



Combina 

Engineering and manufacturing company of

AIR BALANCE HOIST POWER-FREE RAIL SYSTEM



Diamond Quality, Gold Service & Silver Price.

DONGSUNG INDUSTRY MACHINE CO., LTD.

ESFEC AIR BALANCE HOIST

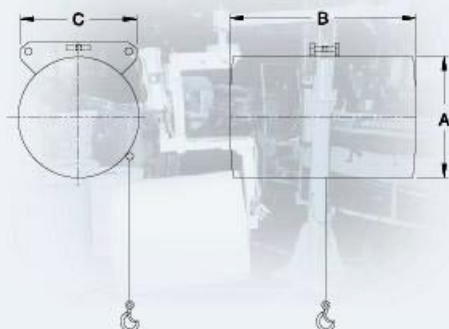


ESFEC AIR BALANCE HOIST

- ▶ 호이스트 기능과 스프링 발란스 기능을 동시에 제공함.
- ▶ 다양한 모델 공급으로 인한 선택의 폭이 확대됨.
- ▶ 상하 컨트롤 스위치를 중지함과 동시에 무중력 기능으로 전환됨.
이는 유사한 시스템에서 찾아볼 수 없는 유일한 기능임(상하 플로트 300mm)
- ▶ STD 공급(60Kg~1000Kg) , 공기압 7Kgf/cm² 기준
- ▶ 최적의 이송속도 공급
-상하 최소 1mm/sec 최대 1000mm/sec 이송이 가능하며 이는 외부의 속도조절 밸브에 의해 조절됨.
- ▶ 뛰어난 안전성 확보
-정격하중 초과 작업시 자동 AIR 배출하여 제품의 수명 연장과 안전성 확보
-작업 중 외부의 갑작스런 Air 공급 차단되었을 경우 작업 현위치에서 제품이 고정됨.
- ▶ 최저의 유지보수 비용과 공기 소비량이 매우 적음(0.13m³/stroke)
- ▶ Is provides hoist and spring balance function at the same time(float functions)
-Up and down control switch can be shifted to stop and float function at the same time.
-This unique function can not be found in the other similar systems (300mm up and down floating)
- ▶ Various models are available, Based on air pressure 100psi
-Standard models are available from 60 to 1000kg
-Customer designs are always welcome for various sizes.
- ▶ Optimum transportation speed
-The transportation speed can be 1 to 1000mm/sec in up and down directions and controlled by outside speed control valve.
- ▶ Excellent safety
-It automatically produces bell sounds by discharging air when over load is applied during work in order to expand hoist life and secure safety of the machine.
-It holds materials tightly when air supply is cut off by accidents.
- ▶ The minimum maintenance cost and very small air consumption(0.13m³/stroke)

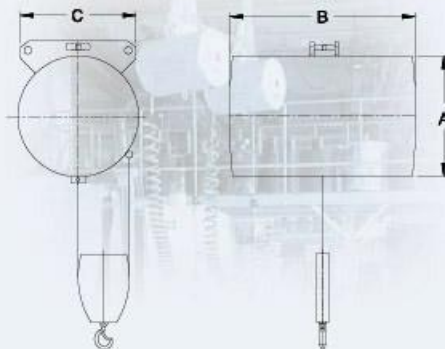
► Basic Configurations

SINGLE TYPE BALANCE



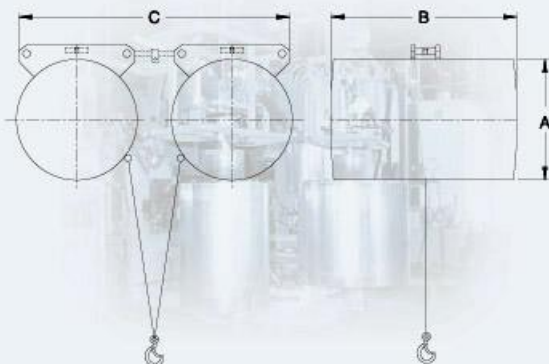
	CAPA [kg]	STROKE [M]	WEIGHT [kg]	DIM.(mm)		
				A	B	C
BH06020	60	2.0	22	165.2	412	190
BH10020	100	2.0	30	216.5	412	220
BH11036	110	3.6	40	267.4	412	220
BH16020	160	2.0	36	267.4	412	220
BH28020	280	2.0	60	355.6	430	270

REEVED TYPE BALANCE



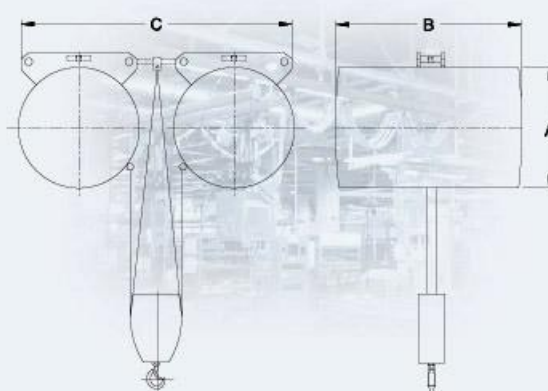
	CAPA [kg]	STROKE [M]	WEIGHT [kg]	DIM.(mm)		
				A	B	C
BH32010	320	1.0	39	267.4	412	220
BH56010	560	1.0	63	355.6	430	270

