AIMS AGILE
FACTORY AUTOMATION
Jeffrey Neoh 梁志勤
Operation Manager
+6012-321 9194
jeffreyneoh@aimsagile.com
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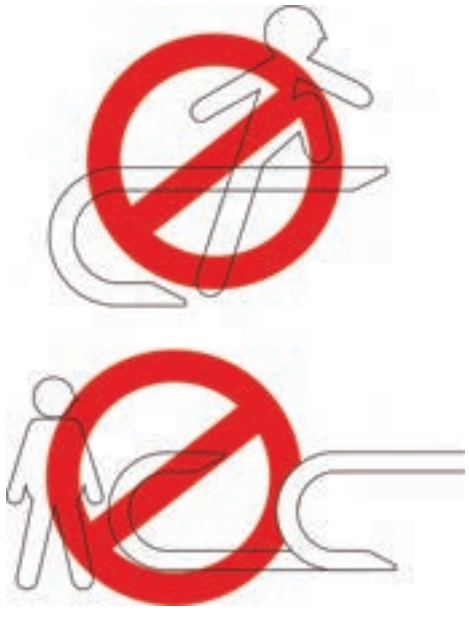
AIMS AGILE FACTORY AUTOMATION SDN BHD
Co. Reg. No.: 202401039298 (1585145-W)
No. 8, Jalan TPM 1
Taman Perindustrian Meranti Jaya
47120 Puchong, Selangor D.E. Malaysia
+603-806 66382 +6011-6171 6382

Hanshin RoboChain®

SINCE 1987

(주) 한 신 체 인
Hanshin Chain Co., Ltd.

주 의



- RoboChain 작업 반경안에 들어가지 마십시오.
- 운행중에는 분해, 조립을 하지 마십시오.
- 정기적인 조립부, 연결부의 점검을 하십시오.
- 분해 조립시 반드시 규정된 공구를 사용하십시오.
- HS, HSS, HSV, HSI type은 Link Plate에 주기적인 급유를 하십시오.

- Keep away from the RoboChain working area.
- Do not assemble or disassemble while in operation.
- Periodical maintenance is necessary in assembled and joint areas.
- Use proper tools while assembling or disassembling works.
- HS, HSS, HSV and HSI types require periodical lubrication.

www.hscv.com
E-mail : info@hanshinchain.com

맑고 투명한 기업~ (주) 한신체인

Since 1987

눈에 보이는 기술

국산화유공기업
대통령표창수상

ISO 9001 / ISO 14001
품질환경 통합시스템 인증

EM 인증

기술표준원 주관하에 국내에 개발된 우수한 제품에 부여하는 품질인증제도. (Agency for Technology and Standards Ministry of Commerce, Industry & Energy)

K마트 인증

한국생산기술연구원 부설 산업기술시험평가연구소 (KTL: Korea Testing Laboratory)의 품질인증마크

유럽공동인증마크

연구개발
특허벤처기업인증

한신로보체인의 모든 제품은 6대 환경유해물질 (Pb, Hg, Cd, Cr, PBB, PBDE)이 포함되어 있지 않습니다.

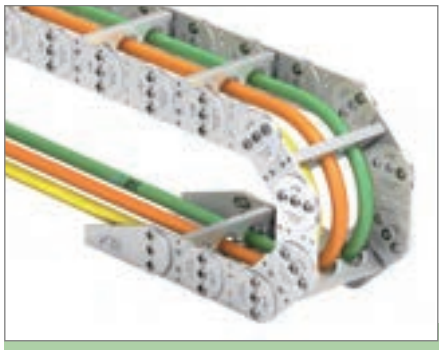
이노비즈
기술혁신중소기업

Fraunhofer TESTED® DEVICE
Hanshin Chain Co., Ltd.
RoboChains RACER and HSRF
Report No. HC 0703-393

TÜV RoboFlex 29dB(A)

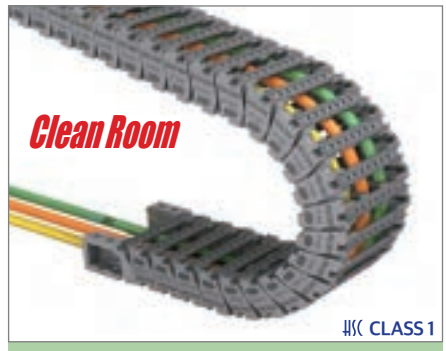
Hanshin RoboChain®

Hanshin RoboChain®

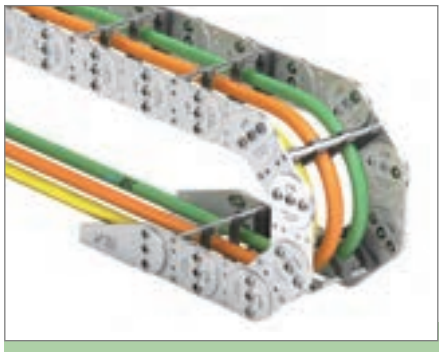


HS Type *RoboChain*

ROBOFLEX Type *RoboChain*



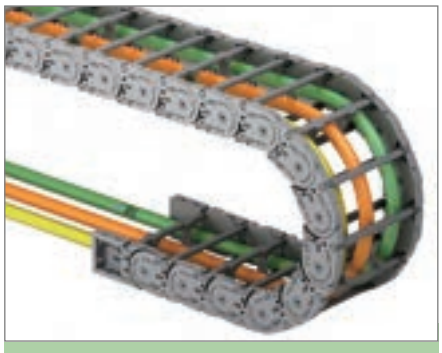
RACER PLUS Type *RoboChain*



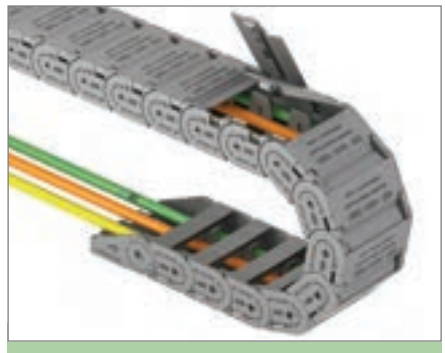
HSS Type *RoboChain*

HSP Type *RoboChain*

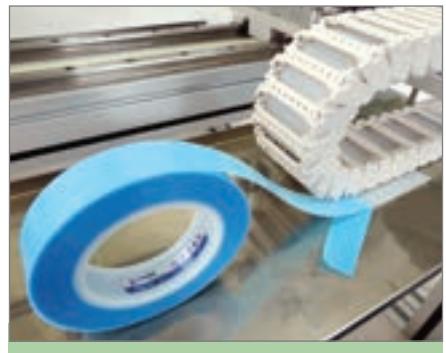
HST-PAD Type *RoboChain*



HSSP Type *RoboChain*



HSP NC Type *RoboChain*



HST-RAIL Type *RoboChain*

HSC Type *RoboChain*

RACER BAR WRENCH Type *RoboChain*

HSR Type *RoboChain*

Hanshin Chain's Footprint

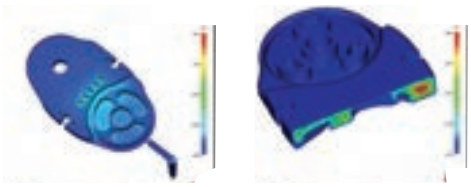
1987.	2	한신체인 창업
1994.	10	대통령표창 수상 ('94 기계류 국산화 유공기업)
1995.	3	구로 세무서장 표창 (조세의 날)
1995.	5	시화공장 완공 (경기도 시흥시 시화공단 2라519)
1997.	5	유망선진기술기업 지정 (중소기업청 #97076)
1997.	6	업계 최초 EM 인증업체 지정 (기술표준원)
1998.	10	벤처기업지정 (중소기업청) 제98162933-330호
1999.	8	ISO 9001 인증업체 (EAQA - 900)
2000.	1	K 마크인증 (산업기술시험평가연구소) KTL B 032:1999
2001.	9	ISO 9001/ ISO14001 품질환경 통합시스템 인증
2003.	11	우수자본재개발 산업자원부장관 표창
2004.	2	기업부설연구소인증 (제20041148호)
2004.	8	시화2공장 완공 (시화공단 2바401-3)
2005.	8	부품·소재 전문기업 지정(산업자원부)
2006.	2	크린사업장 지정(한국산업안전공단)
2006.	3	크린룸, 고속용, 저소음 RoboFlex(로보플렉스) 생산
2006.	4	INNO-BIZ(기술혁신중소기업) 선정 (중소기업청)
2006.	5	크린룸, 고속용, 저소음 RACER(레이서) 생산
2007.	4	RoboFlex(로보플렉스) 독일 크린룸 인증기관 IPA 사로부터 세계 최고 등급(CLASS 1) 인증
2007.	4	RACER(레이서) 독일 크린룸 인증기관 IPA 사로부터 (CLASS 10) 인증
2007.	8	창립 20주년 기념 Global Top 3! Go 3 품질혁신활동
2008.	1	ERP (전사적자원관리) 시스템 구축 완료.
2008.	9	독일 인증기관 TUV 사 세계 최저 소음(29dB) 인증 획득. (로보플렉스)
2008.	10	세계 최소형 크린룸, 고속용, 저분진 Racer S-015 개발완료.
2010.	9	산학협동 산업 기술대전 경기도지사상 수상
2011.	7	국내 최초 대전방지(ESD)제품 개발 완료
2011.	12	국내 최장 이송거리(163M) 15Line POSCO 공급
2013.	6	HSP series 독일 클린룸 인증기관 IPA사로부터(CLASS 10)인증
2013.	6	레이서 플러스 독일 클린룸 인증기관 IPA사로부터(CLASS 1)인증
2015.	10	R&D Center 완공
2016.	4	2016한국품질경쟁력 대상 수상(대한상공회의소)
2016.	4	HST-RAIL(내마모 테이프) 출시
2016.	5	크린룸 레이서플러스 일본 특허 등록
2016.	8	크린룸 레이서플러스 중국 특허 등록
2017.	11	창립 30주년 기념 화보집 발간
2017.	11	크린룸 레이서플러스 미국 특허 등록
2018.	1	크린룸 레이서플러스 독일 특허 등록
2018.	10	HST-RAIL(내마모, 충격흡수 테이프) 출시
2019.	5	SL-015 ENG.PLASTIC S/R 개발
2019.	9	SL-022, 033 ENG. PLASTIC S/R 개발
2020.	2	로보체인 전용 소재 ROBO-S MATE 내마모 T 소재 개발
2021.	5	크린룸 주행 테스터기(Stroke 6M) 구축
2022.	8	창립 35주년
2022.	10	HSR Series 개발
2023.	1	HSR Series 독일 크린룸 인증기관 IPA사로부터 인증

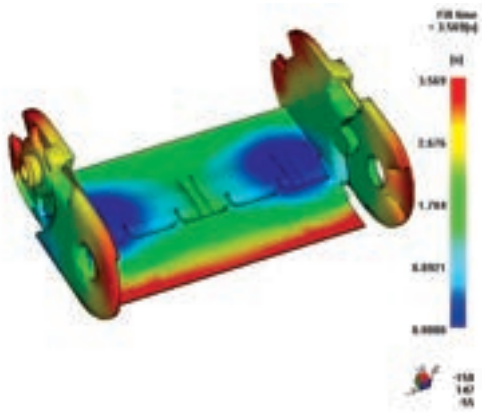
1987.	*2*	*Establishment of "Hanshin Chain Co."*
1992.	*12*	*Patent for Cable Protection Supporting Device (#069527)*
1994.	*3*	*Patent for Cable Protection Supporting Device (#079296)*
1994.	*10*	*'94 Presidential award for Excellence in Localization of Machinery*
1995.	*3*	*Award from Kuro Taxation Office*
1995.	*9*	*Patent for Cable Protection Supporting Duct (#090068)*
1996.	*1*	*Patent for Reinforced Cable Protection Supporting Duct (#093356)*
1997.	*5*	*Designation of "Promising Advanced Technology Enterprise"*
1997.	*6*	*First "EM" mark designation in its industry*
1999.	*8*	*ISO 9001 Certified (EAQA - 900)*
2000.	*1*	*"K" mark designation in Korea Testing Laboratory*
2001.	*9*	*ISO9001/ ISO14001 Certified (NCS - 8404)*
2004.	*2*	*R & D Center Opened*
2006.	*2*	*Elected "Clean work Shop"*
2006.	*4*	*Elected "INNOBIZ"*
2006.	*5*	*Start New Product "RACER" for Cleanroom, High speed, Low noise*
2007.	*4*	*IPA (Germany) approved RoboFlex for Cleanroom Class 1*
2007.	*8*	*20th anniversary of the establishment. Global Top 3 products innovation activity.*
2007.	*11*	*Completed developing engineering plastic HSC series closed type domestically.*
2008.	*1*	*ERP (Enterprise Resource Planning)system is set up.*
2008.	*9*	*RoboFlex received the certification that approves the world lowest noise making product (29dB) from German certification organization, TUV.*
2008.	*10*	*Completed developing Racer S-015 which is world's smallest product for clean room, high-speed, and low particle.*
2010.	*9*	*Elected winner of co-works with KPU in Kyunggi-do province*
2011.	*7*	*Completed developing ESD Series*
2011.	*12*	*Longest (163M) Robochain in POSCO*
2012.	*1*	*Completed New Product HSP 0550*
2013.	*6*	*IPA (Germany) approved HSP series for Cleanroom Class 10*
2013.	*6*	*IPA (Germany) approved RACER PLUS for Cleanroom Class 1*
2015.	*10*	*R&D Center Completion of construction*
2016.	*4*	*2016 Korea Quality Competitive Awards*
2016.	*5*	*Patent of Racer Plus(Japan)*
2016.	*8*	*Patent of Racer Plus(China)*
2017.	*11*	*Patent of Racer Plus(USA)*
2018.	*1*	*Patent of Racer Plus(Germany)*
2018.	*10*	*New products HST-RAIL(no wear tape) Released*
2019.	*5*	*SL-015 Eng. Plastic S/R*
2019.	*9*	*SL-022. 033 Eng. Plastic S/R*
2020.	*2*	*Robo-S mate T (no wear material) Released*
2021.	*5*	*Cleanroom Test Equipment Set up(Stroke 6M)*
2022.	*8*	*35th Anniversary of Establishment*
2022.	*10*	*HSR Series Released*
2023.	*1*	*IPA(Germany) Approved HSR for Cleanroom*

Hanshin RoboChain®

Robo-s Mate®

*Robo - s Mate*는 한신체인에서 개발한 로보체인 전용소재로 제품수명을 극대화하고, 마모를 줄이고, 소음과 분진을 최소화한 새로운 소재입니다.





인사말씀 Preface

우리는 독창적인 신제품 개발로 해외시장을 개척한다!

1987년 저희 (주)한신체인은 로보트, 전자, 디스플레이, 반도체, 철강, 자동차, 공작기계 등 각종 자동화 설비의 필수요소 부품인 로보체인을 개발, 생산하기 위해서 설립되었습니다.
로보체인은 모든 공정자동화에서 Cable, Hose의 보호를 위해서 개발되었으며, 지금은 Cable, Hose의 보호를 넘어 장비의 디자인을 한 단계 업그레이드 하는 주요부품으로 널리 사용되고 있습니다.
창립 초기에 개발된 HS, HSS Steel 로보체인과 당사 연구소의 로보체인 전용소재 Robo-s mate 에 의한 HSP, HSSP, HSRF, RACER 등 약 10,000여 가지의 다양한 제품을 기계산업에 공급하고 있습니다. 특히 반도체, 크린룸, 디스플레이 관련 산업에서 요구하는 저분진, 저소음 로보체인의 개발은 장비의 국산화 및 원가절감에 기여하고자 합니다.
고객과 함께한 지난 36 여년 오랜 경험과 높은 기술력, 지속적인 연구개발로 EM 인증, ISO 9001, ISO 14001, K ,CE, 특허벤처기업 등 각종 인증을 받았으며, 당사 연구소는 신뢰성인증시험을 통해 한신로보체인을 사용하시는 모든 고객께 믿고 사용하실 수 있도록 최선을 다하고 있습니다.
이제 저희 회사는 전세계 Global Top 3를 넘어 '최후의 목표는 고객만족'이라는 경영방침으로 성공을 보장하는 한신로보체인이 되겠습니다.

대표이사 **김 두 진**

Pioneering the overseas market with creative new products!

Hanshin Chain Co., Ltd. (HSC) is the largest manufacturer and supplier of chains in South Korea. RoboChains, which are chains exclusively manufactured by HSC using a special environmentally friendly material (Robo-s Mate), have been recognized internationally for its durability and low noise. RoboChains are installed in mobile parts of various machineries, systems, and devices in order to protect cables and hoses that supply electricity, pneumatic or hydraulic pressure that are essential for all process automations. Unlike the existing systems in which the cables and hoses often disconnect due to unnecessary wear and tear from twists and entanglements, RoboChains move in pre-defined lengths and in precise angles in order to provide maximum protection for the cables and hoses, prolonging their lifespan. RoboChain demonstrated superior performance in a variety of industries worldwide, to include automobile, carpentry, electronics, food processing, iron and steel, medical, and semiconductor industries. RoboChain is also widely installed in industrial robots and automation systems.

*With over 36 years of research and development, with innovation and customers in mind, HSC has technologically advanced in its industry to stay ahead of its competitors. Hanshin Chain has over 10,000 product models, and all HSC products go through reliability authentication tests at the Hanshin R&D Center to ensure that our customers receive the best quality products. With our most diverse product models at affordable prices, prompt and secure delivery system, and management policy that our '**final goal is customer satisfaction,**' Hanshin Chain Co., Ltd. guarantees your business success.*

Dujin Kim
CEO
Hanshin Chain Co., Ltd.

Hanshin RoboChain®

Hanshin RoboChain

RoboChains are designed to move predefined lengths in order to maximize protection of cables and hoses that provide electricity, pneumatic pressure and so forth for prolonged durability and use.









Hanshin RoboChain®

목 차 Contents

Hanshin RoboChain®

로보체인은 일정거리의 왕복 반복운동을 요하는 장치를 위한 유공압, 전원 및 콘트롤을 위한 전기배선 호스를 굴절, 습기, 진동, 먼지 등으로 부터 보호 유지하여 주는 안전장치입니다.

RoboChains are designed to move predefined lengths in order to maximize protection of cables and hoses that provide electricity, pneumatic pressure and so forth for prolonged durability and use.

HSP Type

• 자동화 기계, 산업용로보트 등에 적용됩니다.

Applicable for automation systems, in wood work, food processing and industrial robot related industries.

HSPNC, HSC Type

• 용접ROBOT, 자동화기계, 공작기계 등 고속 Cable Hose의 보호에 적용 됩니다.

Designed for cables and hoses in soldering robots, automated machines and milling machines in high speed movement.

HSSP Type

• 자동차 생산설비, 공작기계 및 장거리 설비에 적용됩니다.

Suitable for industries that require long stroke applications such as the automobile industry and the machining center.

HS, HSS Type

• 제철·제강설비, 운반기계, 공작기계 및 모든 기계에 적용됩니다.

Applicable for most industrial machines to include iron and steel mill, conveying machine, and machining center.

RoboFlex | 로보플렉스(원형)

• 공작기계, 용접 ROBOT, 자동화기계, 철도차량, 조선 등

Applicable for machine building, welding Robot, Automation system, Traction, etc.

For Clean room

Racer Plus | 레이서 플러스

• 반도체 생산설비, 전자, CLEAN ROOM, 고속장비

Applicable for semiconductor industry, Electronics, clean room, etc.

Fraunhofer IPA TESTED® DEVICE Hanshin Chain Co., Ltd. RoboChains RACER and HSRF Report No. HC 0703-393

TÜV RoboFlex 29dB(A)

HST-PAD | HST-패드

• CLEAN ROOM, 반도체, 전자, 디스플레이 장비, 정밀스테이지 및 자동화 설비

Applicable for Clean Room, Semicondutor, Electronics, Display Machinery, Precision Stage, etc.

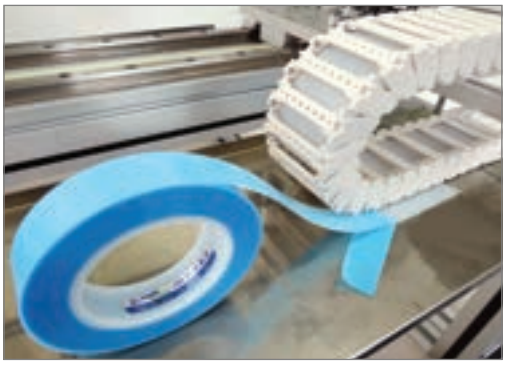
Fraunhofer IPA TESTED® DEVICE Hanshin Chain Co., Ltd. RoboChains RACER Plus Report No. HA 01304-643

TÜV RoboFlex 29dB(A)

HSR-Type | HSR-타입

• CLEAN ROOM, 반도체, 전자, 디스플레이 장비, 정밀스테이지 및 자동화 설비

Applicable for Clean Room, Semicondutor, Electronics, Display Machinery, Precision Stage, etc.



HST-RAIL | HST-레일

• CLEAN ROOM, 반도체, 전자, 디스플레이 장비, 정밀스테이지 및 자동화 설비

Applicable for Clean Room, Semicondutor, Electronics, Display Machinery, Precision Stage, etc.

STEP 1 선정에 필요한 기초자료
User Data Gathering

다음과 같은 기초자료가 형식을 결정하기전에 필요한 자료입니다.

Following data should be gathered prior to decide a proper type.

① 기계의 이동거리
Stroke S (m)

② 기계의 이동속도
Velocity V (m/min)

③ 케이블·호스의 외경과 수량
Outer diameter and number of lines
ød × n

④ 케이블·호스의 합계중량
Total Weight W (kg/m)

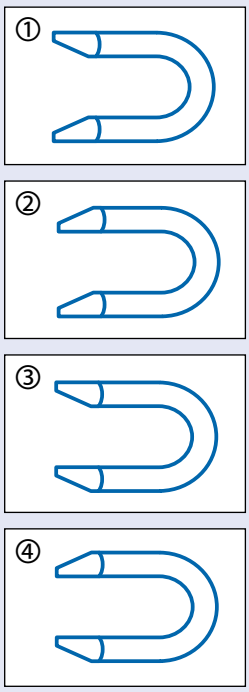
⑤ 허용곡률반경
Radius R (mm)

⑥ 기계의 작동회수
Number of Operation F (Times/Day)

⑦ 주위 환경온도
Temperature ℃

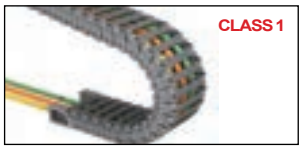
⑧ 주위 조건
Clean Room 용적률(40~50%)

Bracket의 연결 Attachment of Bracket



STEP 1 형식의 선정
Choose a Proper Type

RACER PLUS
CLEAN ROOM



반도체 생산설비, DISPLAY장비, CLEAN ROOM등 고속·저소음용에 적합합니다

ROBOFLEX
CLEAN ROOM

반도체 생산설비, DISPLAY장비, CLEAN ROOM등 고속·저소음용에 적합합니다

HSP Type
개폐형

자동화기계, 목공기계, 식품기계, 산업로보트 등에 적합합니다.

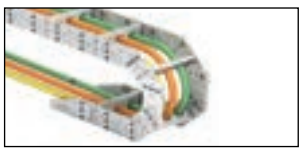
HSSP Type
플라스틱 간편조작형

공작기계 및 장거리 설비에 적합합니다.

HSC Type
플라스틱 간편밀폐형

공작기계, 용접 ROBOT, 자동차 산업, 철강설비 등에 적합합니다.

HS Type
표준형



운반기계, 공작기계, 철강설비 및 모든 기계에 적용하는 표준형 입니다.

HSS Type
간편조작형

Cable, Hose가 비교적 적고 가벼운 설비에 적합 합니다.

STEP 3 필요 기장 계산
Compute Chain Length

· 세계 최고 등급(CLASS1) 인증
  - 독일 IPA 크린룸 인증기관
· LINKLESS 구조로 10m/s 이상의 고속 주행이 가능합니다.
· 고속주행에도 소음 및 분진이 발생하지 않습니다.
· 기장 연결이 (늘임·줄임) 가능합니다.
· 크린룸 환경의 최적의 상품입니다.

· 세계 최고 등급(CLASS1) 인증
  - 독일 IPA 크린룸 인증기관
· LINKLESS 구조로 10m/s 이상의 고속 주행이 가능합니다.
· 고속주행에도 소음 및 분진이 발생하지 않습니다.
· 크린룸 환경의 최적의 상품입니다.

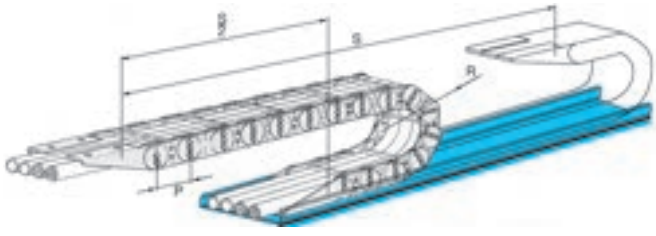
· 본체는 개폐형으로 Cable, Hose의 설치가 쉽습니다.
· 경량이어서 움직임이 원활합니다.
· Divider가 좌우로 움직입니다.

· HS, HSS Type을 경량화시킨 엔지니어링 플라스틱으로 되어 있기 때문에 가벼우며 움직임이 보다 부드럽습니다.
· 간편조작형으로 Cable, Hose의 분해 및 설치가 용이하고 칸막이가 자유롭게 조정됩니다.

· Chip, Slag등 이물질로부터 Cable,Hose를 보호합니다.
· 난연 및 분진이 적습니다.
· 안쪽 Cover가 개폐형으로 Cable,Hose의 분해 설치가 용이합니다.
· 부분보수가 가능합니다.
· End Bracket에 Cable, Hose 고정용 Clamp가 있습니다.

· Steel 체인과 알미늄 Supporter로 강하고 수명이 깁니다.
· 작은판의 링크 플레이트 안전설계로 되어 있습니다.
· Supporter 구멍을 주문가공하여 지지가 보다 확실합니다.
· 운동량이 많을 경우는 I형, V형을 권합니다.

· 분해 및 설치가 용이하고 칸막이가 자유롭게 조정됩니다.
· Frame부가 규격화 되어 간편하며 짧은 납기에 좋습니다.
· 불필요한 무게를 줄였습니다.



필요한 체인의 길이는 다음의 공식으로 얻을 수 있습니다.

Necessary chain length can be obtained through following equation.

$$L = \frac{S}{2} + \pi R + 3P\,(2K)$$

L : 로보체인의 필요 기장 (mm)
Necessary robochain length
S : 이동거리 (mm) Stroke
R : 곡률반경 (mm) Bending Radius
Cable, Hose 허용곡률반경 (r) < Robochain 표준곡률 반경 (R)

Hose 허용곡률반경 (r) ≥ Hose 외경×9
Cable 허용곡률반경 (r) ≥ Cable 외경×7.5

P : 체인 Pitch (mm) Chain Pitch
K : 여유기장

■ 각종 Type의 여유기장(K) 값

Type	Pitch	K(min.) (mm)	Type	Pitch	K(min.) (mm)
HS 070 HSS 070 HSSP 070	70	105	HS 095 HSS 095 HSSP 095	95	145
HS 130 HSS 130 HSSP 130	130	195	HS 180 HSS 180	180	270
HS 250 HSS 250	250	375	SL-015 SL-022	15 22	45 66
HSP 0130 HSP 0180	13 18	20 27	SL-033 SL-044	33 44	99 132
HSP 0320 HSP 0450	32 45	48 68	SL-055 HSC 0555	55 55.5	165 85
HSP 0625	62.5	94	HSC 0665	66.5	100

기술 노트 Technical Note

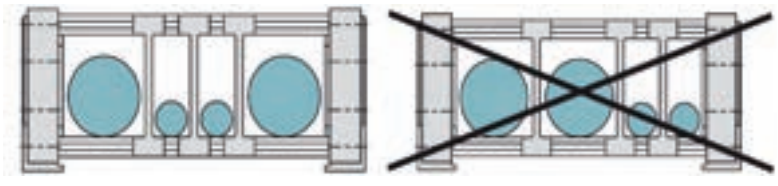
● 여유공간

Cable 이나 Hose 삽입 시 사용환경에 따라 허용 용적률에 차이가 있습니다.
아래 표는 사용환경에 따른 허용 용적률을 보여주고 있으며, 허용치를 초과하여 사용할 경우 Cable 및 Hose의 마찰로 분진이 발생되며 단선발생의 주요 원인이 됩니다.

	CLEAN ROOM	NORMAL
허용 용적률(%)	40~50%	50~60%

● 중량 밸런스

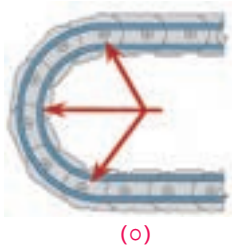
Cable 및 Hose 삽입 시 직경과 중량을 고려하여 배치하여야 안정적인 주행을 보장할 수 있습니다.
밸런스가 맞지 않을 경우 구동 중 쏠림이 발생하거나, 이탈할 수 있으므로 Cable 포설 전 반드시 확인하여야 합니다.



● 곡률반경

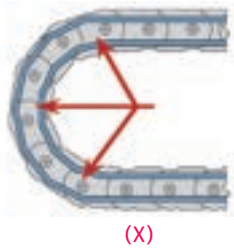
	Cable	Hose
권장 곡률반경(Radius)	외경(Dia) X 7.5	외경(Dia) X 9

아래의 그림을 보면 Cable의 삽입 시 적절한 곡률반경을 선정하여 배치된 사례와 그렇지 않은 사례를 보여주고 있습니다.



Cable이 RoboChain 내 원만한 곡선을 이루도록 해야한다.

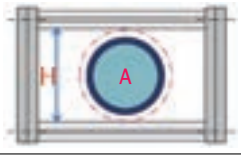
(○)



Cable이 RoboChain 내측에 닿아 각을 이루면서 곡선을 이루게 된다.

(X)

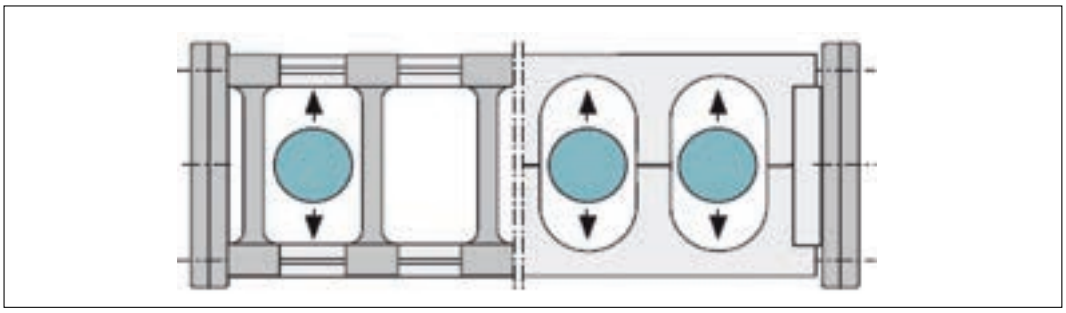
● Cable 및 Hose의 적절한 용적률



	Cable	Pneumatic Hose (공압 호스)	Hydraulic Hose (유압 호스)
H(height)	H ≥ A x 1.1	H ≥ A x 1.15	H ≥ A x 1.2

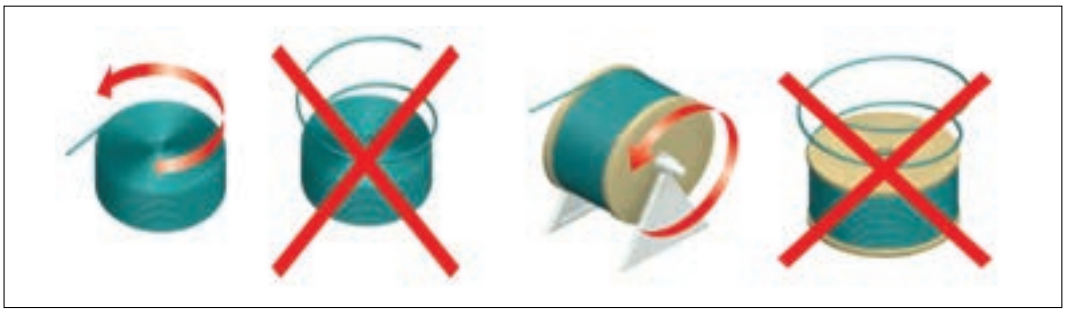
● 디바이더 디자인

Cable 및 Hose의 수량과 배열을 파악하여 꼬임과 단선을 막을 수 있도록 디바이더의 배열을 가로, 세로로 분할하여 설정 할 수 있습니다.
또한, **Cable 과 디바이더는 15%~20%의 여유공간을 확보**해야 합니다.
디바이더를 많이 삽입할 경우 실제적인 Cable의 용적이 줄어들게 되므로 폭(Width)에 적당한 수량을 삽입하시길 바랍니다.



● 케이블, 호스의 풀림 정렬

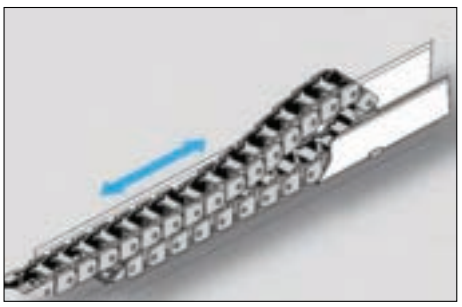
최초 Cable 삽입 전, 감겨있는 Cable을 풀 때 감겨있는 순방향으로 풀지 않을 경우 Cable이 뒤틀린 상태로 포설될 수 있으므로 주의하여야 합니다.



● RoboChain 전용 케이블, 호스 사용

Cable 및 Hose는 RoboChain 전용으로 생산된 제품을 사용하여야 합니다. 일반 Cable 및 Hose는 장기간 주행 시 단선이나 파열의 가능성이 있습니다.
Cable 및 Hose 선정 시 구동용으로 사용이 가능한 여부를 확인하시기 바랍니다.

● Guide Rail

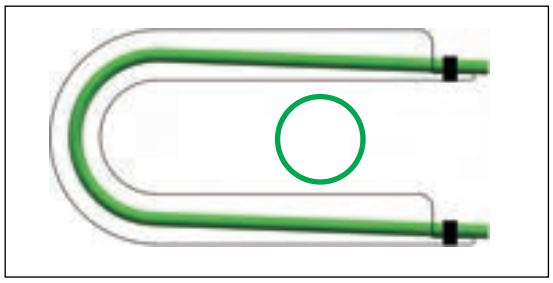


Free span(자체 수평 지지가능거리)을 초과하여 사용할 경우
반드시 Guide Rail을 설치하여야 합니다.
Guide Rail은 RoboChain의 이탈을 방지하고,
안정적인 주행을 보장할 수 있는 최선의 방법입니다.
Guide Rail의 형태와 상세치수는 카다로그를 참고하시길 바랍니다.

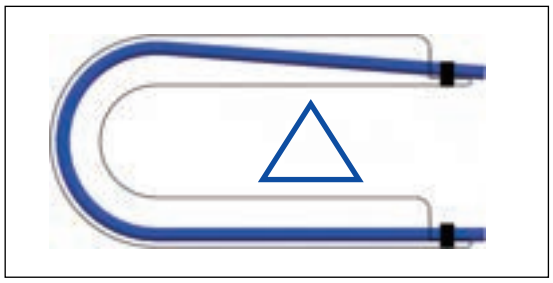
기술 노트 Technical Note

● 케이블·호스 길이 조정

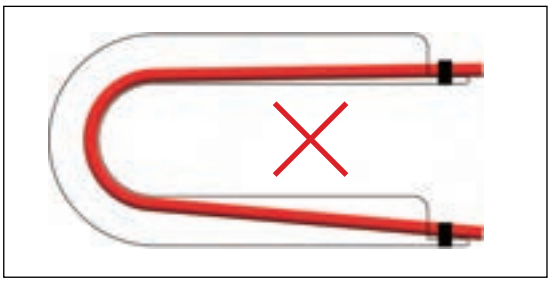
로보체인 가운데 케이블 포설(마모 없음, 적합)



로보체인 바깥쪽 케이블 포설(마모 적음, 적합)

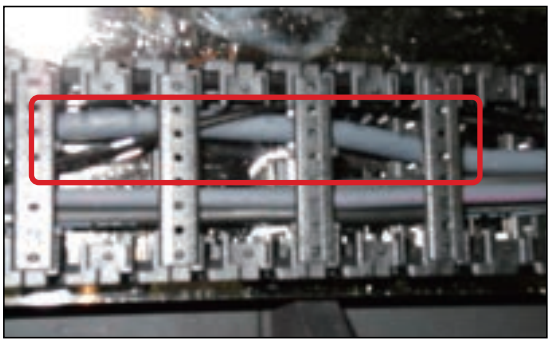


로보체인 안쪽 케이블 포설(마모 많음, 부적합)



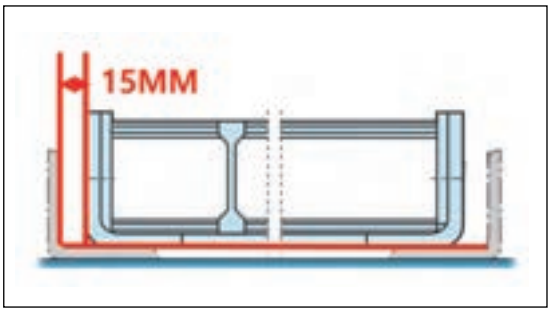
● 케이블·호스 정렬

케이블과 호스는 반드시 일렬로 정렬하여야 함



● 가이드레일 폭

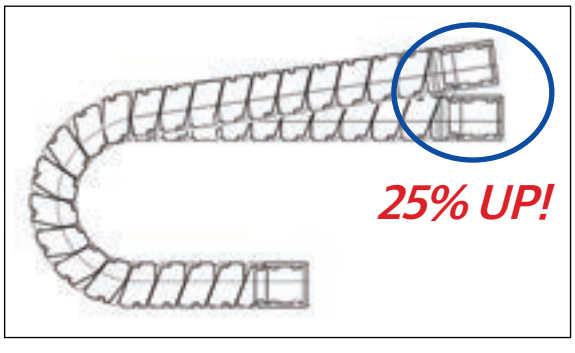
로보체인 바닥에는 가이드레일을 부착하며, 로보체인과 가이드레일 위에는 0.5T의 HST-RAIL을 로보체인 폭보다 15MM 넓게 부착한다.



● 가이드레일, E/B 수평

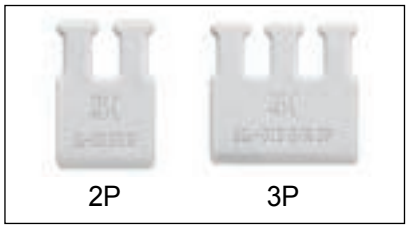
GUIDE RAIL의 기울기가 수평을 유지 하여야함

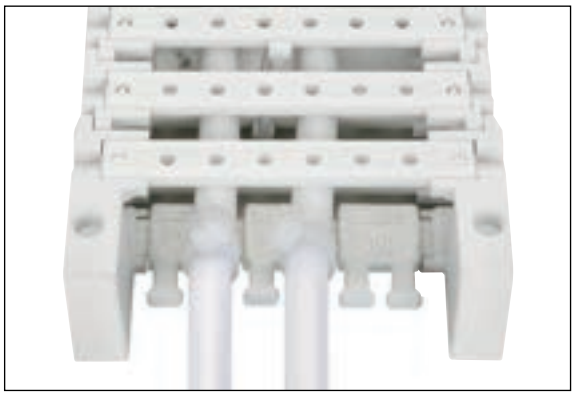
● H. 엔드 브라켓 취부 높이



● 스트레인 릴리프(S/R)

고정부위 Cable의 뒤틀림과 꼬임을 막기 위해
END BRACKET 에 Strain Relief(스트레인 릴리프) 부착





● 로보체인 상하 좌우 여유 공간

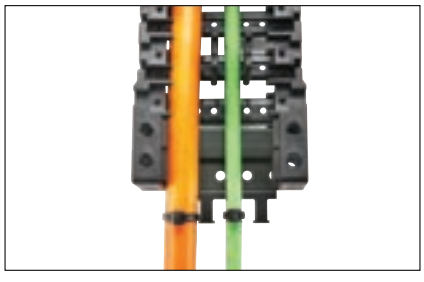
기술 노트 Technical Note

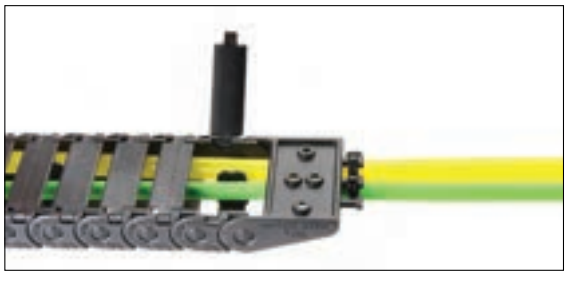
● 케이블, 호스 끝단 처리 및 여유기장

고정부의 Cable의 뒤틀림과 꼬임현상을 막기 위해 FIXED End Bracket에 Strain Relief의 부착을 권장합니다.

