ton)	2.5		1.0
	기복 (Luffing)	(11 kW)	< 3 min (기복 시간)		
	선회 (Slewing)	(4 kW)	0.67 rpm		
7. 카운터웨이트 (COUNTERWEIGHT)	구성 :	JIB 길이 (m)	중량 (kg)	설치 수량	
	A = 3000 kg	30	7000	1A+1B+2C	
	B = 2000 kg	25	6000	1A+1B+1C	
	C = 1000 kg	20	5000	1A+1B	
8. 용도	건설자재 운반용				
9. 설치 위치	<input type="checkbox"/> 옥내 <input checked="" type="checkbox"/> 옥외				
10. 하중을 받는 횟수	하중을 받는 $1.2 \times 10^5 \sim 2.5 \times 10^5$ 정격하중의 50%이상 63%이하의 하중용 크레인				
11. 주위 온도 (Control Box)	-15 °C ~ +40 °C				
12. 풍속 제한 기준 (Wind speed limit)	(in service) 16m/s                      (out of service) 44 m/s				
13. 운전 조작	<input type="checkbox"/> 운전실 <input type="checkbox"/> 펜던트 <input checked="" type="checkbox"/> 무선 리모컨				
14. 사용 전원	MAIN	3 $\phi$ × 60Hz × AC.380V			
	CONTROL	DC 24 V			
15. 메인 전원 차단기 용량	80 A    ✓				
16. 동력 케이블	YCW(또는 PNCT) 3C×16mm <sup>2</sup> + 1C×16mm <sup>2</sup> 또는 동등이상				
17. 방폭구조 사용유무	<input type="checkbox"/> 有 <input checked="" type="checkbox"/> 無                      5-97-0230-00-00				
18. 와이어로프 (WIRE ROPE)	권상	∅12(mm) / 35W×7 - 1960N/mm <sup>2</sup> , Z-lay (F <sub>b</sub> = 102kN)			
	기복	∅12(mm) / 35W×7 - 1770N/mm <sup>2</sup> , Z-lay (F <sub>b</sub> = 91.8kN)			

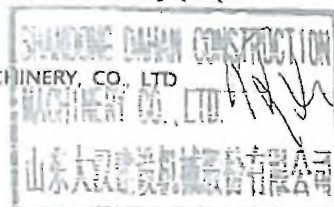
※ 제조자 또는 수입자는 설치·해체·사용상의 안전을 확보하기 위하여 설치·해체·사용·유지·보수 등 관련 설명서를 구매자(사용자)에게 제공한다.

