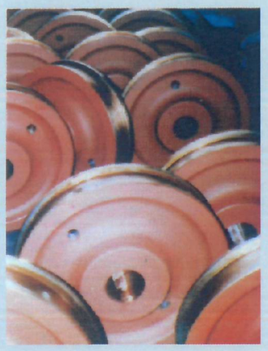
LIST OF MAJOR PRODUCTS

5 to 700 ton hook blocks



200 to 900 mm steel wheels

Multi-layer winding drums

5 to 300 ton electric rotary hooks

5 to 40 ton electric links-type coil lifters

30 to 700 ton crown blocks

PRODUCT TYPE

Auto Crane

- Slab Tongs
- Coil Lift
- C Hook Block
- Twin Coil Lift

Special product

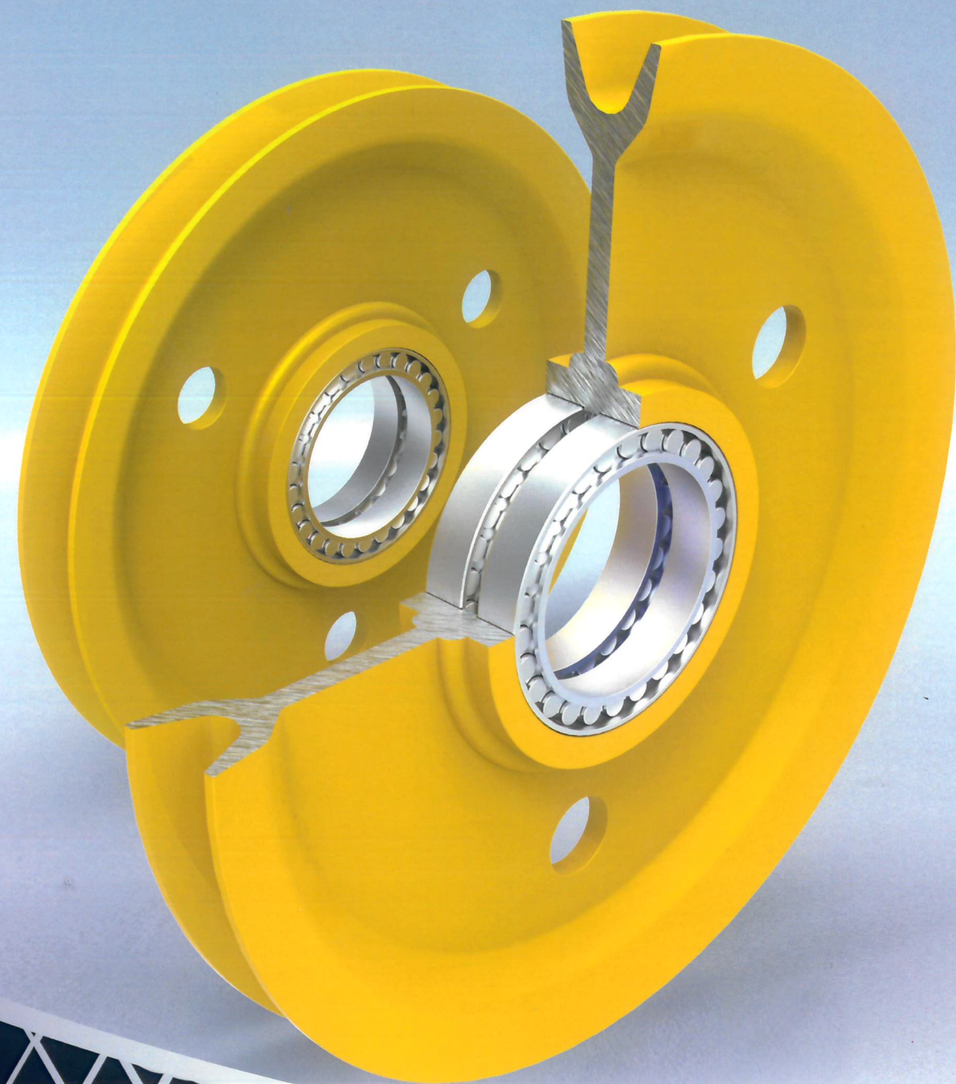
- Scrap Knife
- Scrap Shear Knife

본 사
경상남도 함안군 법수면 윤외공단길 54
T. 055-583-4225 F. 055-583-4226
www.k-cf.com

Head office
54, Yunoegongdan-gil, Beopsu-myeon, Haman-gun,
Gyeongsangnam-do
T. +82-55-583-4225 F. +82-55-583-4226
www.k-cf.com

CF INDUSTRY

New SUPER SHEAVES



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HOT ROLL FORGING

NEW SUPER SHEAVES

successively developed by the leading sheave manufacturer.

H.R.F 공법을 이용하여 업계 최고의 기술로 제작한 고성능 제품

H.R.F 공법 – CF Industries가 개발한 새로운 주형기술

The H.R.F. method-exciting new molding technology developed by CF Industries.

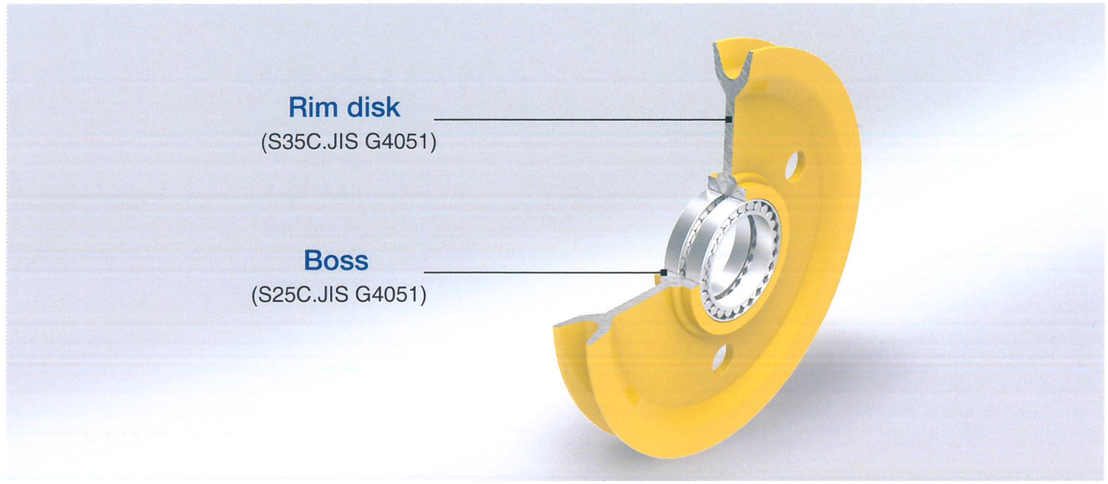
New molding technology by the H.R.F. method.