Cable 끝단 여유기장 = Cable 최대외경 X 30

RoboChain 주행시 움직이지 않는 부분을 반드시 두어야 Cable의 마모 및 수명을 연장할 수 있습니다.



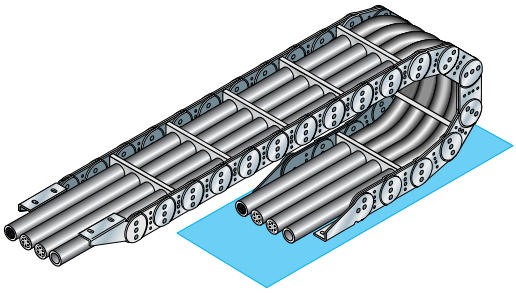


● RoboChain 전용소재 Robo-S Mate(POLYAMID) 내 화학성 Report

약품	
아세톤(수용성)	○
포름산(수용성)	△
가솔린	○
벤졸	○
붕산(수용성)	△
염수소	x
크롬산(수용성)	△
디젤유	○
아세트산	○
식용유	○
포름알데히드(수용성)	△
수용성기름	○
메틸아세테이트	○
우유	○
탄산나트륨	○
기름, 윤활유	○
프로판사스	○
수은	○
염산	△
잉크,인쇄잉크	○

○ : 우수 △ : 조건부 사용 X : 사용불가

CABLE과 HOSE를 완벽하게 보호하여 주는 장치 - 최적의 성능을 위한 한신 RoboChain



한신 RoboChain은 종전에 사용하던 커어텐, 릴 형태의 장치와 비교 하였을 때 그 우수성을 확인 할 수 있습니다. 기존의 시스템과는 전혀 다르게 능률을 향상시킬 수 있으며 케이블과 호스의 수명을 크게 연장시키며 작업의 효율을 올릴 수 있습니다.

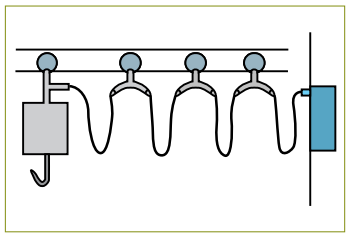
한신 RoboChain은 국내외 기술진이 연구 개발하여 생산하고 있으며, 기존의 국산제품의 개념을 초월한 완벽한 제품으로 해외에도 많은 수출을 하고 있습니다.

When the RoboChain product from Hanshin Chain is compared to the conventional Curtain or Cable Reel systems, the advantages are obvious. Improved efficiency and ensuring long operation life are guaranteed. All Hanshin Chain products are developed by its own R&D stff with techinical partner, and the superior quality has been appreciated throughout the local and overseas customers.

한신 RoboChain이 기존의 시스템보다 성능이 우수한 이유

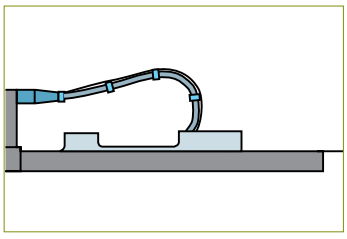
- 케이블이나 호스에 손상이 없음 (Minimizing wear and providing better protection of cable and hose)
- 기계적 스트레스에서 보호되어 수명을 연장 (Long life of lines from mechanical stress)
- 케이블 수리로 인한 작업중단시간의 절감 (Reduction of down-time)
- 공간활용의 극대화 (Littel space required)
- 간단한 설치 (Simple installation)
- 유지보수비가 저렴 (Low maintenance cost)
- 시각적으로 청결감 유지 (Good visual appearances)
- 표준설치에 관하여 신속한 납기 (Timely delivery for standard measurements)

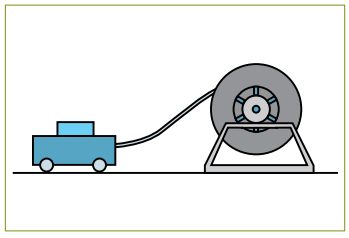
기존의 시스템들 Conventional Systems



Curtain Style

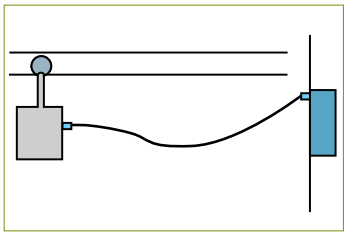
Roll-in Style

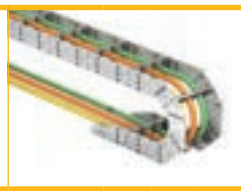
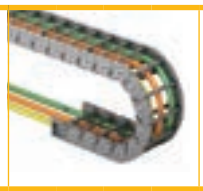
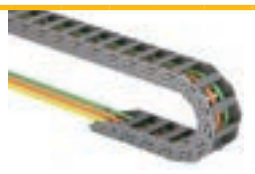




Cable Reel

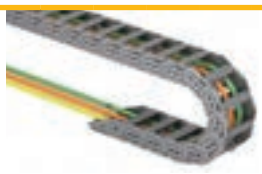
Unsupported Style



Spec. \ Type	HS					HSS					HSSP				HSP										
																									
ROBO CHAIN NO. / SIZE	HS 070	HS 095	HS 130	HS 180	HS 250	HSS 070	HSS 095	HSS 130	HSS 180	HSS 250	HSSP 070	HSSP 095	HSSP 130	HSSP 100	HSP 0120		HSP 0130				HSP 0180				
															7E	13E	1N	1BN	2	2B	1	1BN	2B	3B	4B
Bending Radius (mm)	75 90 125 145 200	125 145 200 250 300	200 250 300 400 500	250 300 400 500 600 700	350 450 600 750	75 90 125 145 200	125 145 200 250 300	200 250 300 400 500	250 300 400 500 600 700	350 450 600 750	75 90 125 145 200	125 145 200 250 300	200 250 300 400 500	145 200 250 300	15 20 30	12	18 28 37	18 28 37	18 28 37	18 28 37	28 37 50	18 28 37 50	28 37 50	28 37 50	28 37 50
Chain Pitch(mm)	70	95	130	180	250	70	95	130	180	250	70	95	130	100	12		13				18				
Free Span(M)	3.5	4.5	6	8	11.5	3.5	4.5	6	8	11.5	3	4	5	6	0.3	0.3	0.7	0.5	0.7	0.5	1	1	1	1	1
Moving Stroke / Without Support Roller	6.7	8.7	11.6	15.7	22	6.7	8.7	11.6	15.7	22	-	-	-	-	0.5	0.5	1.3	0.9	1.3	0.9	1.75	1.75	1.75	1.75	1.75
Moving Stroke / With One Supoort Roller	10.1	13	17.4	23.5	33	10.1	13	17.4	23.5	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moving Stroke / With Two Supoort Roller	13.4	17.4	23.2	31.4	44	13.4	17.4	23.2	31.4	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cable/Hose Out Dia. (mm)	27	46	60	80	110	27	42	50	80	80	32	52	63	65	5	5	8	8	8	8	12	12	12	12	12
Cable/Hose Weight(kg/m)	50	60	70	80	100	50	60	70	80	100	10	20	30	40	0.2	0.2	0.4	0.4	0.4	0.4	1	1	1.3	1.3	1.3
Moving Speed (m/min)	60					60					120				180										
Twin Chain Weight(kg/m)	5	7	15	21	40	5	7	15	21	40	2.5	3.2	5	3.9	0.1	0.1	0.14	0.14	0.15	0.15	0.25	0.25	0.3	0.31	0.33
Temperature(℃)	-25 ~200					-25 ~100					-25 ~100				-25 ~100										
Operating Condition	Inside					Acidity / Alkali(X)					Acidity / Alkali(X)				Acidity / Alkali(X)										
Part Material / chain	Steel					Steel					Eng, Plastic				Eng, Plastic										
Part Material / Supporter	Aluminum					Aluminum, eng, Plastic					Aluminum, eng, Plastic				Eng, Plastic										
Part Material / End Link	Steel					Steel					Eng, Plastic, Steel				Eng, Plastic, Steel										
Stock	부품재고(Part in stock) 주문제작(On order)					부품재고(Part in stock) 주문제작(On order)					부품재고 (Part in stock)				완성품재고(Product in stock)										

* Free Span은 자체 수평 지지 가능한 거리입니다.
상기의 Data는 Free Span 내에서 사용조건입니다.

곡률반경 허용오차 -3%
Tolerance of Bendign Radius

HSP															RACER					HSPNC				HSC	
																									
HSP 020S	HSP 0300	HSP 0320				HSP 0350			HSP 0450				HSP 0625		RACER Plus					HSP 0450 NC				HSC 0555	HSC 0665
	1B	1BN	2BN	35B	3BN	1B	2B	2BW	1B(N)	2B(N)	3B(N)	4B(N)	1B(N)	2B(N)	SL 015	SL 022	SL 033	SL 044	SL 055	1BNC	2BNC	3BNC	4BNC	B125	B150
60	30	37 50 75 100	37 50 75 100	37 50 75 100	37 50 75 100	40	40	40	50 75 95 125 150	50 75 95 125 150	50 75 95 125 150	50 75 95 125 150 200	75 90 125 (150) 200 (250)	75 90 125 (150) 200 (250)	37 50 75 100	55 75 90 110	75 90 120 150	100 120 150 200	150 180 200 250 300	50 75 95 125 150	50 75 95 125 150	50 75 95 125 150	50 75 95 125 150 200	100 125 160 200	120 140 200 250 300
20	30	32				35			45				62.5		15	22	33	44	55	45				55.5	66.5
-	1	1.2	1.2	1.2	1.2	1	1	1	1.5	1.5	1.5	1.5	2.25	2.25	1	1.5	1.7	2.5	3.5	1.5	1.5	1.5	1.5	1.8	2.3
-	1.6	2.2	2.2	2.2	2.2	1.6	1.6	1.6	2.8	2.8	2.8	2.8	4.4	4.4	1.6	2	2.4	3	3.3	2.8	2.8	2.8	2.8	3.2	4.1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	6	16	16	16	16	10	10	10	22	22	22	22	31	31	16	20	35	58	65	22	22	22	22	28	33
-	1	1.5	1.6	1.7	1.8	1	1	1	3.2	3.2	3.2	3.2	5	5	1	2	3	4	5	3.2	3.2	3.2	3.2	7	10
180															600					180				200	
0.3	0.3	0.4	0.5	0.6	0.6	0.3	0.3	0.3	0.8	1	1.2	1.5	1.8	2	0.3	0.5	0.8	1.6	2.5	0.8	1.1	1.3	1.6	2.2	3.7
-25 ~100															-10 ~ 90					-25 ~100				-25 ~100	
-25 ~100Acidity / Alkali(X)															Acidity / Alkali(X)					Acidity / Alkali(X)				Acidity / Alkali(X)	
Eng, Plastic															Eng, Plastic					Eng, Plastic				Eng, Plastic	
Eng, Plastic															Eng, Plastic					Eng, Plastic				Eng, Plastic	
Eng, Plastic, Steel															Eng, Plastic					Eng, Plastic, Steel				Steel	
완성품재고(Product in stock)															부품재고 (Part in stock)					완성품재고 (Product in stock)				완성품재고 (Product in stock)	

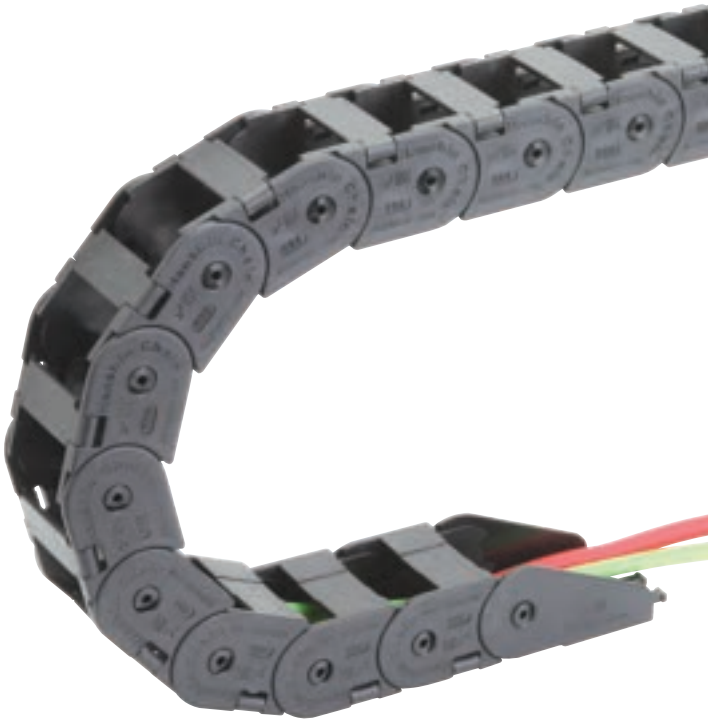
( )안의 Robochain 중량은 완성품 1M의 중량입니다. The Number in ( ) indicates the weight of product in 1 meter.
특수한 사양으로 사용하실 경우에나 표준사양을 초과하여 사용실 경우에는 반드시 상담후 주문하여 주십시요. (For non-standard application, consult us)
[ ]안은 신형.

Low noise | 저소음 HSP series

Low dB

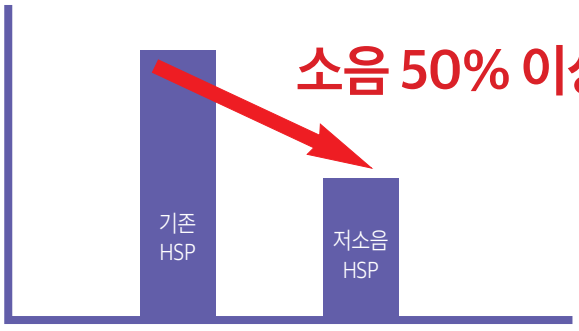
CE

RoHS



HSP type

HSP 0120 series	HSP 0320 series
HSP 0130 series	HSP 0450 series
HSP 0180 series	HSP 0625 series
HSP 0200 series	HSP 0550 series
HSP 0250 series	HSP 0665 series



소음 50% 이상 감소

ESD | 대전 방지 로보체인

ESD

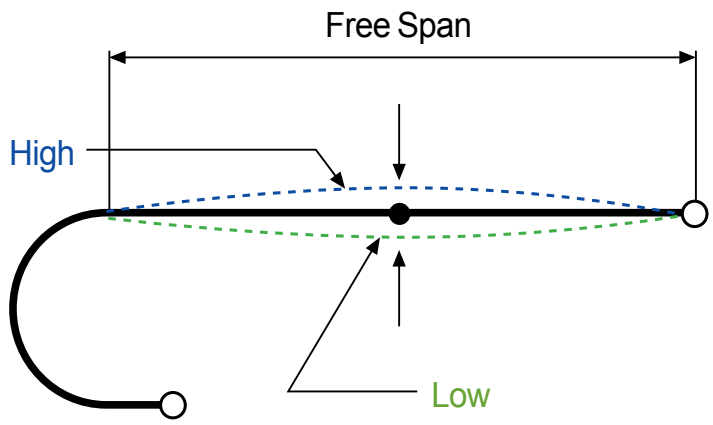
Robo-s Mate®

Robo-s Mate 는 한신체인에서 개발한 로보체인 전용소재로 제품수명을 극대화하고, 마모를 줄이고, 소음과 분진을 최소화한 새로운 소재입니다.

전 규격 재고 보유

RACER (PLUS) 플러스

● 고객의 사용 조건에 따라 RACER(PLUS) Free Span 조절 가능

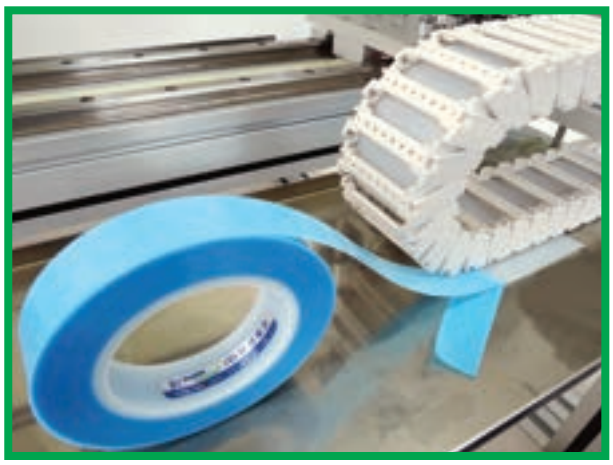


* Free Span은 자체 수평 지지 가능한 거리입니다.

사양 선정 시 당사 기술영업팀과 협의 바랍니다.

● HST-PAD

● HST-RAIL



RACER PLUS | 레이서 플러스

SL-015[N]
SL-022[N]
SL-033[N]
SL-044
SL-055

용도 Application

크린룸, 2차 전지, 반도체, 정밀스테이지, 리니어 모터, 취출 로봇, 용접로봇, 공작기계, 디스플레이, 정밀측정장비 및 자동화설비

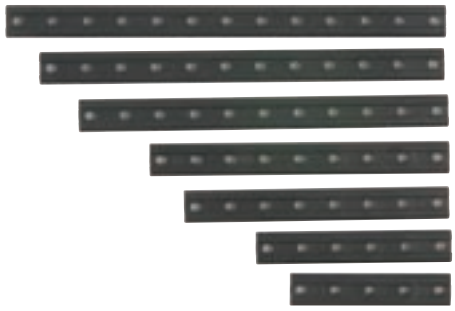
Clean room, Semi-conduct, Precision Stage, Linear Motor, Robot, Display, Machinery, Automotive, F.A

- Class 1

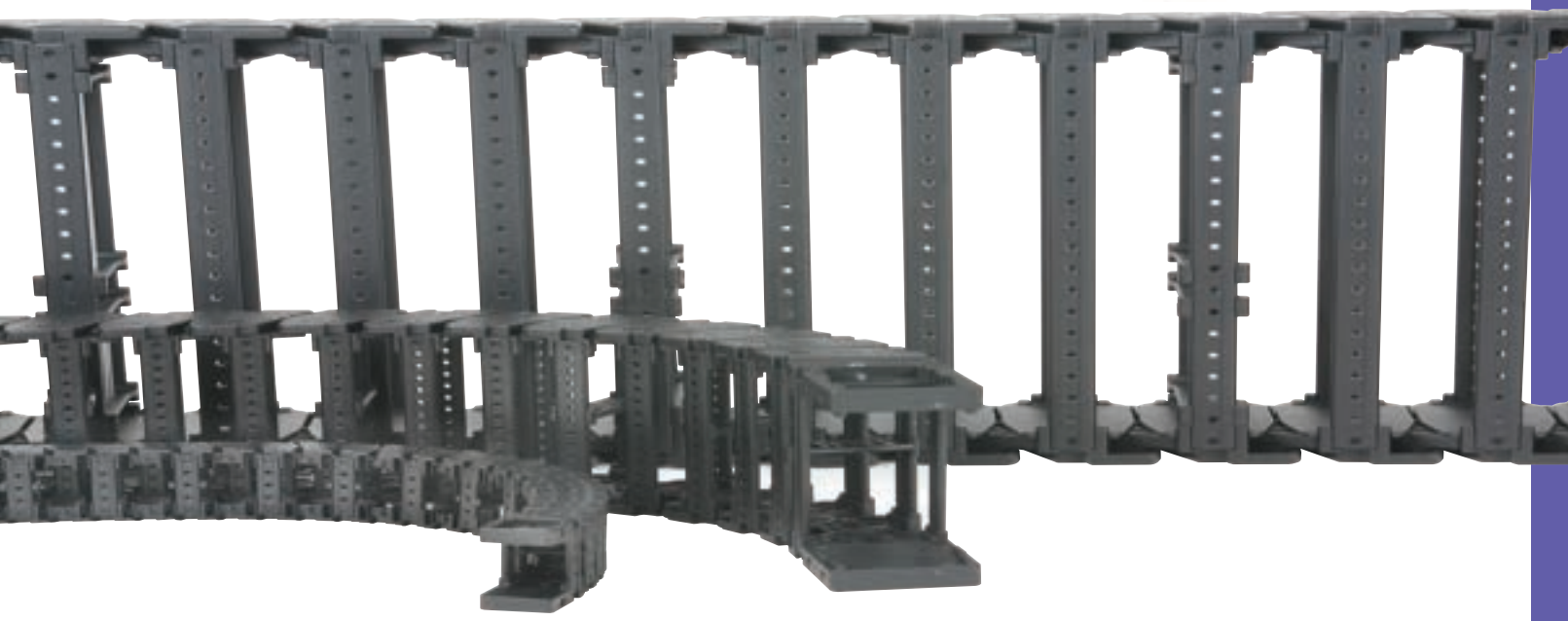
Fraunhofer TESTED® DEVICE
IPA
Hanshin Chain Co., Ltd.
RoboChains RACER Plus
Report No. HA 01304-643

Low dB

- B(내폭) : 20mm ~ 295mm



EASY ASSEMBLING!



기장 조정이 간편한 레이서!

SL-015

Fraunhofer TESTED DEVICE IPA

Low dB

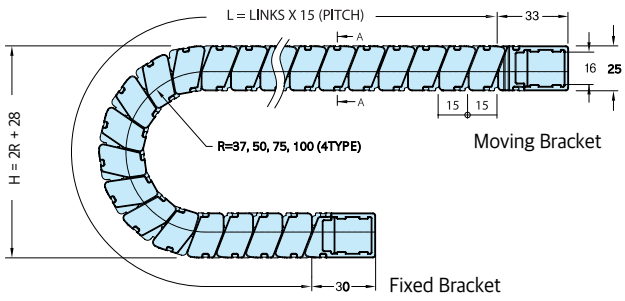
Order Example (주문예)

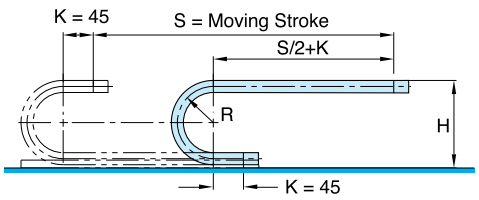
SL-015	37R	B28	D:1	975L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

※ Option : HST-PAD 적용시 규격 끝에 HST-PAD 문구 추가 삽입

- Pitch (mm) : 15
- Bending Radius (mm) : 37, 50, 75, 100
- 가능내폭 (mm) B : 20~100 (+8mm) (표준 : 20, 28, 36, 44, 52, 60, 68, 76, 84, 92, 100)
- 내측높이 (mm) : 19
- 전체외폭 (mm) : B+10
- End Bradket 외폭 (mm) : B+12
- 전체높이 (mm) : H = 2R + 28 (MIN)
- Free Span(m) : 1
- End Bracket 취부높이 (mm) : H + 곡률반경의 25% Up

Chain





· Length $L = \frac{S}{2} + \pi R + 90$

· Radius
· Height

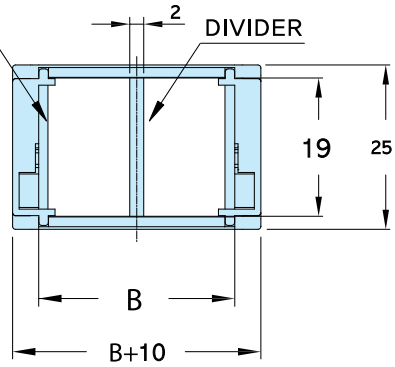
R	37	50	75	100
H	102	128	178	228
권장 취부높이	115	140	197	253

B(Width)

END STAY(OPTION)

※ 디바이더, 가로 분리대는 옵션입니다.

※ 영업부와 협의바랍니다.

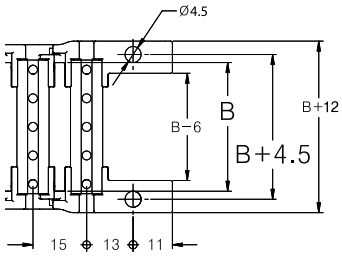


A-A Cross Section

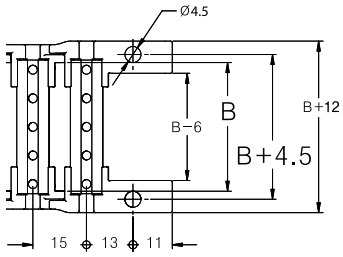
B	B+10
20	30
28	38
36	46
44	54
52	62
60	70

B	B+10
68	78
76	86
84	94
92	102
100	110

Brackets

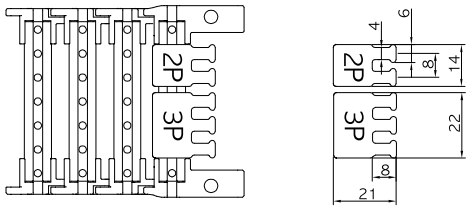


Fixed Bracket



Moving Bracket

Strain Relief(Eng.P)Option



SL-015N

IPA Fraunhofer TESTED DEVICE Hanshin Chain Co., Ltd. RoboChains RACER Plus Report No.HK 01904-848

Low dB

Order Example (주문예)

SL-015N	37R	B28	D:1	975L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

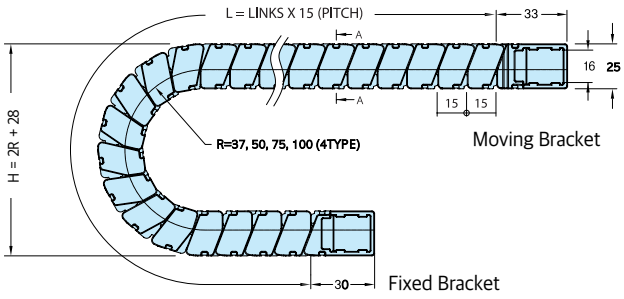
※ Option : HST-PAD 적용시 규격 끝에 HST-PAD 문구 추가 삽입

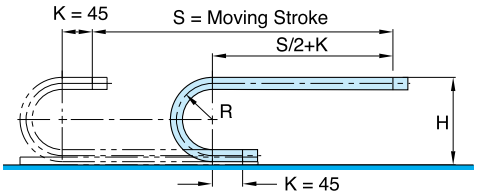
- Pitch (mm) : 15
- Bending Radius (mm) : 37, 50, 75, 100
- 가능내폭 (mm) B : 20~100 (+8mm) (표준 : 20, 28, 36, 44, 52, 60, 68, 76, 84, 92, 100)
- 내측높이 (mm) : 19
- 전체외폭 (mm) : B+10
- End Bradket 외폭 (mm) : B+12
- 전체높이 (mm) : H = 2R + 28 (MIN)
- Free Span(m) : 1
- End Bracket 취부높이 (mm) : H + 곡률반경의 25% Up

레이서 N타입(Round 디자인)

일반 레이서 타입

Chain





· Length $L = \frac{S}{2} + \pi R + 90$

· Radius
· Height

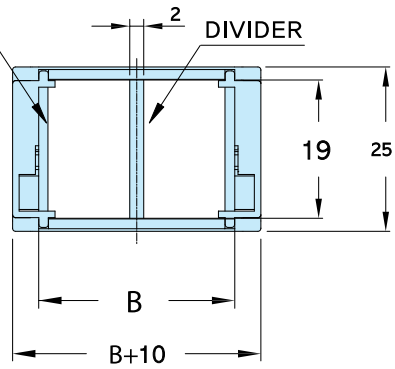
R	37	50	75	100
H	102	128	178	228
권장 취부높이	115	140	197	253

B(Width)

END STAY(OPTION)

※ 디바이더, 가로 분리대는 옵션입니다.

※ 영업부와 협의바랍니다.

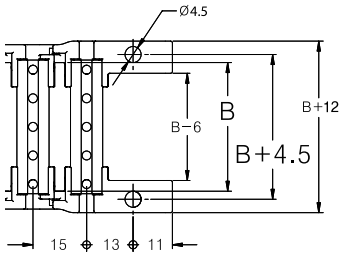


A-A Cross Section

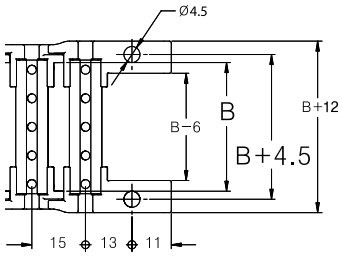
B	B+10
20	30
28	38
36	46
44	54
52	62
60	70

B	B+10
68	78
76	86
84	94
92	102
100	110

Brackets

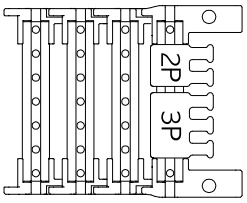


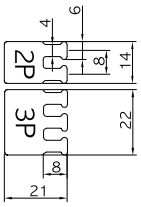
Fixed Bracket



Moving Bracket

Strain Relief(Eng.P)Option





SL-022

Fraunhofer IPA TESTED DEVICE

Low dB

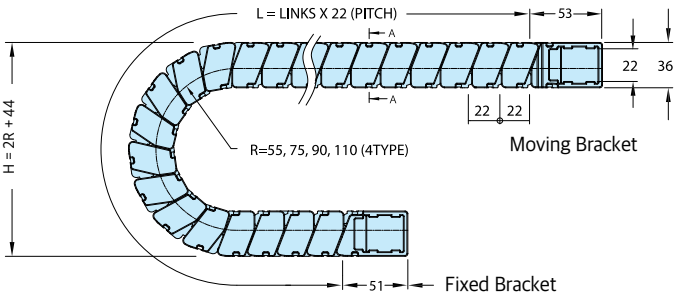
Order Example (주문예)

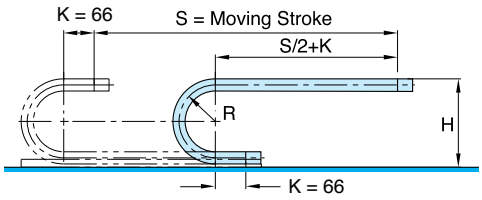
SL-022	55R	B68	D:2	1430L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

※ Option : HST-PAD 적용시 규격 끝에 HST-PAD 문구 추가 삽입

- Pitch (mm) : 22
- Bending Radius (mm) : 55, 75, 90, 110 (4TYPE)
- 가능내폭 (mm) B : 36~140 (+8mm) (표준 : 36, 44, 52, 60, 68, 76, 84, 92, 100, 108, 116, 124, 132, 140)
- 내측높이 (mm) : 28
- 전체외폭 (mm) : B+16
- End Bradket 외폭 (mm) : B+20
- 전체높이 (mm) : H = 2R + 44 (MIN)
- Free Span(m) : 1.5
- End Bradket 취부높이 (mm) : H + 곡률반경의 25% Up

Chain





· Length $L = \frac{S}{2} + \pi R + 132$

· Radius
· Height

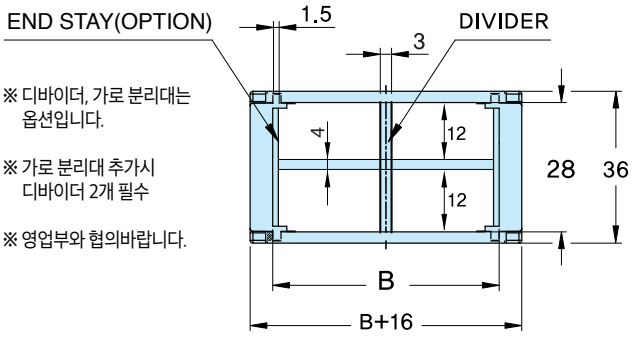
R	55	75	90	110
H	154	194	224	264
권장 취부높이	170	213	247	292

B(Width)

※ 디바이더, 가로 분리대는 옵션입니다.

※ 가로 분리대 추가시 디바이더 2개 필수

※ 영업부와 협의바랍니다.

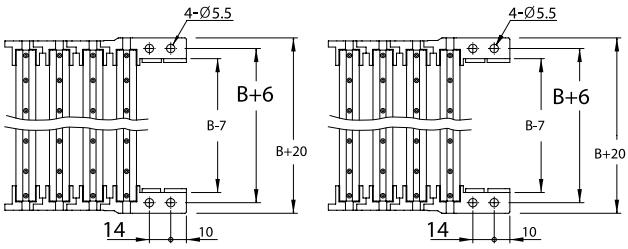


A-A Cross Section

B	B+16
36	52
44	60
52	68
60	76
68	84
76	92
84	100

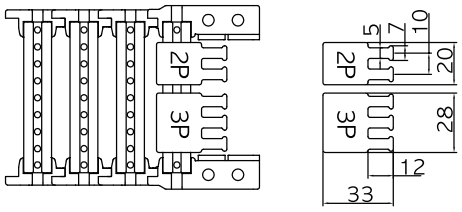
B	B+16
92	108
100	116
108	124
116	132
124	140
132	148
140	156

Brackets



Fixed Bracket　　Moving Bracket

Strain Relief(Eng.P) Option



SL-022N

IPA Fraunhofer TESTED DEVICE Hanshin Chain Co., Ltd. RoboChains R&C-EP Plus Report No.HK 01904-848

Low dB

Order Example (주문예)

SL-022N	55R	B68	D:2	1430L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

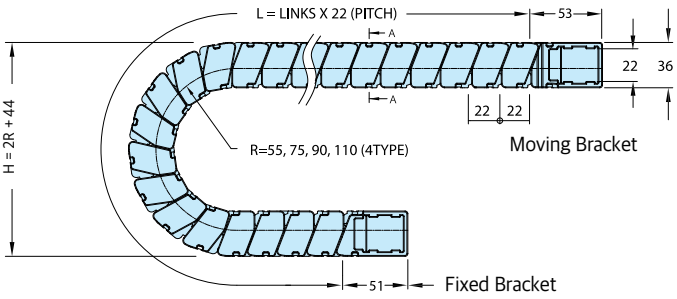
※ Option : HST-PAD 적용시 규격 끝에 HST-PAD 문구 추가 삽입

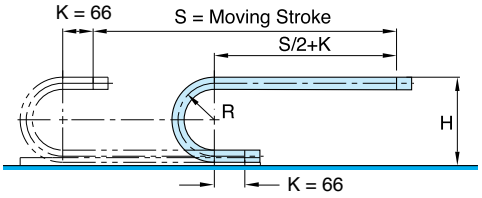
- Pitch (mm) : 22
- Bending Radius (mm) : 55, 75, 90, 110 (4TYPE)
- 가능내폭 (mm) B : 36~140 (+8mm) (표준 : 36, 44, 52, 60, 68, 76, 84, 92, 100, 108, 116, 124, 132, 140)
- 내측높이 (mm) : 28
- 전체외폭 (mm) : B+16
- End Bradket 외폭 (mm) : B+20
- 전체높이 (mm) : H = 2R + 44 (MIN)
- Free Span(m) : 1.5
- End Bradket 취부높이 (mm) : H + 곡률반경의 25% Up

레이서 N타입(Round 디자인)

일반 레이서 타입

Chain





· Length $L = \frac{S}{2} + \pi R + 132$

· Radius
· Height

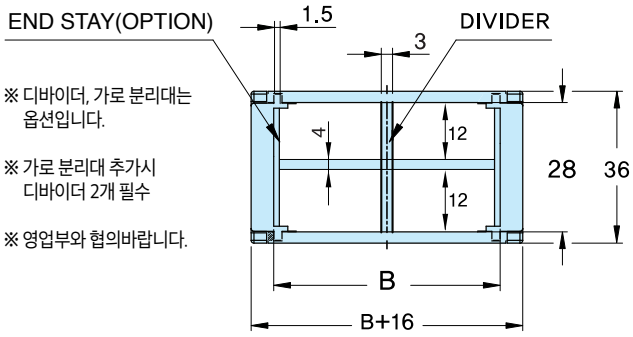
R	55	75	90	110
H	154	194	224	264
권장 취부높이	170	213	247	292

B(Width)

※ 디바이더, 가로 분리대는 옵션입니다.

※ 가로 분리대 추가시 디바이더 2개 필수

※ 영업부와 협의바랍니다.

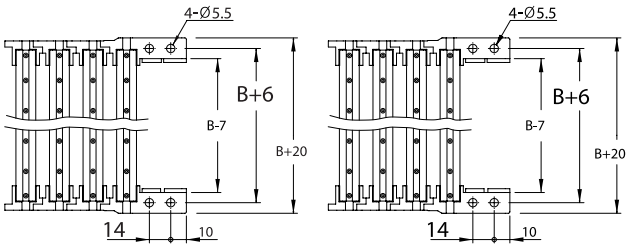


A-A Cross Section

B	B+16
36	52
44	60
52	68
60	76
68	84
76	92
84	100

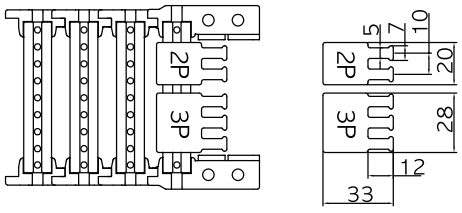
B	B+16
92	108
100	116
108	124
116	132
124	140
132	148
140	156

Brackets



Fixed Bracket　　Moving Bracket

Strain Relief(Eng.P) Option



SL-033

Fraunhofer TESTED DEVICE IPA

Low dB

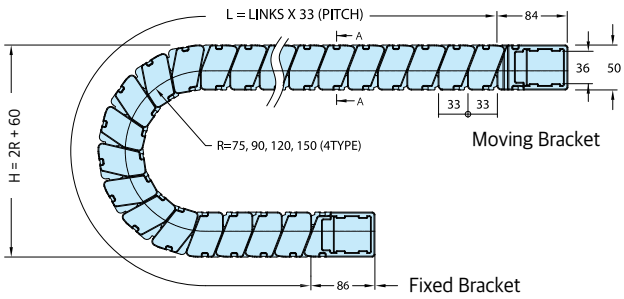
Order Example (주문예)

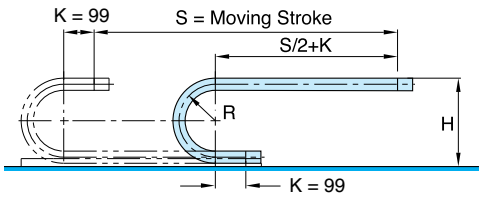
SL-033	75R	B84	D:3	1815L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

※ Option : HST-PAD 적용시 규격 끝에 HST-PAD 문구 추가 삽입

- Pitch (mm) : 33
- Bending Radius (mm) : 75, 90, 120, 150 (4TYPE)
- 가능내폭 (mm) B : 36~140 (+8mm) (표준 : 36, 44, 52, 60, 68, 76, 84, 92, 100, 108, 116, 124, 132, 140)
- 내측높이 (mm) : 42
- 전체외폭 (mm) : B+20
- End Bradket 외폭 (mm) : B+23
- 전체높이 (mm) : H = 2R + 60 (MIN)
- Free Span(m) : 1.7
- End Bradket 취부높이 (mm) : H + 곡률반경의 25% Up

Chain





· Length $L = \frac{S}{2} + \pi R + 198$

· Radius
· Height

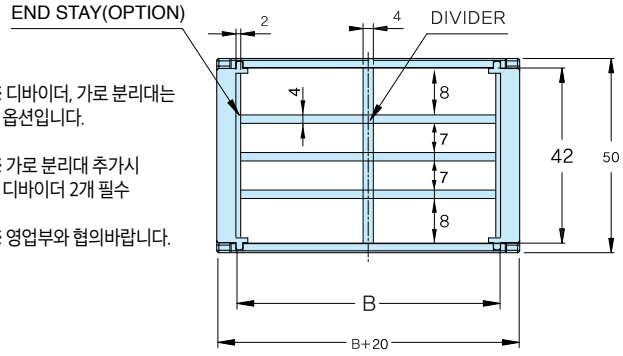
R	75	90	120	150
H	210	240	300	360
권장 취부높이	230	263	330	398

B(Width)

※ 디바이더, 가로 분리대는 옵션입니다.

※ 가로 분리대 추가시 디바이더 2개 필수

※ 영업부와 협의바랍니다.