TANDEM TYPE BALANCE

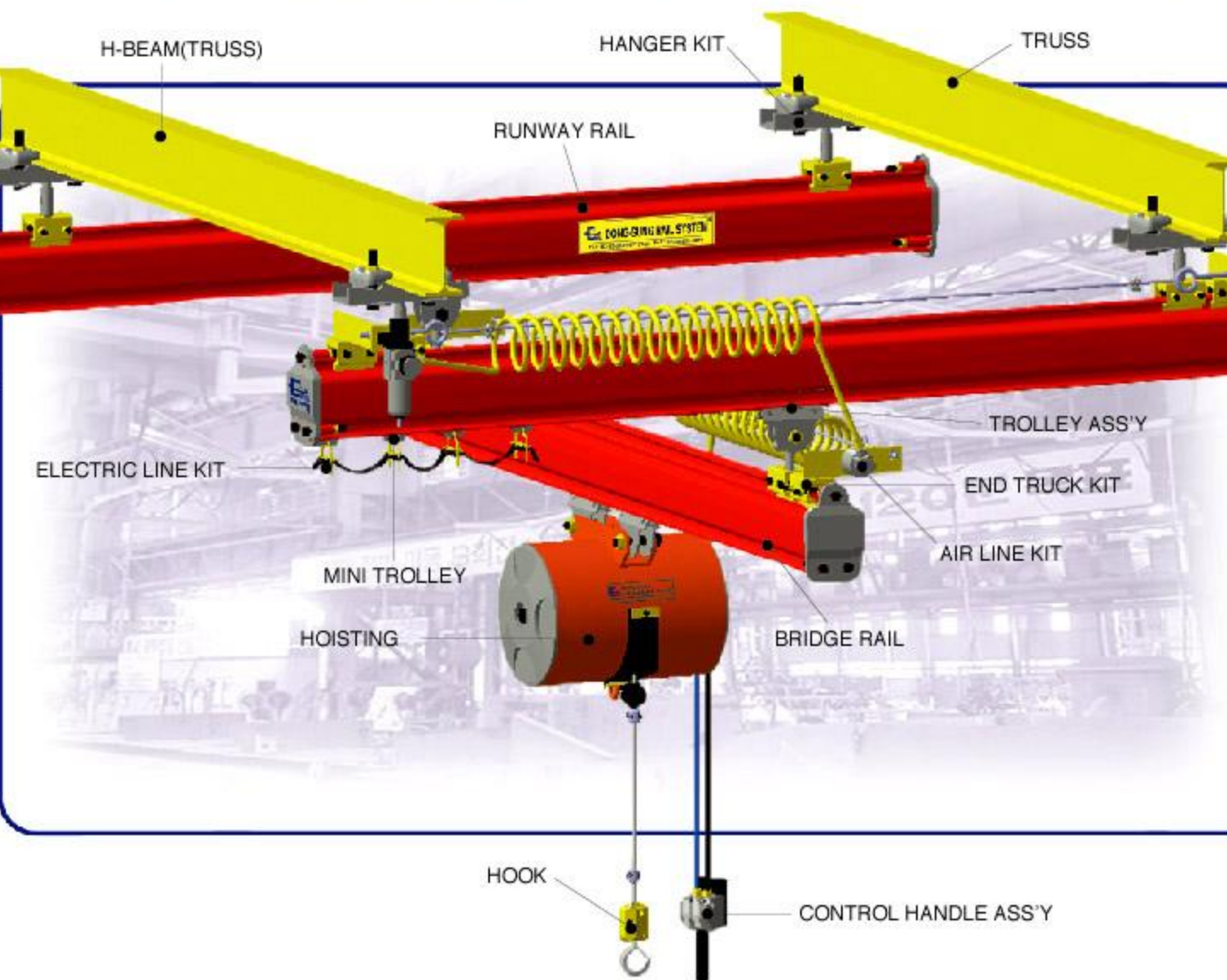


	CAPA [kg]	STROKE [M]	WEIGHT [kg]	DIM.(mm)		
				A	B	C
BH20020	200	2.0	60	216.5	412	590
BH22036	220	3.6	80	267.4	412	590
BH32020	320	2.0	72	267.4	412	590
BH56020	560	2.0	120	355.6	430	630

REEVED TANDEM TYPE VALANCE



	CAPA [kg]	STROKE [M]	WEIGHT [kg]	DIM.(mm)		
				A	B	C
BH44018	440	1.8	83	267.4	412	590
BH64010	640	1.0	75	267.4	412	590
BH100010	1000	1.0	123	355.6	430	630



POWER-FREE RAIL SYSTEM

- ▶ 무동력 레일 시스템은 기존의 전동식 호이스트 작동 방식과는 다르며 사람의 인력으로써 좌,우 종량감을 느끼지 아니하고 구동시키는 방식으로 안전하고 부드러우며 생산성 향상에 기여도가 높은 시스템이다 (동력원이 필요 없음.)
- ▶ 부품의 유니트화로 레이아웃을 자유롭게 구성할 수 있으며, 라인 변경 시에도 100% 재활용이 가능하며, X, Y, Z 3차원의 원활한 이송 작업이 가능합니다.
- ▶ 레일 재질은 알루미늄, 스틸 두 가지 타입이 있으며 중량별로 다양한 모델을 제공합니다.
- ▶ 적용방법: Mono, Runway, Bridge Rail을 양단보 point의 적합한 Rail model 선정

▶ Power-Free Rail system is totally different from the conventional electric hoist in operation mechanism. It can be moved left and right with power freely.

It is safe and smooth to operate easily to the improvement of productivity (it does not need power)

▶ The system is composed of unit parts so that the system layout can be made without restriction.

► RAIL MODEL

- Compositions and model
- Runway rail (applied to H-type and Mono rail)
- Bridge rail (applied to H-type rail)
- STD Lenght 6000mm

RA A0100



Kg/m	1.54
MATERIAL	ALUMINUM
PART NO	RA A0100
CLASSIFICATION	DRA-100

RA A0001



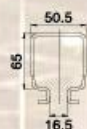
Kg/m	5.57
MATERIAL	ALUMINUM
PART NO	RA A0001
CLASSIFICATION	DRA-1

RA A0002



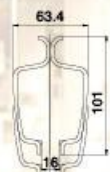
Kg/m	11,11
MATERIAL	ALUMINUM
PART NO	RA A0002
CLASSIFICATION	DRA-2