Features of NEW SUPER SHEAVES

1. 품질과 강도가 개선된 균일한 금속구조	NEW SUPER SHEAVE의 그루브 부분은 고온가열과 압연공정에 의해 형성되므로 제조 공정 중 금속이 결정이 변화되어 균일하고 치밀한 내부 구조 형성. 제품의 충격치, 인성등 기계적 성질 향상 및 단조공정중 소재의 기공문제가 제거됨.
2. 뛰어난 내마모성	기존의 주강(SC46과 SCMn2A)이나 주철(FC25, FCD45)에 비해 뛰어난 내마모성 확보
3. 낮은 원가	동등한 소재, 규격의 다른 제품과 비교해 뛰어난 경제성
4. 와이어로프 교체주기 향상	압연과정에서 그루브 부분의 표면에 높은 조도가 확보되어 와이어로프의 교체주기 향상
5. 경량 구조	기존의 주철제품에 비해 경량으로 제작되므로 크레인의 성능 향상
6. 짧은 제작기간	짧은 제작기간으로 비용절감

1. Uniform metallic structure for improved quality and strength	since theh groove section is formed by heated and compressed rolling the crystal grains are pulverized as in forging to obtain a highly uniform metallic structure with improved impact value and tenacity The problem of blowhole in cast products is thus eliminated (and good hardening is obtained with S35C)
2. Superd resistance to wear	In comparison to conventional cast steel(SC46 and SCMn24) and cast iron (FC25, FCD45), a much better resistance to wear is attained.
3. Low cost	Greater economy in comparison with other materials of comparable quality
4. Longer life wire rope	Less wearing and longer life is obtained by a stronger metallic structure and resistance to wear attained by rolling
5. Lighter weight construction	The lighter weight in comparison to cast iron products and integrated forged steel products contributes to improved crane performance
6. Shorter lead time for delivery	Manufacturing times can be shortened in comparsion with cast products, especially large scale products

Construction and materials of NEW SUPER SHEAVES



1. Rim disk

림디스크는 내마모성과 우수한 용접성을 보유한 S35C(JIS G4051)를 소재로 사용하여 H.R.F 공법으로 제조 요구에 따라 그루브 표면 부위 열처리 가능 고정밀 압연에 의해 제작되므로 그루브 표면의 후가공이 불필요 하다.

2. Boss

보스는 우수한 용접성,강도를 보유한 S25C(JIS G4051) 소재를 단조처리하여 제작한 제품으로 표준 구성품으로 적용되며 이 보스의 특성 중 하나는 사용자의 다양한 요구조건을 충족할 수 있도록 보스 치수를 쉽게 변경할 수 있다.

3. Sheave

NEW SUPER SHEAVE는 림디스크와 보스를 용접가공하여 완제품 제작

용 접 엣지면의 다듬기를 통해 완벽한 용접 가공 수행

검 사 모든 부품의 주요 치수를 검사하며 용접후 비파괴 검사를 실시한다.

부하시험 사용자의 요구가 있을 경우 400톤 수평장력 테스터 (N.K.: Lloyd 승인 장비)를 이용해 부하시험 수행

제품범위 쉬브의 외경 범위 Ø250~ Ø1500mm (사용가능한 와이어로프 지름 Ø10~ Ø 70mm)

1. Rim disk

The rim disk is a hot molded product formed by the H. R. F method with S35C (JIS G40 51) being used as the standard material because of its wear resistance and welding ease. Hardening within the groove is also possible where considered necessary. There is no need to machine the groove since a smooth polish is obtained by high-precision rolling.

2. Boss

The boss is a hot molded product formed by ring rolling mill with the S25C (JIS G4051) steooed boss being used as the standard component because of its welding ease and strength. One of the features of this sheave is the fact that the boss dimensions can be readily altered to meet different user requirements.

3. Sheave

The sheave is an integrated unit with the weld between the rim disk and boss being the only welded section.

Welding Complete welding is achieved by edge preperation and gouging .

Inspection Major dimensions are checked in all products. while non-destruction inspections are performed on a sampling basis

Load Test Depending on user request, load tests are performed by a 400-ton oil pressure type horizontal tension tester (N.K, Lloyd approved plant equipment)

Product Range Sheave diameter 250 to 1,500mm(and wire rope diameters 10 to 70mm) Special requests also considered

Standards of NEW SUPER SHEAVES

측정 검사
각 표의 공차는 표준품에 적용

Measurement Inspection
The tolerances shown in the following tables are for the finished products

그루브 최소원의 허용치(mm)
A. Allowance for the bottom Part of Grooves

(mm)

그루부 최소원의 범위 Range of groove bottom diameter	공 차 Tolerance
200 ~ 400	0 ~ + 2.5
401 ~ 600	0 ~ + 3.0
601 ~ 800	0 ~ + 4.0
801 ~ 1000	0 ~ + 5.0
1001 ~ 1200	0 ~ + 6.0
1201 ~ 1500	0 ~ + 7.0
1501 ~ 1800	0 ~ + 8.0

림 폭 적용하는 와이어로프에 따른 림 폭
B. Rim width

The width of rim is to be within the range as shown below

(mm)

Rim No.	와이어로프 직경 Rope diameter	표준 규격 Standard dimension D/d 20·25	표준 규격 Standard dimension D/d 31.5	공 차 Tolerance
1	10 ~ 12.5	33	33	± 2.0
2	12 ~ 14	36	36	
3	14 ~ 16	40	40	
4	16 ~ 18	41	47	
5	18 ~ 20	51	51	± 3.0
6	20 ~ 22.4	59	55	
7	22.4 ~ 25	69.5	62	
8	25 ~ 28	73	67	
9	28 ~ 31.5	79	76	
10	31.5 ~ 35.5	88	85	
11	35.5 ~ 42.5	94	97	
12	42.5 ~ 50	106	110	± 4.0
13	50 ~ 56	120	–	
14	56 ~ 64	132	–	
15	64 ~ 70	146	–	± 5.0