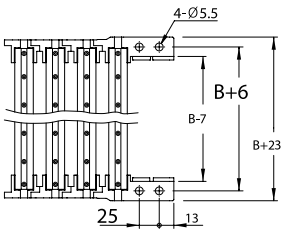


A-A Cross Section

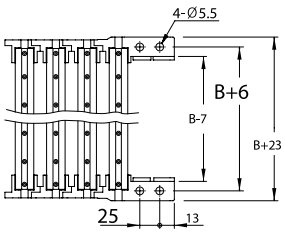
B	B+20
36	56
44	64
52	72
60	80
68	88
76	96
84	104

B	B+20
92	112
100	120
108	128
116	136
124	144
132	152
140	160

Brackets

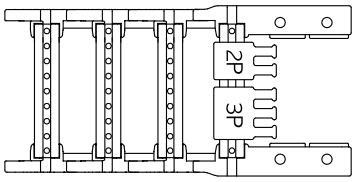


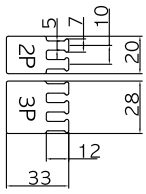
Fixed Bracket



Moving Bracket

Strain Relief(Eng.P) Option





SL-033N

IPA Fraunhofer TESTED DEVICE Hanshin Chain Co., Ltd. RoboChains RACER Plus Report No.HK 01904-848

Low dB

Order Example (주문예)

SL-033N	75R	B84	D:3	1815L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

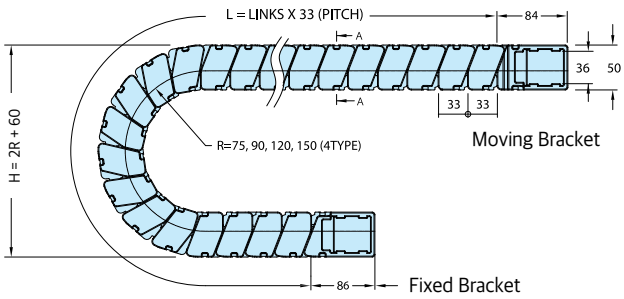
※ Option : HST-PAD 적용시 규격 끝에 HST-PAD 문구 추가 삽입

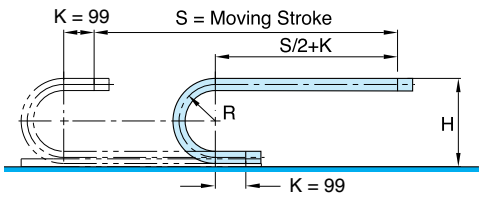
- Pitch (mm) : 33
- Bending Radius (mm) : 75, 90, 120, 150 (4TYPE)
- 가능내폭 (mm) B : 36~140 (+8mm) (표준 : 36, 44, 52, 60, 68, 76, 84, 92, 100, 108, 116, 124, 132, 140)
- 내측높이 (mm) : 42
- 전체외폭 (mm) : B+20
- End Bradket 외폭 (mm) : B+23
- 전체높이 (mm) : H = 2R + 60 (MIN)
- Free Span(m) : 1.7
- End Bradket 취부높이 (mm) : H + 곡률반경의 25% Up

레이서 N타입(Round 디자인)

일반 레이서 타입

Chain





· Length $L = \frac{S}{2} + \pi R + 198$

· Radius
· Height

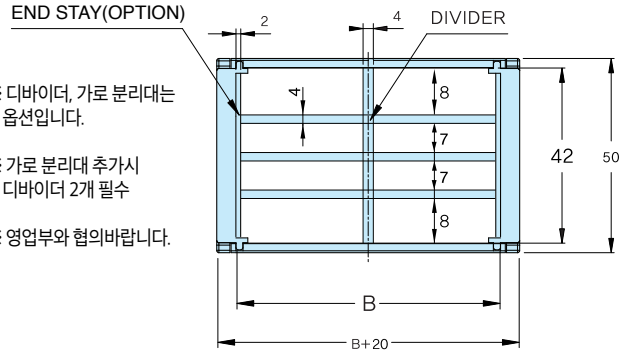
R	75	90	120	150
H	210	240	300	360
권장 취부높이	230	263	330	398

B(Width)

※ 디바이더, 가로 분리대는 옵션입니다.

※ 가로 분리대 추가시 디바이더 2개 필수

※ 영업부와 협의바랍니다.

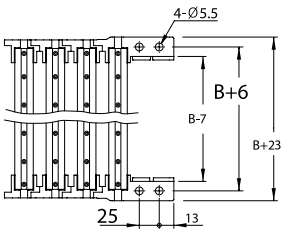


A-A Cross Section

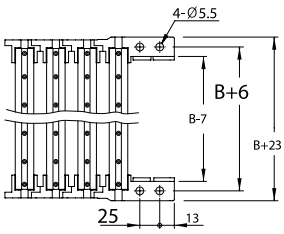
B	B+20
36	56
44	64
52	72
60	80
68	88
76	96
84	104

B	B+20
92	112
100	120
108	128
116	136
124	144
132	152
140	160

Brackets

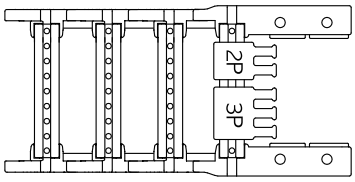


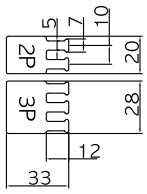
Fixed Bracket



Moving Bracket

Strain Relief(Eng.P) Option





SL-044

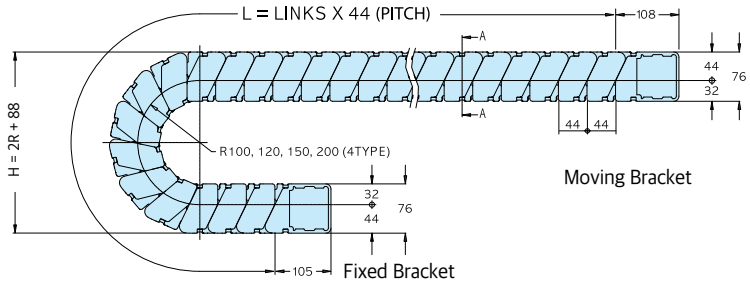
Order Example (주문예)

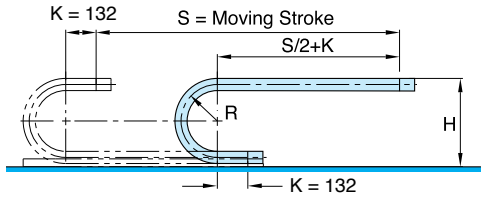
SL-044	100R	B130	D:3	1848L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

※ Option : HST-PAD 적용시 규격 끝에 HST-PAD 문구 추가 삽입

- Pitch (mm) : 44
- Bending Radius (mm) : 100, 120, 150, 200 (4TYPE)
- 가능내폭 (mm) B : 100~295 (+15mm) (표준 : 100, 115, 130, 145, 160, 175, 190, 205, 220, 235, 250, 265, 280, 295)
- 내측높이 (mm) : 63
- 전체외폭 (mm) : B+35
- End Bradket 외폭 (mm) : B+30
- 전체높이 (mm) : H = 2R + 88 (MIN)
- Free Span(m) : 2.5
- End Bradket 취부높이 (mm) : H + 곡률반경의 25% Up

Chain





· Length $L = \frac{S}{2} + \pi R + 264$

· Radius
· Height

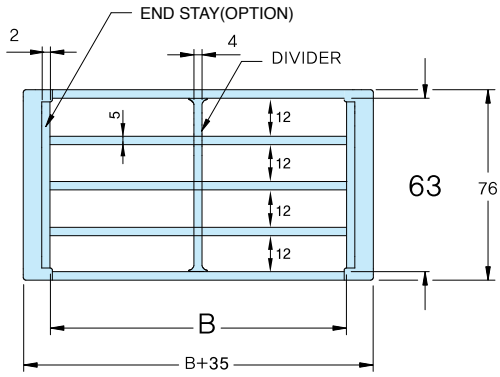
R	100	120	150	200
H	288	328	388	488
권장 취부높이	315	358	426	538

B(Width)

※ 디바이더, 가로 분리대는 옵션입니다.

※ 가로 분리대 추가시 디바이더 2개 필수

※ 영업부와 협의바랍니다.

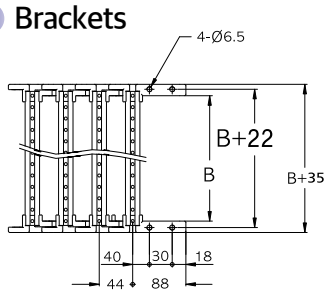


A-A Cross Section

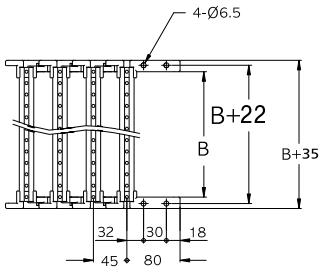
B	B+35
100	135
115	150
130	165
145	180
160	195
175	210
190	215

B	B+35
205	240
220	255
235	270
250	285
265	300
280	315
295	330

Brackets

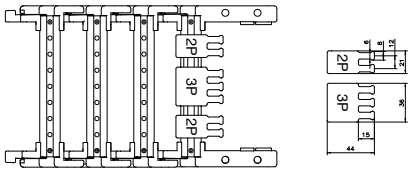


Fixed Bracket



Moving Bracket

PL-SIR



SL-055

Fraunhofer IPA TESTED DEVICE Hanshin Chain Co., Ltd. RoboChain RACER Plus Report No. FIA 01904-448

Low dB

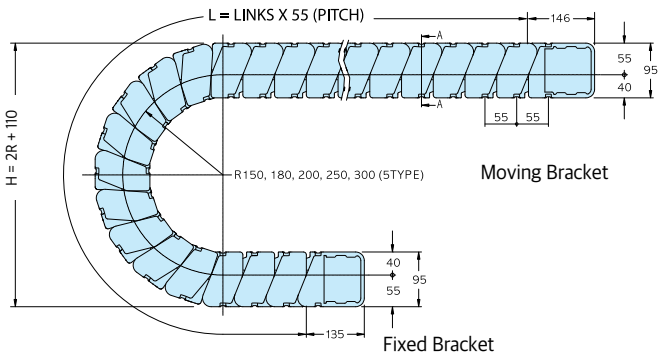
Order Example (주문예)

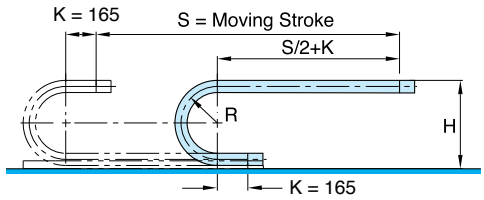
SL-055	180R	B205	D:3	1430L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

※ Option : HST-PAD 적용시 규격 끝에 HST-PAD 문구 추가 삽입

- Pitch (mm) : 55
- Bending Radius (mm) : 150, 180, 200, 250, 300 (5TYPE)
- 가능내폭 (mm) B : 100~295 (+15mm) (표준 : 100, 115, 130, 145, 160, 175, 190, 205, 220, 235, 250, 265, 280, 295)
- 내측높이 (mm) : 82
- 전체외폭 (mm) : B+41
- End Bradket 외폭 (mm) : B+41
- 전체높이 (mm) : H = 2R + 110 (MIN)
- Free Span(m) : 3.5
- End Bradket 취부높이 (mm) : H + 곡률반경의 25% Up

Chain





·Length $L = \frac{S}{2} + \pi R + 330$

·Radius
·Height

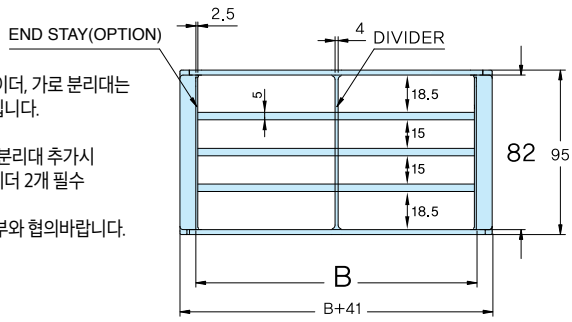
R	150	180	200	250	300
H	410	470	510	610	710
권장 취부높이	450	515	560	673	785

B(Width)

※ 디바이더, 가로 분리대는 옵션입니다.

※ 가로 분리대 추가시 디바이더 2개 필수

※ 영업부와 협의바랍니다.

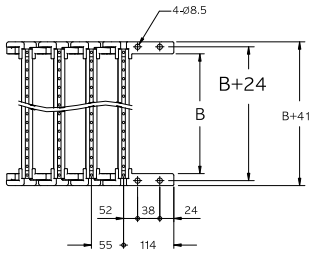


A-A Cross Section

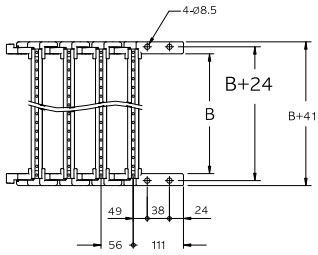
B	B+41
100	141
115	156
130	171
145	186
160	201
175	216
190	231

B	B+41
205	246
220	261
235	276
250	291
265	306
280	321
295	336

Brackets

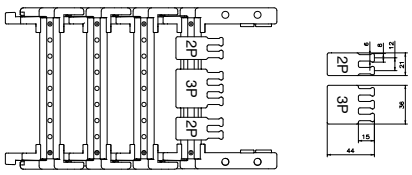


Fixed Bracket



Moving Bracket

PL-SIR



HST-PAD

크린룸에 최적합 솔루션! HST-PAD!

HST-PAD [티패드]
- 케이블,호스의 마모를 줄임
- 로보체인 내 이물질 발생 최소
- 레이서,레이서 플러스와 최고의 조합

For Clean Room
Class 1
39dB

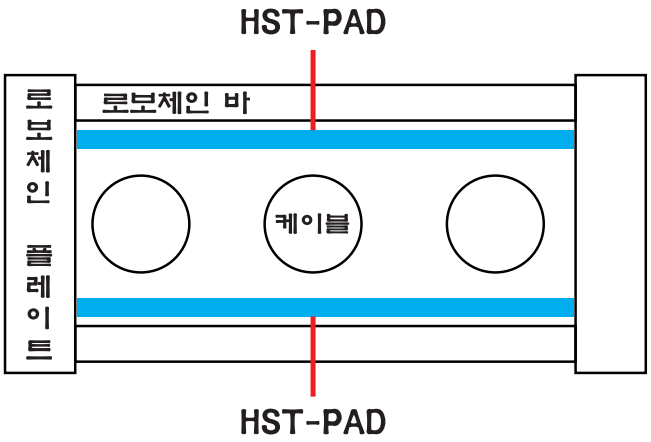
HST-PAD(WW)

HST-PAD(WB)

HST-PAD(BW)

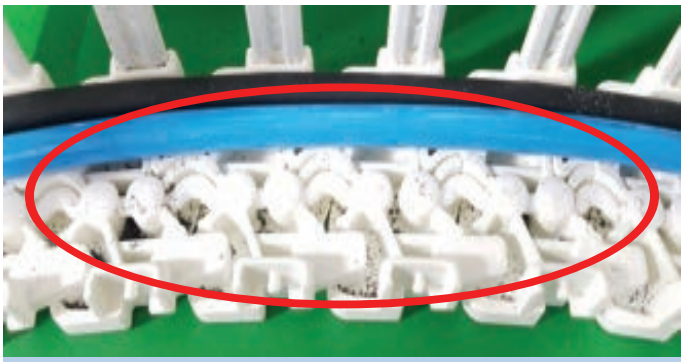
HST-PAD(BB)

1. HST-PAD의 사용목적



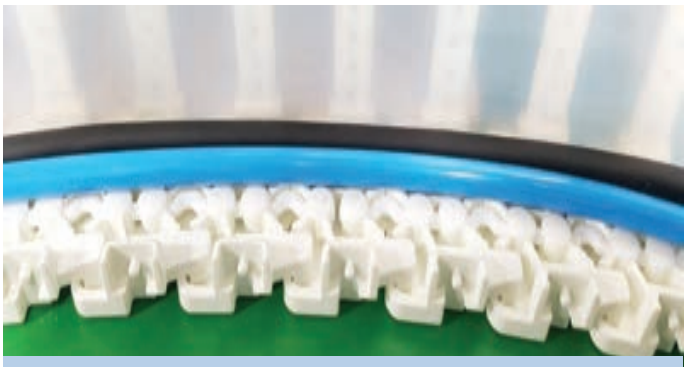
CLASS 1 인증된 레이서 플러스에 마찰계수가 다른 소재에 비해 1/3 낮은 특수한 SHEET를 안쪽 바깥쪽으로 삽입하여 분진을 최소화 합니다.

2. HST-PAD의 사용 전후 비교 사진(500만회 주행 테스트)



사용 전

(포설된 케이블이 로보체인 BAR 부분에 갈려 분진 발생)



사용 후

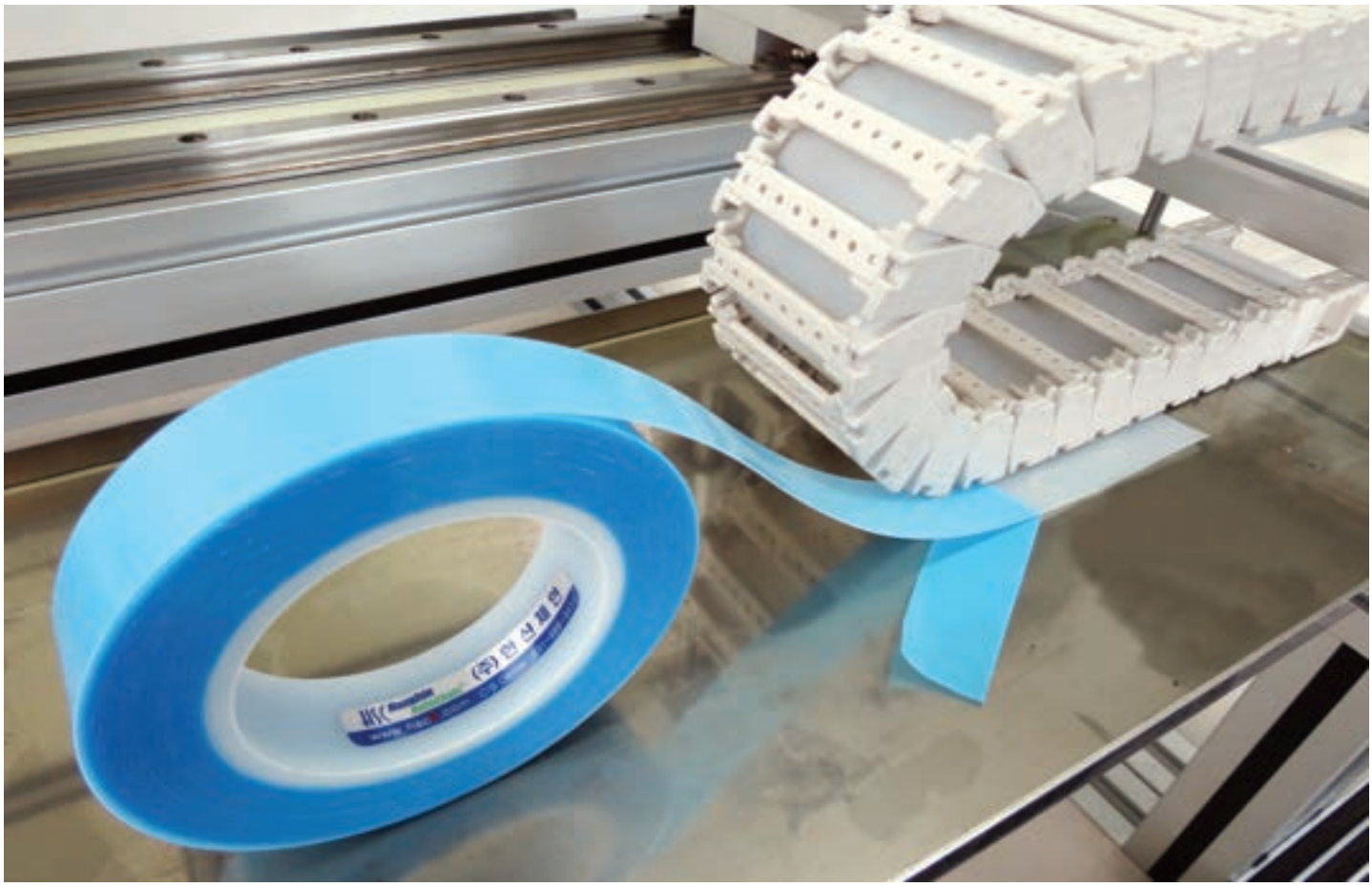
(케이블과 BAR 사이에 HST-PAD를 적용시킴으로 갈림 방지/분진 95%감소)

3. HST-PAD 옵션 적용

HST-RAIL

크린룸을 위한 저마모 테이프! HST-RAIL!

크린룸 최적화 필수 아이템!
원하는 위치에 원하는 만큼 더욱 쉽고 간편하게!

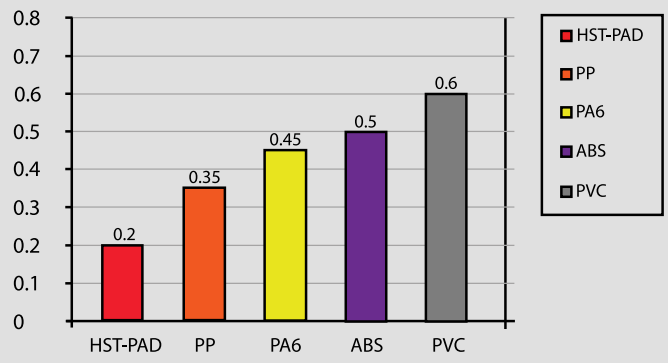


크린룸,반도체,디스플레이,정밀스테이지,리니어모터,취출로봇,
정밀측정장비 및 자동화 설비에 적용.

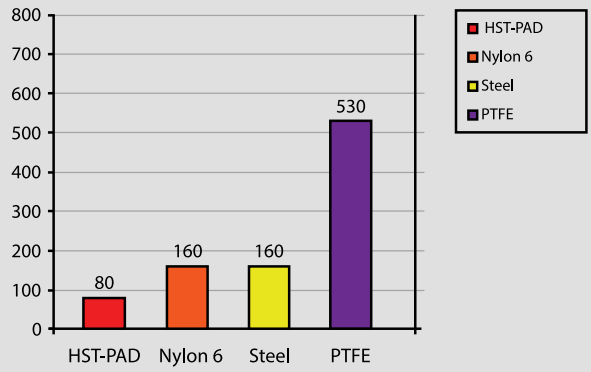
For Clean Room
Class 1
39dB

1. HST-RAIL 기술 그래프

마찰 계수



저 마모 물질 비교 표

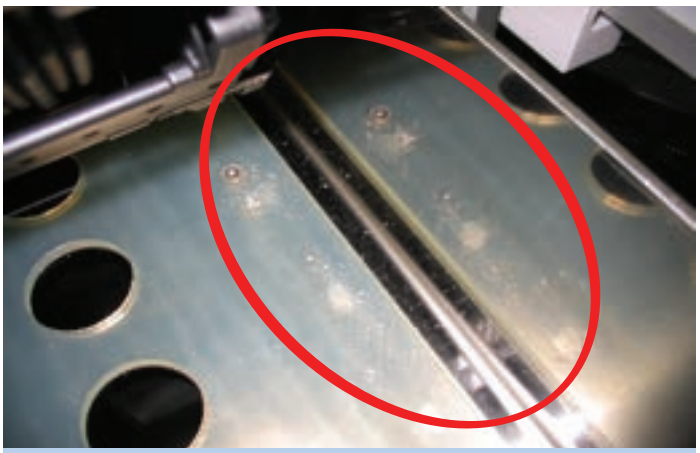


(연구 결과 HST-PAD가 스틸보다 마모가 적음.)

2. HST-RAIL 규격

품명	두께	넓이	롤 길이
HST-RAIL 0330	0.3mm	30mm	20m
HST-RAIL 0350	0.3mm	50mm	20m
HST-RAIL 0375	0.3mm	75mm	20m
HST-RAIL 03100	0.3mm	100mm	20m
HST-RAIL 03125	0.3mm	125mm	20m
HST-RAIL 03150	0.3mm	150mm	20m

품명	두께	넓이	롤 길이
HST-RAIL 0530	0.5mm	30mm	16.5m
HST-RAIL 0550	0.5mm	50mm	16.5m
HST-RAIL 0575	0.5mm	75mm	16.5m
HST-RAIL 05100	0.5mm	100mm	16.5m
HST-RAIL 05125	0.5mm	125mm	16.5m
HST-RAIL 05150	0.5mm	150mm	16.5m



사용 전
(주행구간에 로보체인의 분진 발생)

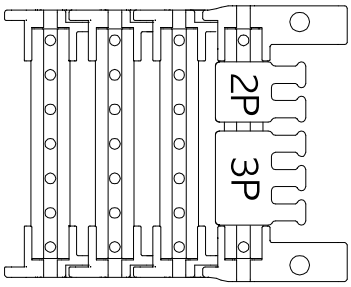
사용 후
(마찰계수를 낮춰 움직임을 부드럽게 하여 분진 발생 방지)

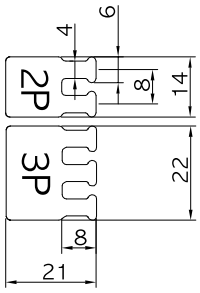
Hanshin RoboChain®

NEW

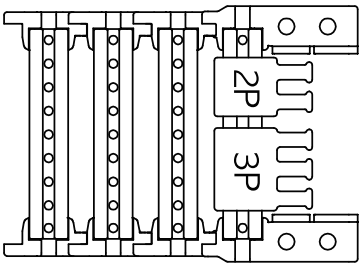
RACER PLUS (PL S/R)

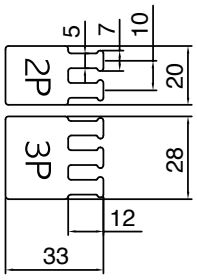
SL-015 S/R



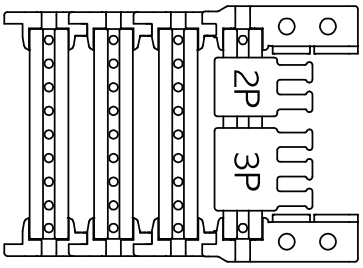


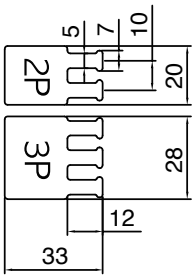
SL-022 S/R



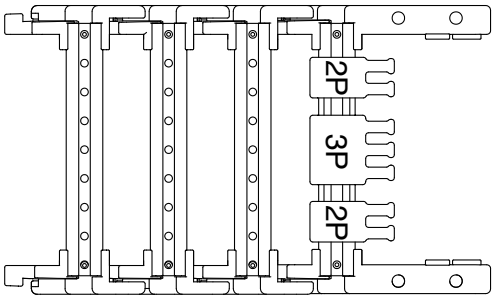


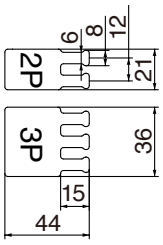
SL-033 S/R



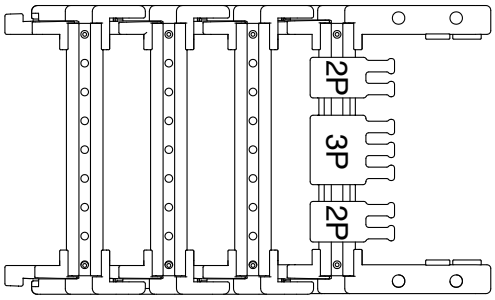


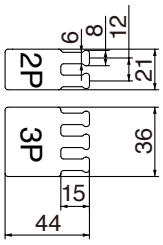
SL-044 S/R





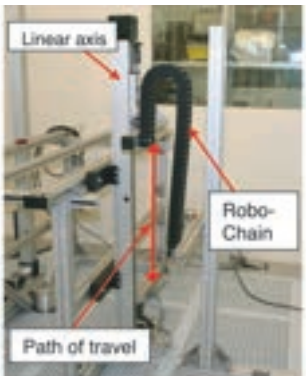
SL-055 S/R

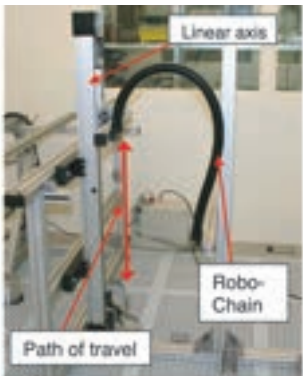


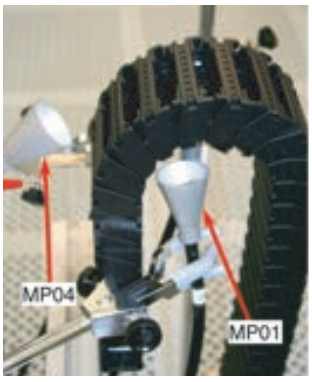


Hanshin RoboChain®

Fraunhofer IPA
TESTED® DEVICE
Hanshin Chain Co., Ltd.
RoboChains RACER and HSRF
Report No. HC 0703-393







Class specification	Highest limiting values permitted for particle values ≥ 0.5 (rounded)							
	GMP "at rest"	GMP "in operation"	US / Federal Standard 209E		VDI 2083		ISO 14644-1	
	per m≥	per m≥	per m≥	per cbf	per m≥	per cbf	per m≥	per cbf
ISO Class 1							0	0.01
ISO Class 2							4	0.1
"Class" 1			35	1				
Class 1					45	1		
ISO Class 3							35	1
"Class" 10			353	10				
Class 2					450	13		
ISO Class 4							352	10
"Class" 100			3,530	100				
Class 3					4,500	128		
ISO Class 5							3,520	100
Room Grade A	3,500	3,500						
"Class" 1.000			35,300	1,000				
Class 4					45,000	1277		
ISO Class 6							35,200	1,000
Room Grade B	3,500	350,000						
"Class" 10.000			353,000	10,000				
Class 4					450,000	12768		
ISO Class 6							352,000	10,0000
Room Grade B	350,000	3,500,000						
"Class" 100.000			3,530,000	100,000				
Class 4					4,500,000	127677		
ISO Class 6							3,520,000	100,000
Room Grade B	3,500,000							

HSR type

HSR 0260
HSR 0380

용도 Application

크린룸, 2차 전지, 반도체, 정밀스테이지, 리니어 모터, 취출 로봇, 용접로봇, 공작기계, 디스플레이, 정밀측정장비 및 자동화설비

Clean room, Semi-conduct, Precision Stage, Linear Motor, Robot, Display, Machinery, Automotive, F.A

기장 조정이 간편한 저소음 저분진 제품!

HSR

EASY ASSEMBLY!

측면 갈림 최소화

Round 설계

HSR 0260

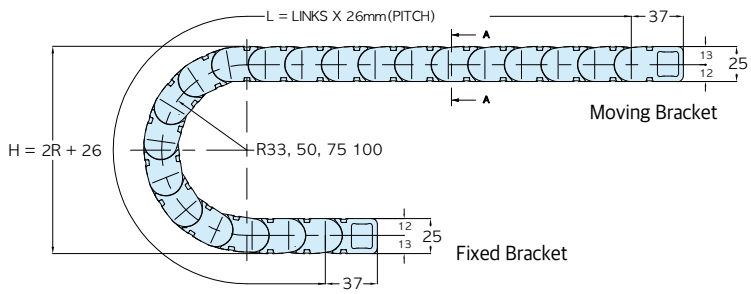
Order Example (주문예)

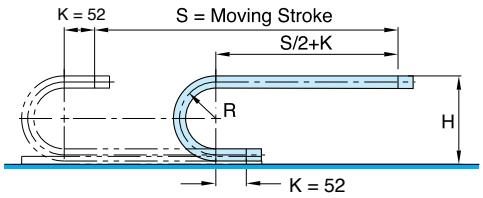
HSR 0260	33R	B28	D:1	962L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

※ Option : HST-PAD 적용시 규격 끝에 HST-PAD 문구 추가 삽입

- Pitch (mm) : 26
- Bending Radius (mm) : 33, 50, 75, 100
- 가능내폭 (mm) B : 20~100 (+8mm) (표준 : 20, 28, 36, 44, 52, 60, 68, 76, 84, 92, 100)
- 내측높이 (mm) : 19
- 전체외폭 (mm) : B+12
- End Bradket 외폭 (mm) : B+14
- 전체높이 (mm) : H = 2R + 26 (MIN)
- Free Span(m) : 1
- End Bracket 취부높이 (mm) : H + 곡률반경의 25% Up

Chain





· Length $L = \frac{S}{2} + \pi R + 104$

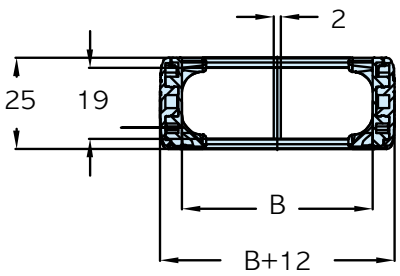
· Radius
· Height

R	33	50	75	100
H	92	126	176	226
권장 취부높이	105	140	197	253

B(Width)

※ 디바이더, 가로 분리대는 옵션입니다.

※ 영업부와 협의바랍니다.

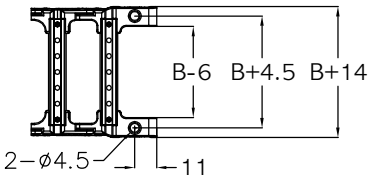


A-A Cross Section

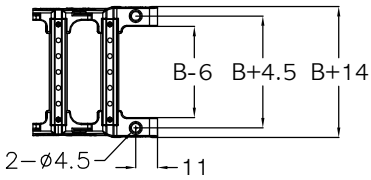
B	B+12
20	30
28	38
36	46
44	54
52	62
60	70

B	B+12
68	78
76	86
84	94
92	102
100	110

Brackets



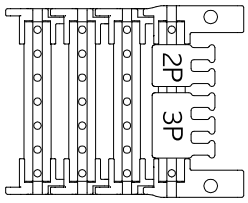
Fixed Bracket

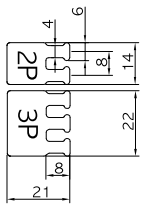


Moving Bracket

※ SL-015 타입과 End Bracket 부착 홀, 간격 동일

Strain Relief(Eng.P)Option





HSR 0380

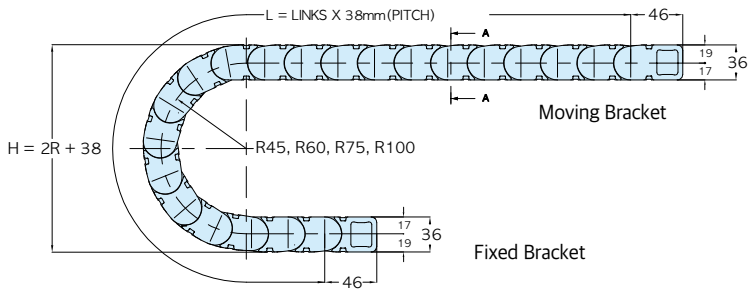
Order Example (주문예)

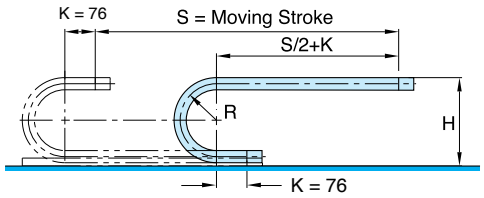
HSR 0380	45R	B36	D:1	1406L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

※ Option : HST-PAD 적용시 규격 끝에 HST-PAD 문구 추가 삽입

- Pitch (mm) : 38
- Bending Radius (mm) : 45, 60, 75, 100
- 가능내폭 (mm) B : 36~140 (+8mm) (표준 : 36, 44, 52, 60, 68, 76, 84, 92, 100, 108, 116, 124, 132, 140)
- 내측높이 (mm) : 28
- 전체외폭 (mm) : B+16
- End Bradket 외폭 (mm) : B+20
- 전체높이 (mm) : H = 2R + 38 (MIN)
- Free Span(m) : 1.5
- End Bradket 취부높이 (mm) : H + 곡률반경의 25% Up

Chain





· Length $L = \frac{S}{2} + \pi R + 152$

· Radius
· Height

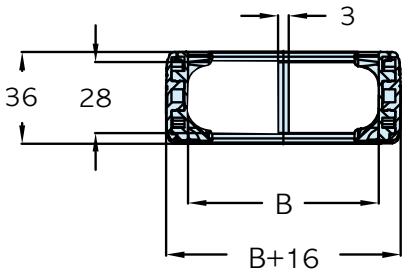
R	45	60	75	100
H	128	158	188	238
권장 취부높이	143	175	210	265

B(Width)

※ 디바이더, 가로 분리대는 옵션입니다.

※ 가로 분리대 추가시 디바이더 2개 필수

※ 영업부와 협의바랍니다.

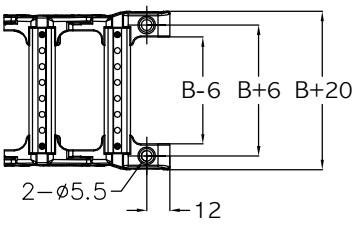


A-A Cross Section

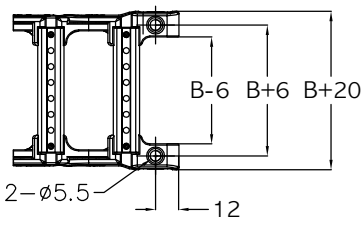
B	B+16
36	52
44	60
52	68
60	76
68	84
76	92
84	100

B	B+16
92	108
100	116
108	124
116	132
124	140
132	148
140	156

Brackets

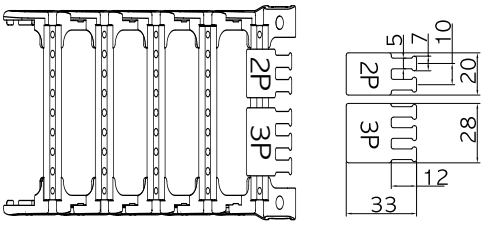


Fixed Bracket



Moving Bracket

Strain Relief(Eng.P) Option

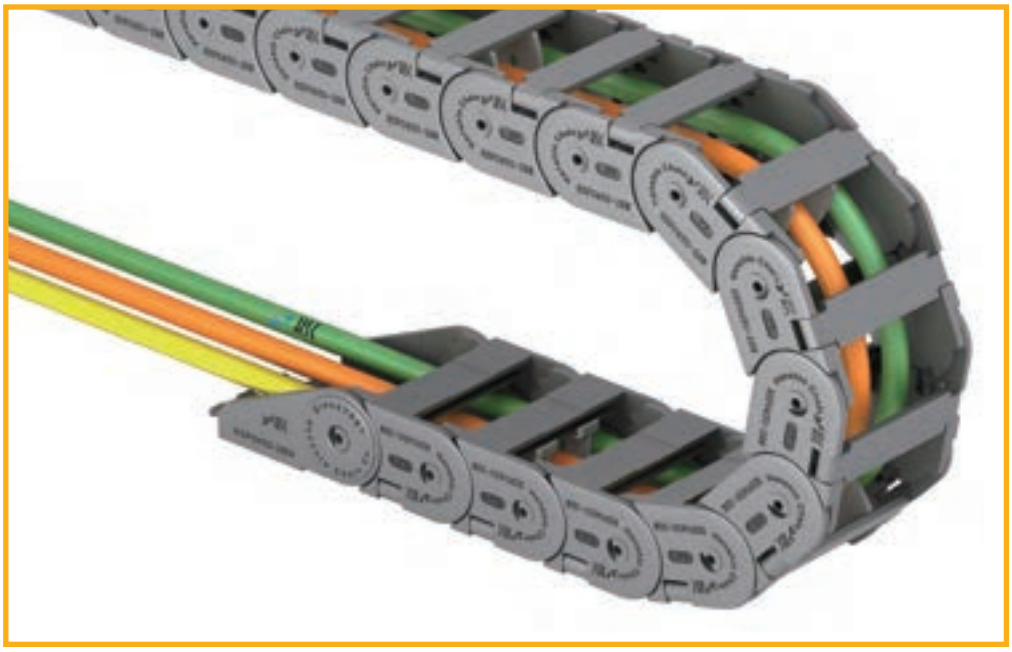


HSR TYPE

HSP type

HSP 0120-7E
HSP 0120-13E
HSP 0130-1N
HSP 0130-1BN
HSP 0130-2
HSP 0130-2B
HSP 0180-1N
HSP 0180-1BN
HSP 0180-2BN
HSP 0180-3B
HSP 0180-4BN
HSP 0180-50
HSP 0200-1E
HSP 0250-20
HSP 0250-35
HSP 0300-1B
HSP 0320-1BN
HSP 0320-24
HSP 0320-35B
HSP 0320-50
HSP 0450-1B [N]
HSP 0450-2B [N]
HSP 0450-3BN
HSP 0450-4BN
HSP 0550-1BN
HSP 0625-1BN
HSP 0625-2BN
HSP 0555-B125
HSP 0665-B150
HSP 020S

※ [N]은 신형.