RA S0100



Kg/m	3.88
MATERIAL	STEEL
PART NO	RA S0100
CLASSIFICATION	DRS-100

RA S0001



Kg/m	6.43
MATERIAL	STEEL
PART NO	RA S0001
CLASSIFICATION	DRS-1

RA S0002



Kg/m	14.13
MATERIAL	STEEL
PART NO	RA S0002
CLASSIFICATION	DRS-2

RA S0003

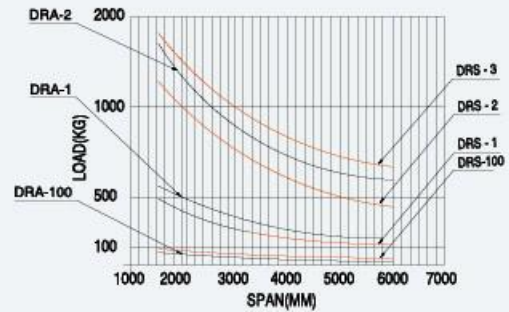
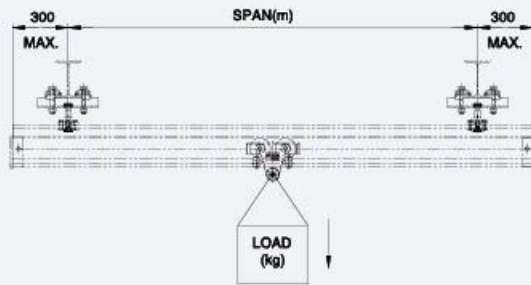


Kg/m	15.89
MATERIAL	STEEL
PART NO	RA S0003
CLASSIFICATION	DRS-3

POWER-FREE RAIL SYSTEM

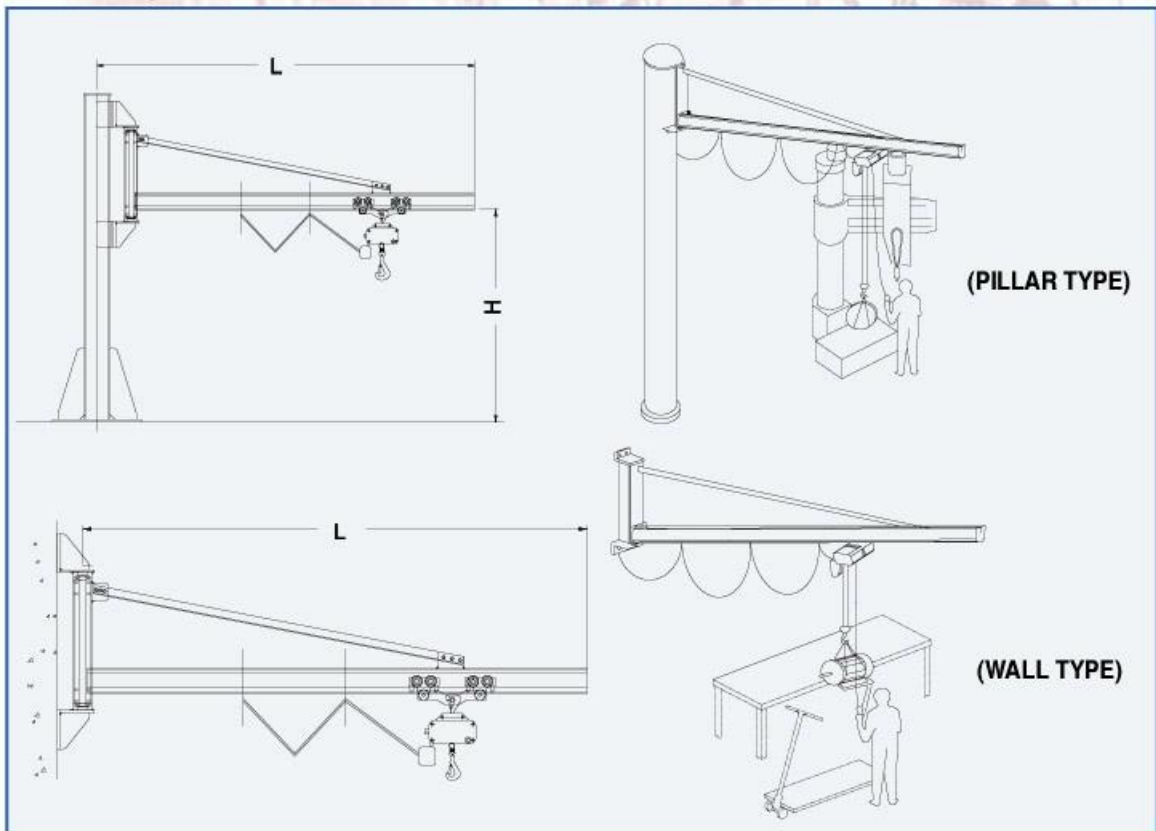
RAIL CAPACITY

SELECTED A STATE OF ART RAIL MODE TO FIT IDEA LOGICALLY TO THE POINT OF THE GUARD, SUPPORT RAIL AT BOTH END (SAFETY FACTOR : 5)