## GENERAL DESIGN OF TOWER CRANE

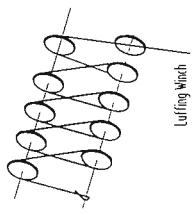
ITEM		SPECIFICATION			
1. RATED LOAD		(Max. Load) 2.5ton , (Tip Load) 1.9ton @ 30m			
2. HOOK	TYPE	Single Hook			
	WEIGHT	152 kg			
3. WORKING RADIUS		3.5m ~ 30m @ 30m ( Luffing angle : 15° ~ 83° )			
4. TOWER HEIGHT		(Free Standing) 30.79m, (Max.) 90.79m			
5. LIFTING HEIGHT	H.U.Hook (m) @ FREE STANDING	Jib Length	30M	25M	20M
		$\alpha = 15^\circ$	37.2	35.9	34.6
	$\alpha = 83^\circ$	60.3	55.3	50.4	
	H.U.Hook (m) @ MAX. STANDING	$\alpha = 15^\circ$	97.2	95.9	94.6
$\alpha = 83^\circ$		120.3	115.3	110.4	
6. SPEED	HOISTING  11 kW	Gear	1		2
		Speed (m/min)	0 ~ 21.7		0 ~ 43.4
		Load (ton)	2.5		1.0
	LUFFING	(11 kW)	< 3 min (Luffing Time)		
	SLEWING	(4 kW)	0.67 rpm		
7. COUNTERWEIGHT	Composition : A = 3000 kg B = 2000 kg C = 1000 kg	JIB LENGTH (m)	WEIGHT (kg)		INSTALLATION
		30	7000		1A+1B+2C
		25	6000		1A+1B+1C
		20	5000		1A+1B
8. PURPOSED USAGE		Transportation of Construction materials			
9. LOCATION		<input type="checkbox"/> Indoor <input checked="" type="checkbox"/> Outdoor			
10. LOAD SPECTRUM		When the rated load $6.3 \times 10^4 \sim 1.2 \times 10^5$ , The efficiency of crane is over 50% but below 63%			
11. ENV. TEMPERATURE (Control Box)		-15 °C ~ +40 °C			
12. WIND SPEED LIMIT		(in service) 16m/s (out of service) 44 m/s			
13. OPERATION METHOD		<input type="checkbox"/> CABIN <input type="checkbox"/> Pendant <input checked="" type="checkbox"/> Radio remote control			
14. POWER SOURCE	MAIN	3 $\phi$ × 60Hz × AC.380V			
	CONTROL	DC 24 V			
15. MAIN CIRCUIT BRAKE		80 A			
16. POWER CABLE		YCW(또는 PNCT) 3C×16mm <sup>2</sup> + 1C×16mm <sup>2</sup> 또는 동등이상			
17. EXPLOSION PROOF		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NONE			
18. WIRE ROPE	HOISTING	∅12(mm) / 35W×7 - 1960N/mm <sup>2</sup> , Z-lay (F <sub>b</sub> = 102kN)			
	LUFFING	∅12(mm) / 35W×7 - 1770N/mm <sup>2</sup> , Z-lay (F <sub>b</sub> = 91kN)			

※ The operation manual should be submitted to the end-user which is specified the chapter of installation, dismantle, operation and maintenance to secure the safety purpose.

※ MANUFACTURER : SHANDONG DAHAN CONSTRUCTION MACHINERY CO., LTD

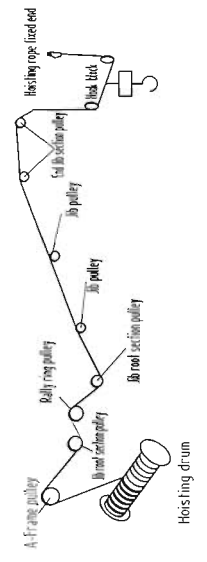


Luffing Rope winding diagram (10Tails)



Luffing Winch

Hoist rope winding diagram (2 Fall)