·실용신안등록 제 093356호
·실용신안등록 제 134988호

Low dB

ESD

ESD | 대전 방지 로보체인

용도 Application

자동화기계, 반도체, LED, LCD, PDP, OLED, 전자, 식품기계, 취출로보트, 섬유기계, 특장차 자동차생산설비, 의료기계, 각종 공작기계 및 컴퓨터 관련기계에 적용.

Factory automation, Wood work machine, Food processing, Grabbing-and-extracting robot, Fabric machine, Special purpose vehicle, Automobile industry, Medical machine, Machining center and Computer related machine

특징 Features

- 본체는 개폐형으로 Cable, Hose의 설치가 쉽습니다.
- 경량이어서 움직임이 원활합니다.
- Divider가 좌우로 움직입니다.
- 150여종의 다양한 모델과 특수 규격도 주문가능합니다.
- 자동화기계, 목공기계, 식품기계, 산업용로보트 등 다방면에 적합한 모델입니다.

- *HSP type provides cover lead for easy installation of cables and hoses.*
- *Its light weight provides prompt movement.*
- *Divider is adjustable.*
- *Applicable for factory automation, wood work, food processing, industrial robot and many more.*
- *150 various models are manufactured.*
- *Special orders can be made.*

운용환경 Operation

HSP Type은 플라스틱 RoboChain으로 케이블 및 호스의 인입을 용이하게 하는 개폐형으로 설계되어 있습니다. HSP Type의 RoboChain은 모든 구성품이 고강도 엔지니어링 플라스틱으로 설계 제작되어 소음이 적고, 깨끗하며 작고, 가벼운 장점이 있습니다. 특히 HSP 0450-1BN 이상의 Type은 Divider를 부착하여 사용하실 수 있습니다. HSP Type은 전자기계, 산업용 로보트 공작기계 및 다방면에 사용되는 이상적인 장치입니다.

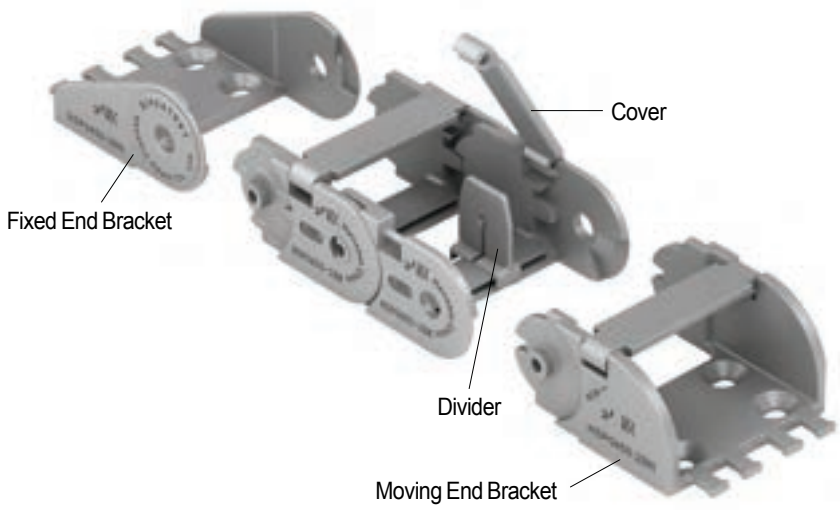
Cover in HSP Type provides easy access and installation of cables and hoses. All parts are made of highly durable engineering plastic. Therefore, it features less noise, good appearance and light weight. In particular, HSP 0450-1BN and higher types accommodate divider.
This type is applicable for many areas such as eletronic and electrical machine, industrial robot, machine center and many more.

주요제원 Properties

- 운동속도 : 180m/min이하
- 케이블 호스의 직경 : 36mm 이하
- 사용온도 : -25 ~ 100℃
- 장력 : 190 (건조), 120 (공기습도) N/mm2
- 인장 팽창 : 4 (건조), 6 (공기습도) %
- 탄성계수 : 10000 (건조), 7000 (공기습도) N/mm2
- 미끄럼 마찰 : 0.4 (무윤활시)
- 기본색 : Black
- 재질 : 엔지니어링 플라스틱

- *Moving Velocity: below 180m/min*
- *Diameter of Cable Hose: less than 36mm*
- *Operating Temperature: -25 ~ 100℃*
- *Tension: 190 (in dry), 120 (in moisture) N/mm2*
- *Stretch: 4 (in dry), 6 (in moisture) %*
- *Elasticity: 10000 (in dry), 7000 (in moisture) N/mm2*
- *Sliding Friction: 0.4 (non-greased)*
- *Basic Color: Black*
- *Material: Engineering Plastic*

구조와 명칭 Structure



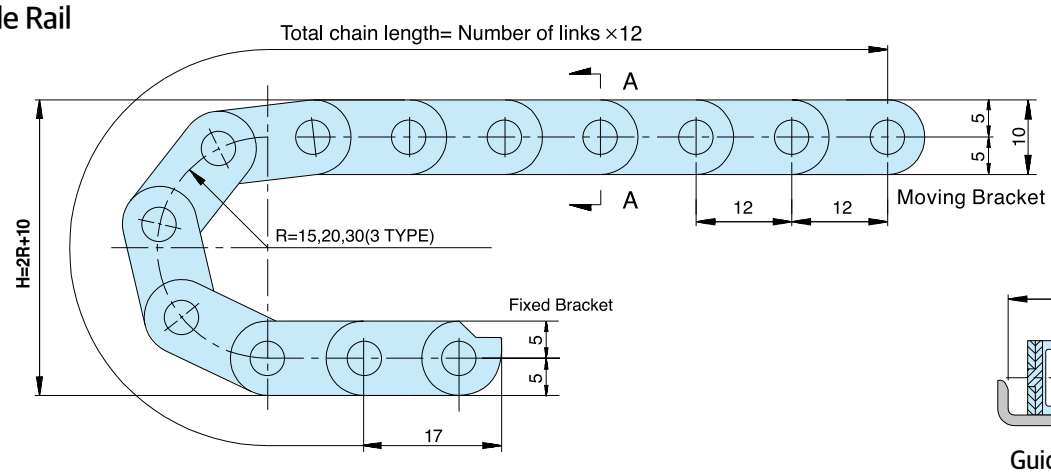
(국내최소형)

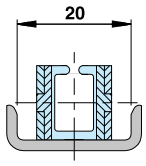
HSP 0120-7E

Order Example (주문예)

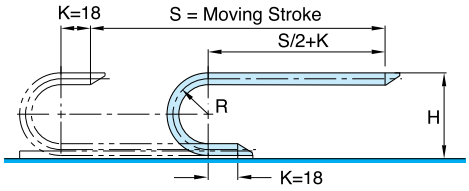
HSP0120-7E	15R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail





Guide Rail

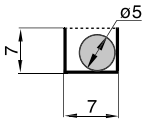


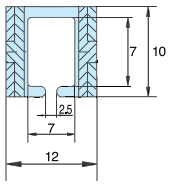
· Length $L = \frac{S}{2} + \pi R + 36$

· Radius
· Height

R	15	20	30
H	40	50	70

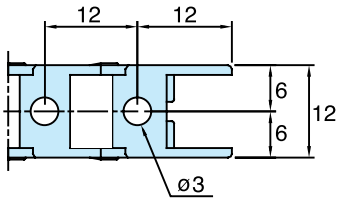
Max. Cable Diameter Cross Section



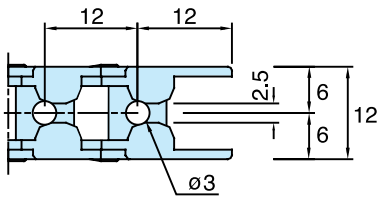


A-A Cross Section

Brackets (별도의 END BRACKET이 없이 CHAIN에 취부)



Fixed Bracket



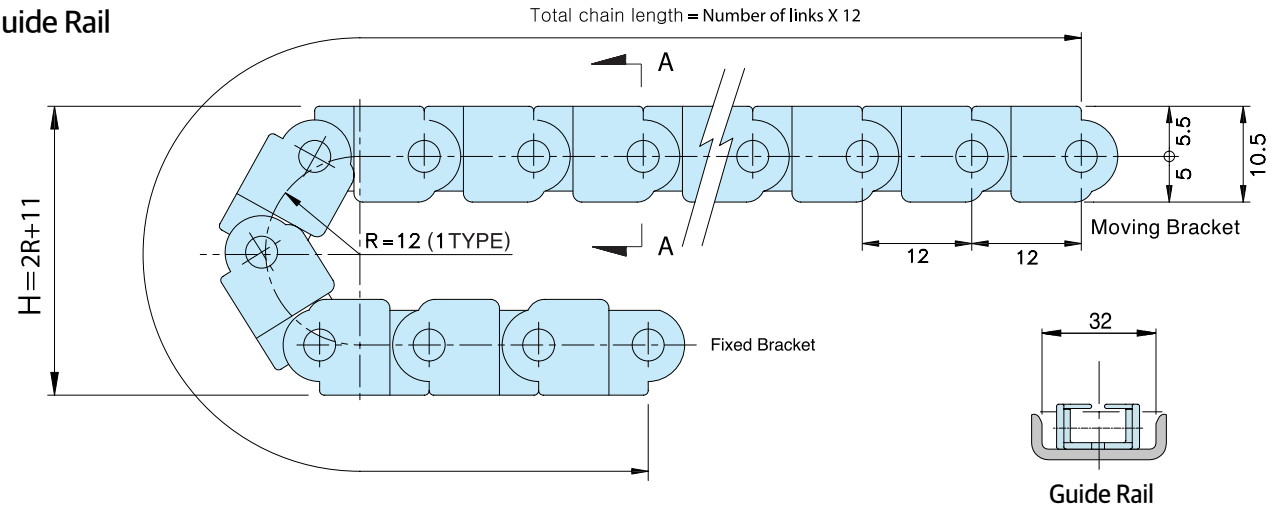
Moving Bracket

HSP 0120-13E

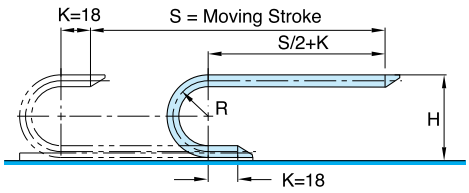
Order Example (주문예)

HSP0120-13E	12R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



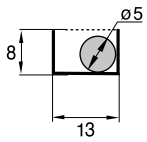
Guide Rail

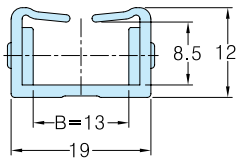


· Length $L = \frac{S}{2} + \pi R + 36$

· Radius	R	12
· Height	H	35

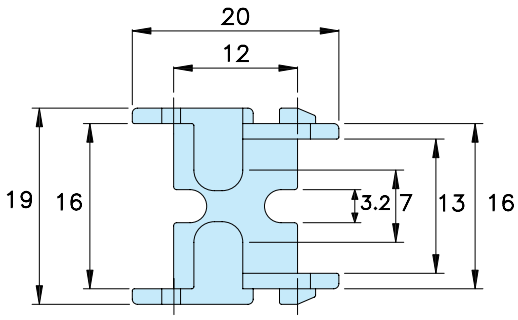
Max. Cable Diameter Cross Section





A-A Cross Section

Brackets (별도의 END BRACKET이 없이 CHAIN에 취부)

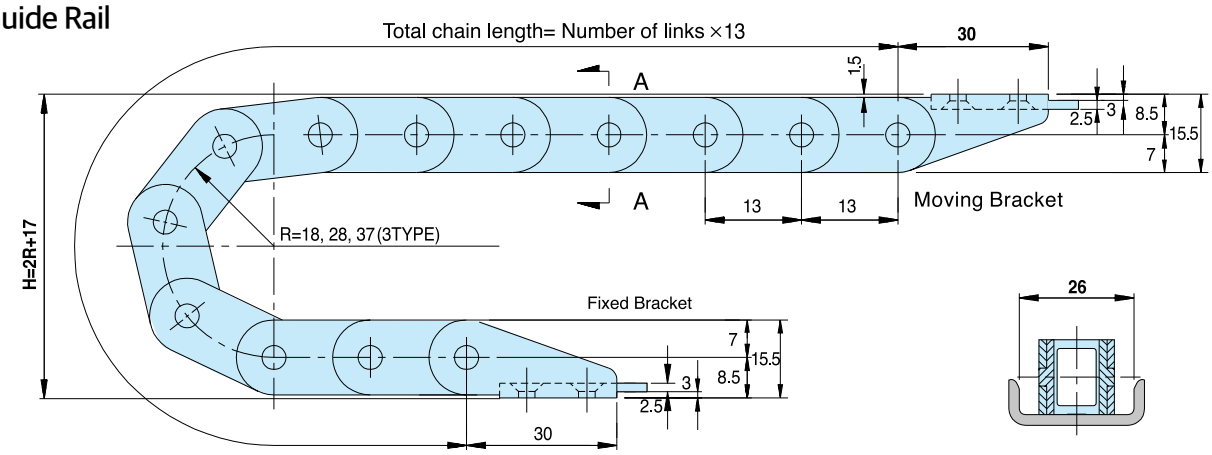


HSP 0130-1N

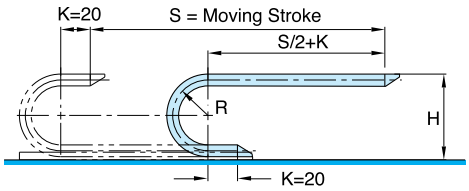
Order Example (주문예)

HSP0130-1N	37R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

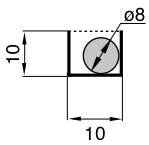


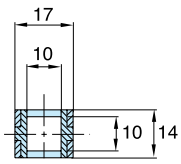
· Length $L = \frac{S}{2} + \pi R + 40$

· Radius
· Height

R	18	28	37
H	53	73	91

Max. Cable Diameter Cross Section

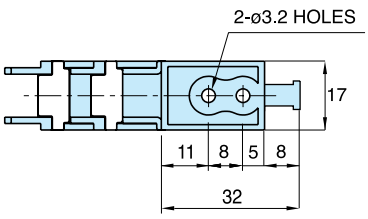




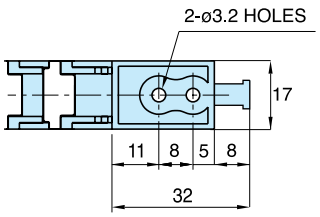
A-A Cross Section

Cover 일체형

Brackets(Hole 간격 8mm)



Fixed Bracket



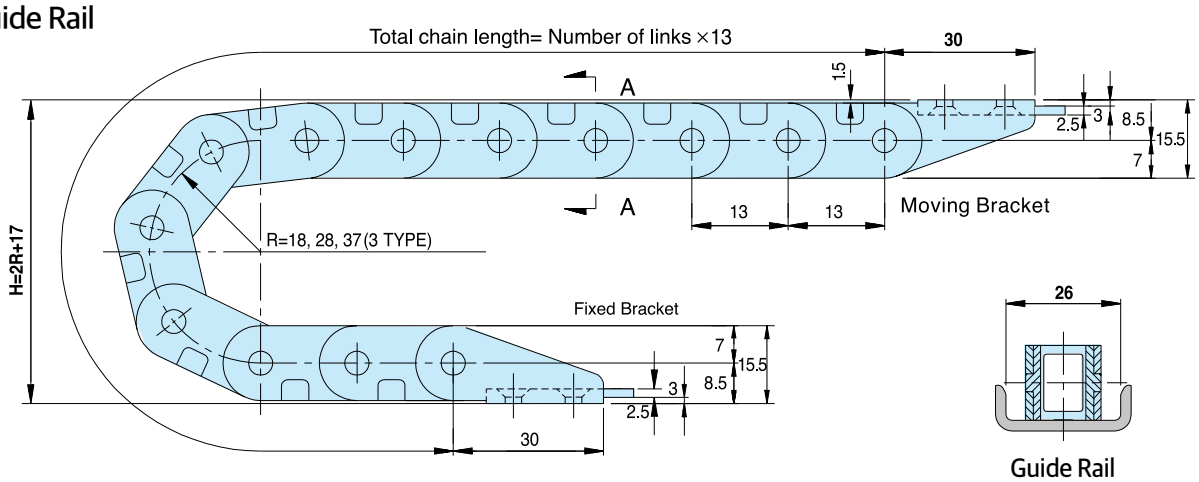
Moving Bracket

HSP 0130-1BN

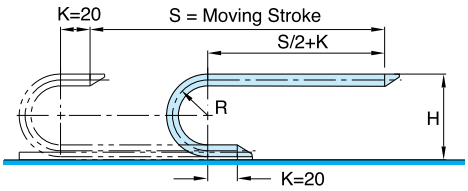
Order Example (주문예)

HSP0130-1BN	37R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



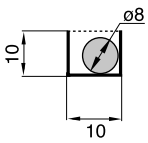
Guide Rail

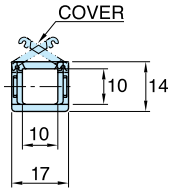


· Length $L = \frac{S}{2} + \pi R + 40$

· Radius	R	18	28	37
· Height	H	53	73	91

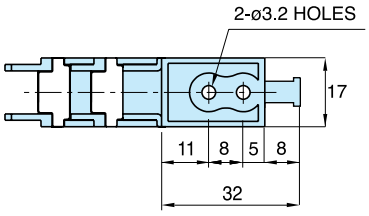
Max. Cable Diameter Cross Section



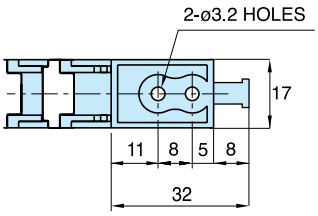


A-A Cross Section

Brackets(Hole 간격 8mm)



Fixed Bracket



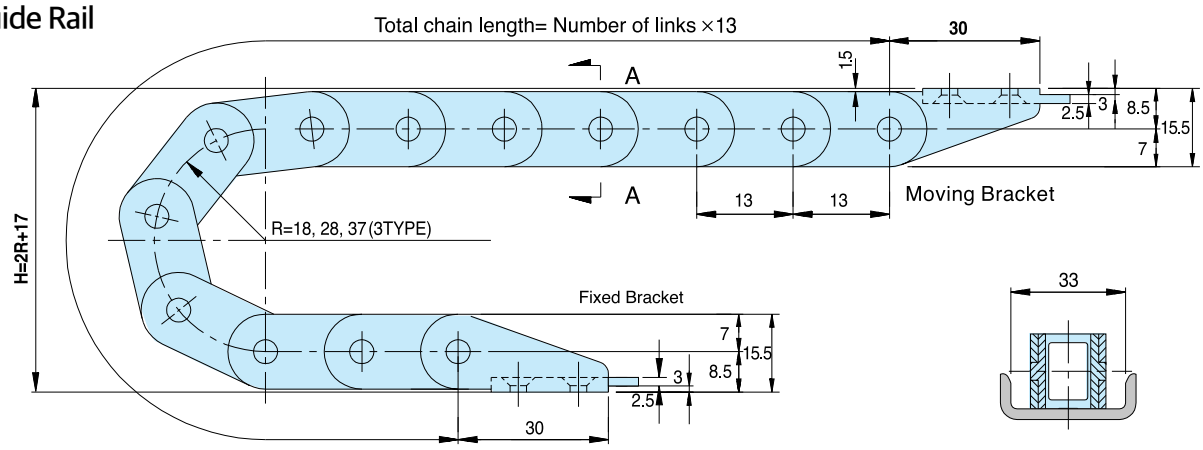
Moving Bracket

HSP 0130-2

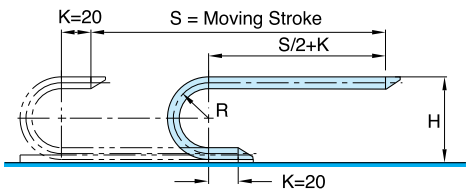
Order Example (주문예)

HSP0130-2	28R	2000L	10SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

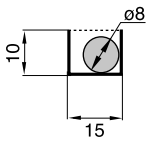


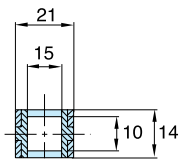
· Length $L = \frac{S}{2} + \pi R + 40$

· Radius
· Height

R	18	28	37
H	53	73	91

Max. Cable Diameter Cross Section

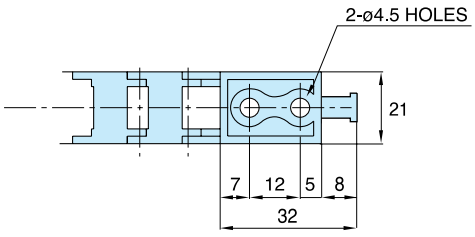




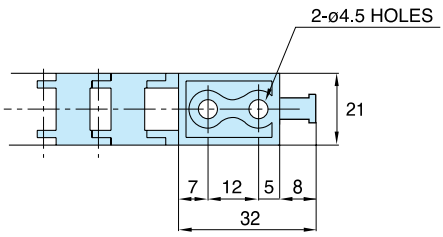
A-A Cross Section

Cover 일체형

Brackets



Fixed Bracket



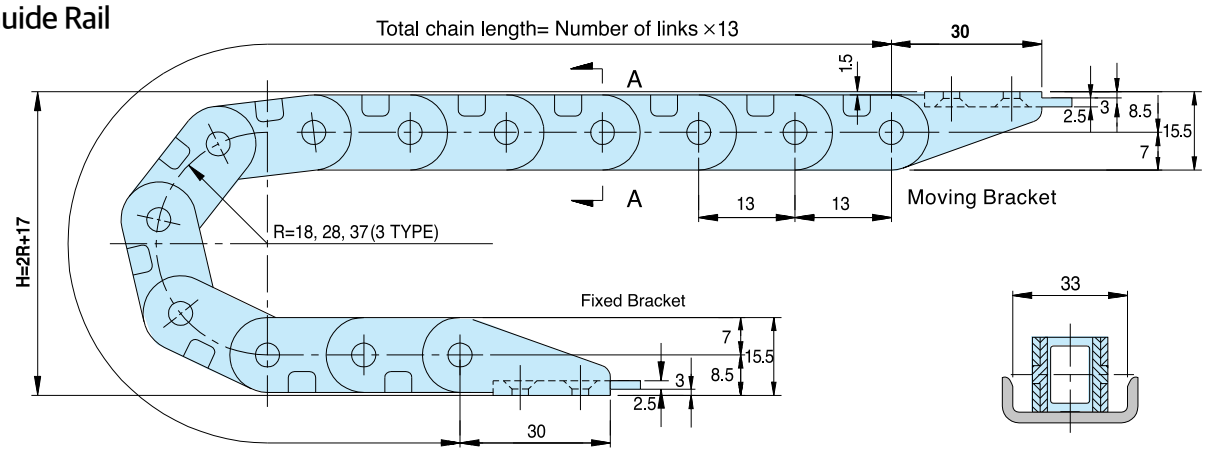
Moving Bracket

HSP 0130-2B

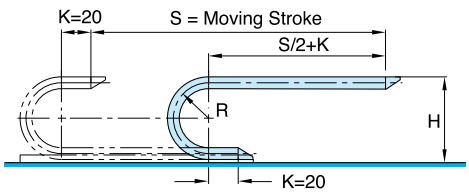
Order Example (주문예)

HSP0130-2B	28R	1000L	7SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

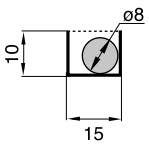


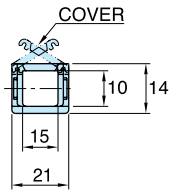
· Length $L = \frac{S}{2} + \pi R + 40$

· Radius
· Height

R	18	28	37
H	53	73	91

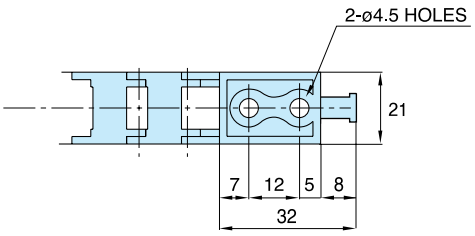
Max. Cable Diameter Cross Section



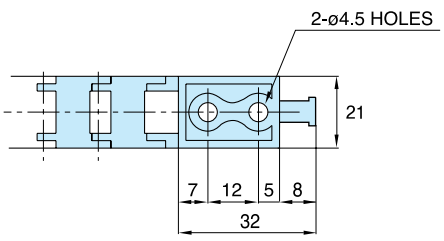


A-A Cross Section

Brackets



Fixed Bracket



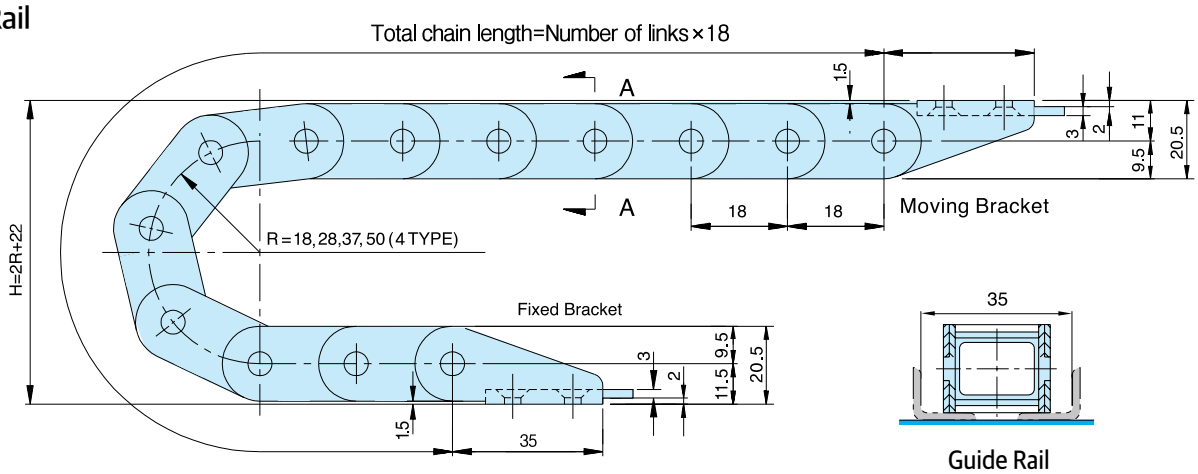
Moving Bracket

HSP 0180-1N

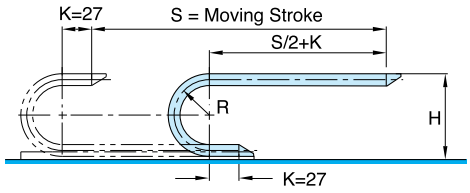
Order Example (주문예)

HSP0180-1N	50R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

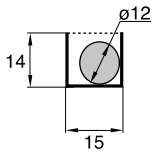


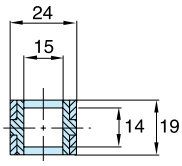
· Length $L = \frac{S}{2} + \pi R + 54$

· Radius
· Height

R	18	28	37	50
H	58	78	96	122

Max. Cable Diameter Cross Section

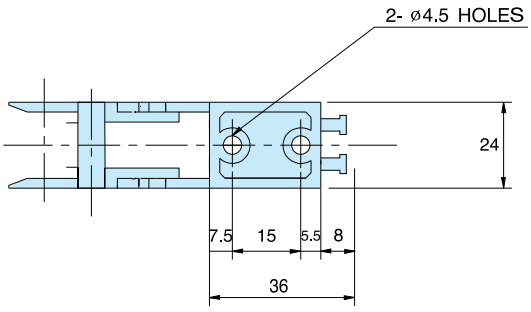




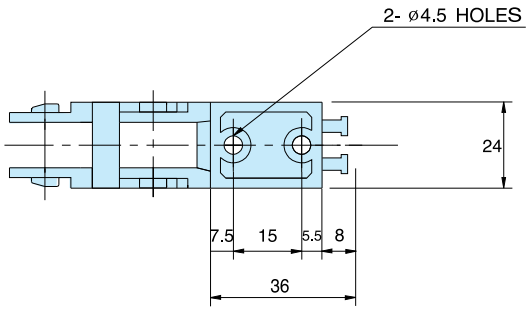
A-A Cross Section

Cover 일체형

Brackets



Fixed Bracket



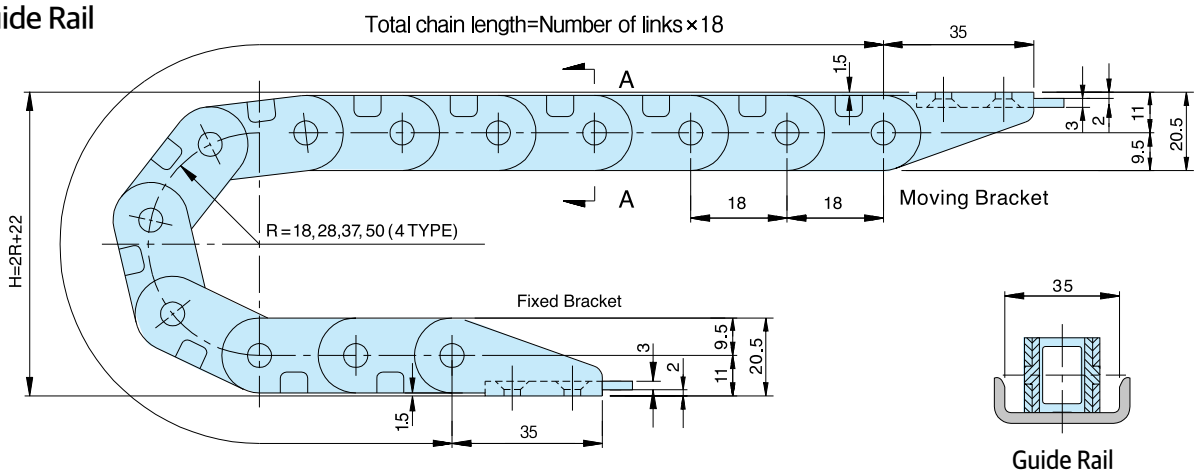
Moving Bracket

HSP 0180-1BN

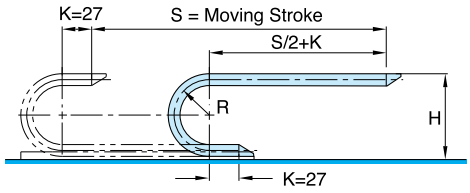
Order Example (주문예)

HSP0180-1BN	28R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

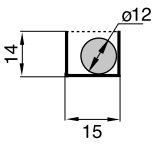


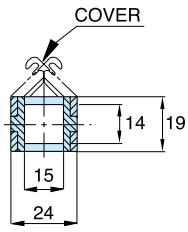
· Length $L = \frac{S}{2} + \pi R + 54$

· Radius
· Height

R	18	28	37	50
H	58	78	96	122

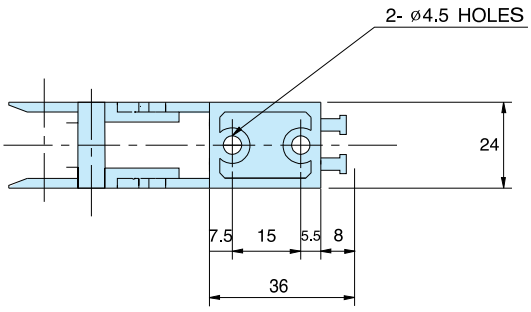
Max. Cable Diameter Cross Section



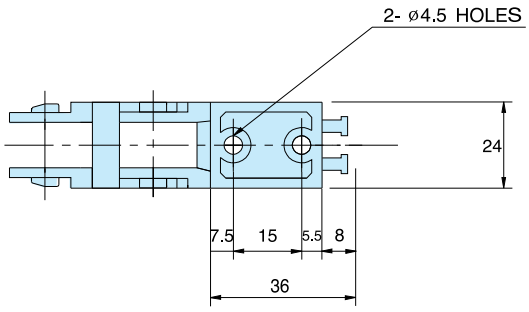


A-A Cross Section

Brackets



Fixed Bracket



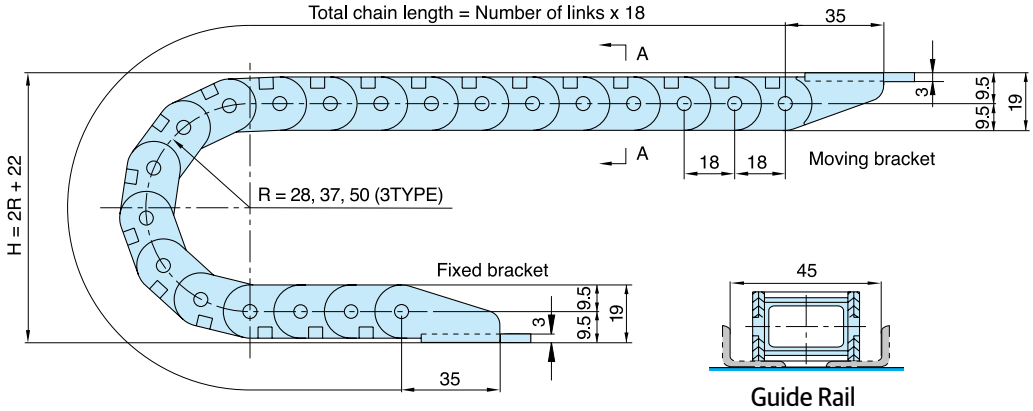
Moving Bracket

HSP 0180-2BN

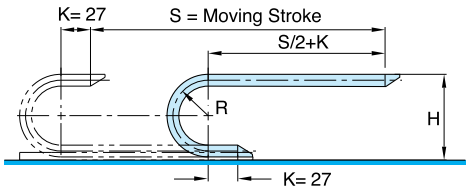
Order Example (주문예)

HSP0180-2BN	50R	1500L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

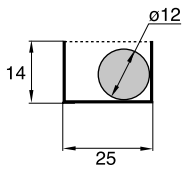


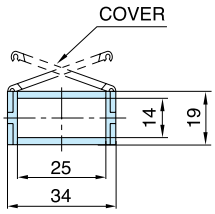
· Length $L = \frac{S}{2} + \pi R + 54$

· Radius
· Height

R	28	37	50
H	78	96	122

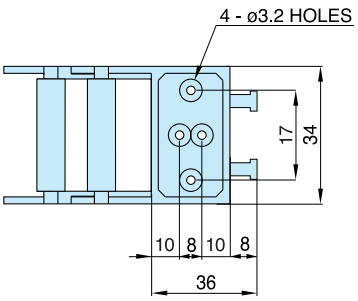
Max. Cable Diameter Cross Section



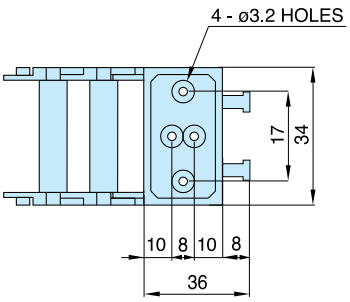


A-A Cross Section

Brackets



Fixed Bracket



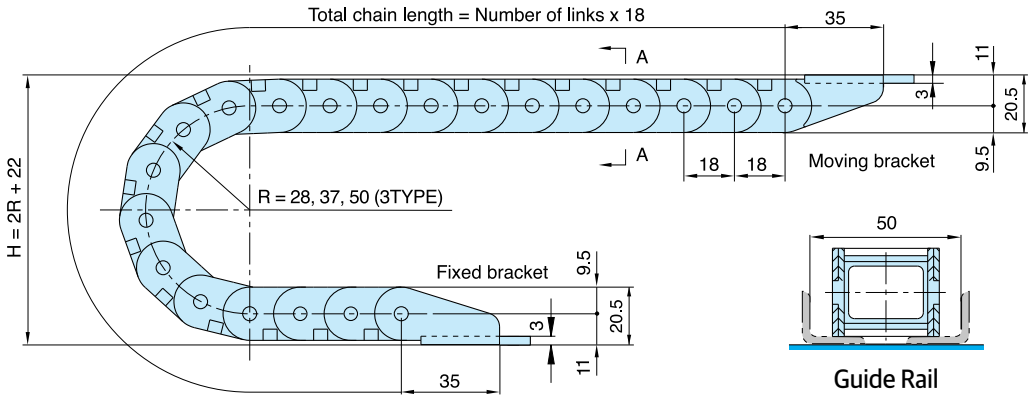
Moving Bracket

HSP 0180-3B

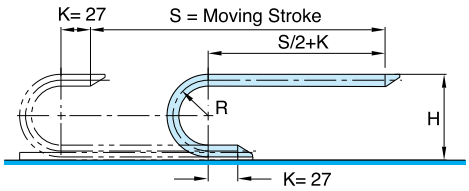
Order Example (주문예)

HSP0180-3B	50R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

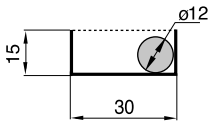


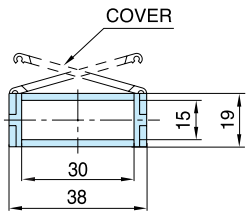
· Length $L = \frac{S}{2} + \pi R + 54$

· Radius
· Height

R	28	37	50
H	78	96	122

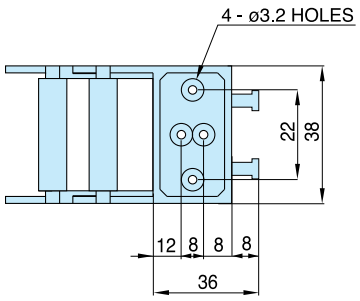
Max. Cable Diameter Cross Section



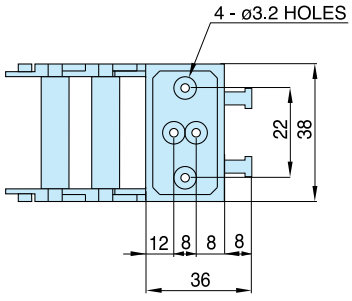


A-A Cross Section

Brackets



Fixed Bracket



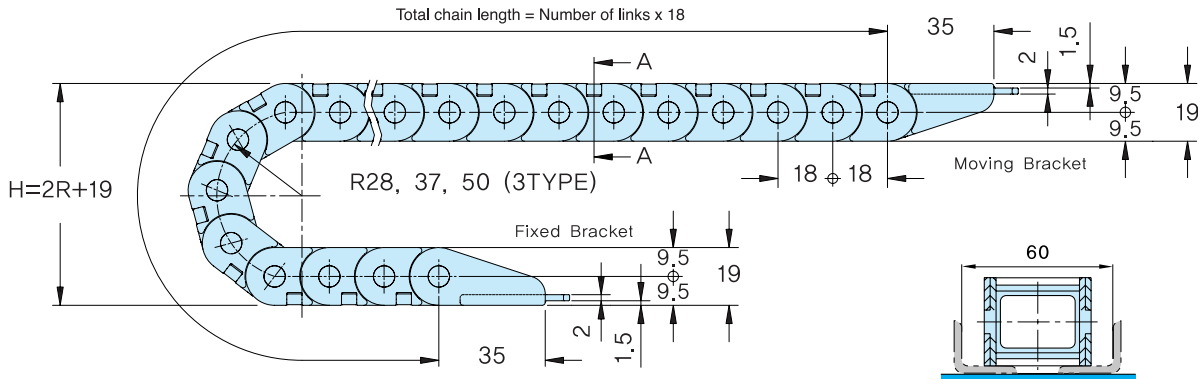
Moving Bracket

HSP 0180-4BN

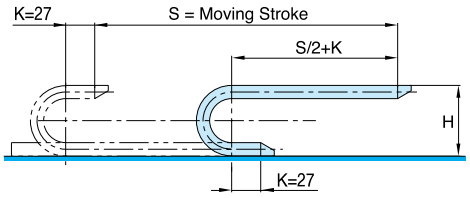
Order Example (주문예)