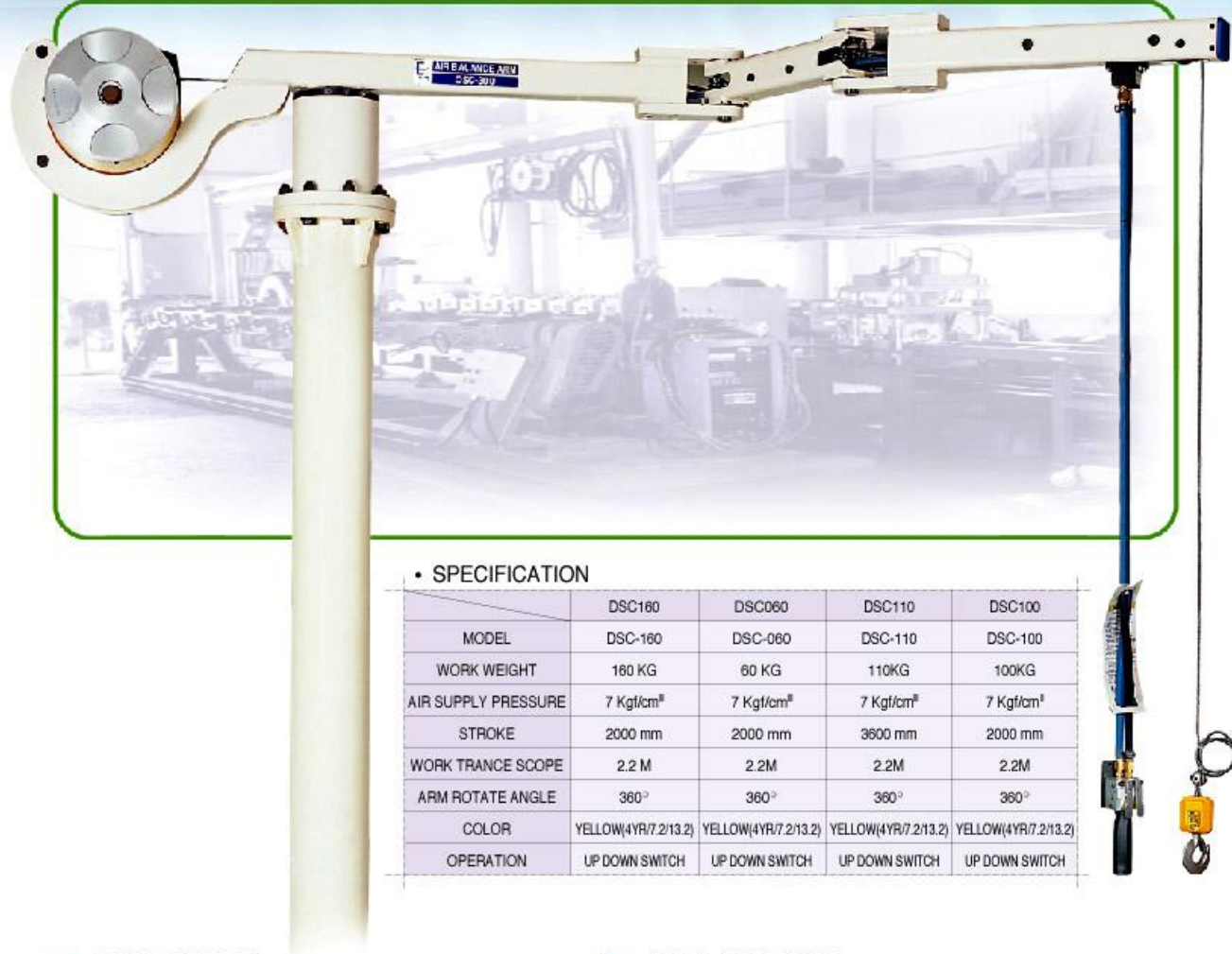
JIB CRANE SYSTEM

- Hoisting: AIR BALANCE. AIR HOIST. ELECTRIC HOIST
- Allowable weight 1kg~1,000kg(max)
- Arm lenght 1m ~ 5m



AIR BALANCE ARM

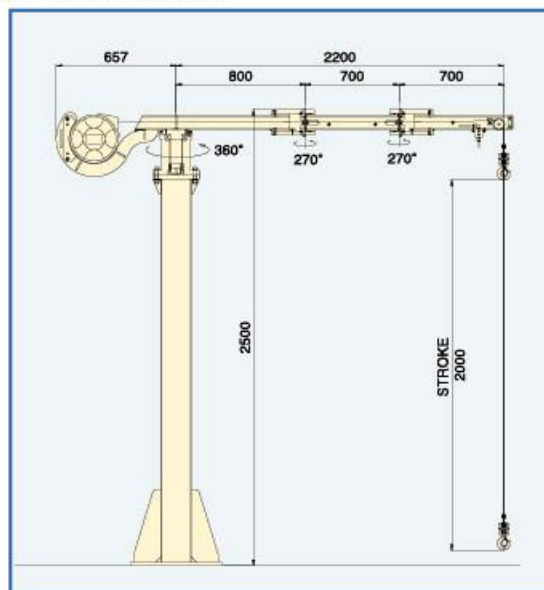
DSC-300



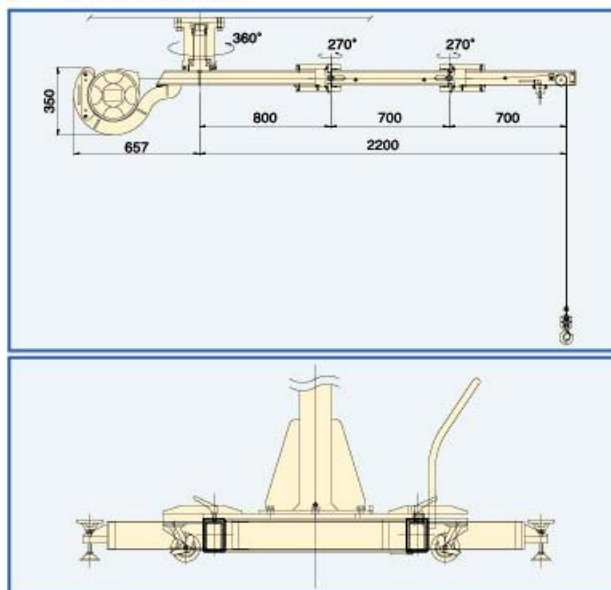
• SPECIFICATION

	DSC160	DSC060	DSC110	DSC100
MODEL	DSC-160	DSC-060	DSC-110	DSC-100
WORK WEIGHT	160 KG	60 KG	110KG	100KG
AIR SUPPLY PRESSURE	7 Kgf/cm ²	7 Kgf/cm ²	7 Kgf/cm ²	7 Kgf/cm ²
STROKE	2000 mm	2000 mm	3600 mm	2000 mm
WORK TRANCE SCOPE	2.2 M	2.2M	2.2M	2.2M
ARM ROTATE ANGLE	360°	360°	360°	360°
COLOR	YELLOW(4YR/7.2/13.2)	YELLOW(4YR/7.2/13.2)	YELLOW(4YR/7.2/13.2)	YELLOW(4YR/7.2/13.2)
OPERATION	UP DOWN SWITCH	UP DOWN SWITCH	UP DOWN SWITCH	UP DOWN SWITCH