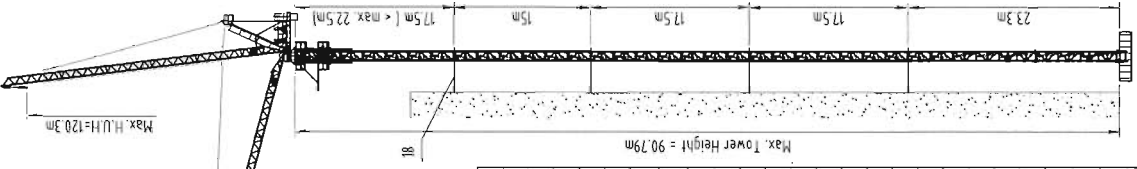


Overhang Height of the wall-tie system

Wall Bracing H	1st	2nd	3rd	4th
Max. Overhang	< 25m	< 25m	< 22.5m	< 22.5m

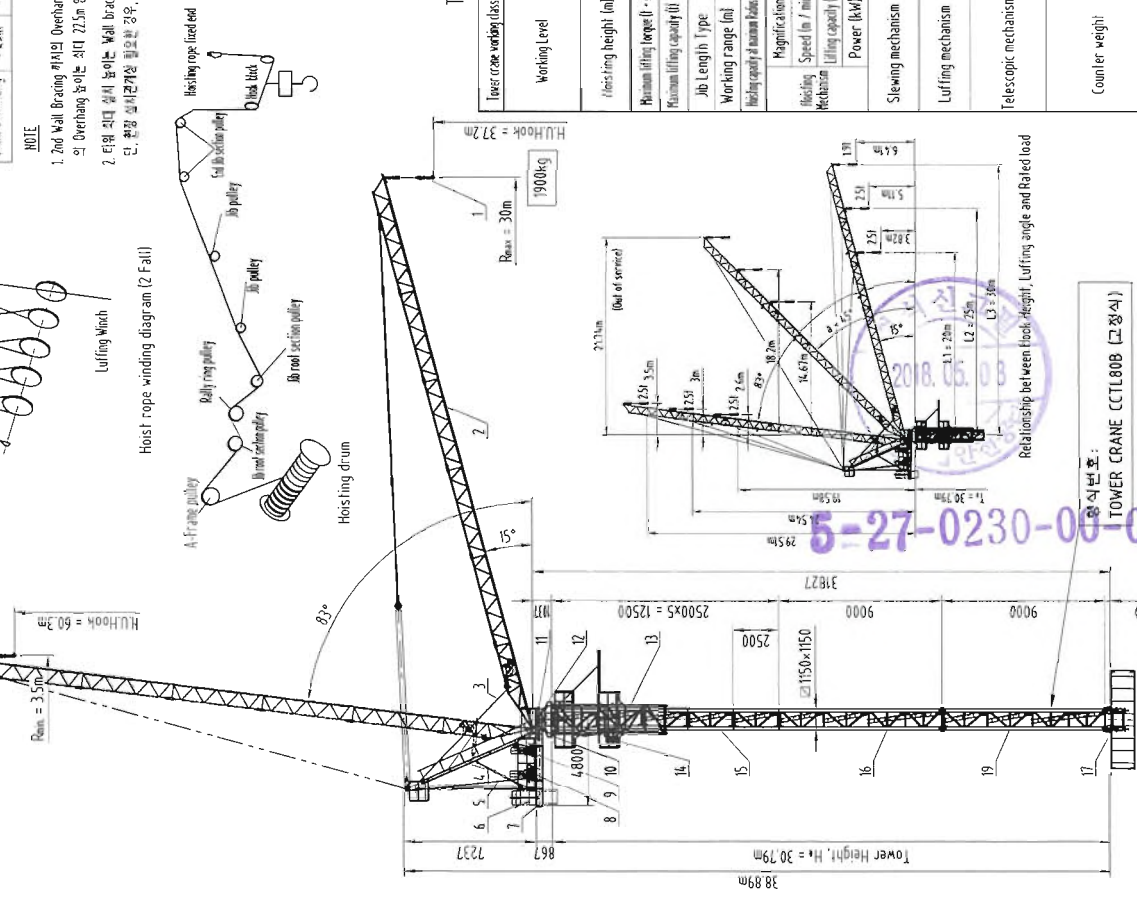
NOTE

- 2nd Wall Bracing 위치의 Overhang 높이는 25m 이고, 3rd-4th Wall Bracing 의 Overhang 높이는 최대 22.5m 인.
- 타워 고대 설치 높이는 Wall bracing plane 상응높이 보다 설치 높이(90.79m) 초과할 수 없다. 단, 환경 조사결과상 필요는 경우, 저조성에 따라, 현장감의 검토를 하여 한다.



Technical Specifications

Lower crane working class	A4		
Working Level	Hoisting mechanism	M5	
	Slewing mechanism	M4	
Luffing mechanism	Luffing mechanism	M4	
	Magnification	Fixed 37.27/60.3 97.2/120.3 a=2	
Minimum lifting force (t-n)	62.5		
	Maximum lifting capacity (t)	2.5	
Job Length Type	30M	25M	20M
	Working range (m)	3.5 ~ 30	3.0 ~ 25
Hoisting capacity of main cable (t)	1.9		
	Magnification	2	
Hoisting Mechanism	Hoisting Speed (m / min)	0 ~ 21.7	0 ~ 4.3, 4
	Lifting capacity (t)	2.5	1.0
Power (kW)	Speed (r / min)	0 ~ 0.67	
	Motor power (kW)	4 x 1	
Slewing mechanism	Time (min)	6 x 3	
	Motor power (kW)	11	
Luffing mechanism	Speed (m / min)	< 0.7	
	Working pressure (MPa)	20	
Telescopic mechanism	Power (kW)	4	
	Job Length (m)	Counter weight (t)	
Counter weight	30	7	
	25	6	
	20	5	
Electric	Power	Main 3φ × 60Hz × AC 380 Control DC 24V	
	Main Cable	YCW for PNC1) 4×16S0	
	Main Brake	Wireless Remote Controller 80A	
Controller	Wireless Remote Controller		