HSP0180-4BN	50R	1500L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

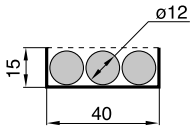


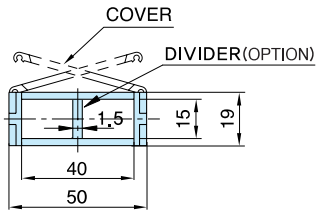
· Length $L = \frac{S}{2} + \pi R + 54$

· Radius
· Height

R	28	37	50
H	75	93	119

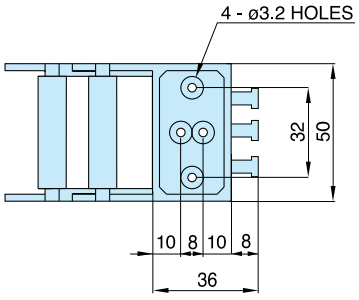
Max. Cable Diameter Cross Section



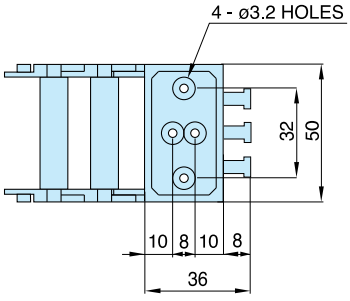


A-A Cross Section

Brackets



Fixed Bracket



Moving Bracket

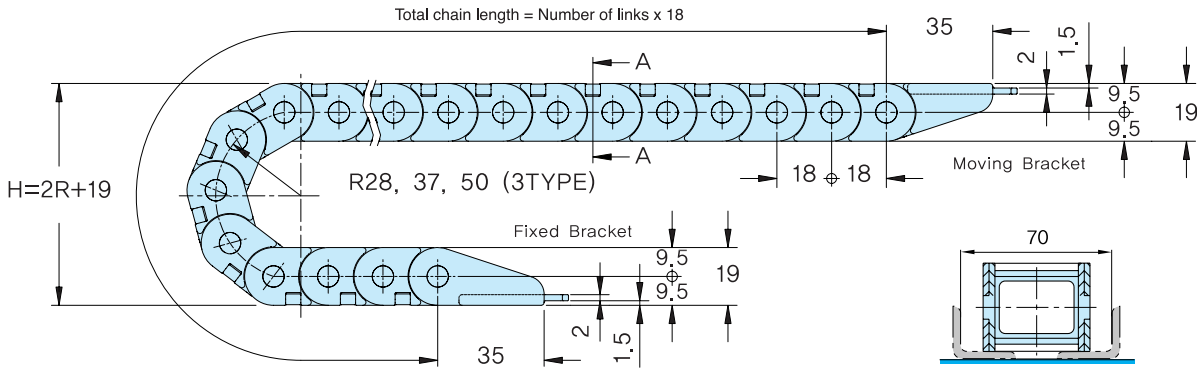
NEW

HSP 0180-50

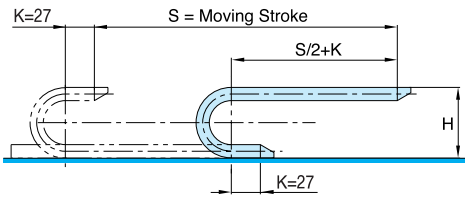
Order Example (주문예)

HSP0180-50	50R	1500L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

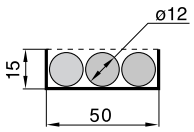


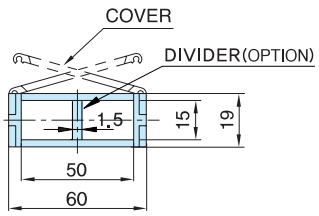
· Length $L = \frac{S}{2} + \pi R + 54$

· Radius
· Height

R	28	37	50
H	75	93	119

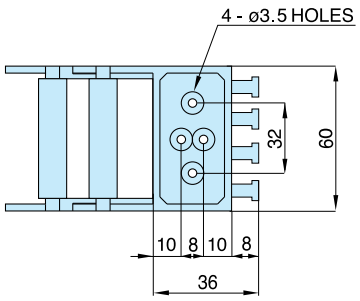
Max. Cable Diameter Cross Section



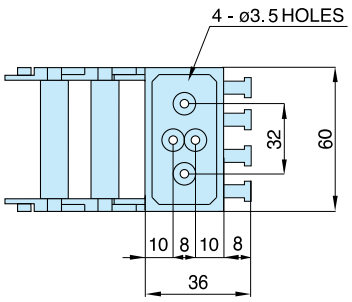


A-A Cross Section

Brackets



Fixed Bracket



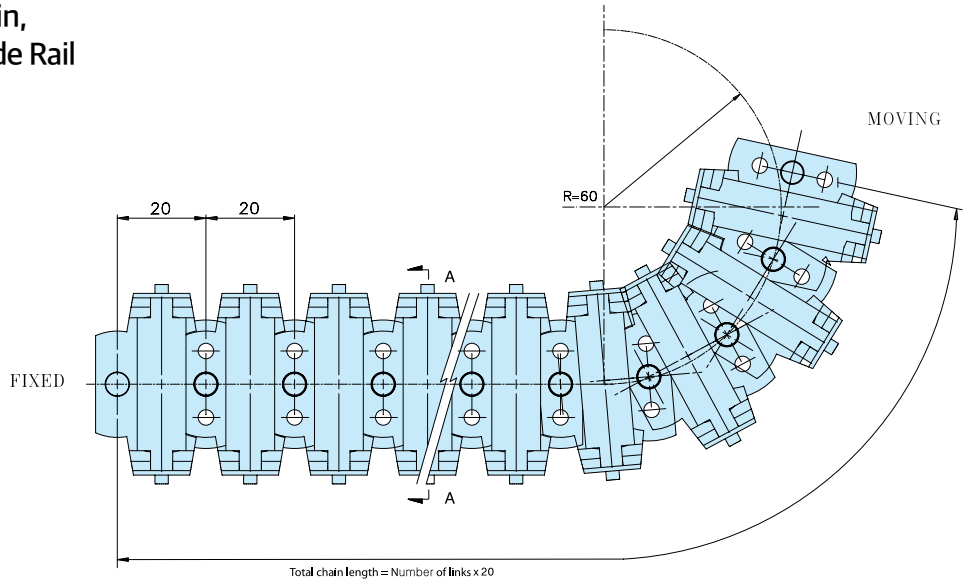
Moving Bracket

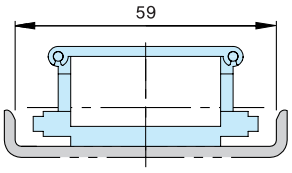
HSP 020S

Order Example (주문예)

HSP020S	60R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail

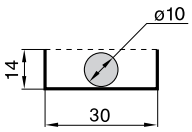


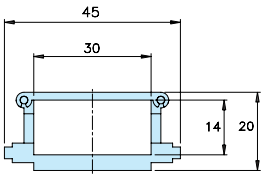


Guide Rail

· Radius	R	60
· Height	H	165

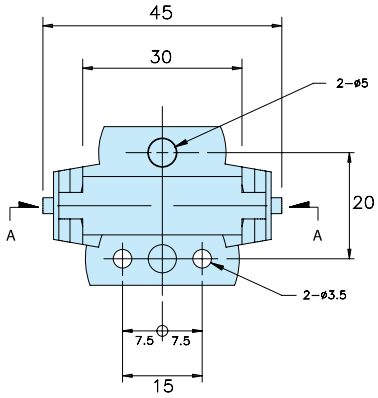
Max. Cable Diameter Cross Section





A-A Cross Section

Brackets (별도의 END BRACKET이 없이 CHAIN에 취부)



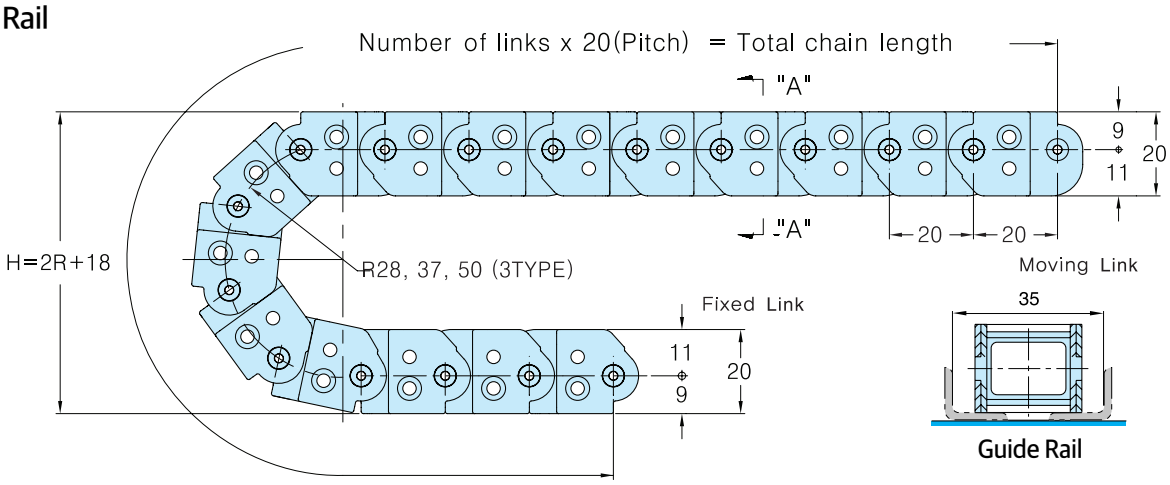
NEW

HSP 0200-1E

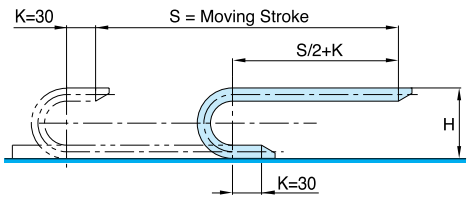
Order Example (주문예)

HSP0200-1E	28R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

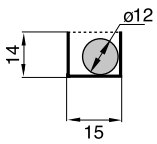


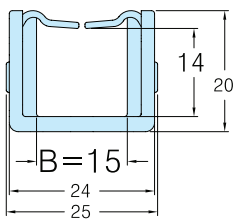
· Length $L = \frac{S}{2} + \pi R + 60$

· Radius
· Height

R	28	37	50
H	74	92	118

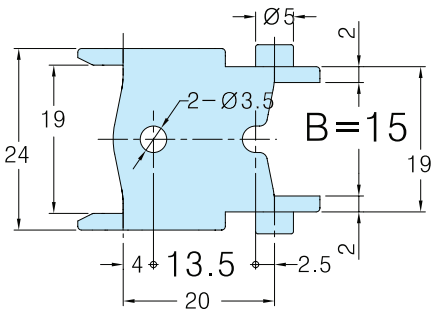
Max. Cable Diameter Cross Section





A-A Cross Section

Brackets (별도의 END BRACKET이 없이 CHAIN에 취부)



Moving·Fixed Link

HSP

Hanshin RoboChain®

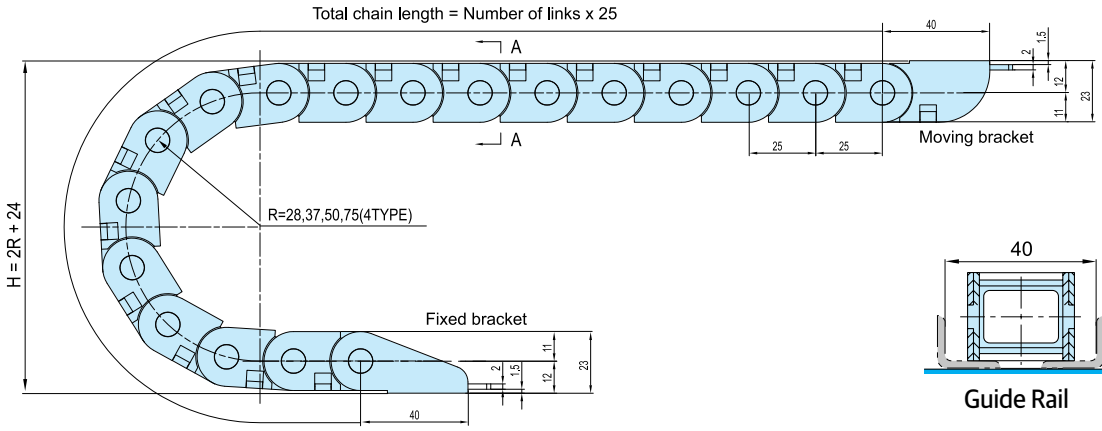
NEW

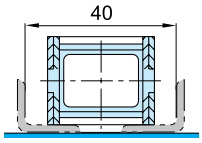
HSP 0250-20

Order Example (주문예)

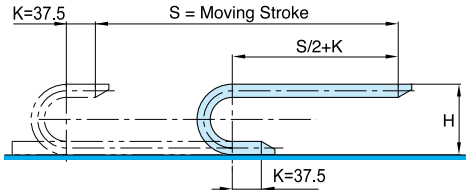
HSP0250-20	28R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail





Guide Rail

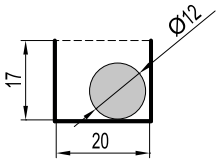


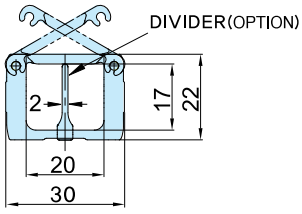
· Length $L = \frac{S}{2} + \pi R + 75$

· Radius
· Height

R	28	37	50	75
H	80	98	124	174

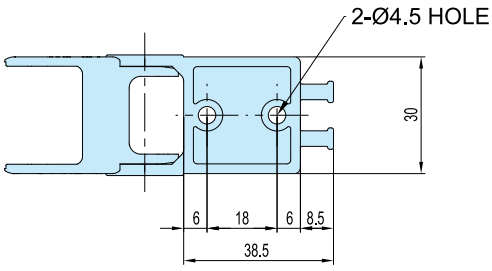
Max. Cable Diameter Cross Section



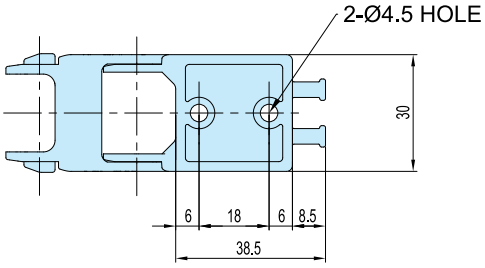


A-A Cross Section

Brackets



Fixed Bracket



Moving Bracket

Hanshin RoboChain®

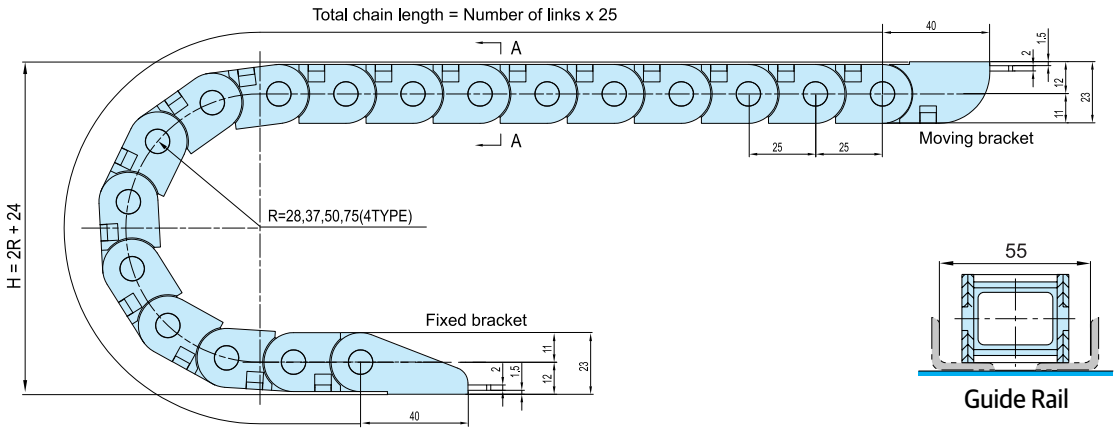
NEW

HSP 0250-35

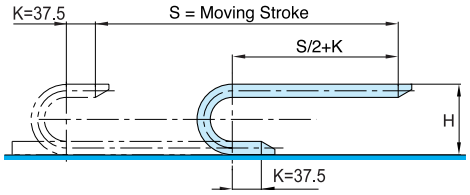
Order Example (주문예)

HSP0250-35	28R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

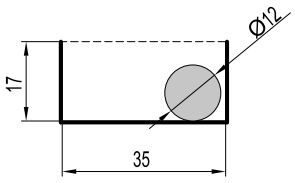


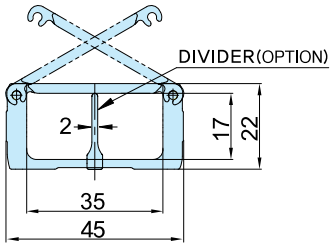
· Length $L = \frac{S}{2} + \pi R + 75$

· Radius
· Height

R	28	37	50	75
H	80	98	124	174

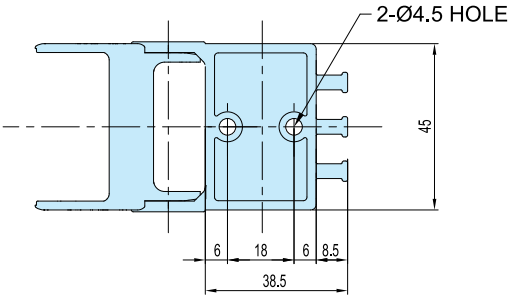
Max. Cable Diameter Cross Section



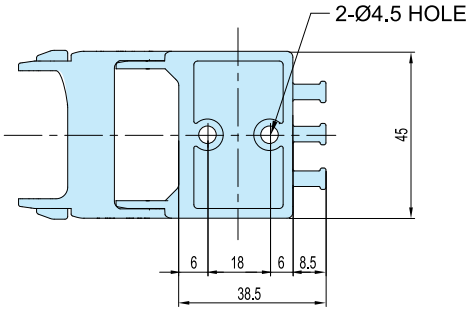


A-A Cross Section

Brackets



Fixed Bracket



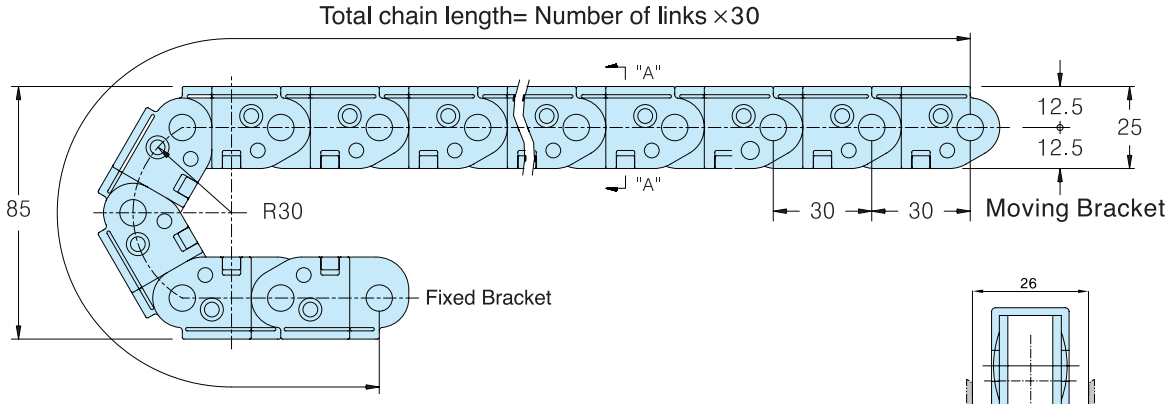
Moving Bracket

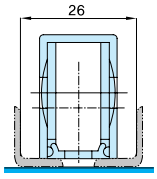
HSP 0300-1B

Order Example (주문예)

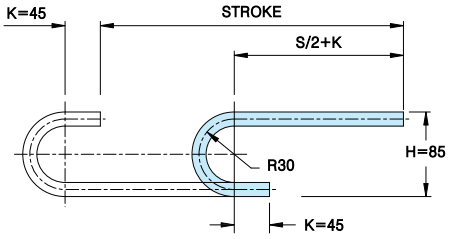
HSP0300-1B	30R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail





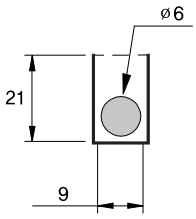
Guide Rail

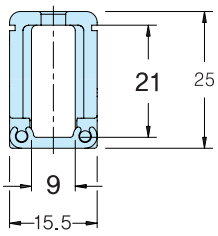


· Length $L = \frac{S}{2} + \pi R + 90$

· Radius	R	30
· Height	H	85

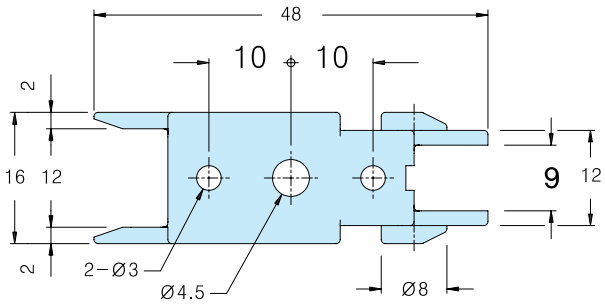
Max. Cable Diameter Cross Section





A-A Cross Section

Brackets (별도의 END BRACKET이 없이 CHAIN에 취부)

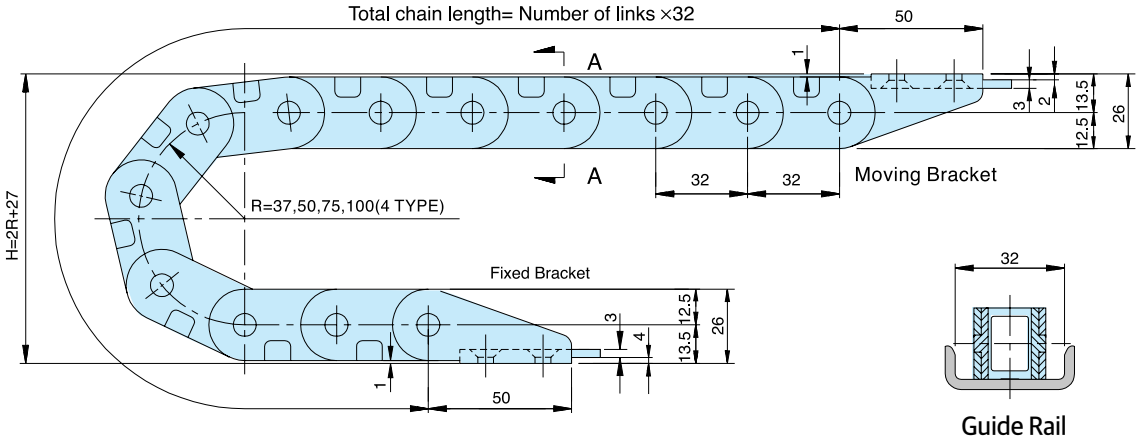


HSP 0320-1BN

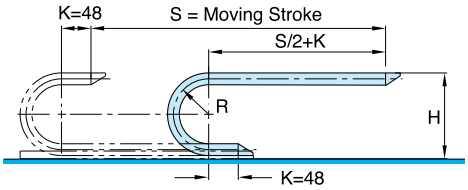
Order Example (주문예)

HSP0320-1BN	50R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



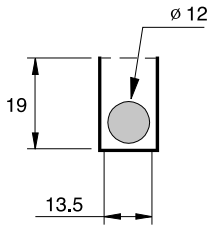
Guide Rail

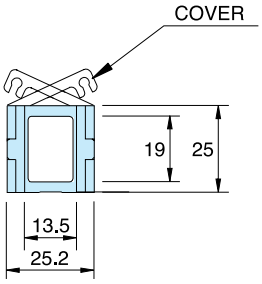


· Length $L = \frac{S}{2} + \pi R + 96$

· Radius	R	37	50	75	100
· Height	H	101	127	177	227

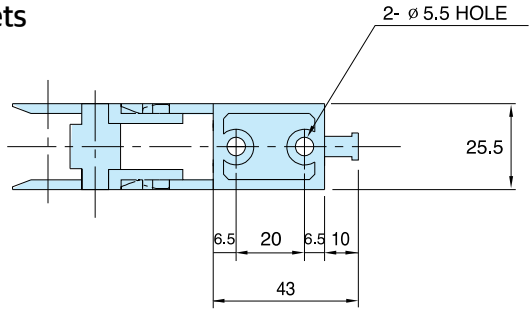
Max. Cable Diameter Cross Section



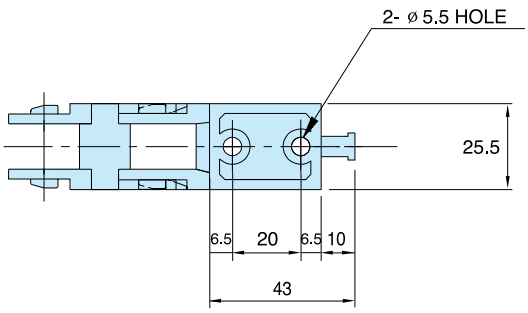


A-A Cross Section

Brackets



Fixed Bracket



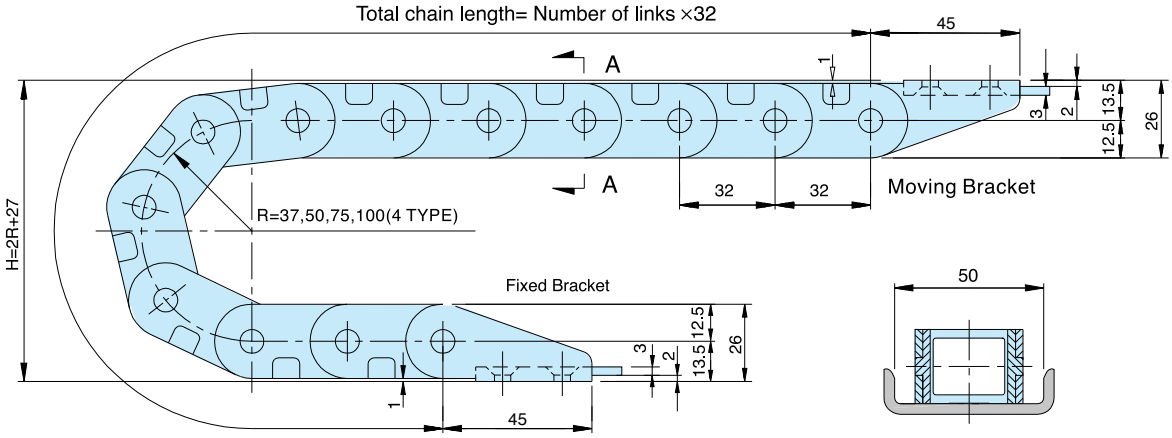
Moving Bracket

HSP 0320-24
(HSP 0320-2BN)

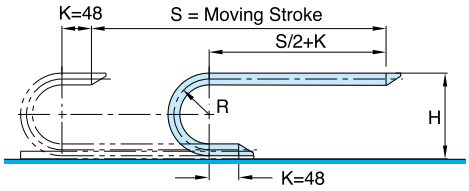
Order Example (주문예)

HSP0320-2BN	75R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

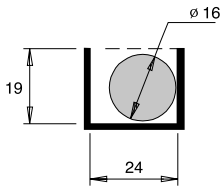


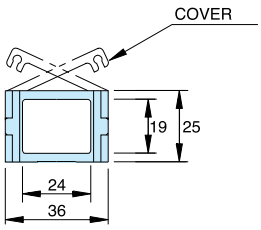
· Length $L = \frac{S}{2} + \pi R + 96$

· Radius
· Height

R	37	50	75	100
H	101	127	177	227

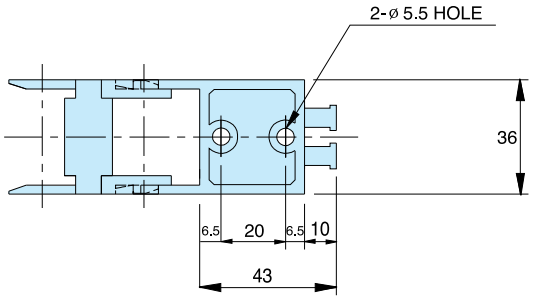
Max. Cable Diameter Cross Section



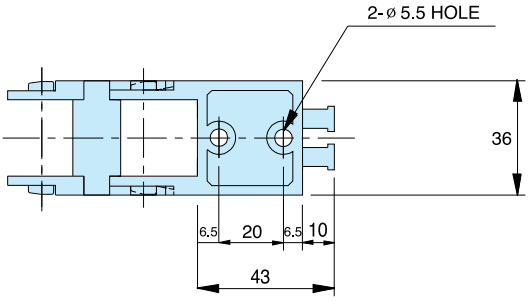


A-A Cross Section

Brackets



Fixed Bracket



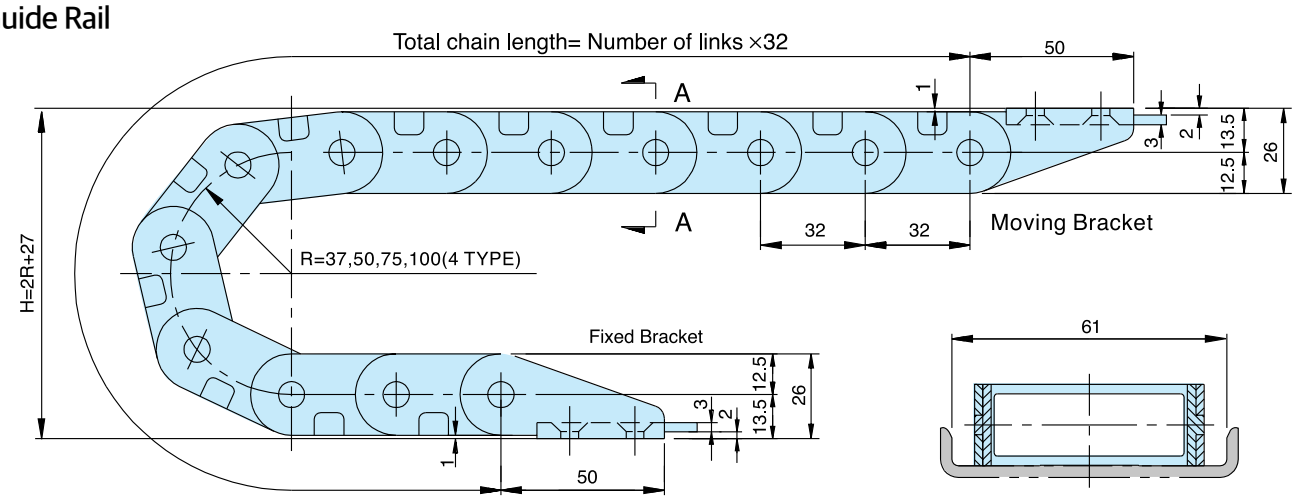
Moving Bracket

HSP 0320-35B

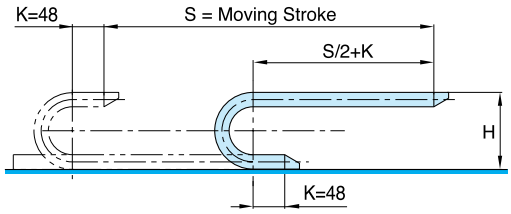
Order Example (주문예)

HSP0320-35B	37R	2000L	10SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

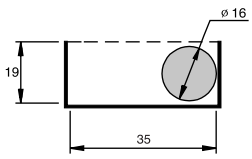


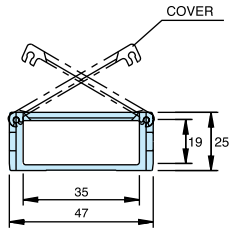
· Length $L = \frac{S}{2} + \pi R + 96$

· Radius
· Height

R	37	50	75	100
H	101	127	177	227

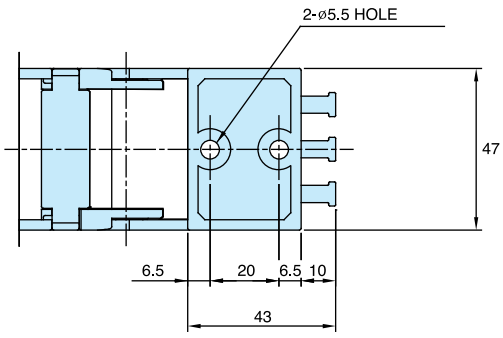
Max. Cable Diameter Cross Section



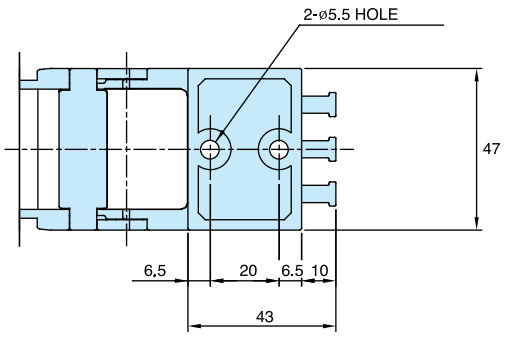


A-A Cross Section

Brackets



Fixed Bracket



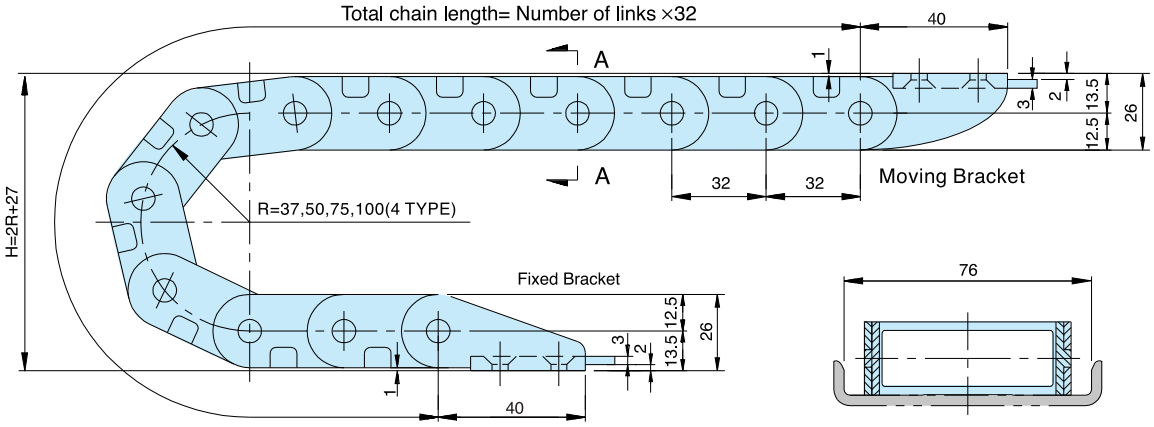
Moving Bracket

HSP 0320-50
(HSP 0320-3BN)

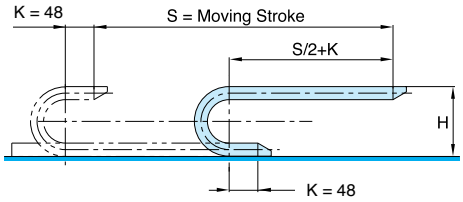
Order Example (주문예)

HSP0320-3BN	50R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

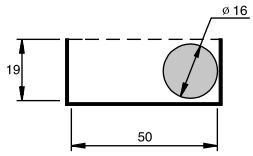


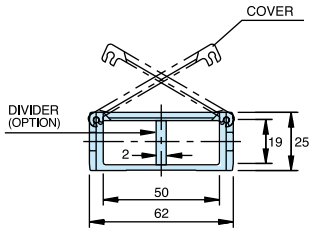
· Length $L = \frac{S}{2} + \pi R + 96$

· Radius
· Height

R	37	50	75	100
H	101	127	177	227

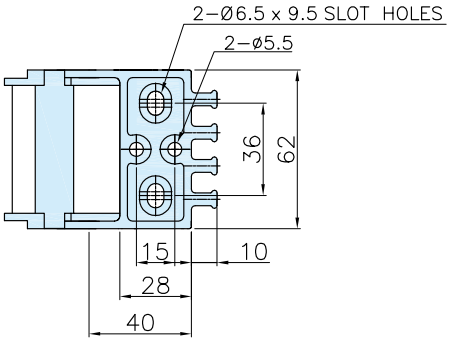
Max. Cable Diameter Cross Section



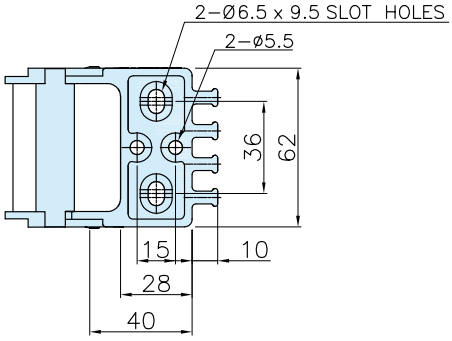


A-A Cross Section

Brackets



Fixed Bracket



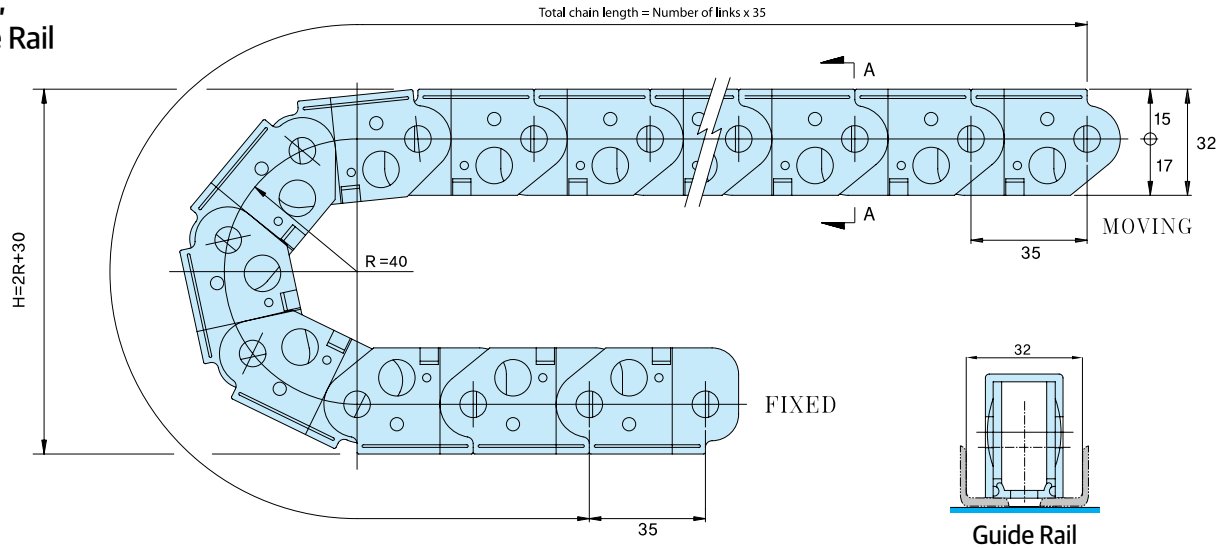
Moving Bracket

HSP 0350-1B

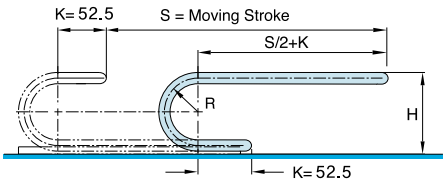
Order Example (주문예)

HSP0350-1B	40R	2000L	10SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

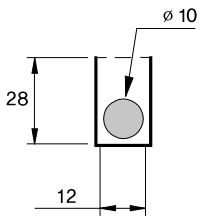


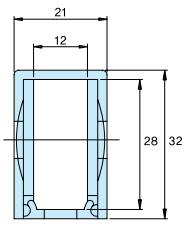
· Length $L = \frac{S}{2} + \pi R + 105$

· Radius
· Height

R	40
H	110

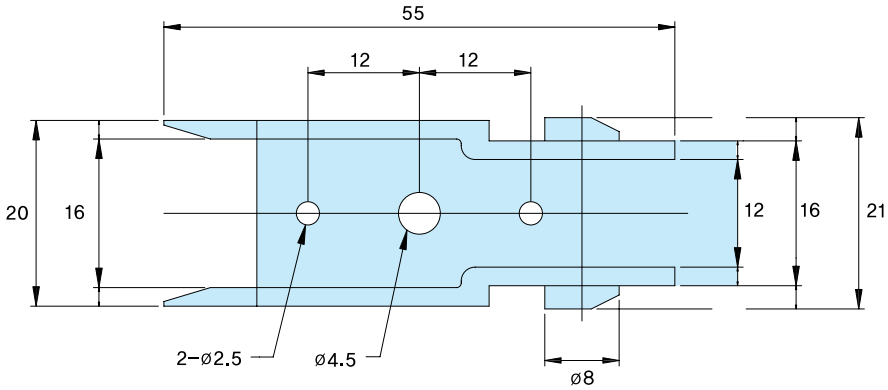
Max. Cable Diameter Cross Section





A-A Cross Section

Brackets (별도의 END BRACKET이 없이 CHAIN에 취부)