► DIMENSION



► APPLICATION



AIR BALANCE ARM SYSTEM

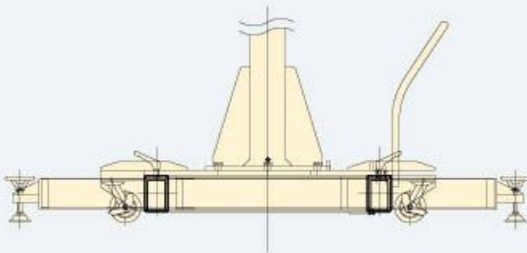
DSJ-300

DSJ-300

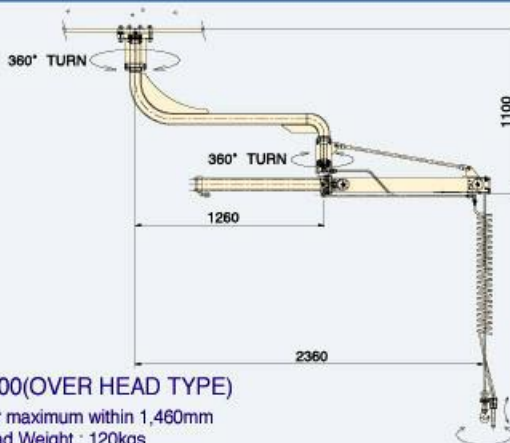
DSJ-300 with its high efficiency for handling of heavy materials in three dimensional work space.

The air balance arm DSJ-300 achieves high performance, excellent safety and low cost in handling of heavy materials, also the efficiency is greatly enhanced by using various attachments.

► OPTION

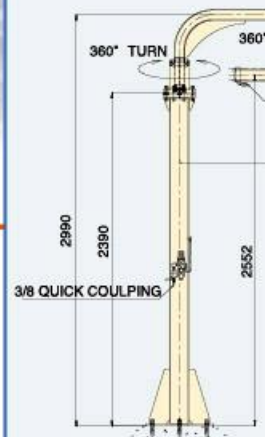


DSP-300 (PALLET BASE TYPE-□1,000×1,000)
-Transfer maximum within 1,460mm -Max.Load Weight : 120kgs



DSO-300(OVER HEAD TYPE)
-Transfer maximum within 1,460mm
-Max.Load Weight : 120kgs

► DSJ-300 LAY OUT



STANDARD TYPE AIR BALANCE ARM DSJ-300



• DESCRIPTION (Unit: mm)

SPECIFICATION	
MODEL	DSJ-300
MAX. PAYLOAD	120kg
UP-DOWN STROKE	1,460mm
MAX. ARM LENGTH	2,336mm
ARM ROTATION	360°
COLOR	4YR/7.2/13.2(YELLOW)
OPERATION	UP DOWN SWITCH
AIR PRESSURE	6Kgf/cm ²
WEIGHT	200kg

* Order-made model can be manufactured.