중식번호: TOWER CRANE CCTL808 (고장차)  
 부식 산후 리프트 부품  
 최대 적재중 : 2.5 TON (2PAL)  
 5-27-0230-00-00

Working Radius & Load Capacity

Job 30m	Working Radius (m)	3.5 ~ 24	25	26	27	28	29	30	
	Rated Load (kg)	2500							
Job 25m	Working Radius (m)	3 ~ 25							
	Rated Load (kg)	2500							
Job 20m	Working Radius (m)	2.6 ~ 20							
	Rated Load (kg)	2500							

Technical Requirement

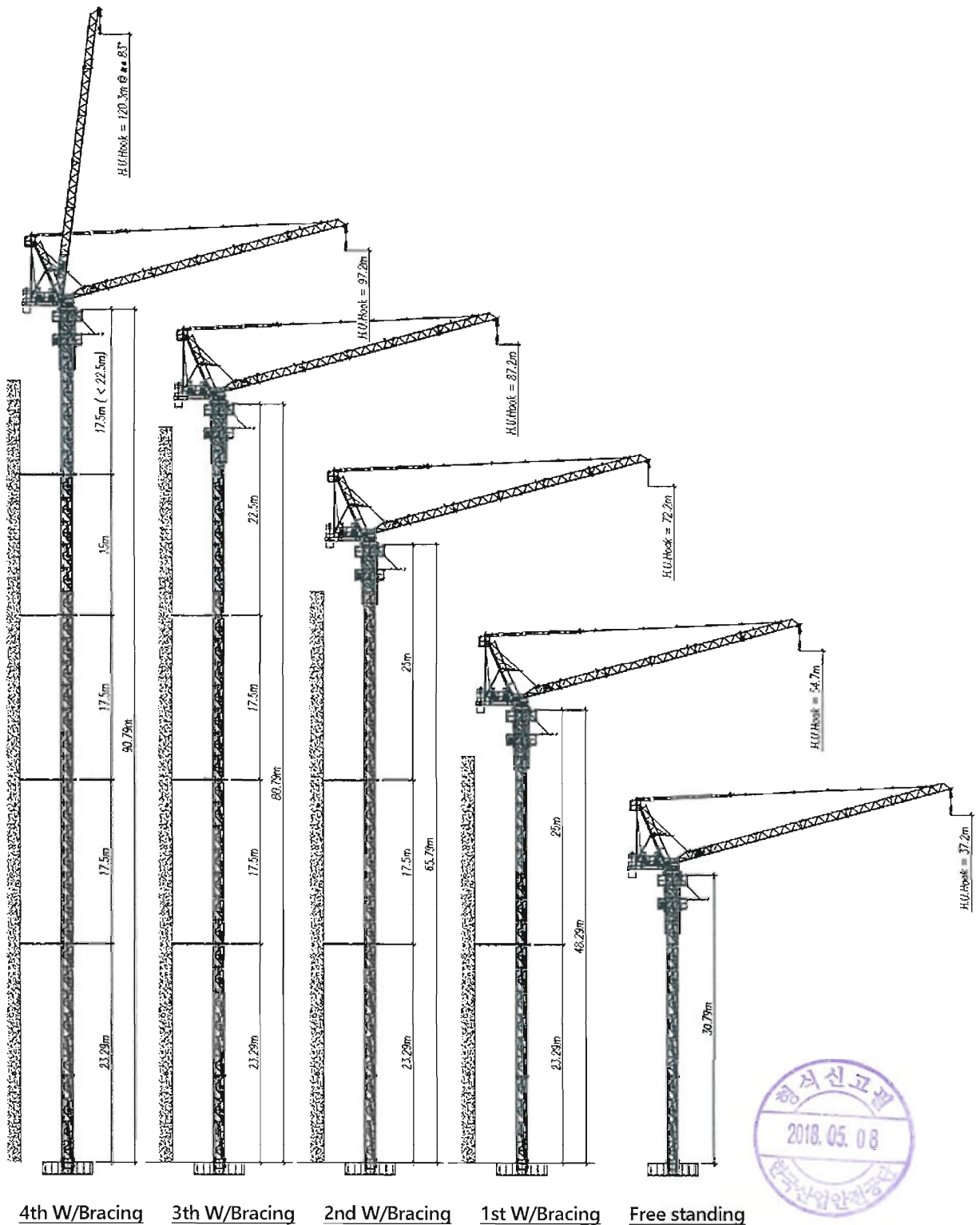
- The lower cable is fixed, attached to two cases, attached to the installation, the suspended height shall not exceed 73 meters.
- The whole installation, the lower axis line of the straightness tolerance shall not exceed the measured length of 4/1000.
- After the installation of the lower crane, the rotating parts should be flexible rotation, the brake work should be sensitive, safe and reliable.
- The safety device installation, commissioning and use should be in strict accordance with the conditions specified in the use of instructions. The error is not more than 2% of the design value.
- A variety of nominal speed and nominal value of the error is not greater than 5% of nominal.
- According to national standards GB / 15031-2008 tower cranes, GB / 119352-1997 tower crane design specifications and GB344-2006 tower crane safety regulations design.