그루브 반경 규격
C. Bottom part of Grooves

The radii of grooves are to be within the ranges as shown below

그루브 반경 Radii of Grooves	공 차 Tolerance
10	0 ~ + 1.0
11.2	0 ~ +1.5
12 ~ 16	- 0.5 ~ + 1.5
17 ~ 20	-0.5 ~ + 1.5
21 ~ 26	0 ~ + 3.0
27 ~ 29	0 ~ + 4.0

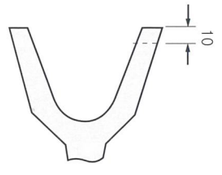
외 경
D. Outer Diameter

(mm)

외 경 Outer Diameter	공 차 Tolerance
250	0 ~ - 1.0
251 ~ 500	0 ~ - 1.2
501 ~ 1000	0 ~ - 1.6
1001 ~ 1200	0 ~ - 2.0
1201 ~ 1500	0 ~ - 2.5
1501 ~ 1800	0 ~ - 3.0

워블 허용치
E. Allowance of Wobble of Grooves of intemal groove

(mm)



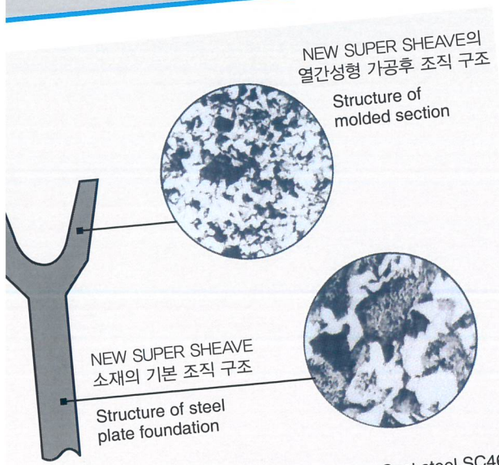
외 경 Outer Diameter	그루부 워블 Wobble of Grooves
250	1.5
251 ~ 500	2.0
501 ~ 1000	2.5
1001 ~ 1200	3.0
1201 ~ 1500	3.5
1501 ~ 1800	4.0

그루브 경도
F. Hardness of Grooves

The width of rim is to be within the range as shown below
그루브 경도 : Hs 50~60

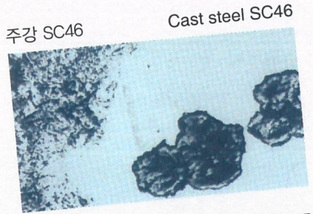
t data of
EW SUPER SHEAVES

NEW SUPER SHEAVE의
열간성형 가공후 조직 구조
Structure of
molded section

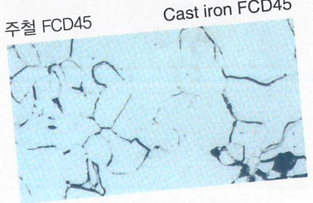


NEW SUPER SHEAVE
소재의 기본 조직 구조
Structure of steel
plate foundation

주강 SC46 Cast steel SC46



주철 FCD45 Cast iron FCD45



금속조직(S35C)

S35C의 조직은 주조용 소재보다 치밀하고 열간 가공후에는 소재의 충격강도,인성 상승 NEW SUPER SHEAVE는 열간 성형가공을 행하므로 가공중 열처리가 되어 제품의 사용중에 발생하는 와이어로프의 손상현상이 감소하고 풀리의 마모,파손의 빈도가 현저히 감소.

용접 구조

NEW SUPER SHEAVE 의 양면에서 용접 수행

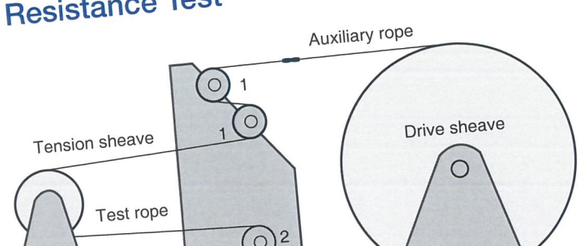
Metallic Structure(S35C)

Since the crystal grains are finer than in cast Products, the metallic structure of molded parsts is the same as after heat treatment. And that meams a better impact value and tenacity. As a result, rope pressure scarring occurs less readily, and there is less wear and tear.

Weld Structure

The butt welding is executed facing down from both sides. Properation by gouging, and additional chamfering from the rear ensure that perfect welds are made

내마모 시험
Wear Resistance Test



시험 조건

A. 장 소	일본 도쿄 로프제작소 실험실
B. 시험 Sheave 규격	P.C.D. Ø 320mm, 볼 베어링 적용
C. Sheave 소재	S35C(Q)(Hs60)S35C(Hs27) SC46(Hs26)FCD45(Hs26) SM50B(Hs22)SS41(Hs20)
D. 적용 와이어로프	원형 스탠다드 병렬 로프 JIS 7×7×Fi(29) IWRC 16mm B형
E. 시 험 부 하	파단 강도 17.6톤(SHEAVE 부하 7.0톤)
F. 와이어로프 스트로크	1.4 m
G. 시험주기	900 / hour (15/minute)
H. Sheave 회전수	320P.C.D 1.39 회전 / st (1,250 revolutions / hour) (D / d20)
I. 시험 주기 횟수	150,000 Cycle

Test condition

A. Site of test	Tsuchiura Test Laboratories of Tokoy Rope mfg.co.Ltd
B. Test sheave diameter	P.C.D. 320mm Ball Bearing
C. Test sheave materials	S35C(Q)(Hs60)S35C(Hs27) SC46(Hs26)FCD45(Hs26) SM50B(Hs22)SS41(Hs20)
D. Ropes	Round strand paraller ply rope JIS spec product 7 x 7 x fi(29) IWRC 16mm dia B type
E. Test load	Rope tension 3.5ton Breaking strength 17.6ton (load against sheave 7.0ton)
F. Stroke	1.4 m
G. Cyle rate	900 / hour (15/minute)
H. Test sheave rpm	320P.C.D 1.39 revolutions / st (1,250 revolutions / hour) (D / d20)
I. Number of test cycles	150,000 Cycle

시험 결과

SC46과 FDC45 소재로 주조한 제품의 내마모성 시험 결과는 압력에 의한 깊은 손상이 발생한다 그루브 표면을 경화한 S35C의 시험 결과가 가장 우수 하고 표면 열처리한 S35C 소재의 Sheave는 다른 소재의 Sheave에 비해 물성이 가장 뛰어남 사용중 부하에 의해 깊은 손상이 발생한 Sheave에서 와이어로프가 쉽게 파손, 절단되며, 새 와이어로프로 교체할 때 이런 현상이 빈번하게 발생 한다.