Welding-Wire Reel Handling



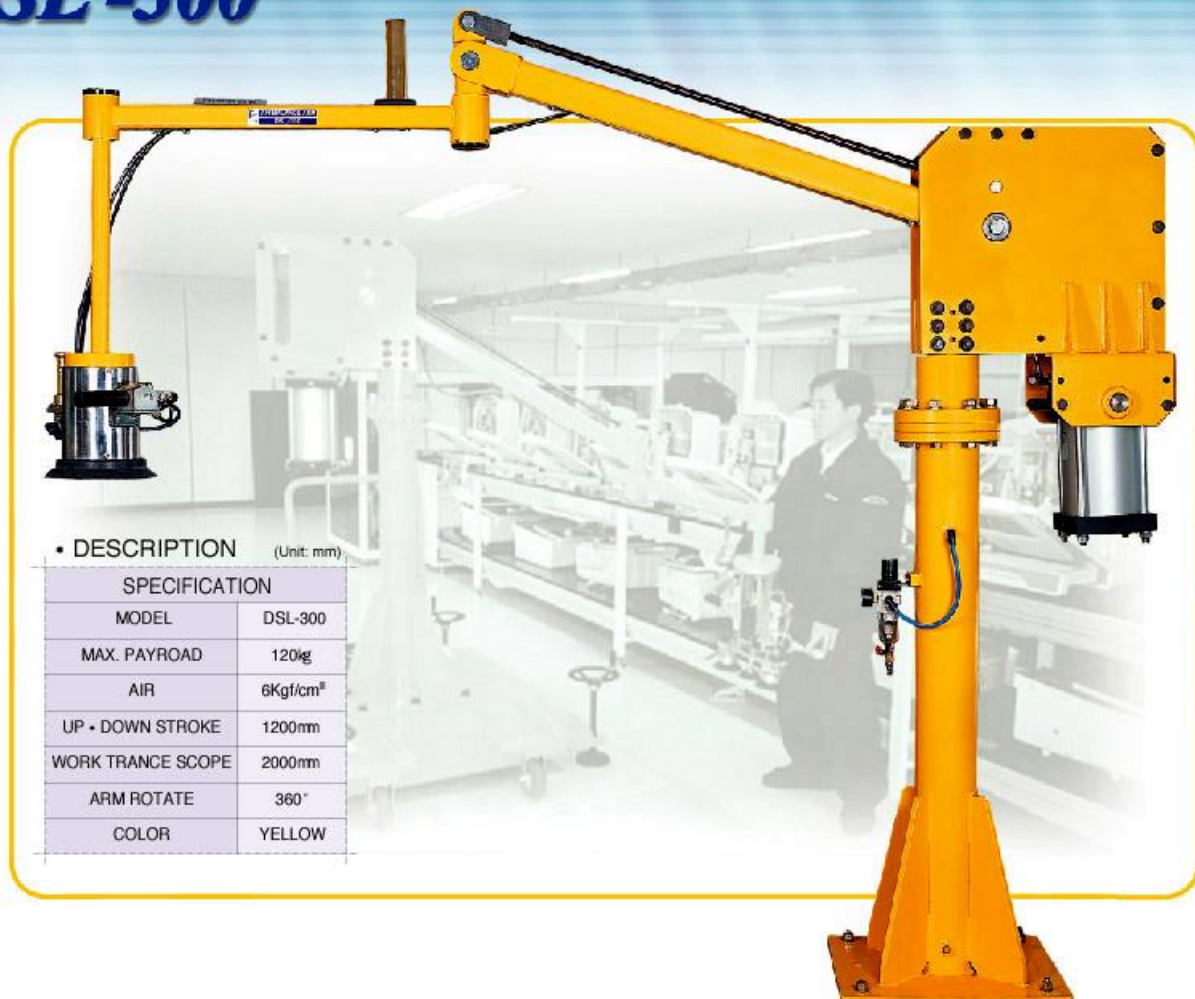
TV Monitor Handling



Forged Product Handling

AIR BALANCE ARM

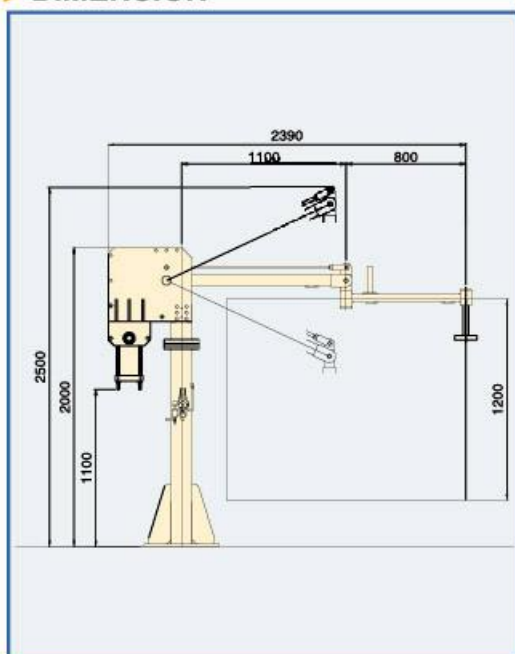
DSL-300



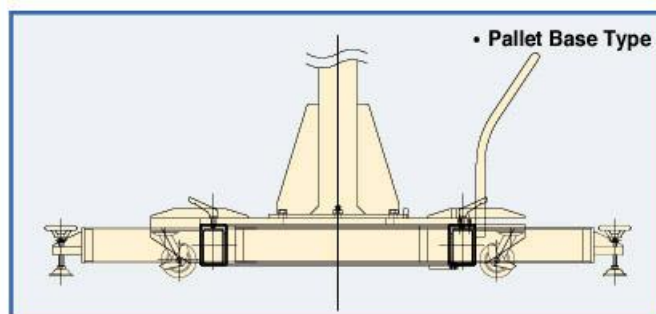
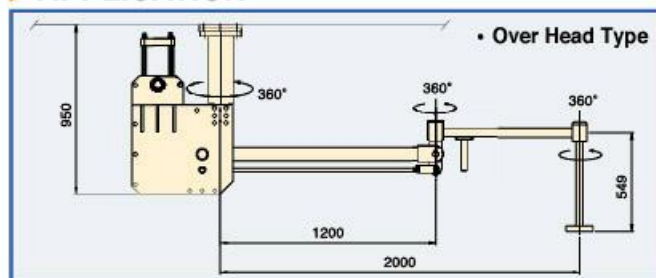
• DESCRIPTION (Unit: mm)

SPECIFICATION	
MODEL	DSL-300
MAX. PAYLOAD	120kg
AIR	6Kg/cm ²
UP • DOWN STROKE	1200mm
WORK TRANCE SCOPE	2000mm
ARM ROTATE	360°
COLOR	YELLOW

► DIMENSION



► APPLICATION





**PROCESSING LINE OF
HUB DRUM CASE**



**PAPER ROLL HANDLING
(LIFT TYPE)**



**TEXTILE PRODUCT
HANDLING**



RAIL SYSTEM



DOOR ASS'Y LINE



**HYDRULIC PROCESSING
ENGINEERING WORKSHOP**



**TOOL RAIL AUTOPART
ASS'Y LINE**



HOIST SYSTEM



**CHINAWARE CASE
HANDLING SYSTEM**



AUTO MOBILE JIG



TAN DEM BALANCE



**RUBBERBELT MOLDBASE
(이송 장치)**



**WELDING MACHINE HANGER
(MULTI ARM SYSTEM)**



**AUTO MOBILE
GLASS MOVE LINE**



ARM LIFT JIG SYSTEM



**WELDING MACHINE HANGER
(Rail system)**

· 회사 연혁 요약 ·

-95. 2. 1

-97. 6. 10

-97. 5

-98. 4

-98. 8

-98. 8

-98. 8

-98. 12

-98. 12

-99. 5

-99. 8

-00. 6

-00. 12

-00. 12

-01. 4

-02. 7

법인 설립 (주)동성산기

자가공장 신축 (창원시 동읍)

특허출원 : AIR BALANCE HOIST 등 外 9건

실용신안출원중 : 보급형 AIR BALANCE ARM -2건

의장등록출원중 : RAIL 및 주변부품 -4건

상표등록 : ESFEC -1건

창원대학교 산. 학. 연구개발 협약 체결

중소기업청 우수기업 선정 (중소기업청)

K.T 마크 획득-국산 신기술 (과학기술부)

N.T 마크 획득-신기술 (중소기업청)

벤처기업선정-2000212441-0338호

기술경쟁력평가 우수기업선정-99-002

수출유망 중소기업선정-990799호

CE마크 획득-한국산업 안전공단

S마크 획득-한국산업 안전공단

지역특화 메카노 21 기술개발 사업수행-과학기술부, 경상남도

병력특례 업체지정

우량기술기업선정-기술신용보증기금

INNO-BIZ 기업선정-중소기업청(2111-0284)

· 수상현황 ·

-98. 10

-99. 6

-95.12

-99. 2

-99. 10

-00. 6

-00. 8

-01.12

경상남도 최우수 기술인상 수상(대상-경상남도)-17호

경남중소기업대상-기술부분-중소기업청장 (234호)

불우 청소년 사랑나눔-창원시장 (626호)

품질인증기여-창원시장 (45호)

경상남도 벤처기술-우수상 수상

우수자본재 기술개발-산업자원부장관 (47040호)

중소기업기술혁신-국무총리표창 (104399호)

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Easy
Safe
Fast
Economy
Control



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- U R L: <http://www.esfec.co.kr>



당사제품은 과학기술부, 중소기업청 및 국제규격의 안전성능 및 품질인증을 획득한 우수한 제품입니다.