No.	Code	Name	Qty	Material	Unit	Total Weight	Remark
19	JIS150	Reinforced Basic Mast	1	Part	2397	2397	
18	CT12525.10	Wall-Tie System	Components		-	-	
17	601150.0	Foundation Anchor	1	Part	-	-	
16	BS1950	Basic Mast	1	Part	2751	2751	
15	MT1150	Mast	5	Part	775	3875	
14		Hydraulic Unit	1	Part	400	400	Purchases
13	T1150	Telescopic cage (with platform)	1	Part	2356	2356	Purchases
12		Slewing ring DWA116.35	1	Products	330	330	Purchases
11		Slewing drive (H07-Reducer)	1	Part	155	155	Purchases
10	CT12525.6	Lower Slewing Frame	1	Part	165	165	
9	BS150A	Hoisting Winch	1	Part	1075	1075	
8	LBL12A	Luffing Winch	1	Part	1075	1075	
7	CT12525.2	Counter-jib (with turntable)	1	Components	1965	1965	Purchases
6	D3098.12	Counterweight	1	Part	7000	7000	Purchases
5	钢丝绳 35×3-12-1770	Luffing Wire Rope φ12.35×4.7	1	160 m	1722	1722	
4	CT12525.3	A-Frame Assembly	1	Components	1722	1722	Purchases
3	钢丝绳 35×3-12-1960	Hoisting Wire Rope φ12.35×4.7	1	300m	2210	2210	
2	CT13019.4	Job sections (with tie-bar)	1	Components	152	152	Purchases
1	DG.2	Hook	1	Part	152	152	DG only 2-falls

Shandong Dahan Construction Machinery Co., Ltd.  
 Luffing Jib Tower Crane CCTL808  
 General Assembly  
 Mark, Qty, Part, Name, Date, Phase, lag, Weight, Scale  
 Design, Drawing, Approval  
 PAGE 1 of 1  
 CCTL808.0.0

주 리프트 큰 트롤은 반드시 사이파보 및 진파 장에기  
 없는 곳에서 조작한다.

1.1.3. Tower Height & Wall Bracing Plan



4th W/Bracing    3th W/Bracing    2nd W/Bracing    1st W/Bracing    Free standing

※ NOTE : 1. 2nd Wall bracing 까지의 Overhang 높이는 25m이고, 3rd 및 4th Wall bracing의 Overhang 높이는 최대 22.5m 임.  
2. 타워 최대 설치 높이는 Wall bracing plan과 상관없이 최대 설치 높이(90.79m)를 초과할 수 없다. 단, 현장 설치관계상 필요한 경우, 제조사에 문의하여, 전문가의 검토를 받아야 한다.

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