Test Results

The results of wear - resistance testing of SC46 and FDC45 cast products shows deep pressure scarring the best results were obtained with the S35C where the groove section had been hardened The unhardened S35C was much more wear-resistant than the other samples which had not been hardened. That is S35C is considered the best standard material Rope breaks occur more readily in material with deeper pressure scarring, and this becomes more apparent when replacing with new rope. it is also important to consider hardening of the groove section according to usage

150,000번의 테스트를 시행한다
Sheave weaing after 150,000 test cycles

일본산업표준(JIS) 및 그에 상응하는 외국 표준
Japanese indurtial standards(JIS) And equivalent foreign standards

JIS	ASTM	DIN	BS
S35C JIS4051	A576 - 74 AISI 1035	17200 - 69 ck35	970 080 A35
SC46 JIS G5101	A27 - 79 65 - 35	1681 - 67 GS - 45	3100 - 76
SM50B JIS G3106	A529 - 75	17100 - 66 St 50 - 1	4360 - 79
FCD 45 JIS G5502	A536 - 80 65 - 45 - 12	1693 - 77 GGG40	2789 - 1973 420/2
SS41 JIS G3101	A283 - 79 D	17100 - 80 USt 42 - 1	-

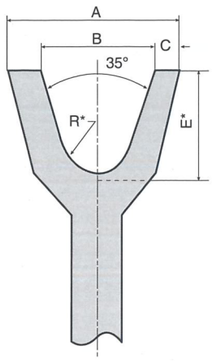
Dimensions of RIM & BOSS

RIM

[S35C]

림 치수는 아래 표에 요약 수록된다. 로프는 단일 쉬브 에 사용할수 있다.

Rim dimensions are summarized in the following table.
Ropes can be used in commom with a single sheave.



Dimensions of Rim

(mm)

Rim No.	Wire rope diam(mm)	D/d =20		D/d =25		D/d =31.5		D/d =20,25,31.5 incommor		
		A	C	A	C	A	C	B	E	R
1	10 ~ 12.5	33	4.5	33	4.5	33	4.5	24	20	7.1
2	12 ~ 14	36	4	36	4	36	4	28	22.5	8
3	14 ~ 16	40	4.5	40	4.5	43	6	31	25	9
4	16 ~ 18	44	5	47	6.5	47	6.5	34	28	10
5	18 ~ 20	51	6	51	6	51	6	39	31.5	11.2
6	20 ~ 22.4	55	6	55	6	59	8	43	35.5	12.5
7	22.4 ~ 25	62	6.5	62	6.5	69.5	10.3	49	40	14
8	25 ~ 28	67	6	70	6	73	9	55	45	16
9	28 ~ 31.5	76	8	76	8	79	9.5	60	50	18
10	31.5 ~ 35.5	85	9	85	9	88	10.5	67	56	20
11	35.5 ~ 42.5	94	10	94	10	101	13.5	74	63	22.4
12	42.5 ~ 50	106	11	106	11			84	76	26
13	50 ~ 56	120	12	120	12			96	86	29
14	56 ~ 64	132	14					104	90	32.5
15	64 ~ 70							114	100	37

Note 1. 위의 치수는 CF Industries가 보유하고 있는 표준금형 규격임.

Note 2. 그루브 형상(각도와 반경)은 사용자의 요구에 따라 변경 가능. (당사에 문의)

Note 3. 별표로 표시한 치수는 JIS G8807 – 1995 규격에 따름(1~11번 림).

Note 4. 표시는 기존의 슈퍼 로프 풀리 림 치수와는 약간 다른 값을 의미한다. (이러한 차이는 성능에는 영향을 주지 않는다.)

Note 1. The above dimensions are for molds owned by F.T Industries.

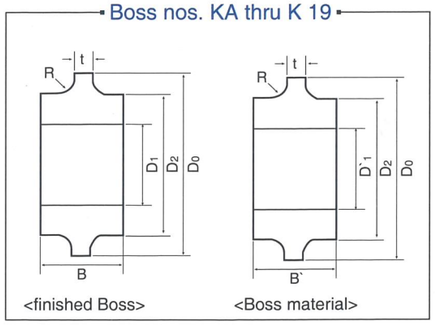
Note 2. Groove shapes (angle and radius) can be changed within the range permitted by the molding equipment. Enquiries are welcome

Note 3. Dimensions marked by an asterisk conform with JIS G8807-1995 (up to rim no. 11)

Note 4. The mark denotes values which differ slightly from conventional super sheave rim dimensions.(These differences do not effect performance figures)

BOSS

보스의 표준 규격(SL04–50※※NR.)
Standard stepped bosses are used for sheave bearing(SL04-50 ※※NR)



Note 1. 보스 치수는 사용자 요구에 따라 변경 가능. (당사에 문의).

Note 2. SL04–50xxNR 베어링 치수는 11~12페이지 참조

Note 3. 고속 회전용의 경우 당사에 문의.

Note 1. Boss dimensions can be changed to match user settings and conditions. Enquiries wecleome.

Note 2. See page 11 ~ 12 for SLO-50 ※※NR bearing dimensions.

Note 3. Check bearing selection conditions if high - speed rotations applications are considered

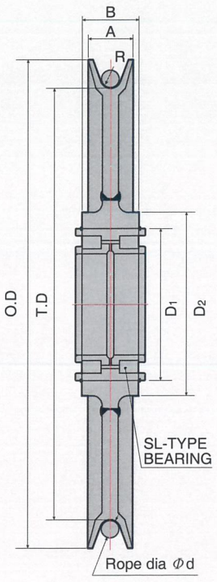
Standard Stepped Boss Dimensions

(mm)

Boss No.	SLO4-NR	보스 재료 치수 Boss material dimensions					완성 보스 치수 Finished bossdimensions			WEIGHT
		D_0	$D`_1$	D_2	B`	t	D_1	B	R	
KA	5011	150	80	120	44	12	90	34	15	3.52
	5012						95			
	5013						100			
KB	5014	175	100	145	52	12	110	42	15	4.70
	5015						115			
KC	5016	205	115	165	58	12	125	48	15	5.92
	5017						130			
KD	5018	230	130	190	64	12	140	54	15	9.07
	5019						145			
	5020						150			
KE	5022	260	160	220	75	19	170	65	15	13.62
	5024						180			
KF	5026	290	190	250	87	19	200	77	15	17.13
	5028						210			
K10	5030	310	215	270	91	25	225	81	15	19.27
K11	5032	330	230	290	99		240	89		23.63
K12	5034	355	250	315	109		260	99		29.64
K13	5036	380	270	340	120		280	110		36.92
K14	5938	390	280	350		30	290			40.17
K15	5040	415	300	375	130		310	120		47.59
K16	5044	450	330	410	140		340	130		58.74
K17	5048	475	350	435	140	30	360	130	15	67.50
K18	5052	520	390	480	164		400	154		88.05
K19	5056	545	410	505			420			106.68