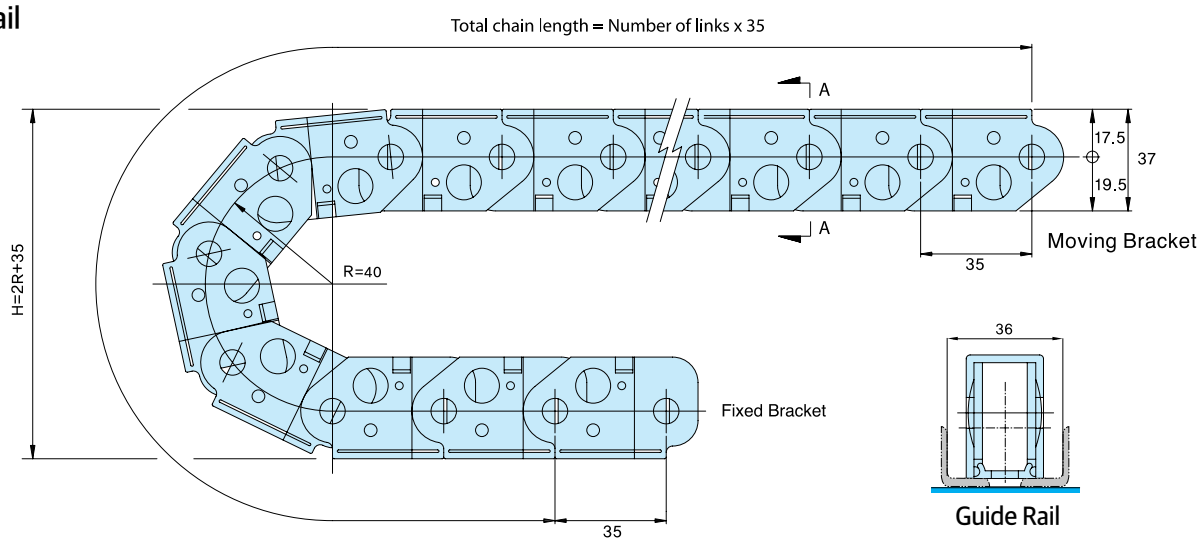


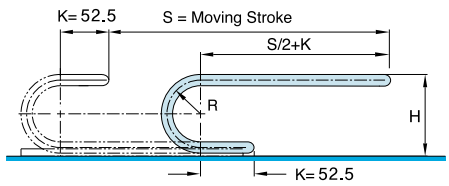
HSP 0350-2B

Order Example (주문예)

HSP0350-2B	40R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



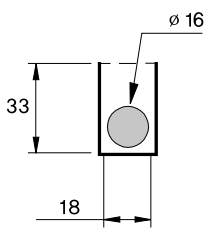


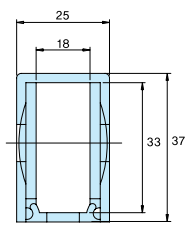
· Length $L = \frac{S}{2} + \pi R + 105$

· Radius
· Height

R	40
H	115

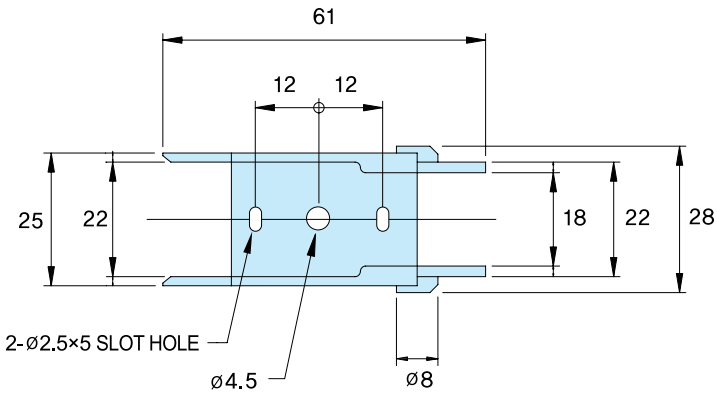
Max. Cable Diameter Cross Section





A-A Cross Section

Brackets (별도의 END BRACKET 없이 부착 가능)

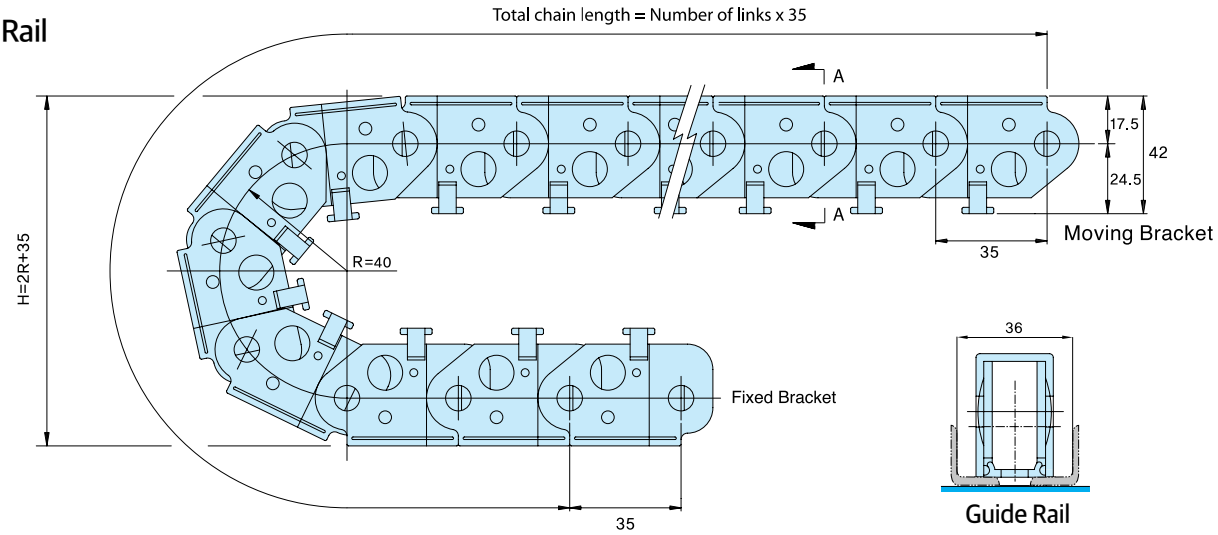


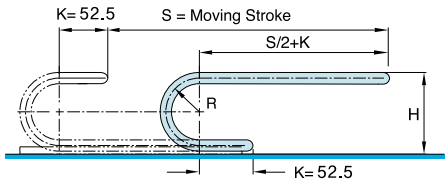
HSP 0350-2BW

Order Example (주문예)

HSP0350-2BW	40R	1000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



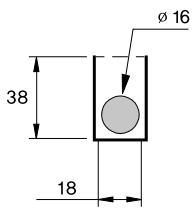


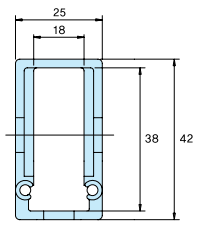
· Length $L = \frac{S}{2} + \pi R + 105$

· Radius
· Height

R	40
H	115

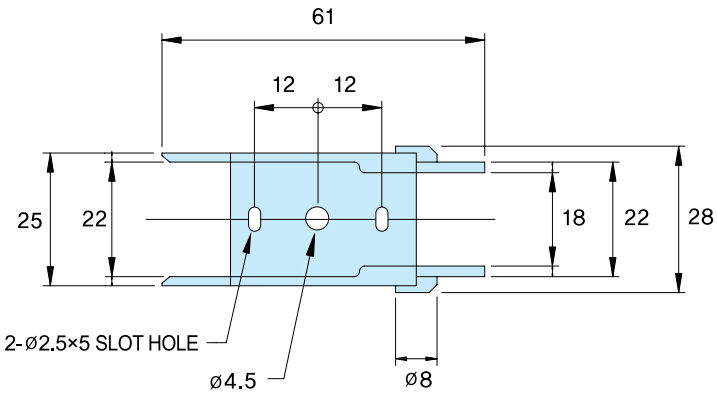
Max. Cable Diameter Cross Section





A-A Cross Section

Brackets (별도의 END BRACKET 없이 CHAIN에 취부)



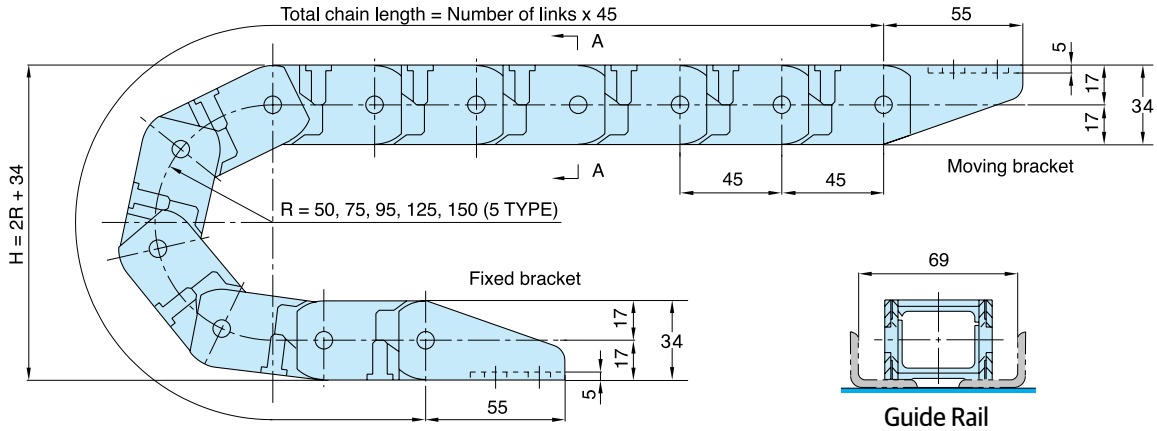
HSP 0450-1B 제품은 기존제품으로 신형인 HSP 0450-1BN으로 권장합니다.

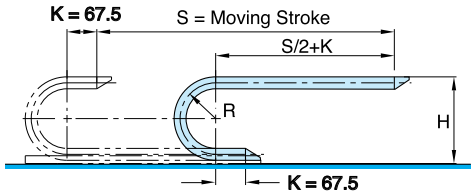
HSP 0450-1B

Order Example (주문예)

HSP0450-1B	150R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



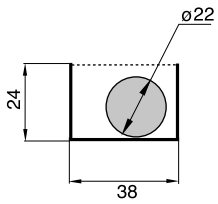


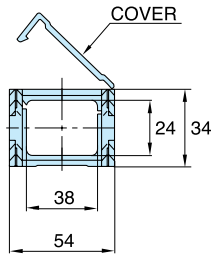
· Length $L = \frac{S}{2} + \pi R + 135$

· Radius
· Height

R	50	75	95	125	150
H	134	184	224	284	334

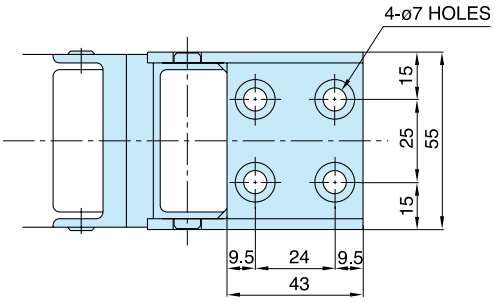
Max. Cable Diameter Cross Section



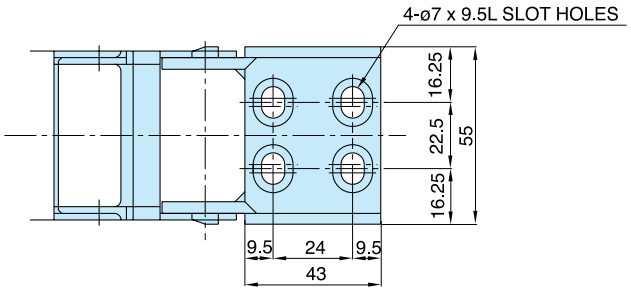


A-A Cross Section

Brackets



Fixed Bracket



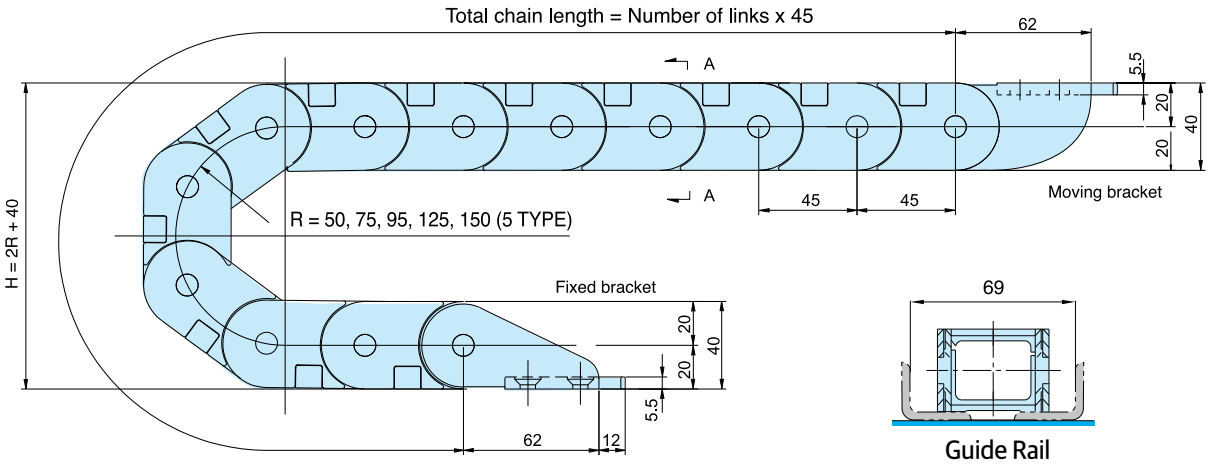
Moving Bracket

HSP 0450-1BN

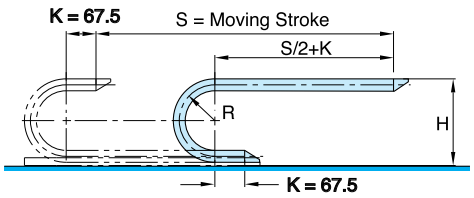
Order Example (주문예)

HSP0450-1BN	150R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

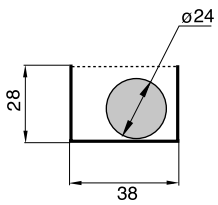


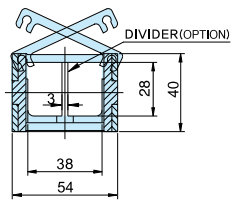
· Length $L = \frac{S}{2} + \pi R + 135$

· Radius
· Height

R	50	75	95	125	150
H	140	190	230	290	340

Max. Cable Diameter Cross Section

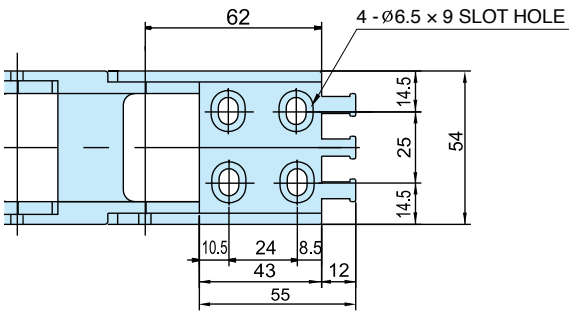




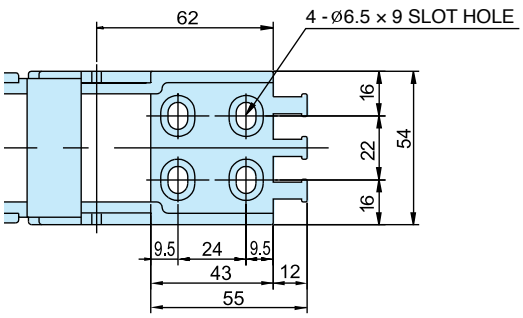
A-A Cross Section

HSP 0450-1BNC
See page 84

Brackets



Fixed Bracket



Moving Bracket

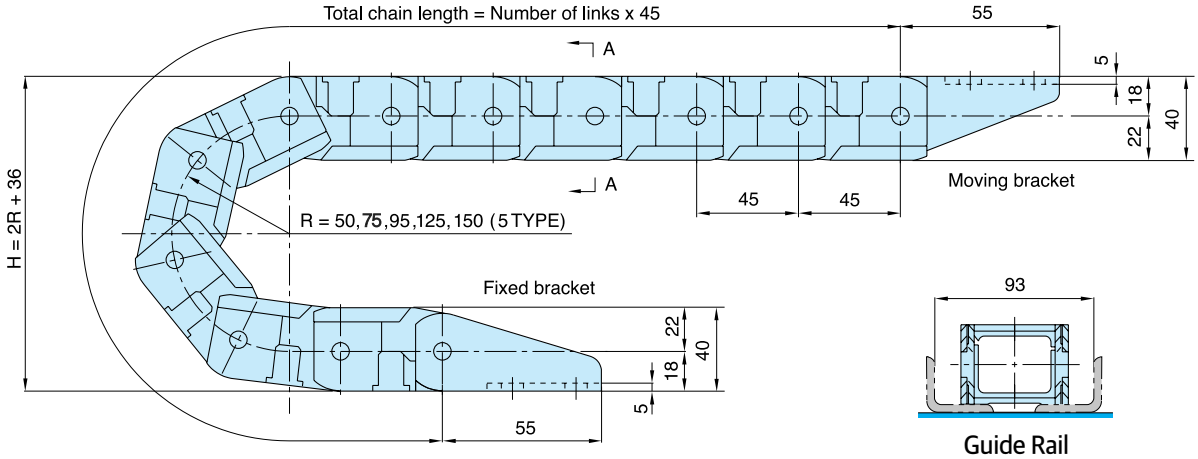
HSP 0450-2B 제품은 기존제품으로 신형인 HSP 0450-2BN으로 권장합니다.

HSP 0450-2B

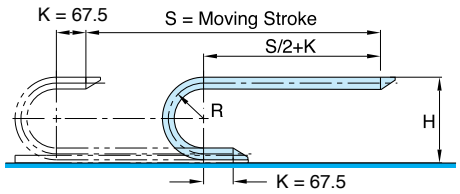
Order Example (주문예)

HSP0450-2B	150R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

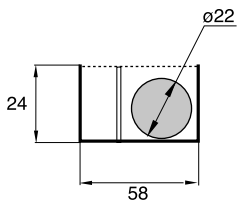


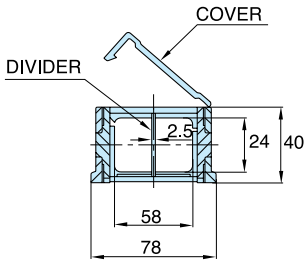
· Length $L = \frac{S}{2} + \pi R + 135$

· Radius
· Height

R	50	75	95	125	150
H	136	190	226	286	336

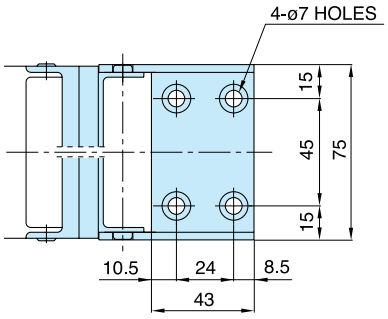
Max. Cable Diameter Cross Section



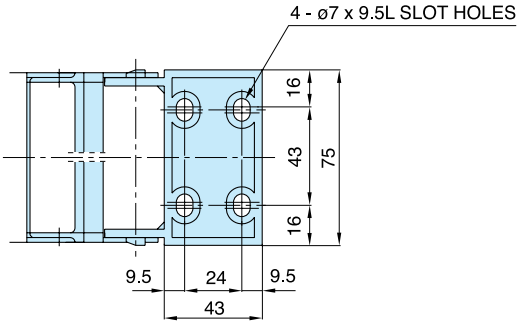


A-A Cross Section

Brackets



Fixed Bracket



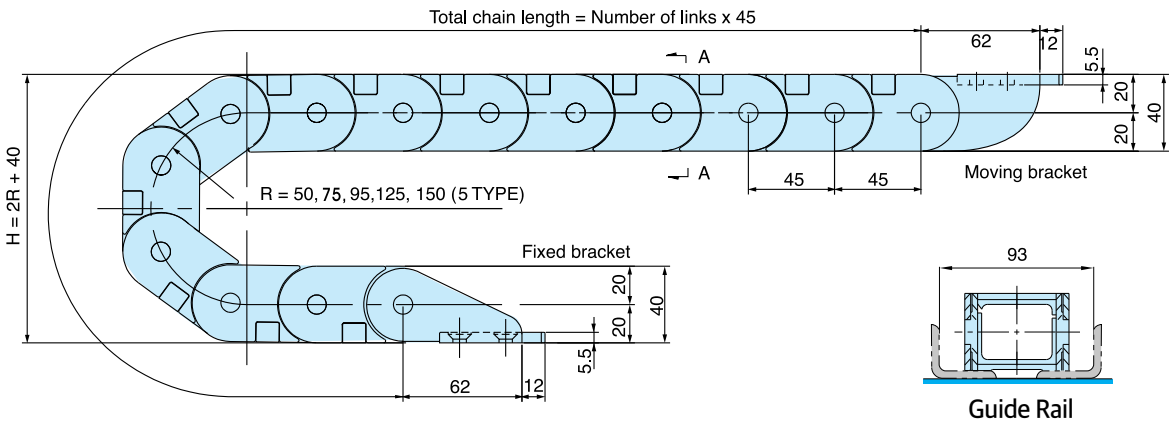
Moving Bracket

HSP 0450-2BN

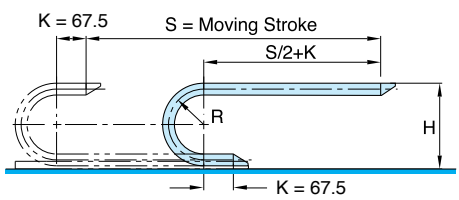
Order Example (주문예)

HSP0450-2BN	150R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

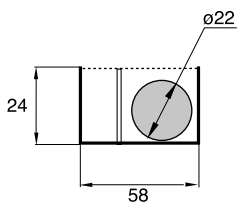


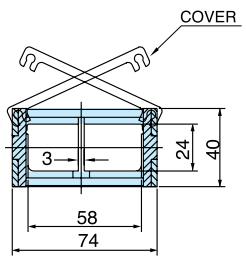
· Length $L = \frac{S}{2} + \pi R + 135$

· Radius
· Height

R	50	75	95	125	150
H	140	190	230	290	340

Max. Cable Diameter Cross Section

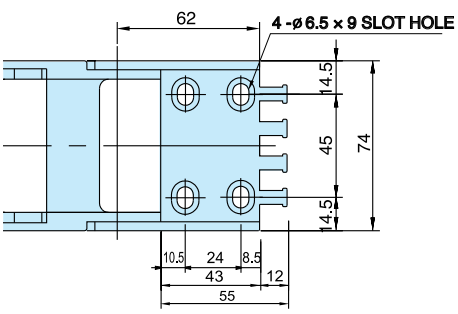




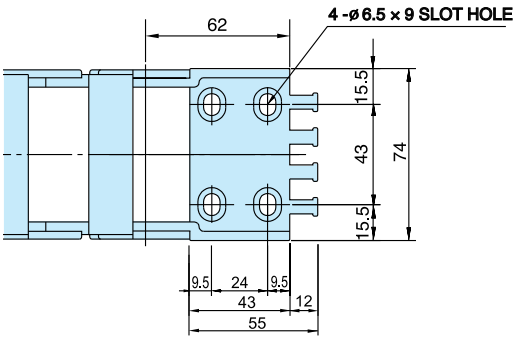
A-A Cross Section

HSP 0450-2BNC
See page 85

Brackets



Fixed Bracket



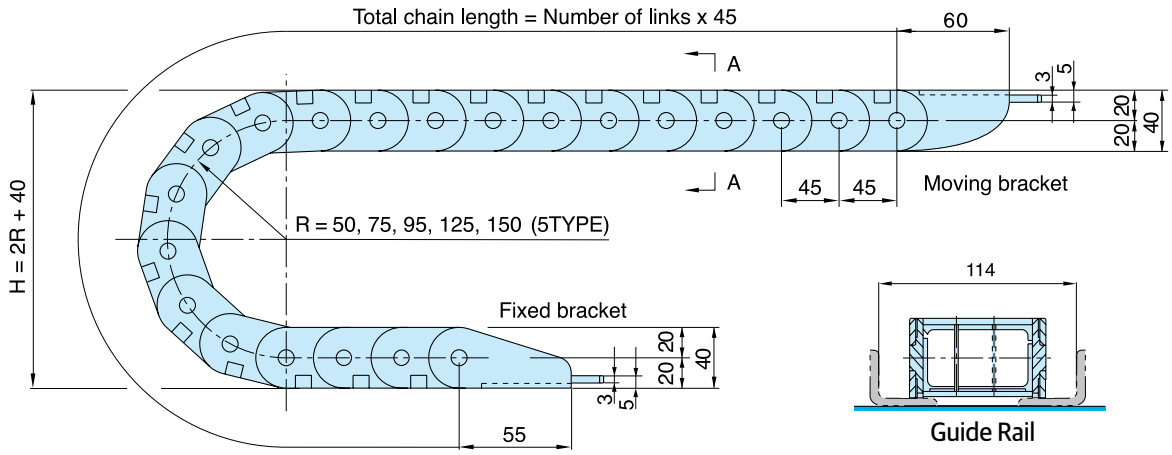
Moving Bracket

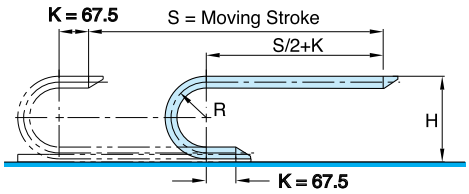
HSP 0450-3BN

Order Example (주문예)

HSP0450-3BN	50R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



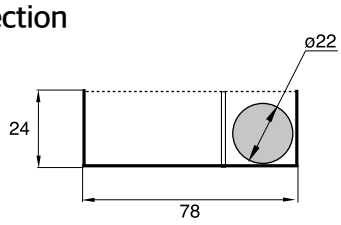


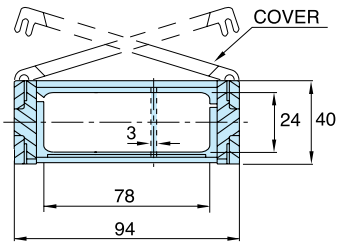
· Length $L = \frac{S}{2} + \pi R + 135$

· Radius
· Height

R	50	75	95	125	150
H	140	190	230	290	340

Max. Cable Diameter Cross Section

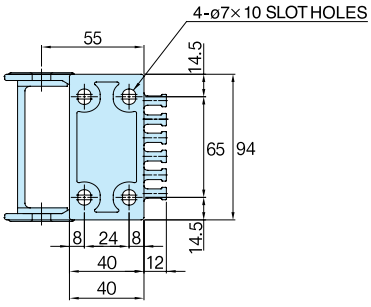




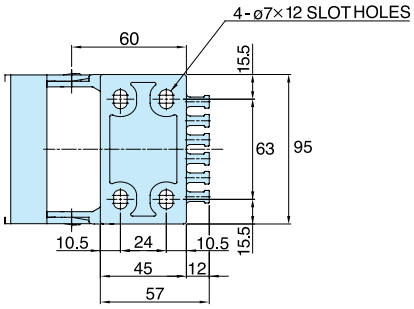
A-A Cross Section

HSP 0450-3BNC
See page 86

Brackets



Fixed Bracket



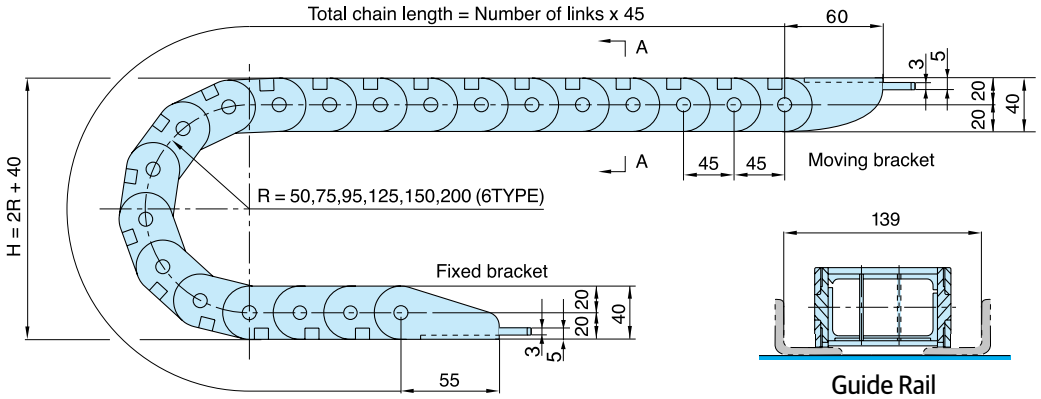
Moving Bracket

HSP 0450-4BN

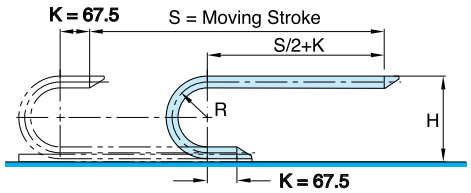
Order Example (주문예)

HSP0450-4BN	150R	3000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail



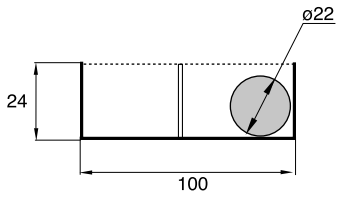
· Length $L = \frac{S}{2} + \pi R + 135$

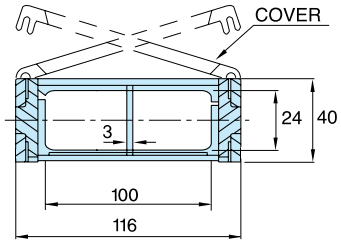
· Radius
· Height

R	50	75	95	125	150	200
H	140	190	230	290	340	440

HSP

Max. Cable Diameter Cross Section

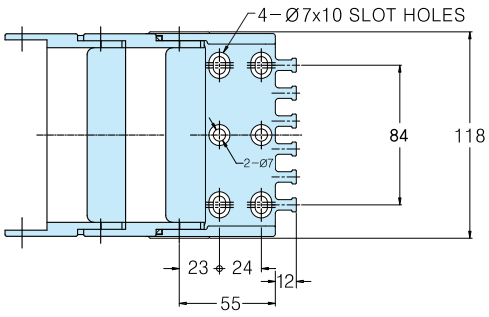




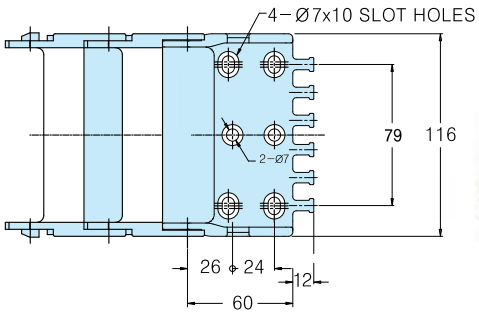
A-A Cross Section

HSP 0450-4BNC
See page 87

Brackets



Fixed Bracket



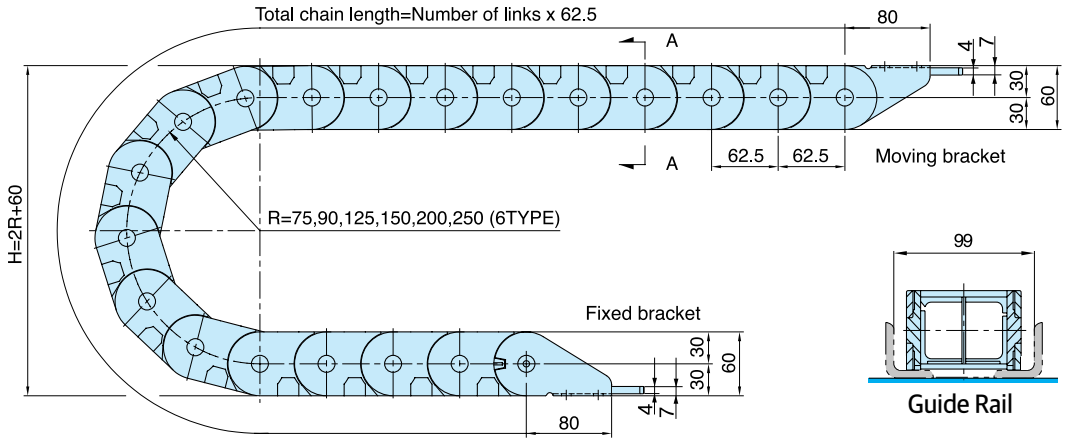
Moving Bracket

HSP 0625-1BN

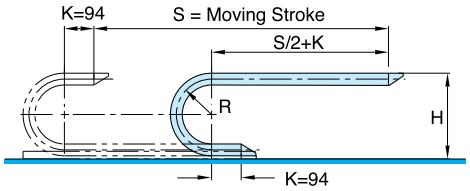
Order Example (주문예)

HSP0625-1BN	90R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

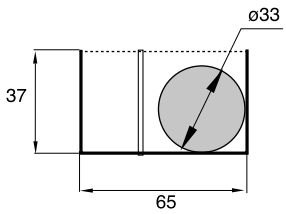


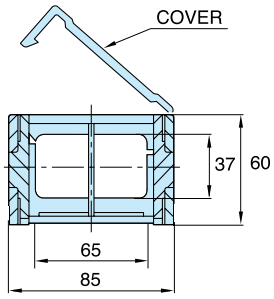
· Length $L = \frac{S}{2} + \pi R + 188$

· Radius
· Height

R	75	90	125	150	200	250
H	210	240	310	360	460	560

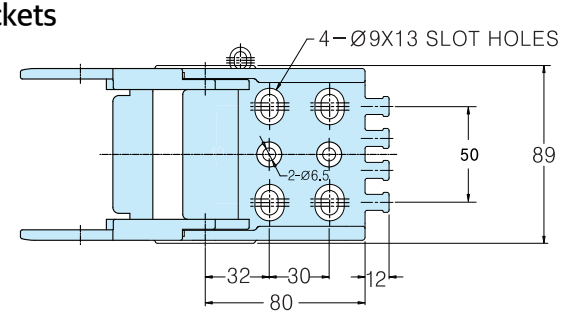
Max. Cable Diameter Cross Section



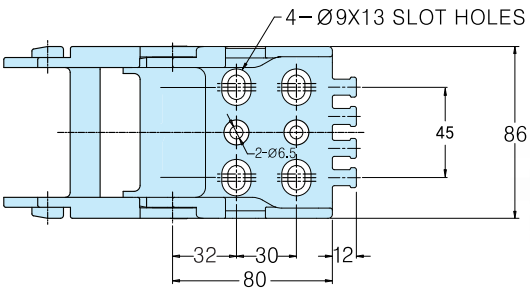


A-A Cross Section

Brackets



Fixed Bracket



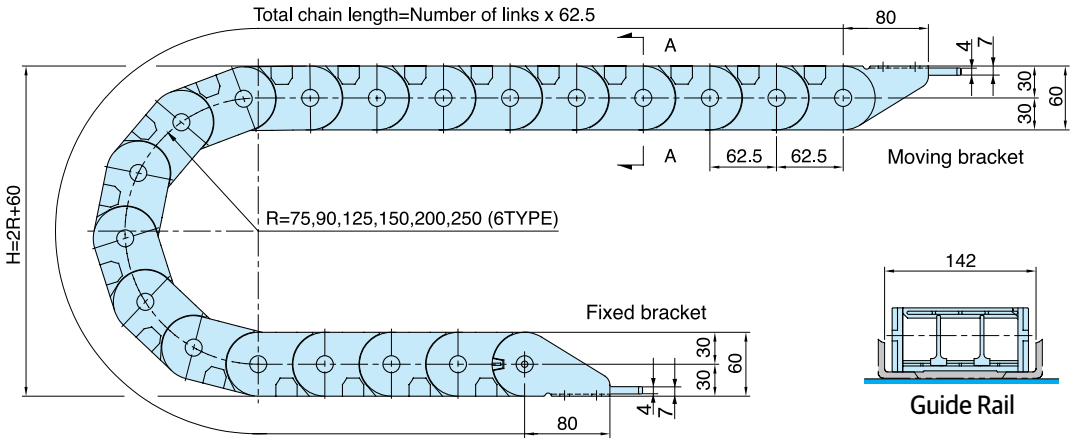
Moving Bracket

HSP 0625-2BN

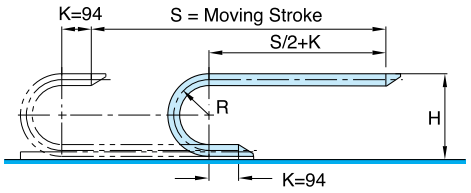
Order Example (주문예)

HSP0625-2BN	90R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

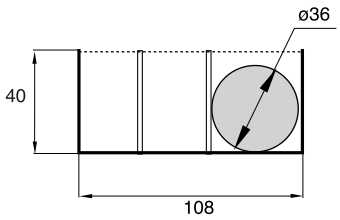


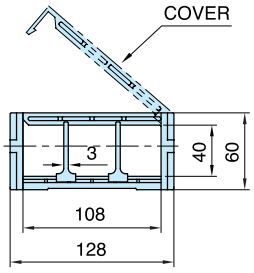
· Length $L = \frac{S}{2} + \pi R + 188$

· Radius
· Height

R	75	90	125	150	200	250
H	210	240	310	360	460	560

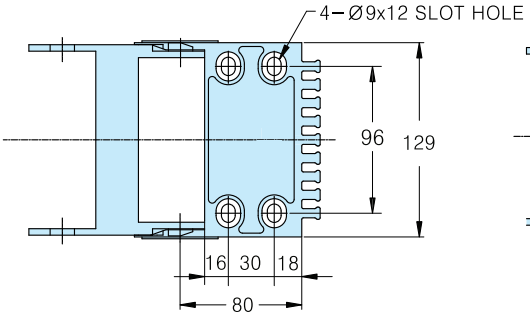
Max. Cable Diameter Cross Section



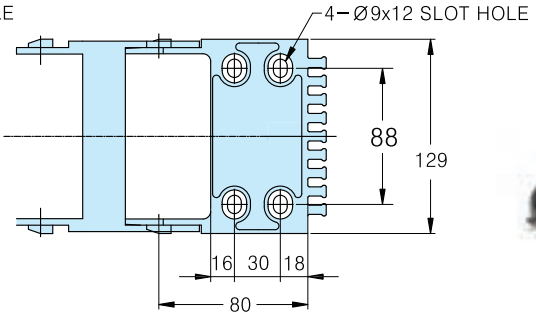


A-A Cross Section

Brackets



Fixed Bracket



Moving Bracket

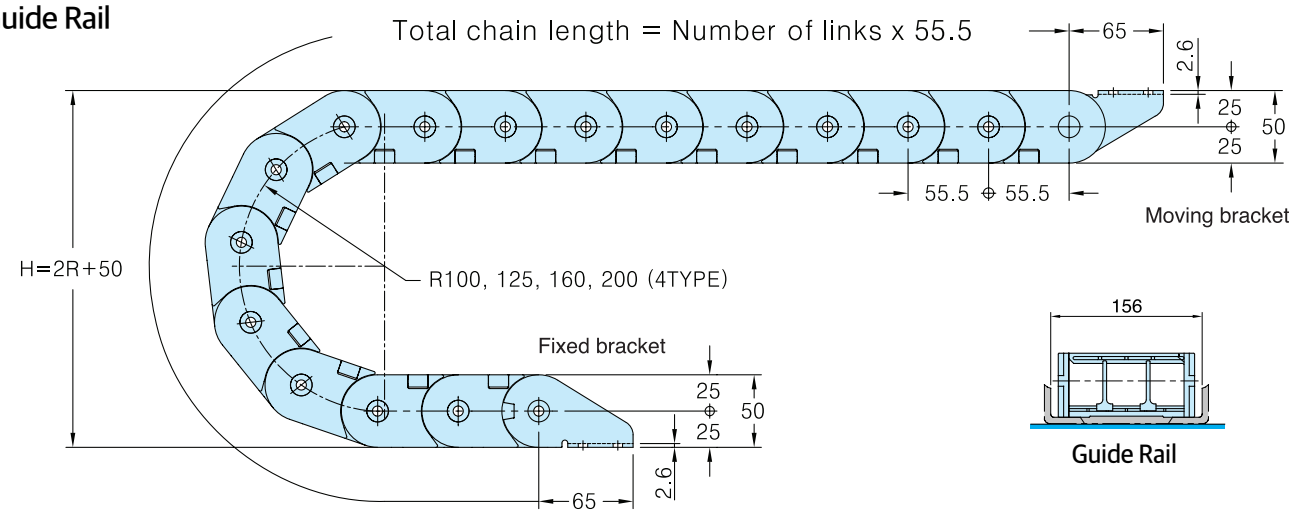
HSP

HSP 0555-B125

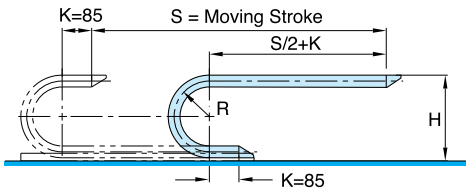
Order Example (주문예)