The performance and quality of our products were approved by Ministry of Science and Technology and Small and Medium Business Administration in Korea

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대구영업소: Tel: 053-585-0455 Fax: 053-585-0454

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Fax: 86-21-6401-2315

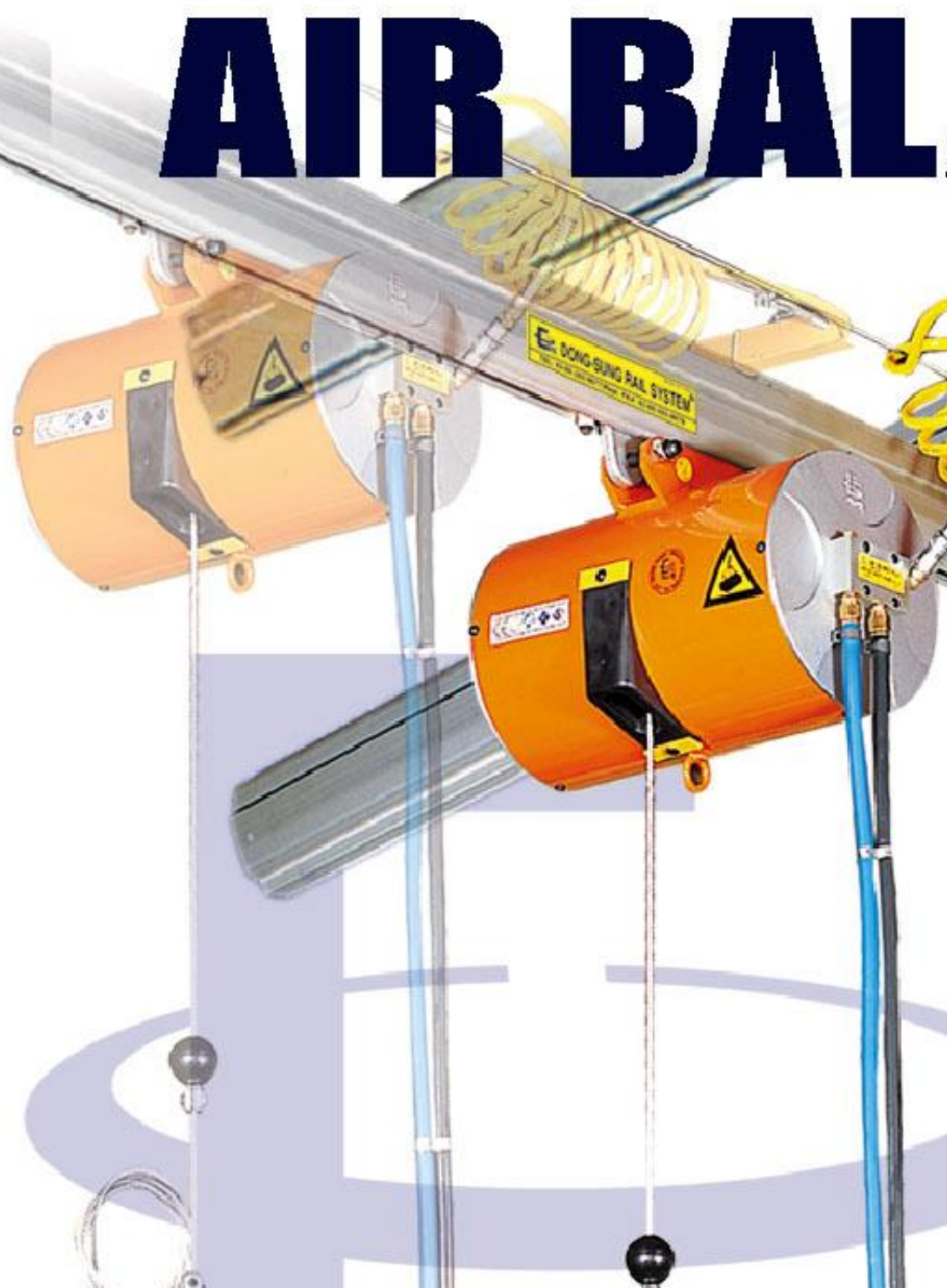
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세계로