Dimensions of NEW SUPER SHEAVES

D/d 20



Rim NO	Rope size(mm)	Dimensions(mm)								Bearing NO. SL04-50※※NR	Weight Kgs	Inquiry No.
		OD	TD	PCD	R	B	D_1	D_2	A			
1	10 ~ 12.5	278	238	250.5	7.1	34	90	120	33	5011	7.1	0821010211
						34	95	120		5012	6.9	0821010212
						34	100	120		5013	6.8	0821010213
						42	110	145		5014	8.7	0821010214
2	12.5 ~ 14	311	266	280	8	34	95	120	36	5012	9.4	0821020212
						34	100	120		5013	9.3	0821020213
						42	110	145		5014	10.0	0821020214
						42	115	145		5015	9.9	0821020215
3	14 ~ 16	354	304	320	9	42	110	145	40	5014	12.4	0821030214
						42	115	145		5015	12.3	0821030215
						48	125	165		5016	13.9	0821030216
						48	130	165		5017	13.7	0821030217
4	16 ~ 18	398	342	360	10	48	125	165	44	5016	16.3	0821040216
						48	130	165		5017	16.1	0821040217
						54	140	190		5018	19.7	0821040218
						54	145	190		5019	18.9	0821040219
5	18 ~ 20	443	380	400	11.2	48	130	165	51	5017	21.5	0821050217
						54	140	190		5018	25.1	0821050218
						54	145	190		5019	24.2	0821050219
						65	170	220		5022	30.0	0821060222
6	20 ~ 22.4	499	428	450.4	12.5	54	145	190	55	5019	29.1	0821060219
						54	150	190		5020	28.4	0821060220
						65	170	220		5022	34.3	0821060222
						65	180	220		5024	33.8	0821060224
7	22.4 ~ 25	555	475	500	14	56	180	220	62	5024	44.2	0821070224
						77	200	250		5026	50.1	0821070226
						77	210	250		5028	49.4	0821070228
						81	225	270		5030	52.1	0821070230
8	25 ~ 28	622	532	560	16	77	200	250	67	5026	61.5	0821080226
						77	210	250		5028	60.8	0821080228
						81	225	270		5030	63.6	0821080230
						89	240	290		5032	69.8	0821080232
9	28 ~ 31.5	699	599	630.5	18	77	210	250	76	5028	78.6	0821090228
						81	225	270		5030	81.0	0821090230
						89	240	290		5032	87.2	0821090232
						99	260	315		5034	96.7	0821090234
10	31.5 ~ 35.5	787	675	710.5	20	89	240	290	85	5032	114.1	0821100232
						99	260	315		5034	123.5	0821100234
						110	280	340		5036	135.3	0821100236
						110	290	350		5038	136.6	0821100238
11	35.5 ~ 42.5	934	808	850.5	22.4	110	280	340	94	5036	184.2	0821110236
						110	290	350		5038	185.3	0821110238
						120	310	375		5040	198.9	0821110240
						130	340	410		5044	216.4	0821110244
12	42.5 ~ 50	1102	950	1000	26	110	290	350	106	5038	260.0	0821120238
						120	310	375		5040	275.1	0821120240
						130	340	410		5044	292.1	0821120244
						130	360	435		5048	301.7	0821120248
13	50 ~ 56	1236	1064	1120	29	120	310	375	120	5040	359.7	0821130240
						130	340	410		5044	378.9	0821130244
						130	360	435		5048	386.1	0821130248
						154	400	480		5052	428.1	0821130252
14	56 ~ 64	1396	1216	1280	32.5	130	340	410	132	5044	510.5	0821140244
						130	360	435		5048	517.3	0821140248
						154	400	480		5052	562.0	0821140252
						154	420	505		5056	571.5	0821140256
15	64 ~ 70	상기표에 수록된 SHEAVE의 의문사항은 당사에 문의 Please make inquiries about sheaves in this portion										

Note 1.
상기표 이외의 SHEAVE 제작 가능 (당사에 문의)

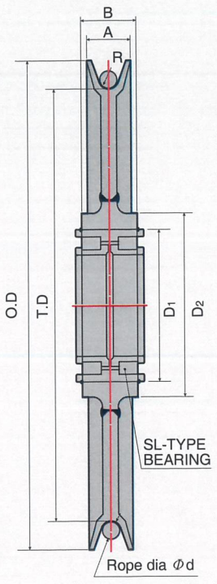
Note 2.
중량은 베어링 중량이 포함된 수치임.