HSP0555-B125	100R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

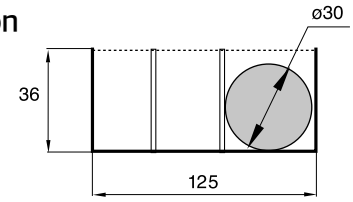


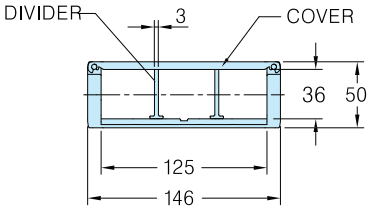
· Length $L = \frac{S}{2} + \pi R + 170$

· Radius
· Height

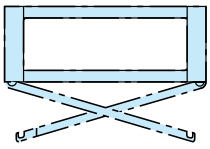
R	100	125	160	200
H	250	300	370	450

Max. Cable Diameter Cross Section



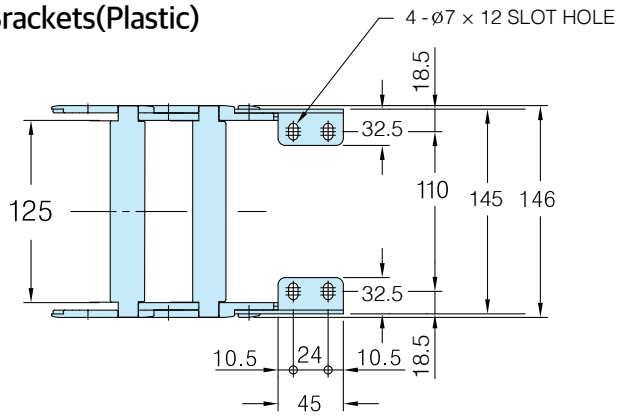


A-A Cross Section

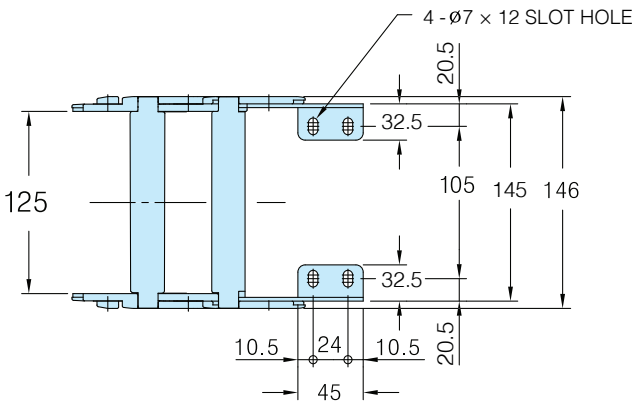


Openable Lower Cover

Brackets(Plastic)



Fixed Bracket



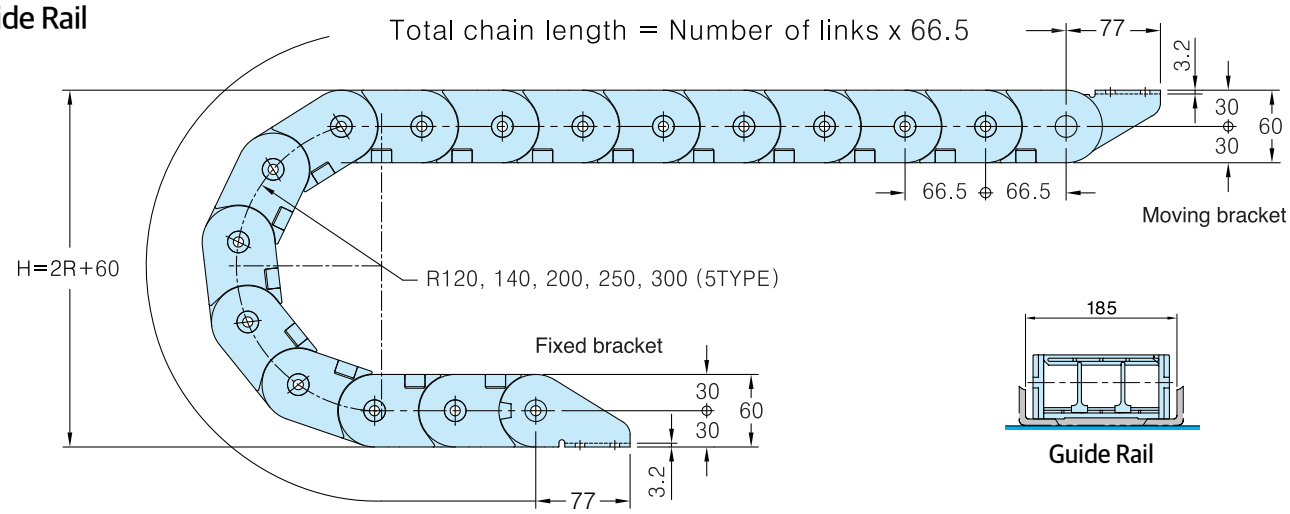
Moving Bracket

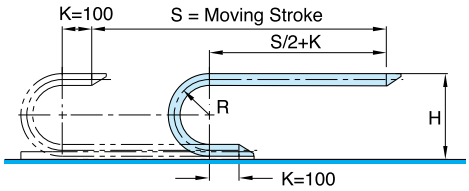
HSP 0665-B150

Order Example (주문예)

HSP0665-B150	120R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



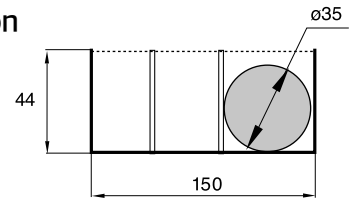


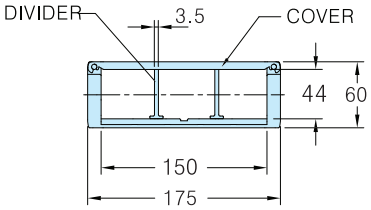
· Length $L = \frac{S}{2} + \pi R + 200$

· Radius
· Height

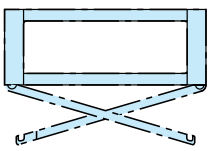
R	120	140	200	250	300
H	300	340	460	560	660

Max. Cable Diameter Cross Section



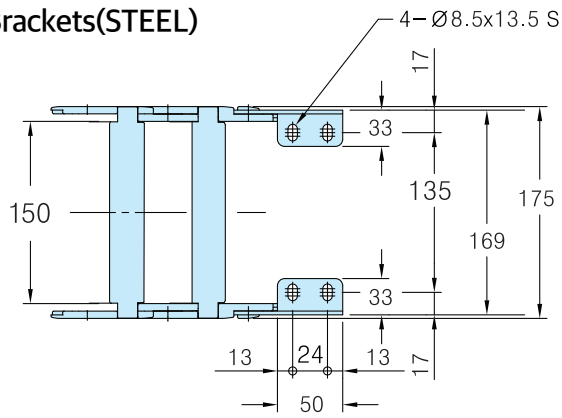


A-A Cross Section

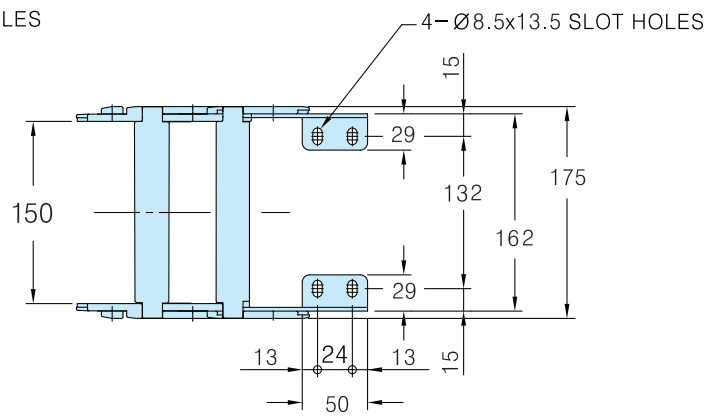


Openable Lower Cover

Brackets(STEEL)



Fixed Bracket



Moving Bracket

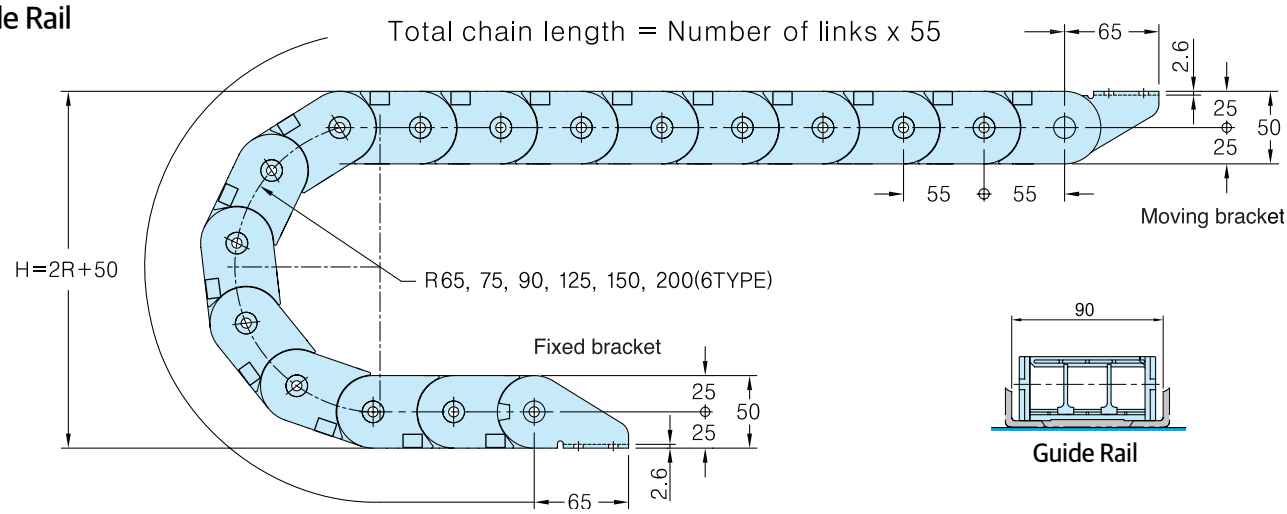
HSP

HSP 0550-1BN

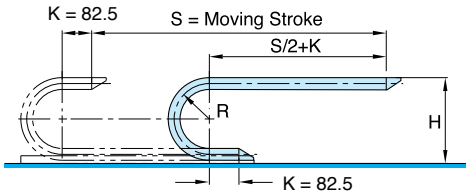
Order Example (주문예)

HSP0550-1BN	100R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

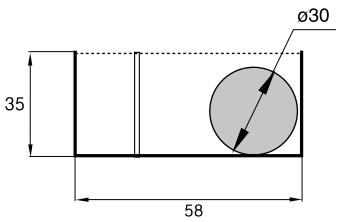


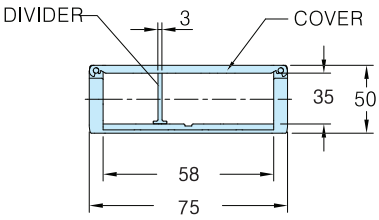
· Length $L = \frac{S}{2} + \pi R + 165$

· Radius
· Height

R	65	75	90	125	150	200
H	180	200	230	300	350	450

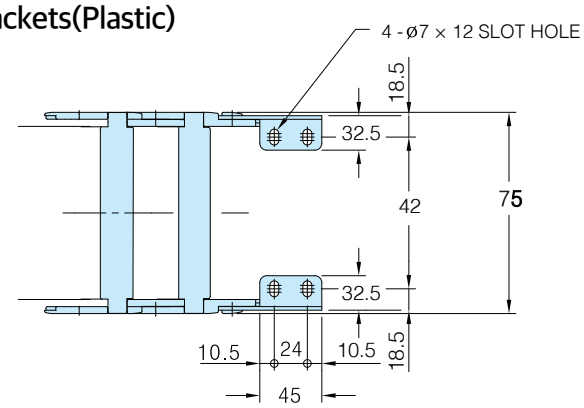
Max. Cable Diameter Cross Section



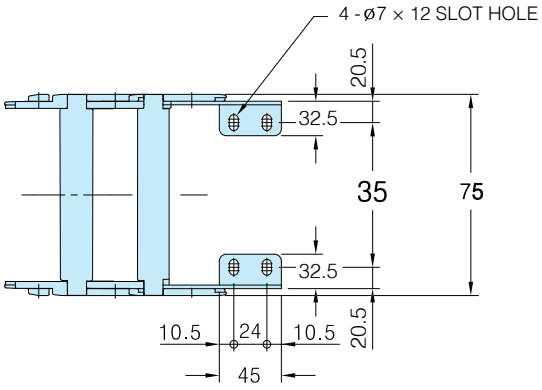


A-A Cross Section

Brackets(Plastic)



Fixed Bracket

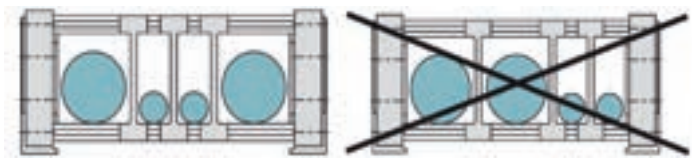


Moving Bracket

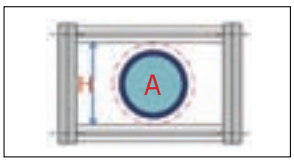
기술 노트 Technical Note

● 중량 밸런스

Cable 및 Hose 삽입 시 직경과 중량을 고려하여 배치하여야 안정적인 주행을 보장할 수 있습니다.
밸런스가 맞지 않을 경우 구동 중 쏠림이 발생하거나, 이탈할 수 있으므로 Cable 포설 전 반드시 확인하여야 합니다.



● Cable 및 Hose의 적절한 용적률



	Cable	Pneumatic Hose (공압호스)	Hydraulic Hose (유압호스)
H (height)	H ≥ A X 1.1	H ≥ A X 1.15	H ≥ A X 1.2

● RoboChain 전용소재 Robo-S Mate(POLYAMID) 내 화학성 Report

약품	
아세톤(수용성)	○
포름산(수용성)	△
가솔린	○
벤졸	○
붕산(수용성)	△
염수소	X
크롬산(수용성)	△
디젤유	○
아세트산	○
식용유	○
포름알데히드(수용성)	△
수용성기름	○
메틸아세테이트	○
우유	○
탄산나트륨	○
기름, 윤활유	○
프로판가스	○
수은	○
염산	△
잉크, 인쇄잉크	○

○ : 우수 △ : 조건부 사용 X : 사용불가

응용예 Application Examples


1

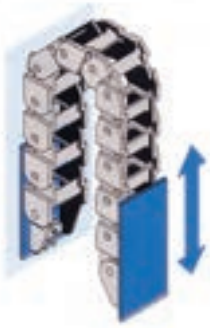

2


3


4


5


6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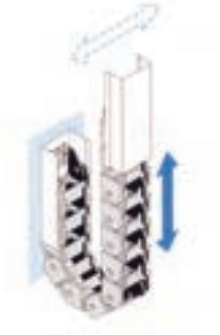
8


9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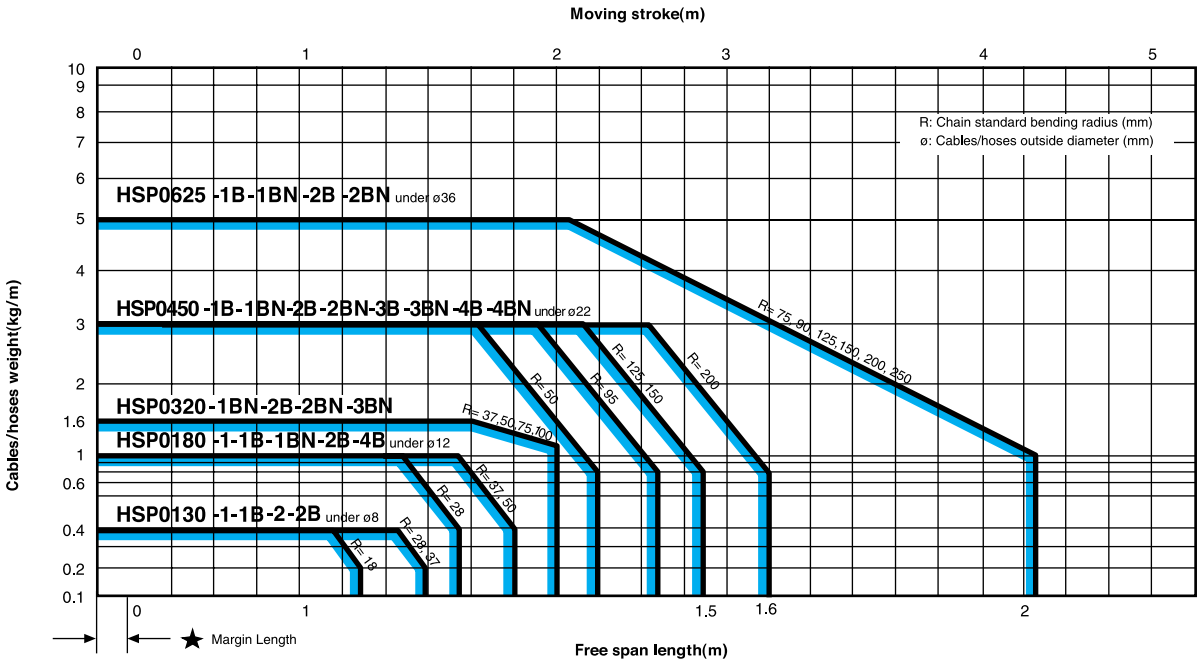
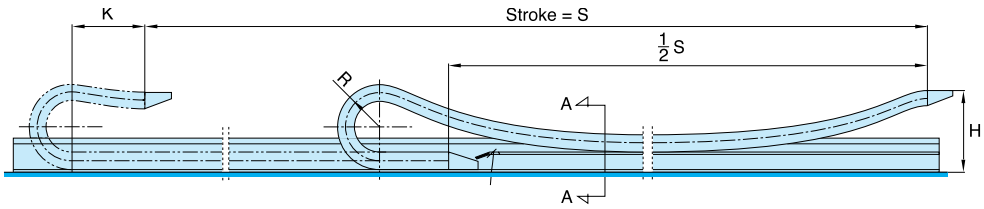
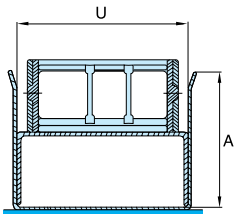
16

능력선도(HSP) Capability Graph



외형치수 Dimension

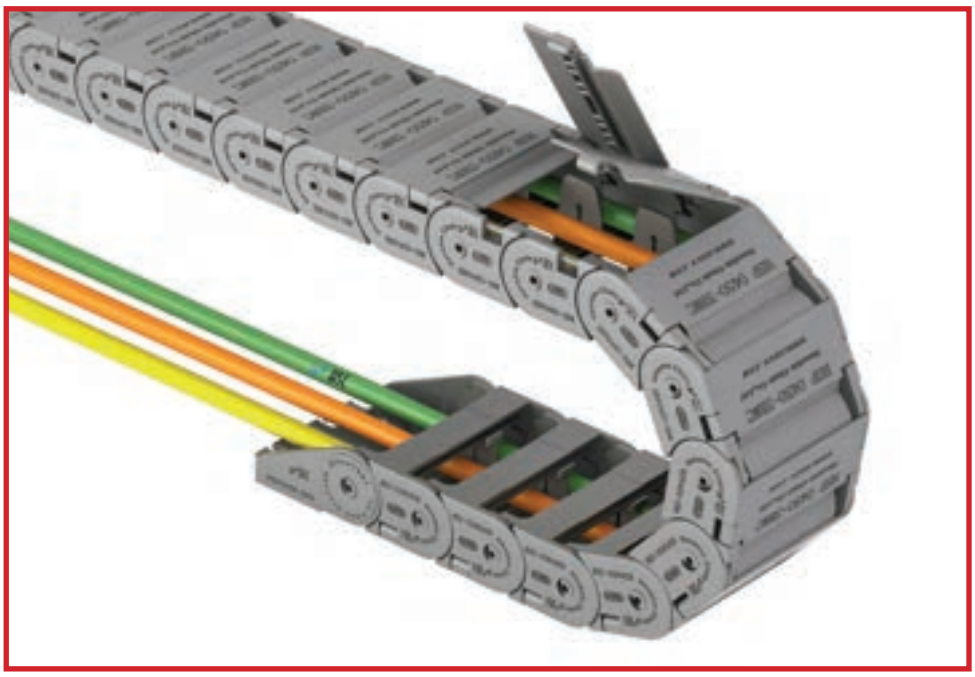




Type	Stroke	Max. Supporter Weight	H	U (±1)	A	K
HSP 0450-1B(N)	20m	1.5kg/m	136	60	68	150~600
HSP 0450-2B(N)	20m	2kg/m	138	88	80	200~700
HSP 0450-3B(N)	20m	2kg/m	140	104	80	200~700
HSP 0450-4B(N)	20m	2.5kg/m	140	130	80	200~700
HSP 0625-1B(N)	20m	3kg/m	210	103	124	300~900
HSP 0625-2B(N)	30m	3.5kg/m	210	146	124	300~900
HSP 0555-B125	40m	5kg/m	300	156	130	400~1000
HSP 0665-B150	50m	6kg/m	400	185	140	500~1000

HSP NC type

HSP 0450-1BNC
HSP 0450-2BNC
HSP 0450-3BNC
HSP 0450-4BNC



·실용신안등록 제 093356호
·실용신안등록 제 134988호

용도 Application

자동화기계, 반도체, 전자, 목공기계, 식품기계, 취출로보트, 섬유기계, 특장차
자동차생산설비, 의료기계, 각종 공작기계 및 컴퓨터 관련기계에 적용.

Factory automation, Wood work machine, Food processing, Grabbing-and-extracting robot, Fabric machine, Special purpose vehicle, Automobile industry, Medical machine, Machining center and Computer related machine

특징 Features

- 본체는 개폐형으로 Cable, Hose의 설치가 쉽습니다.
- 경량이어서 움직임이 원활합니다.
- Divider가 좌우로 움직입니다.
- 150여종의 다양한 모델과 특수 규격도 주문가능합니다.
- 자동화기계, 목공기계, 식품기계, 산업용로보트 등 다방면에 적합한 모델입니다.

- *HSP-C type provides cover lead for easy installation of cables and hoses.*
- *Its light weight provides prompt movement.*
- *Divider is adjustable.*
- *Applicable for factory automation, wood work, food processing, industrial robot and many more.*
- *150 various models are manufactured.*
- *Special orders can be made.*

운용환경 Operation

HSPNC Type은 플라스틱 RoboChain으로 케이블 및 호스의 인입을 용이하게 하는 개폐형으로 설계되어있습니다. HSPNC Type의 RoboChain은 모든 구성품이 고강도 엔지니어링 플라스틱으로 설계 제작되어 소음이 적고, 깨끗하며 작고, 가벼운 장점이 있습니다. 특히 HSP 0450-1BNC이상의 Type은 Divider를 부착하여 사용하실 수 있습니다. HSPNC Type은 전자기계, 산업용 로보트 공작기계 및 다방면에 사용되는 이상적인 장치입니다.

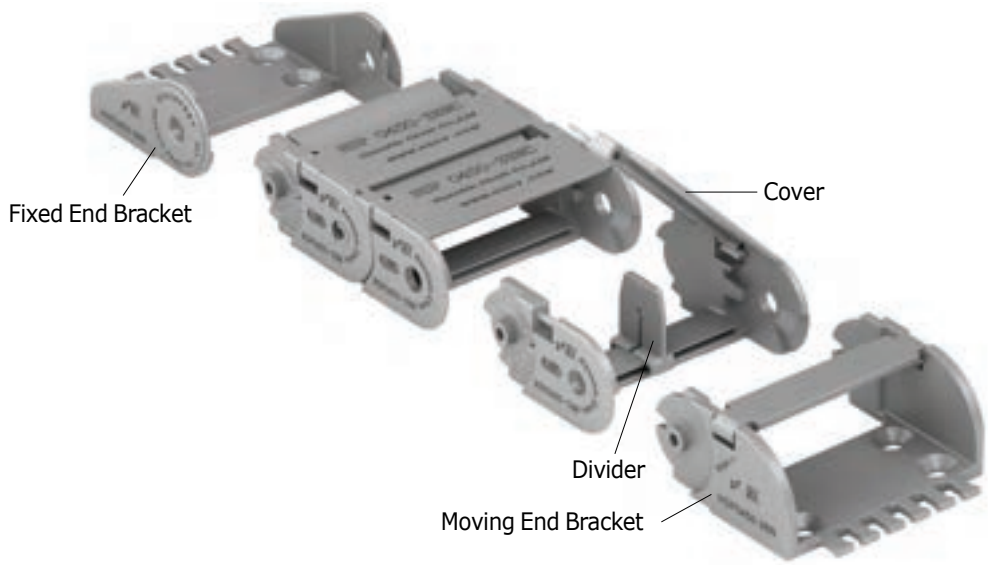
Cover in HSP-C Type provides easy access and installation of cables and hoses. All parts are made of highly durable engineering plastic. Therefore, it features less noise, good appearance and light weight. In particular, HSP 0450-1BNC and higher types accommodate divider.
This type is applicable for many areas such as eletronic and electrical machine, industrial robot, machine center and many more.

주요제원 Properties

- 운동속도 : 180m/min이하
- 케이블 호스의 직경 : 22mm 이하
- 사용온도 : -25 ~ 100℃
- 장력 : 190 (건조), 120 (공기습도) N/mm2
- 인장 팽창 : 4 (건조), 6 (공기습도) %
- 탄성계수 : 10000 (건조), 7000 (공기습도) N/mm2
- 미끄럼 마찰 : 0.4 (무윤활시)
- 기본색 : Black (칼라 주문가능)
- 재질 : 엔지니어링 플라스틱

- *Moving Velocity : below 180m/min*
- *Diameter of Cable Hose : less than 22mm*
- *Operating Temperature : -25 ~100℃*
- *Tension : 190 (in dry), 120 (in moisture) N/mm2*
- *Stretch : 4 (in dry), 6 (in moisture) %*
- *Elasticity : 10000 (in dry), 7000 (in moisture) N/mm2*
- *Sliding Friction : 0.4 (non-greased)*
- *Basic Color : Black*
- *Material : Engineering Plastic*

구조와명칭 Structure

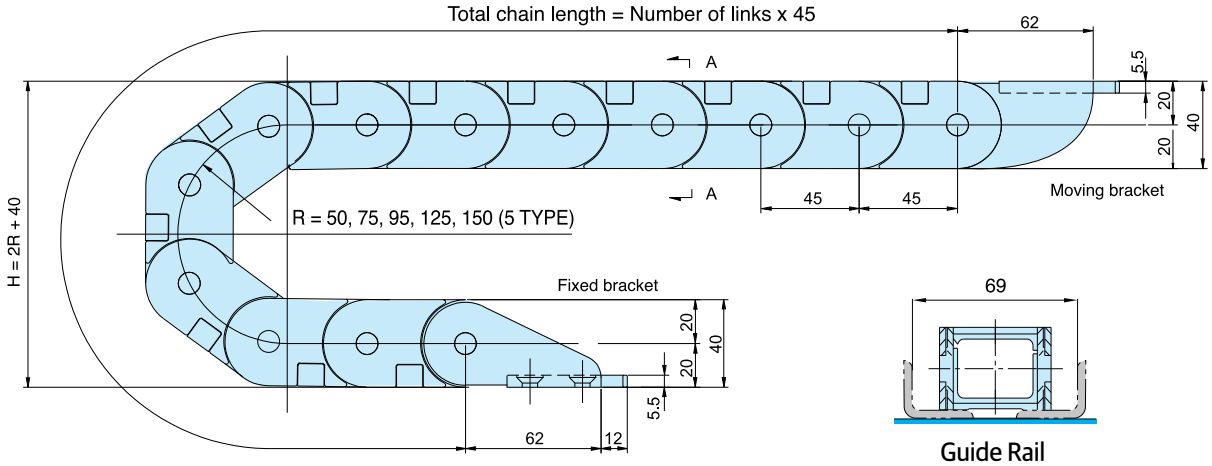


HSP 0450-1BNC

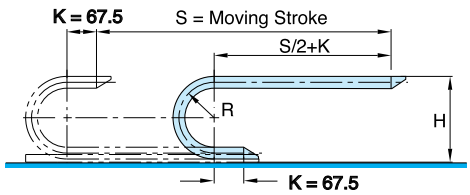
Order Example (주문예)

HSP0450-1BNC	150R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

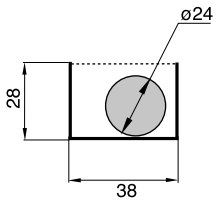


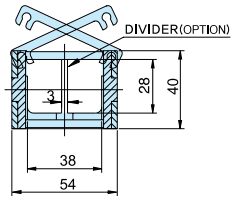
· Length $L = \frac{S}{2} + \pi R + 136$

· Radius
· Height

R	50	75	95	125	150
H	140	190	230	290	340

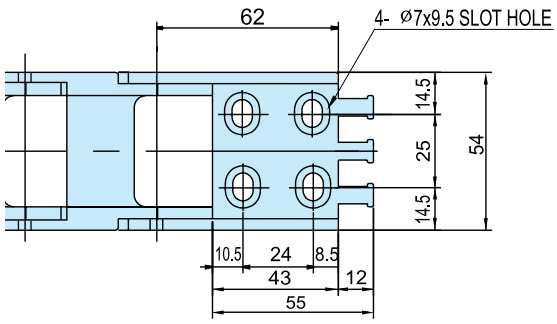
Max. Cable Diameter Cross Section



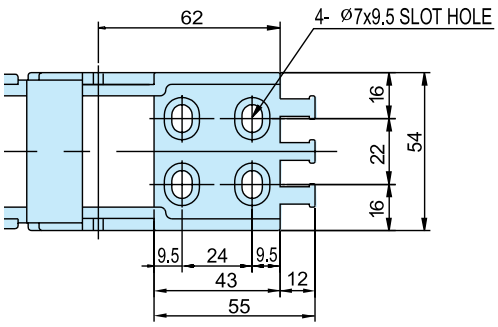


A-A Cross Section

Brackets



Fixed Bracket



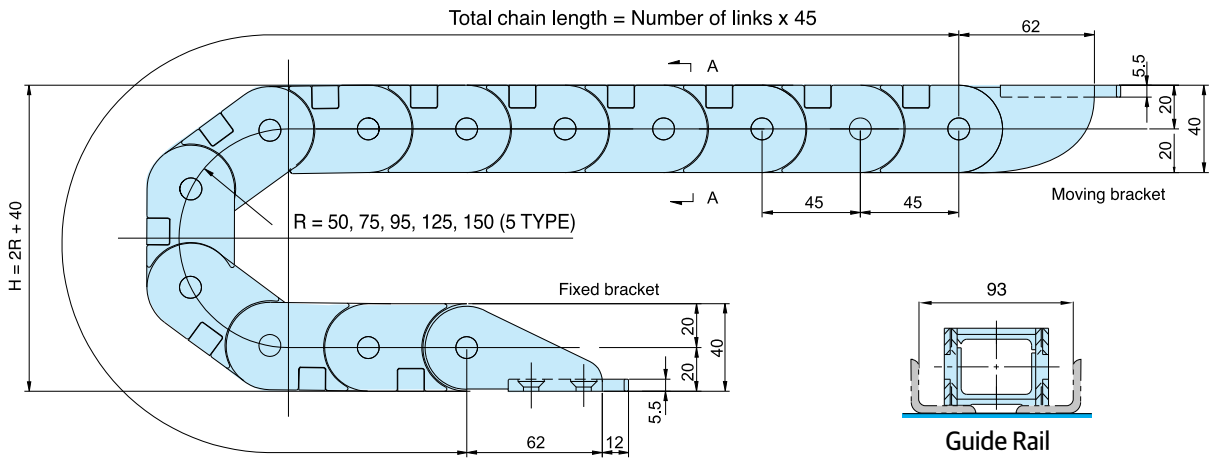
Moving Bracket

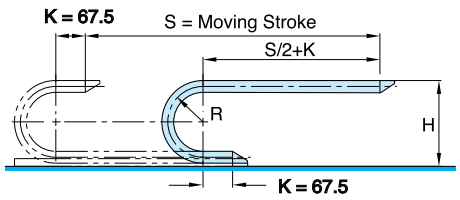
HSP 0450-2BNC

Order Example (주문예)

HSP0450-2BNC	150R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



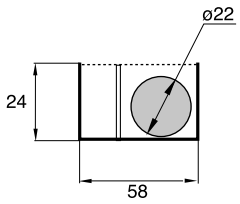


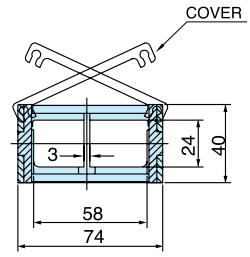
· Length $L = \frac{S}{2} + \pi R + 136$

· Radius
· Height

R	50	75	95	125	150
H	140	190	230	290	340

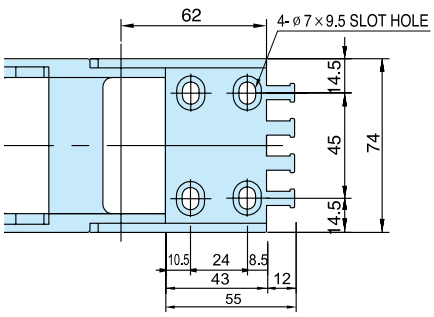
Max. Cable Diameter Cross Section



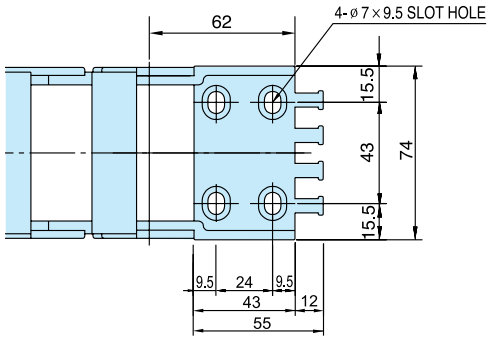


A-A Cross Section

Brackets



Fixed Bracket



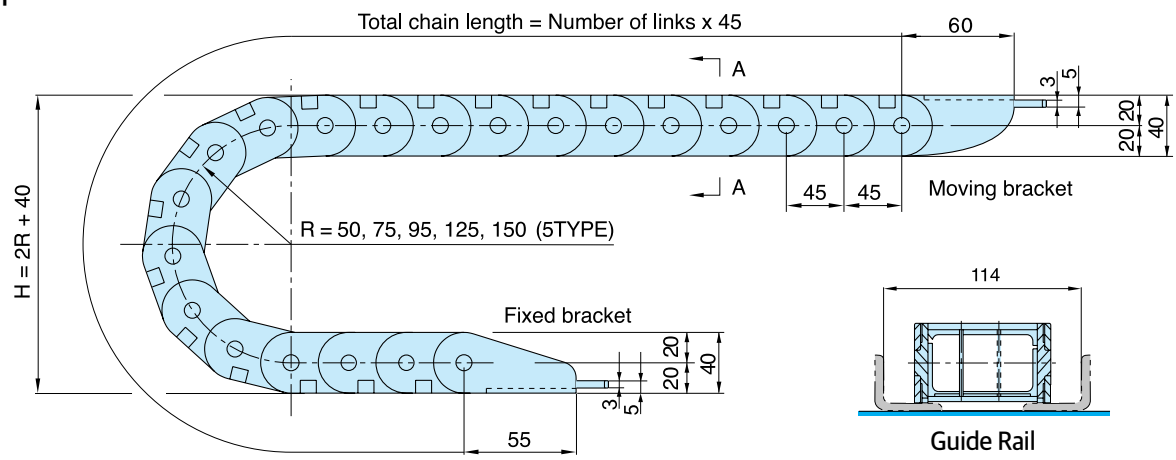
Moving Bracket

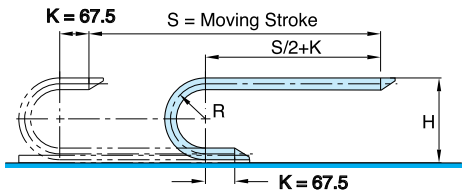
HSP 0450-3BNC

Order Example (주문예)

HSP0450-3BNC	50R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



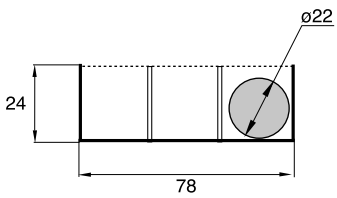


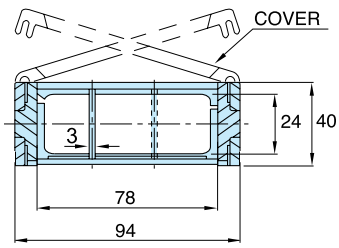
· Length $L = \frac{S}{2} + \pi R + 136$

· Radius
· Height

R	50	75	95	125	150
H	140	190	230	290	340

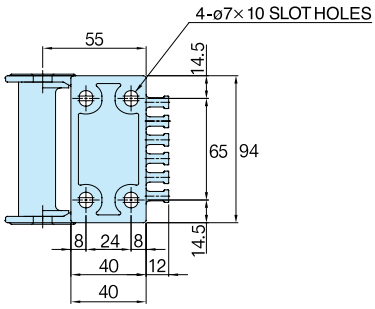
Max. Cable Diameter Cross Section



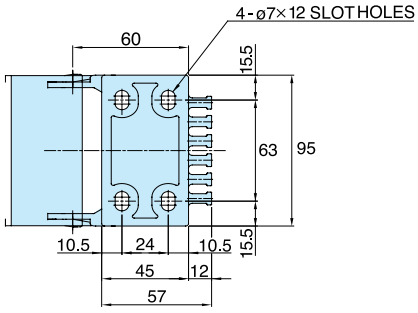


A-A Cross Section

Brackets(PLASTIC)



Fixed Bracket



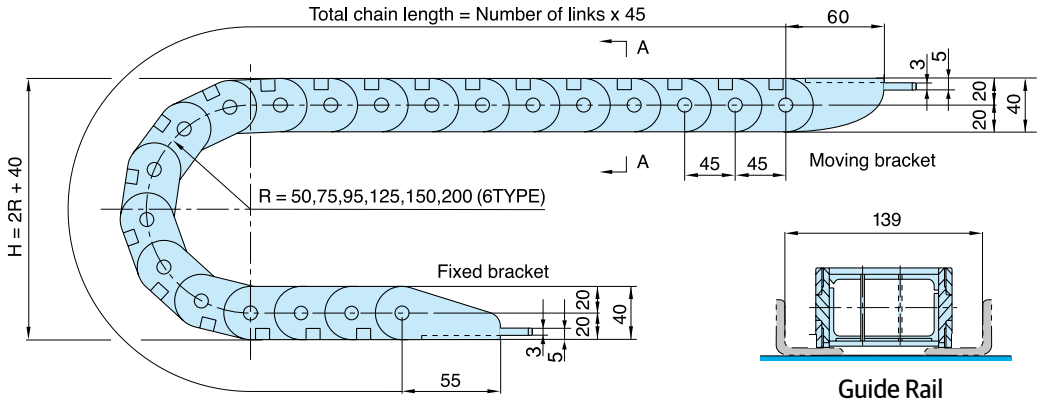
Moving Bracket

HSP 0450-4BNC

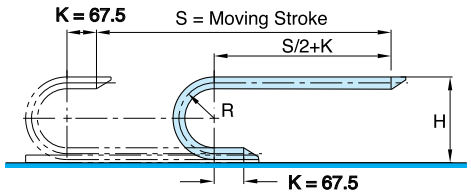
Order Example (주문예)

HSP0450-4BNC	150R	3000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

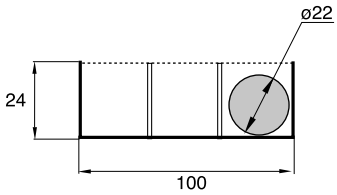


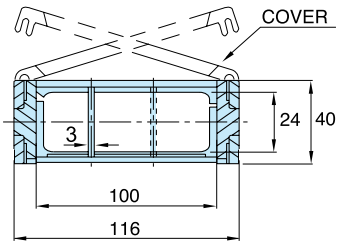
· Length $L = \frac{S}{2} + \pi R + 136$

· Radius
· Height

R	50	75	95	125	150	200
H	140	190	226	290	340	440

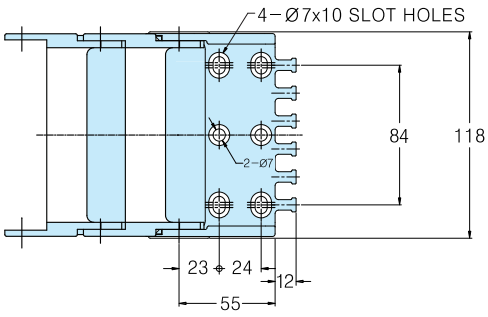
Max. Cable Diameter Cross Section



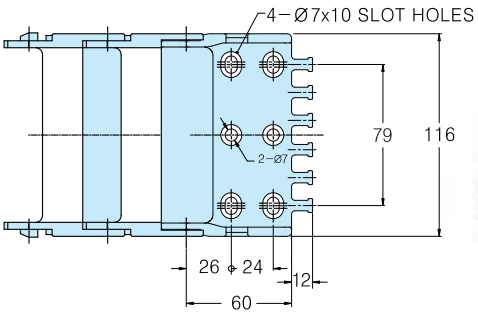


A-A Cross Section

Brackets



Fixed Bracket



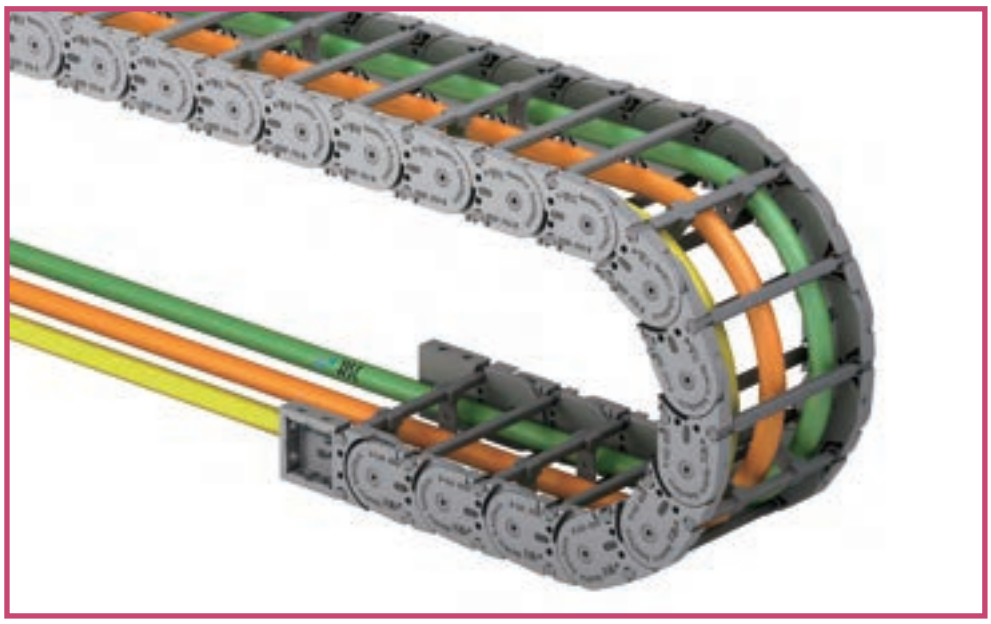
Moving Bracket

HSPNC

HSSP type

HSSP 070N
HSSP 095N
HSSP 130
HSSP 100

(SLIDING TYPE)
HSSP 070NS
HSSP 095NS
HSSP 130S
HSSP 100S



·실용신안등록 제 090068호
·실용신안등록 제 134987호
·실용신안등록 제 142619호

용도 Application

공작기계, 운반기계, 자동차 생산설비, 산업용 플랜트, 자동용접기, 산업용로보트 등
장거리 설비에 적용

Applicable for long stroke use such as Machining center, Conveying machine, Automobile industry, Industrial plant facility, Automatic soldering machine, Industrial robot and so forth

특징 Features

- HS, HSS Type을 경량화 시켰으며 엔지니어링 플라스틱으로 되어 있기 때문에 가벼우며 보다 움직임이 부드럽습니다.
- 간편 조작형으로 Cable, Hose의 분해 및 설치가 용이하고 칸막이가 자유롭게 조정됩니다.
- 공작기계 및 장거리 설비에 적합합니다.
- 30종의 다양한 모델이 있습니다.
- Link Plate에 장거리 주행을 위한 Side Cover, Slider를 부착할 수 있습니다.
- 공작기계, 운반기계, 자동차 생산설비, 산업용 플랜트, 자동용접기, 산업용로보트 등 장거리 설비에 적합합니다.