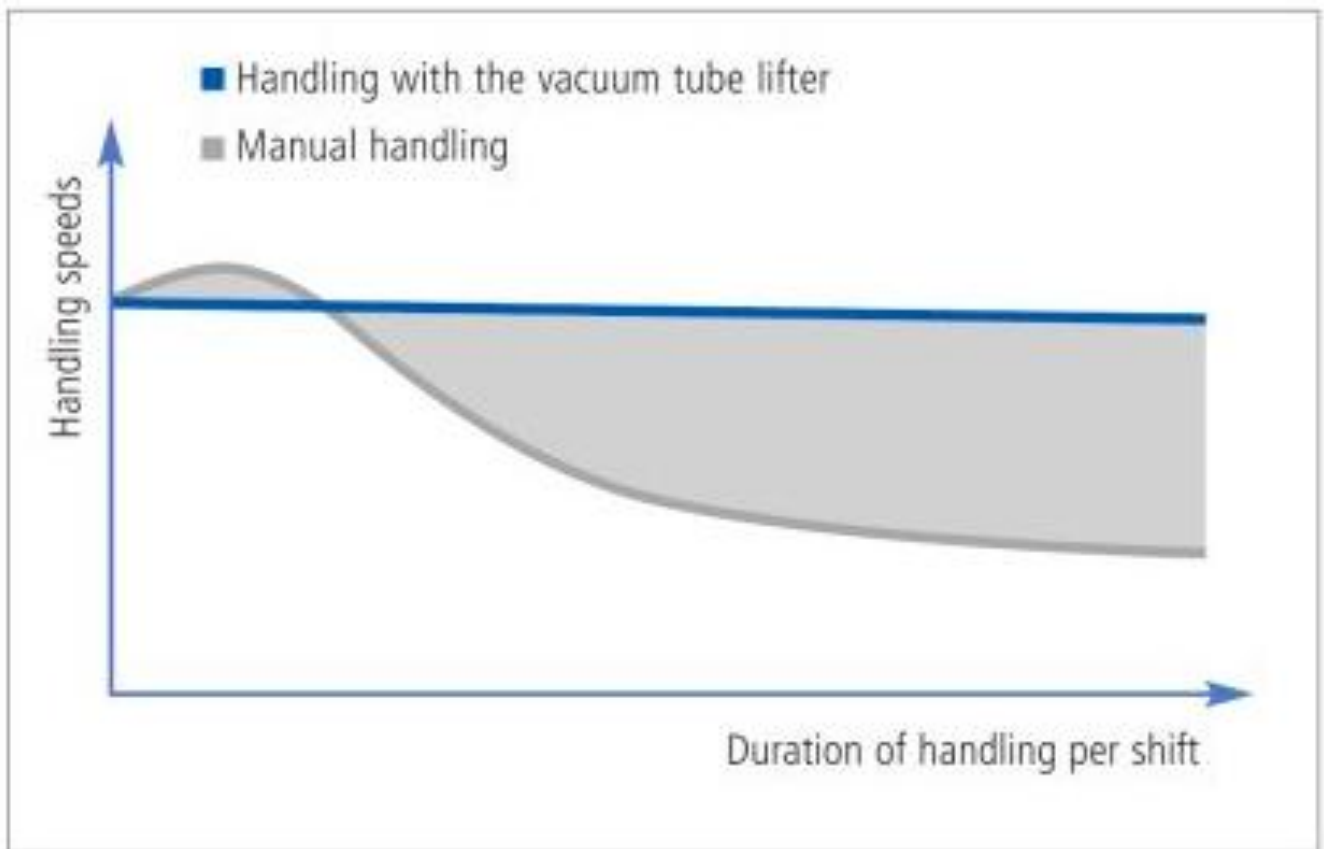
AIR BAL



7

Your benefits

Increased productivity and employee motivation



Comparison of handling speeds between handling with the vacuum tube lifter and manual handling

Only one person for handling



Before



After

Minization of downtime due to employee injury



Before



After

Applications by COMBINA

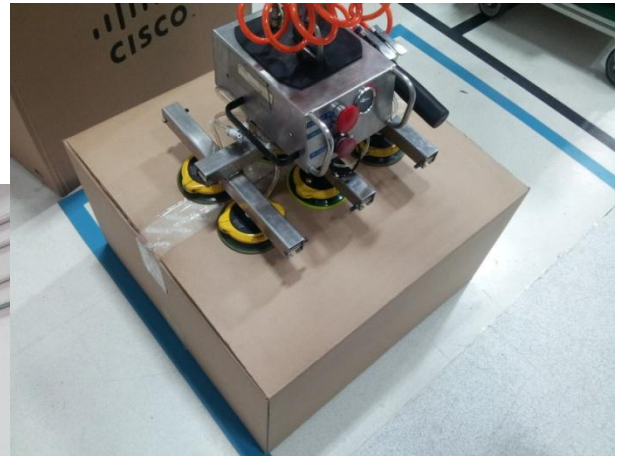
TOA



BN Brother



Celestica



TMT



BJC Foods



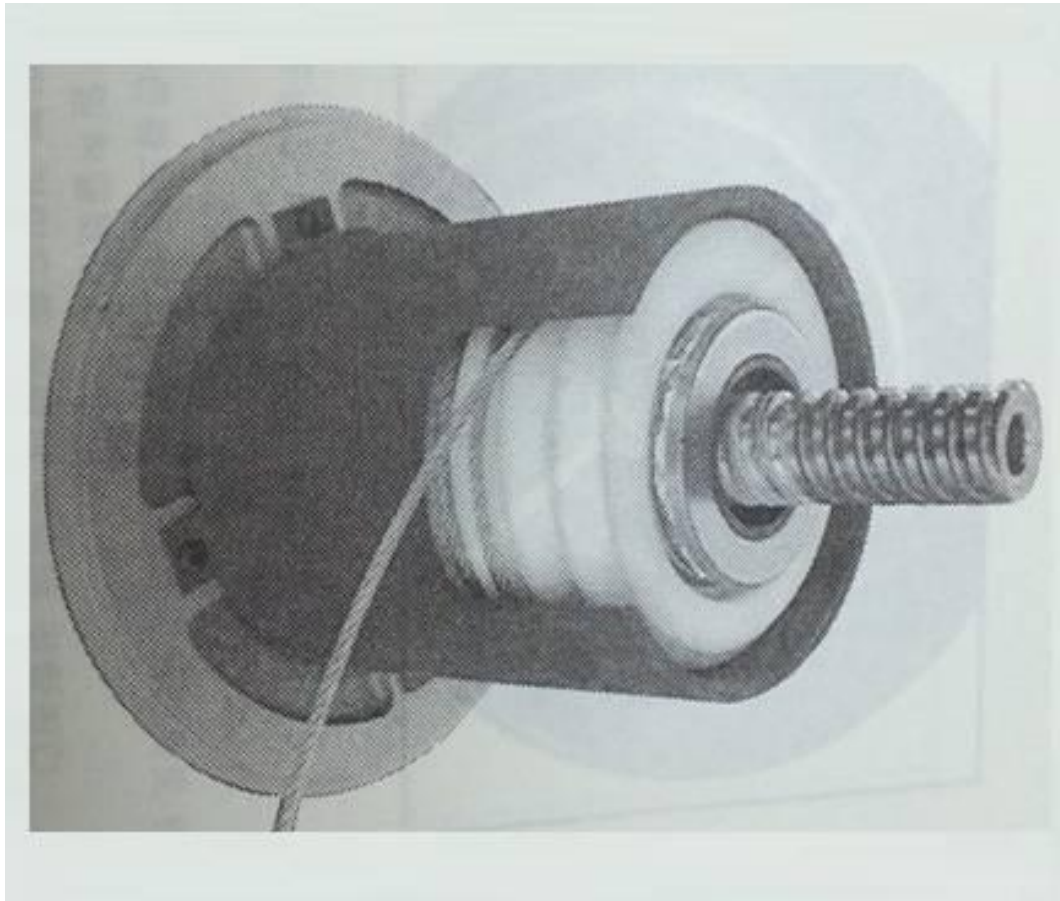
Wanthai



Unilever



Reassembly



THANKS YOU