Note 1.
Inquiries re dimensions not included in this table are also welcome

Note 2.
Weight figures also include bearings

Dimensions of NEW SUPER SHEAVES

D/d 25



Rim NO	Rope size(mm)	Dimensions(mm) OD	TD	PCD	R	B	D_1	D_2	A	Bearing NO. SL04-50※※NR	Weight Kgs	Inquiry No.
1	10 ~ 12.5	343	303	315.5	7.1	34	90	120	33	5011	9.6	0822010211
						34	95	120		5012	9.4	0822010212
						34	100	120		5013	9.3	0822010213
						42	110	145		5014	11.1	0822010214
2	12.5 ~ 14	386	341	355	8	34	95	120	36	5012	12.6	0822020212
						34	100	120		5013	12.5	0822020213
						42	110	145		5014	13.2	0822020214
						42	115	145		5015	13.1	0822020215
3	14 ~ 16	434	384	400	9	42	110	145	40	5014	16.3	0822030214
						42	115	145		5015	16.2	0822030215
						48	125	165		5016	17.8	0822030216
						48	130	165		5017	17.6	0822030217
4	16 ~ 18	488	432	450	10	48	125	165	47	5016	24.9	0822040216
						48	130	165		5017	24.7	0822040217
						54	140	190		5018	28.3	0822040218
						54	145	190		5019	27.5	0822040219
5	18 ~ 20	543	480	500	11.2	48	130	165	51	5017	29.5	0822050217
						54	140	190		5018	25.1	0822050218
						54	145	190		5019	24.2	0822050219
						65	170	220		5022	30.0	0822050222
6	20 ~ 22.4	609	538	560.4	12.5	54	145	190	55	5019	39.1	0822060219
						54	150	190		5020	38.8	0822060220
						65	170	220		5022	44.3	0822060222
						65	180	220		5024	43.8	0822060224
7	22.4 ~ 25	685	605	630	14	65	180	220	62	5024	61.1	0822070224
						77	200	250		5026	67.0	0822070226
						77	210	250		5028	66.3	0822070228
						81	225	270		5030	69.0	0822070230
8	25 ~ 28	772	682	710	16	77	200	250	70	5026	89.9	0822080226
						77	210	250		5028	88.7	0822080228
						81	225	270		5030	92.4	0822080230
						89	240	290		5032	98.3	0822080232
9	28 ~ 31.5	868	768	799.5	18	77	210	250	76	5028	111.2	0822090228
						81	225	270		5030	113.4	0822090230
						89	240	290		5032	119.7	0822090232
						99	260	315		5034	129.1	0822090234
10	31.5 ~ 35.5	976	864	899.5	20	89	240	290	85	5032	161.0	0822100232
						99	260	315		5034	170.2	0822100234
						110	280	340		5036	182.0	0822100236
						110	290	350		5038	184.0	0822100238
11	35.5 ~ 42.5	1146	1020	1062.5	22.4	110	280	340	94	5036	250.2	0822110236
						110	290	350		5038	251.3	0822110238
						120	310	375		5040	266.8	0822110240
						130	340	410		5044	284.2	0822110244
12	42.5 ~ 50	1352	1200	1250	26	110	290	350	106	5038	367.8	0822120238
						120	310	375		5040	380.7	0822120240
						130	340	410		5044	397.7	0822120244
						130	360	435		5048	408.4	0822120248
13	50 ~ 56	1516	1344	1400	29	120	310	375	120	5040	509.5	0822130240
						130	340	410		5044	525.9	0822130244
						130	360	435		5048	533.2	0822130248
						154	400	480		5052	579.2	0822130252
14	56 ~ 64	상기표에 수록된 SHEAVE의 의문사항은 당사에 문의 Please make inquiries about sheaves in this portion										
15	64 ~ 70											

Note 1.
상기표 이외의 SHEAVE 제작 가능
(당사에 문의)

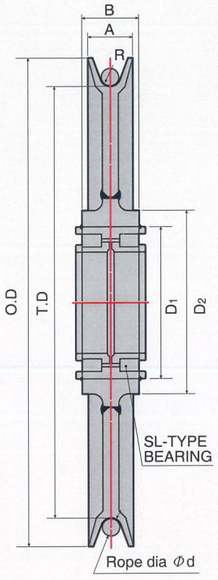
Note 2.
중량은 베어링 중량이 포함된 수치임.

Note 1.
Inquiries re dimensions not included in this table are also welcome

Note 2.
Weight figures also include bearings

Dimensions of NEW SUPER SHEAVES

D/d 31.5



Rim NO	Rope size(mm)	Dimensions(mm) OD	TD	PCD	R	B	D_1	D_2	A	Bearing NO. SL04-50※※NR	Weight Kgs	Inquiry No.
1	10 ~ 12.5	422	382	394.5	7.1	34	90	120	33	5011	13.0	0823010211
						34	95	120		5012	12.9	0823010212
						34	100	120		5013	12.8	0823010213
						42	110	145		5014	14.6	0823010214
2	12.5 ~ 14	472	427	441	8	34	95	120	36	5012	17.0	0823020212
						34	100	120		5013	16.9	0823020213
						42	110	145		5014	17.6	0823020214
						42	115	145		5015	17.5	0823020215
3	14 ~ 16	538	488	504	9	42	110	145	43	5014	26.9	0823030214
						42	115	145		5015	26.8	0823030215
						48	125	165		5016	28.2	0823030216
						48	130	165		5017	27.9	0823030217
4	16 ~ 18	605	549	567	10	48	125	165	47	5016	34.5	0823040216
						48	130	165		5017	34.6	0823040217
						54	140	190		5018	38.2	0823040218
						54	145	190		5019	37.3	0823040219
5	18 ~ 20	673	610	630	11.2	48	130	165	51	5017	42.1	0823050217
						54	140	190		5018	45.7	0823050218
						54	145	190		5019	44.8	0823050219
						65	170	220		5022	50.2	0823060222
6	20 ~ 22.4	755	684	706	12.5	54	145	190	59	5019	69.2	0823060219
						54	150	190		5020	68.9	0823060220
						65	170	220		5022	74.8	0823060222
						65	180	220		5024	73.8	0823060224
7	22.4 ~ 25	843	763	788	14	65	180	220	69.5	5024	100	0823070224
						77	200	250		5026	106.6	0823070226
						77	210	250		5028	105.3	0823070228
						81	225	270		5030	109.8	0823070230
8	25 ~ 28	944	854	882	16	77	200	250	73	5026	143.7	0823080226
						77	210	250		5028	142.4	0823080228
						81	225	270		5030	146.7	0823080230
						89	240	290		5032	152.2	0823080232
9	28 ~ 31.5	1062	962	993.5	18	77	210	250	79	5028	174	0823090228
						81	225	270		5030	177.5	0823090230
						89	240	290		5032	183.5	0823090232
						99	260	315		5034	192.8	0823090234
10	31.5 ~ 35.5	1195	1083	1118.5	20	89	240	290	88	5032	250.1	0823100232
						99	260	315		5034	259.1	0823100234
						110	280	340		5036	272.8	0823100236
						110	290	350		5038	274	0823100238
11	35.5 ~ 42.5	1424	1298	1340.5	22.4	110	280	340	101	5036	435.2	0823110236
						110	290	350		5038	436.0	0823110238
						120	310	375		5040	448.3	0823110240
						130	340	410		5044	464.6	0823110244
12	42.5 ~ 50	상기표에 수록된 SHEAVE의 의문사항은 당사에 문의 Please make inquiries about sheaves in this portion										
13	50 ~ 56											
14	56 ~ 64											
15	64 ~ 70											

Note 1.
상기표 이외의 SHEAVE 제작 가능
(당사에 문의)

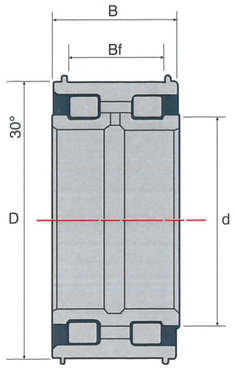
Note 2.
중량은 베어링 중량이 포함된 수치임.

Note 1.
Inquiries re dimensions not included in this table are also welcome

Note 2.
Weight figures also include bearings

Dimensions of BEARING for NEW SUPER SHEAVES

SL타입 실린드리컬 로울러 베어링
SL-ROLLER BEARING



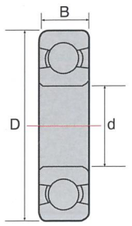
SL타입 실린드리컬 로울러 베어링은 이중 밀봉형태의 베어링이다.

This SL-Bearing is of double sealed bearing type

SHAFT DIA (mm)	BEARING NO.	DIMENSIONS(MM)				BASIC LOAD		WEIGHT
		d	D	B	Bf	Dynamic	Static	
40	SL04-5008NR	40	68	38	28	8100	11800	0.55
45	SL04-5009NR	45	75	40	30	9750	14700	0.69
50	SL04-5010NR	50	80	40	30	10200	16100	0.75
55	SL04-5011NR	55	90	46	34	12100	19600	1.12
60	SL04-5012NR	60	95	46	34	12600	21200	1.20
65	SL04-5013NR	65	100	46	34	13100	22800	1.27
70	SL04-5014NR	70	110	54	42	17500	29000	1.87
75	SL04-5015NR	75	115	54	42	20000	33000	1.97
80	SL04-5016NR	80	125	60	48	20900	36000	2.66
85	SL04-5017NR	85	130	60	48	21800	38500	2.79
90	SL04-5018NR	90	140	67	54	31000	55000	3.71
95	SL04-5019NR	95	145	67	54	32000	57500	3.87
100	SL04-5020NR	100	150	67	54	33500	59500	4.03
110	SL04-5022NR	110	170	80	65	39000	71000	7.00
120	SL04-5024NR	120	180	80	65	41000	76500	7.50
130	SL04-5026NR	130	200	95	77	55000	102000	11.4
140	SL04-5028NR	140	210	95	77	61000	115000	12.1
150	SL04-5030NR	150	225	100	81	70500	131000	14.6
160	SL04-5032NR	160	240	109	89	73500	142000	18.2
170	SL04-5034NR	170	260	122	99	94500	182000	24.6
180	SL04-5036NR	180	280	136	110	111000	218000	32.3
190	SL04-5038NR	190	290	136	110	114000	227000	33.7
200	SL04-5040NR	200	310	150	120	133000	270000	43.5
220	SL04-5044NR	220	340	160	130	167000	335000	55.5
240	SL04-5048NR	240	360	160	130	175000	365000	59.5
260	SL04-5052NR	260	400	190	154	217000	460000	90.7
280	SL04-5056NR	280	420	190	154	221000	475000	96.2
300	SL04-5060NR	300	460	218	176	272000	600000	137.0

N.T.N CAT-NO.1100

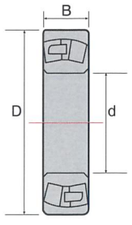
깊은 홈 볼 베어링
DEEP GROOVE BALL BEARING



BEARIN NO.	DIMENSIONS			BASIC LOAD		WEIGHT
	d	D	B	Dynamic	Static	
6208	40	80	18	2280	1650	0.365
6209	450	85	19	2450	1850	0.405
6210	50	90	20	2750	2100	0.465
6211	55	100	21	3400	2660	0.665
6212	60	110	22	4100	3300	0.775
6213	65	120	23	4500	3650	0.995
6214	70	125	24	4900	4000	1.08
6215	75	130	25	5200	4400	1.18
6216	80	140	26	5700	4750	1.41
6217	85	150	28	6600	5600	1.77
6218	90	160	30	7550	6450	2.18
6219	95	170	32	8550	7400	2.64
6220	100	180	34	9600	8400	3.05
6221	105	190	36	10400	9500	3.75
6222	110	200	38	11300	10600	4.35
6224	120	215	40	12200	11900	5.15
6226	130	230	40	13100	13200	5.80
6308	40	90	23	3200	2300	0.635
6309	45	100	25	4150	3100	0.835
6310	50	110	27	4850	3650	1.06
6311	55	120	29	5600	4300	1.37
6312	60	130	31	6400	5000	1.72
6313	65	140	33	7250	5750	2.10
6314	70	150	35	8150	6550	2.56
6315	75	160	37	8900	7400	3.05
6316	80	170	39	9650	8250	3.65
6317	85	180	41	10400	9200	4.30
6318	90	190	43	11200	10200	5.0
6319	95	200	45	12000	11300	5.65
6320	100	215	47	13600	13500	7.00
6321	105	225	49	14400	14700	8.05
6322	110	240	50	16100	17200	9.55
6324	120	260	55	16200	17400	12.4
6326	130	280	58	18000	20200	15.1

NSK Pr NO.111B

스페리컬 로울러 베어링
SELF-ALIGNING ROLLER BEARING

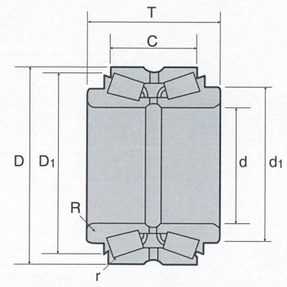


BEARIN NO.	DIMENSIONS			BASIC LOAD		WEIGHT (Kgs)
	d	D	B	Dynamic c.(Kgf)	Static Co.(kgf)	
22208E	40	80	23	6550	5250	0.515
22209E	45	85	23	6850	5650	0.560
22210E	50	90	23	7150	6050	0.605
22211B	55	100	25	8300	7100	0.850
22212B	60	110	28	10200	9400	1.15
22213B	65	120	31	12700	11500	1.50
22214B	70	125	31	13700	12900	1.55
22215B	75	130	31	14700	14300	1.65
22216B	80	140	33	15900	15300	2.15
22217B	85	150	36	19000	18000	2.66
22218B	90	160	40	22700	22200	3.50
22219B	95	170	43	25800	24800	4.10
22220B	100	180	46	28400	27100	4.95
22222B	110	200	53	36500	37000	7.20
22224B	120	215	58	43000	45000	9.10
22226B	130	230	64	50000	50500	11.2
22228B	140	250	68	60500	62500	14.0
22230B	150	270	73	68500	75000	18.1
22232B	160	290	80	77000	83000	22.7
22234B	170	310	86	89000	97500	28.0
22236B	180	320	86	92000	103000	29.3
22238B	190	340	92	103000	116000	36.6
22240B	200	360	98	116000	29000	44.0
22244B	220	400	108	138000	156000	60.4
22248B	240	440	120	170000	195000	81.7
22252B	260	480	130	198000	231000	106
22256B	280	500	130	205000	244000	112
22260B	300	540	140	237000	279000	141

NACHI CAT NO.3001-6/NTN CAT No.1100

Dimensions of BEARING for NEW SUPER SHEAVES

복열 테이퍼 로울러 베어링
TWO-ROW ASSEMBLY PRE-SET, DOUBLE CUP, SLOTTED CONES



bore d (inch) (mm)	out side diam D (inch) (mm)	width through cones T (inch) (mm)	width cup C (inch) (mm)	rating at 500 RPM for 3000 hours L10 trust (lbs) (daN)	rating at 500 RPM for 3000 hours L10 two row radial (lbs (daN)	factor K	part numbers cone	part numbers cup	cone rib out side diam d_1 (inch) (mm)	cone max. shaft fillet radius R (inch) (mm)	Cup max. housing fillet radius r (inch) (mm)	backing shoulder diam D_1	bearing manufactured correct running clearance for these fits: these fits for stationary shaft applications only: shaft diam limits (inch) (mm)	fit (loose) (inch) (mm)	unclamped cup design in sheaves only: housing bore limits (inch) (mm)	unclamped cup design in sheaves only: fit (tight) (inch) (mm)
6.5000 165.100	8.8750 225.425	3.7500 95.250	2.7500 69.850	9500 4226	29000 12900	1.52	N A46790 NW	46720 D	7.7600 197.104	0.14 3.6	0.03 0.8	8.472 215.2	6.5000 6.4990 165.100 165.074	0 0.002 0 0.051	8.8730 8.8120 225.374 225.348	0.002 0.004 0.051 0.104
7.0000 177.800	9.7500 247.650	4.0625 103.188	3.3125 84.138	13900 6183	37000 16459	1.33	N A67791 SW	67720 D	8.3891 213.084	0.14 3.6	0.03 0.8	9.358 237.7	7.0000 6.9990 177.800 177.774	0 0.002 0 0.051	9.7480 9.7470 247.599 247.573	0.002 0.004 0.051 0.104
7.2500 184.150	9.5625 242.888	3.7500 95.250	1.7500 69.850	10700 4760	29800 13256	1.39	L M637349 NW	L M 637310D	8.4803 215.400	0.14 3.6	0.03 0.8	9.244 234.8	7.2500 7.2490 184.150 184.124	0 0.002 0 0.051	9.5605 9.5595 242.837 242.811	0.002 0.004 0.051 0.104
8.0000 203.200	10.8750 276.225	3.7500 95.250	2.8750 73.025	10400 4626	38200 16992	1.83	L M 241149 N W	L M 241110D	9.4659 240.434	0.14 3.6	0.03 0.8	10.346 262.8	8.0000 7.9990 203.200 203.174	0 0.002 0 0.051	9.5605 9.5595 242.837 242.811	0.002 0.004 0.051 0.104
9.2500 234.950	12.2500 311.150	4.0000 101.600	2.8750 73.025	13000 5783	41800 18594	1.61	L M446349 N W	L M 446310D	10.8156 274.716	0.14 3.6	0.03 1.8	11.693 297.0	9.2500 2.2490 234.950 234.924	0 0.002 0 0.051	12.2480 12.2460 311.099 311.049	0.002 0.006 0.051 0.152
9.9990 253.975	13.6875 347.663	4.0000 101.600	2.7500 69.850	13400 5961	47200 20996	1.76	L M 249747 N W	L M 249710D	11.5860 294.284	0.14 3.6	0.06 1.6	12.941 328.7	9.9990 9.9980 253.975 253.949	0 0.002 0 0.051	13.6855 13.6835 347.612 347.562	0.002 0.006 0.051 0.152
10.5000 266.700	13.8750 352.425	4.2500 107.950	3.2500 82.550	15000 6672	54800 24377	1.83	L M 251649 N W	L M 251610D	12.1994 309.865	0.25 6.4	0.06 1.6	13.181 334.8	105.000 10.4990 266.700 266.674	0 0.002 0 0.051	13.8730 13.8710 352.374 352.324	0.002 0.006 0.051 0.152
12.0000 304.800	15.5000 393.700	4.2500 107.950	3.2500 82.550	17900 7962	58400 25978	1.63	L M 357049 N W	L357010D	13.7971 350.446	0.25 6.4	0.06 0.6	14.854 377.3	12.0000 11.9990 304.800 304.774	0 0.002 0 0.051	15.4980 15.4960 393.649 393.599	0.002 0.006 0.051 0.152

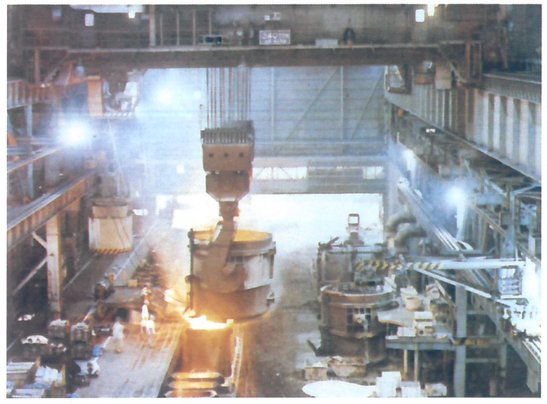
MAJOR APPLICATIONS

육상용 크레인, 해상용 크레인등 다양한 종류의 크레인에 사용

Diversified Use in All Kinds of Cranes - Both on Land and At Sea.

THE BEST TECHNOLOGY

지상 크레인	Land Cranes
· 지브 크레인	· Jib Cranes
· 언로더	· Unloaders
· 컨테이너 크레인	· container cranes
· 케이블 크레인	· cable cranes
· 오버헤드 크레인	· overhead travelling crandes
· 기중기	· Derrick cranes
· 트럭 크레인	· Truck cranes
선박용 크레인	Floating cranes
석유 시추용 굴착장치	Rigs for oil drilling
준설기	Dredgers
갑판 크레인	Deck cranes
수문	Sluice gates
광산설비	Mine
교량 거더	Bridge girders
조선설비	Ship building
외줄 크레인 등	Gin poles



인양장력기 Riser tensioner