• HSSP Type is made of engineering plastic to lighten the weight applicable for long stroke.
• Easily adjustable dividers.
• Machining center that requires long stroke applications.
• Side cover and slider are attachable to link plate for long stroke movement.
• 30 various models are manufactured.

운용환경 Operation

HSSP Type의 RoboChain은 고강도 엔지니어링 플라스틱으로 설계 제작되어 경량이며 소음이 적고 취급이 간편합니다.
케이블 호스의 Supporter 부위는 플라스틱 및 알루미늄을 사용하여 중량을 최소화하여 장거리 응용분야에 적합합니다.

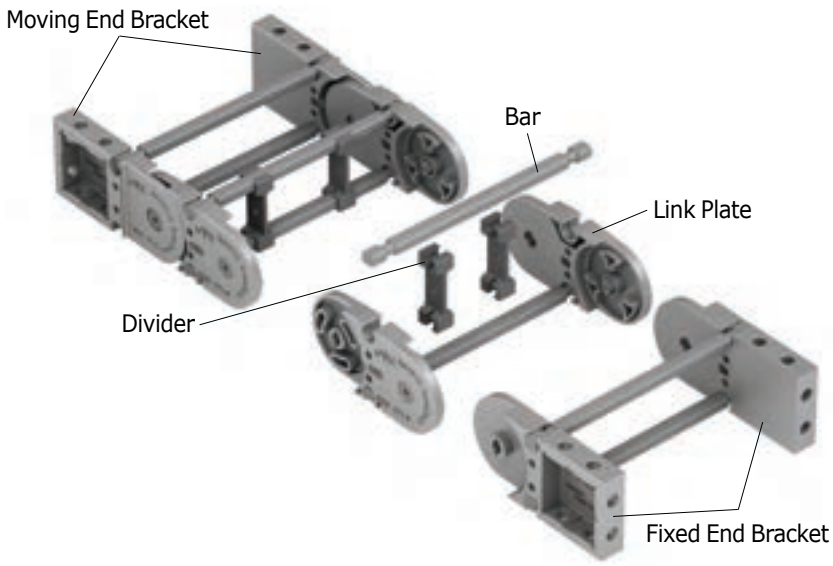
HSSP Type RoboChain is made of highly durable engineering plastic. It features light weight, less noise, and easy handling.
Supporter part of cable hose is made of engineering plastic or aluminum to lighten the weight. This feature also contributes to long stroke application.

주요제원 Properties

- 운동속도 : 120m/min 이하
- 케이블 호스의 직경 : 63mm 이하
- 사용온도 : -25 ~ 100℃
- 장력 : 190 (건조), 120 (공기습도) N/mm2
- 인장 팽창 : 4 (건조), 6 (공기습도) %
- 탄성계수 : 10000 (건조), 7000 (공기습도) N/mm2
- 미끄럼 마찰: 0.4 (무윤활시)
- 기본색 : Black (칼라주문가능)
- 재질 : 엔지니어링 플라스틱, Aluminum

- *Moving Velocity : below 120m/min*
- *Diameter of Cable Hose : less than 63mm*
- *Operating Temperature : -25 ~100℃*
- *Tension : 190 (in dry), 120 (in moisture) N/mm2*
- *Stretch : 4 (in dry), 6 (in moisture) %*
- *Elasticity : 10000 (in dry), 7000 (in moisture) N/mm2*
- *Sliding Friction : 0.4 (non-greased)*
- *Basic Color : White Zinc Coating*
- *Material : Engineering Plastic, Aluminum*

구조와명칭 Structure

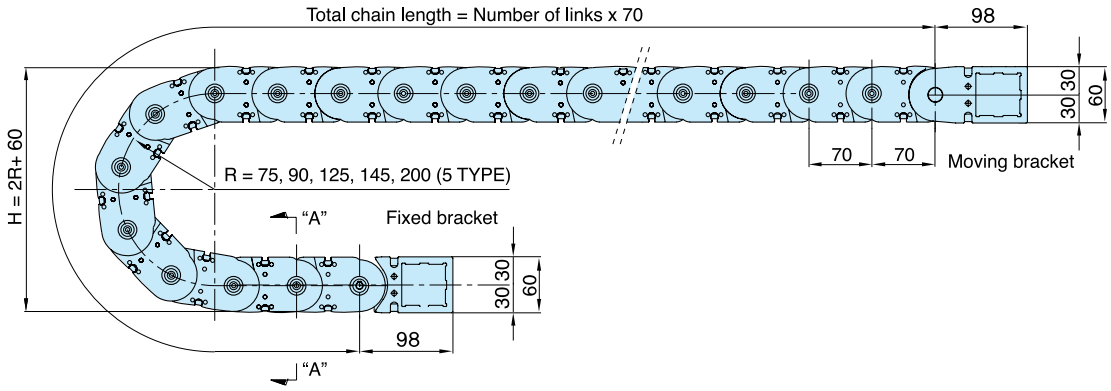


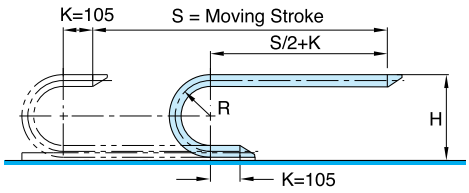
HSSP 070N

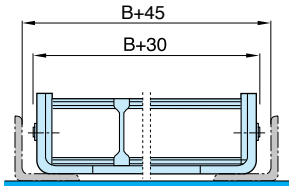
Order Example (주문예)

HSSP070N	145R	B200	D:3	2940L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

Chain, Cross Section







Guide Rail

· Length $L = \frac{S}{2} + \pi R + 210$

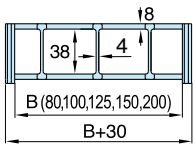
· Radius
· Height

R	75	90	125	145	200
H	210	240	310	350	460

Divider

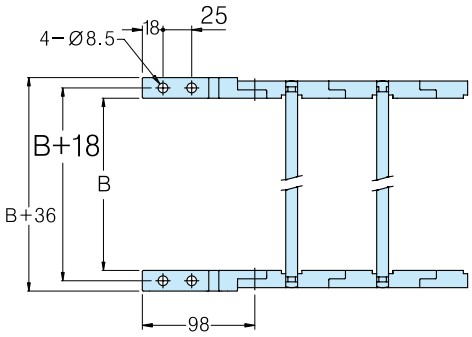
Cable/Hose dmax		Ø32					
Frame Dim. "B"		80	100	125	150	200	250
Divider	Min. No.	0	0	1	1	2	3
	Max. No.	3	3	4	5	6	7

* Eng. Plastic(표준), Aluminum(옵션)

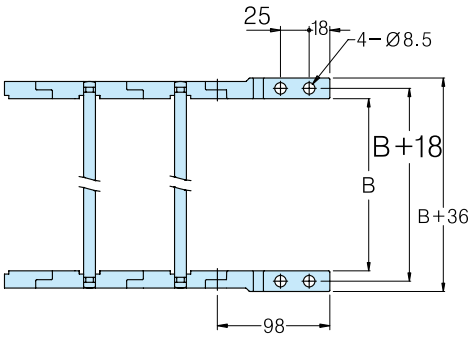


A-A Cross Section

Brackets * Eng. Plastic(표준), Steel(장거리 옵션)



Fixed Bracket



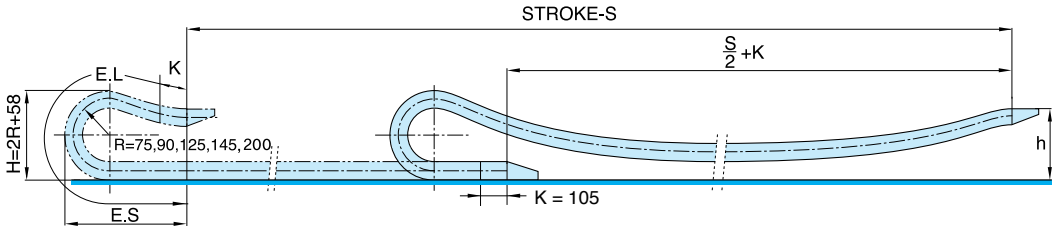
Moving Bracket

HSSP 070NS

Order Example (주문예)

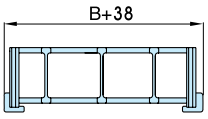
HSSP070NS	145R	B200	D:3	1505OL	2SETS
Type	Radius	Width	Divider	Length	Q'ty

Chain



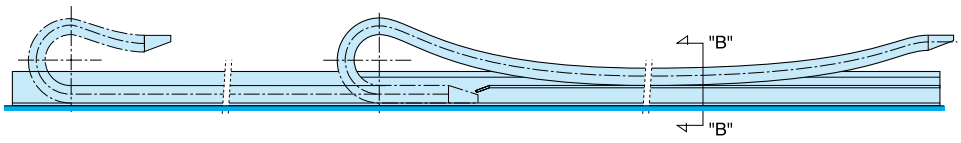
· Length $L = \frac{S}{2} + E.L + 210$

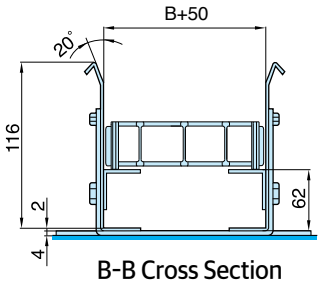
· Radius	R	75	90	125	145	200
· Height	H	210	240	310	350	460
· Moving Point Height	h	200	200	200	200	200
· Extra Length	E.L	560	700	910	1050	1470
· Extra Space	E.S	230	260	380	450	580



SLIDER 부착시

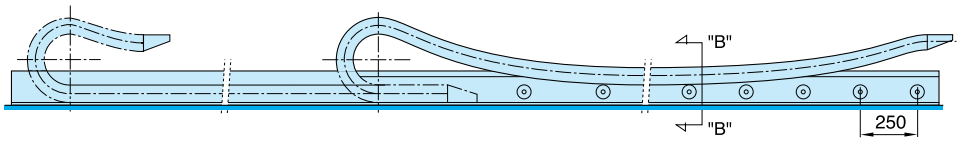
Guide Rail

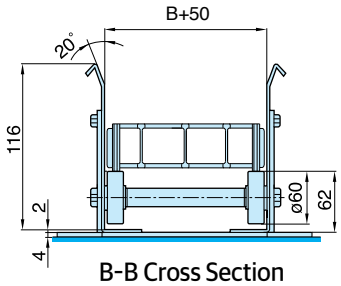




B-B Cross Section

Guide Roller





B-B Cross Section

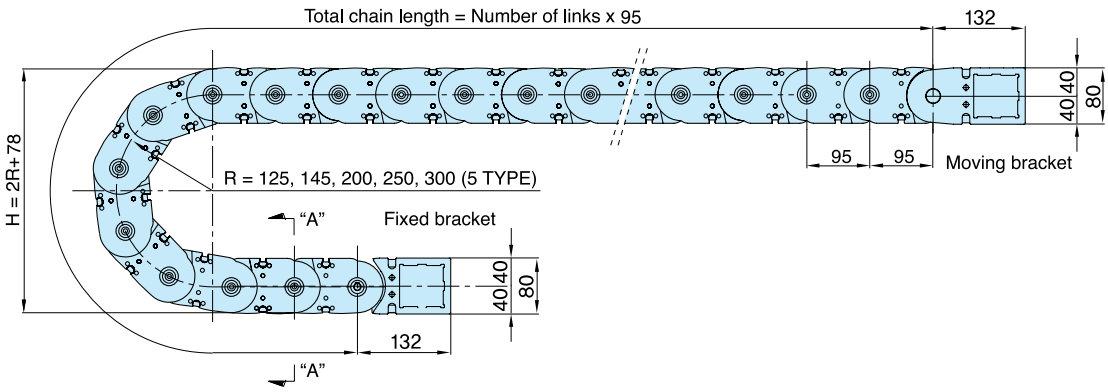
HSSP

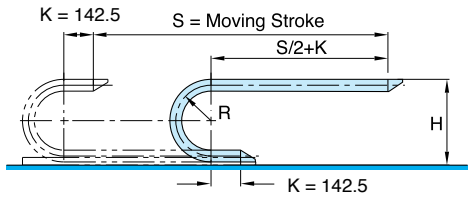
HSSP 095N

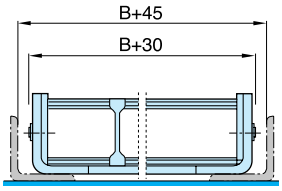
Order Example (주문예)

HSSP095N	300R	B200	D:3	3990L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

Chain, Cross Section







Guide Rail

·Length $L = \frac{S}{2} + \pi R + 290$

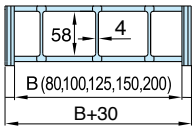
· Radius	R	125	145	200	250	300
· Height	H	328	368	478	578	678

Divider

Cable/Hose dmax		Ø52						
Frame Dim. "B"		80	100	125	150	200	250	300
Divider	Min. No.	0	0	1	1	2	3	4
	Max. No.	3	3	4	5	6	7	8

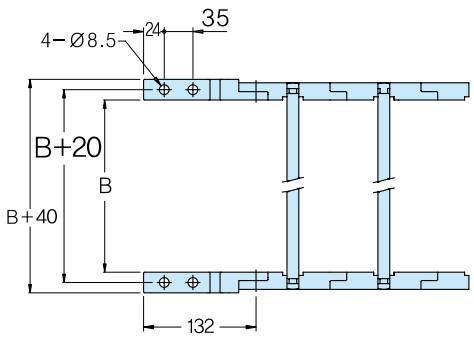
if "B" › 300, "WIDE BAR" (OPTION)

* Eng. Plastic(표준), Aluminum(옵션)

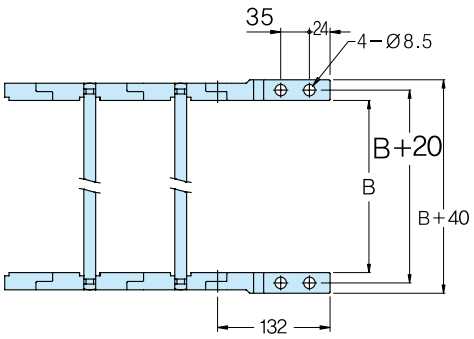


A-A Cross Section

Brackets * Eng. Plastic(표준), Steel(장거리 옵션)



Fixed Bracket



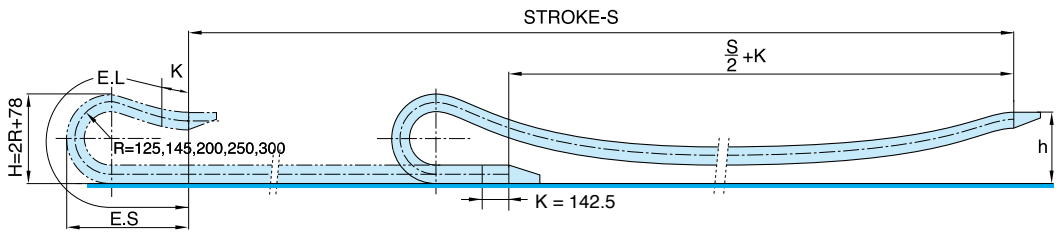
Moving Bracket

HSSP 095NS

Order Example (주문예)

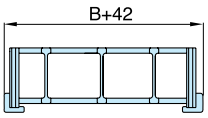
HSSP095NS	300R	B200	D:3	19950L	2SETS
Type	Radius	Width	Divider	Length	Q'ty

Chain



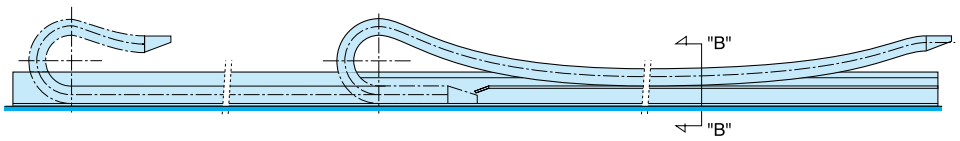
· Length $L = \frac{S}{2} + E.L + 290$

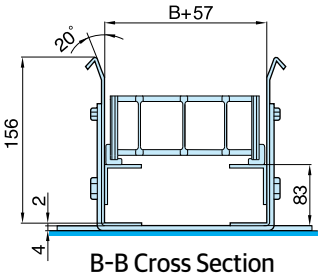
· Radius	R	125	145	200	250	300
· Height	H	328	368	478	578	678
· Moving Point Height	h	250	250	250	250	250
· Extra Length	E.L	950	1140	1520	1900	2185
· Extra Space	E.S	340	430	600	750	860



SLIDER 부착시

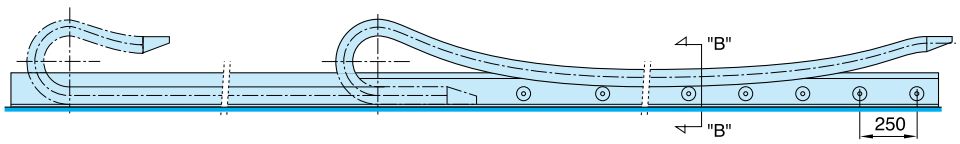
Guide Rail

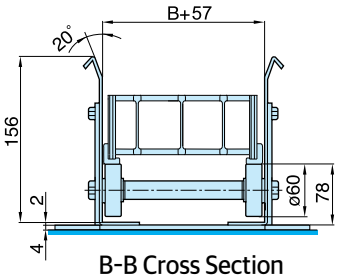




B-B Cross Section

Guide Roller





B-B Cross Section

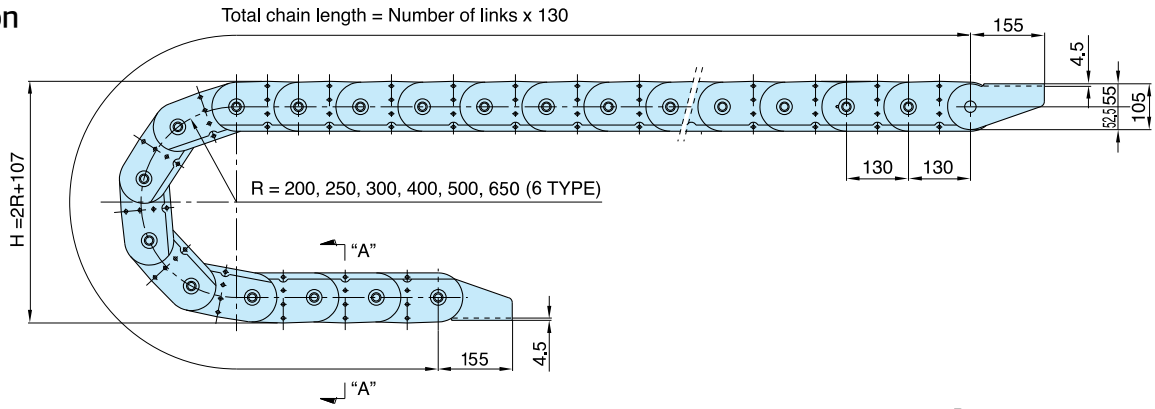
HSSP

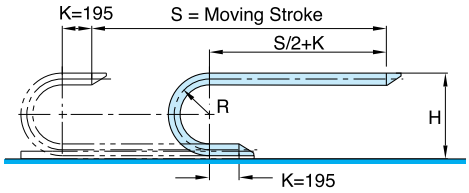
HSSP 130

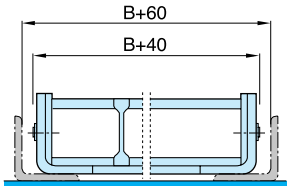
Order Example (주문예)

HSSP130	250R	B200	D:3	4420L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

Chain, Cross Section







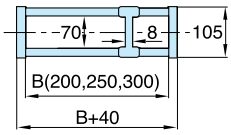
Guide Rail

· Length $L = \frac{S}{2} + \pi R + 390$

· Radius	R	200	250	300	400	500	650
· Height	H	507	607	707	907	1107	1307

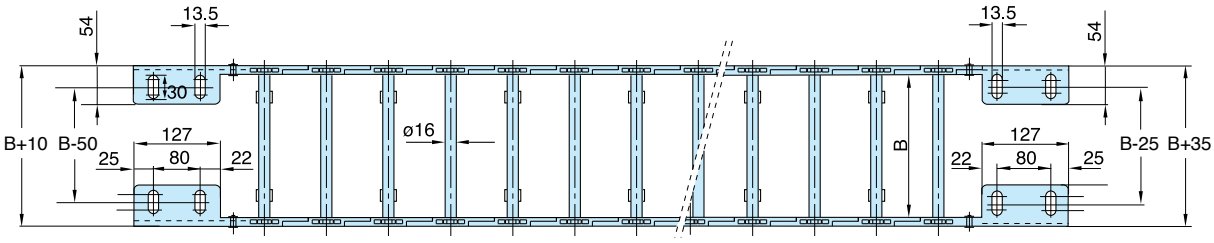
Divider

Cable/Hose dmax		Ø63				
Frame Dim. "B"		200	250	300	350	400
Divider	Min. No.	2	3	4	5	6
	Max. No.	4	5	6	8	10



A-A Cross Section

Brackets



Fixed Bracket

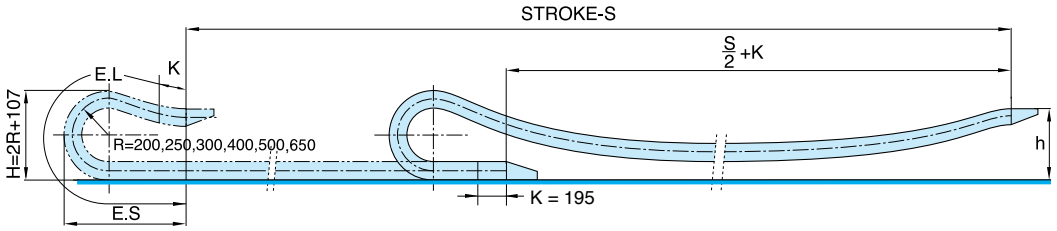
Moving Bracket

HSSP 130S

Order Example (주문예)

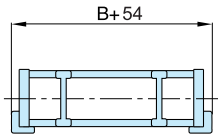
HSSP130S	400R	B300	D:3	24960L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

Chain



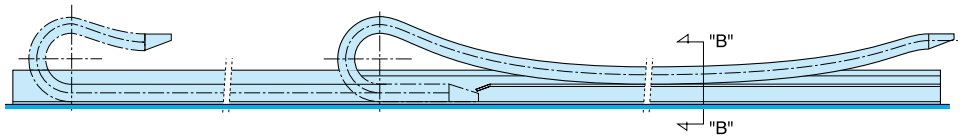
· Length $L = \frac{S}{2} + E.L + 390$

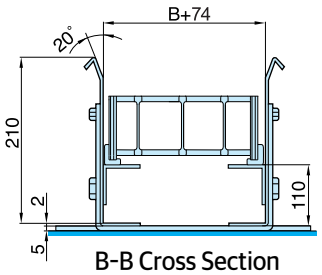
	R	200	250	300	400	500	650
· Radius							
· Height	H	507	607	707	907	1107	1407
· Moving Point Height	h	300	300	300	300	300	300
· Extra Length	E.L	1560	1820	2210	2990	3640	4200
· Extra Space	E.S	780	950	1100	1400	1700	2000



SLIDER 부착시

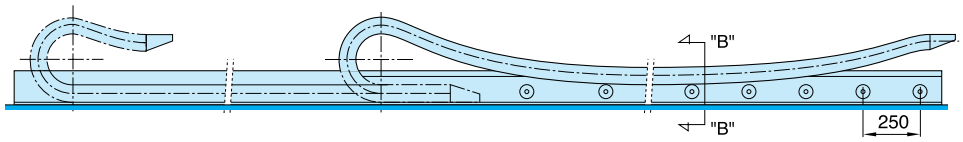
Guide Rail

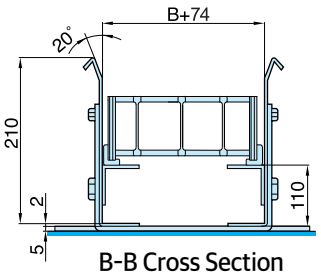




B-B Cross Section

Guide Roller





B-B Cross Section

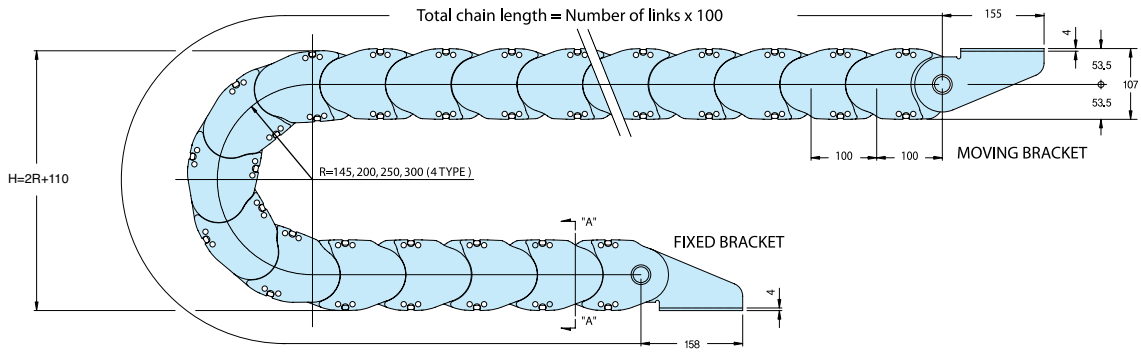
HSSP

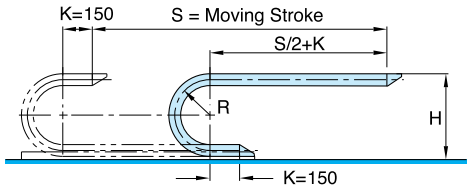
HSSP 100

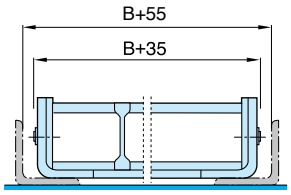
Order Example (주문예)

HSSP100	250R	B200	D:3	4400L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

Chain, Cross Section







Guide Rail

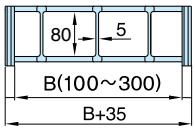
· Length $L = \frac{S}{2} + \pi R + 300$

· Radius	R	145	200	250	300
· Height	H	400	510	610	710

Divider

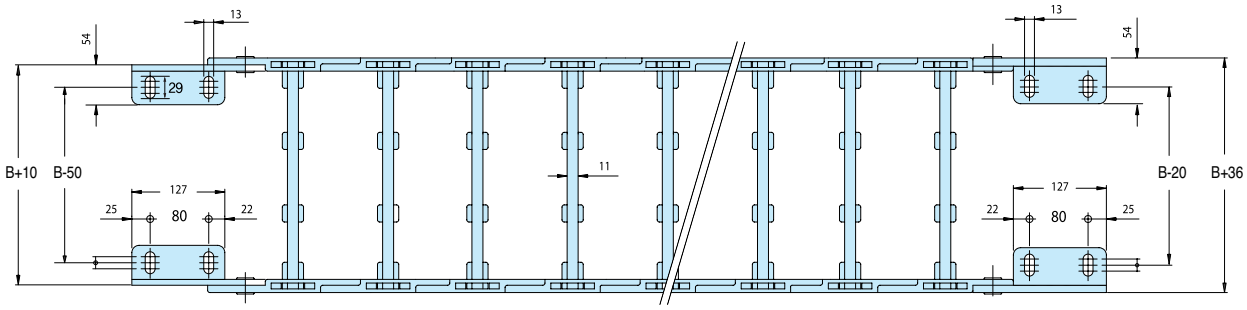
Cable/Hose dmax		Ø75				
Frame Dim. "B"		200	250	300	350	400
Divider	Min. No.	2	3	4	5	6
	Max. No.	4	5	6	8	10

if "B" > 300 "WIDE BAR" (OPTION)



A-A Cross Section

Brackets



if "B" > 300 "WIDE BAR" (OPTION)

Fixed Bracket

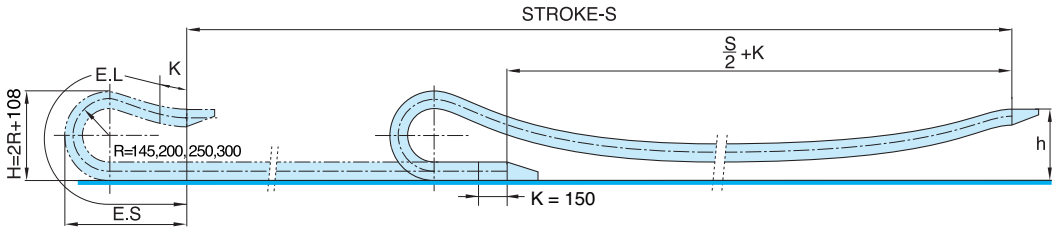
Moving Bracket

HSSP 100S

Order Example (주문예)

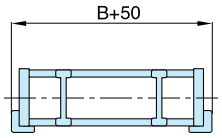
HSSP100S	300R	B300	D:3	24900L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

Chain



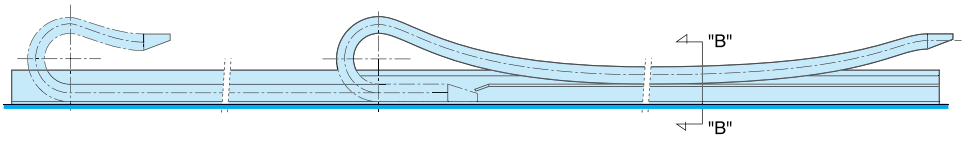
· Length $L = \frac{S}{2} + E.L + 300$

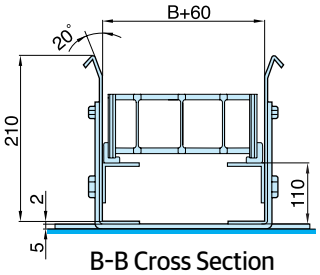
· Radius	R	145	200	250	300
· Height	H	400	510	610	710
· Moving Point Height	h	300	300	300	300
· Extra Length	E.L	1400	1700	2300	2800
· Extra Space	E.S	730	850	1070	1300



SLIDER 부착시

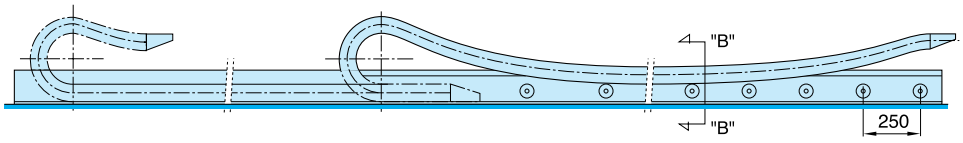
Guide Rail

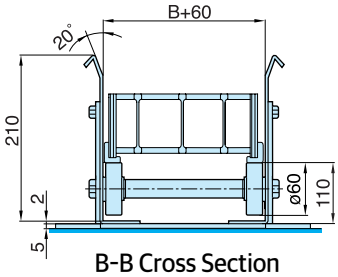




B-B Cross Section

Guide Roller





B-B Cross Section

HSSP Sliding

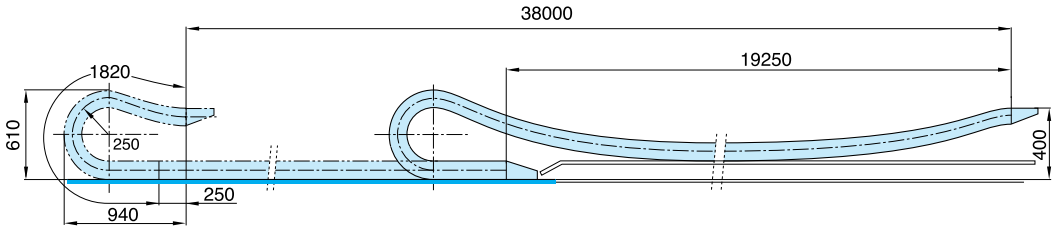
HSSP 095NS

HSSP 130S

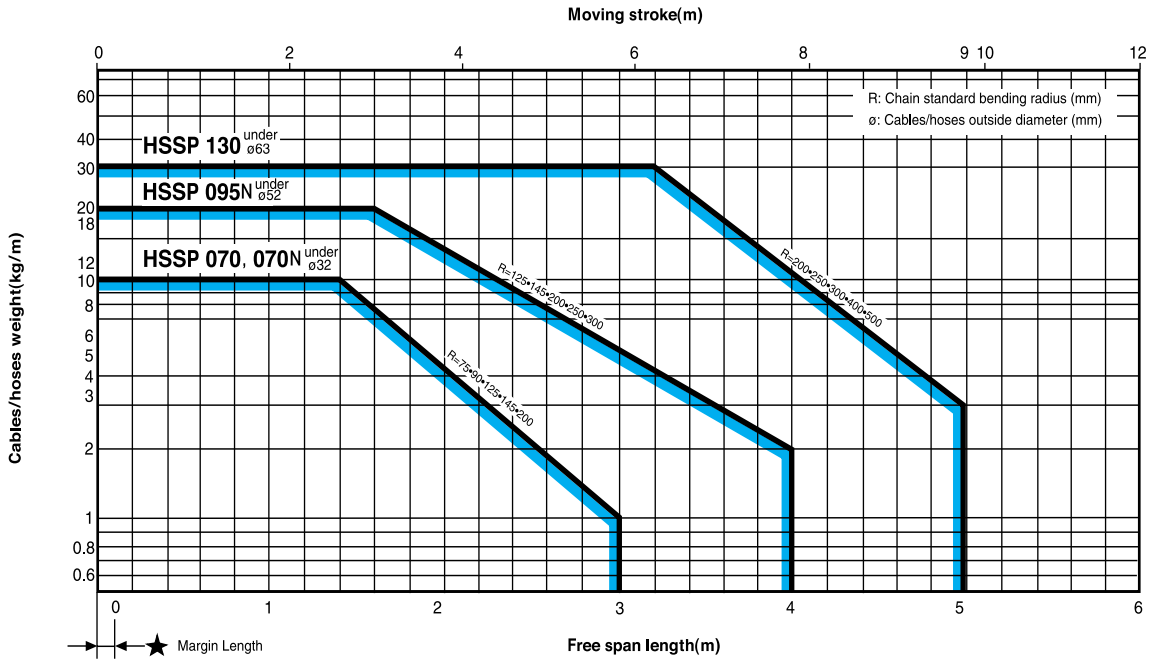
HSSP 130S 400R B200 65000L

설계사례

HSSP 130S 250R B:200 D:3 21320L



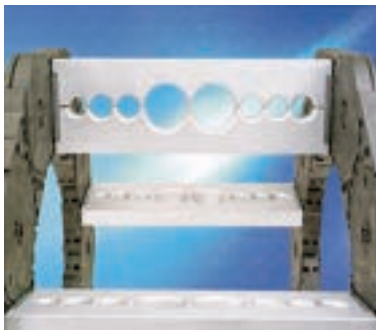
능력선도 (HSSP) Capability Graph



HSSP095S

응용 예 Application Examples

HSSP095NS

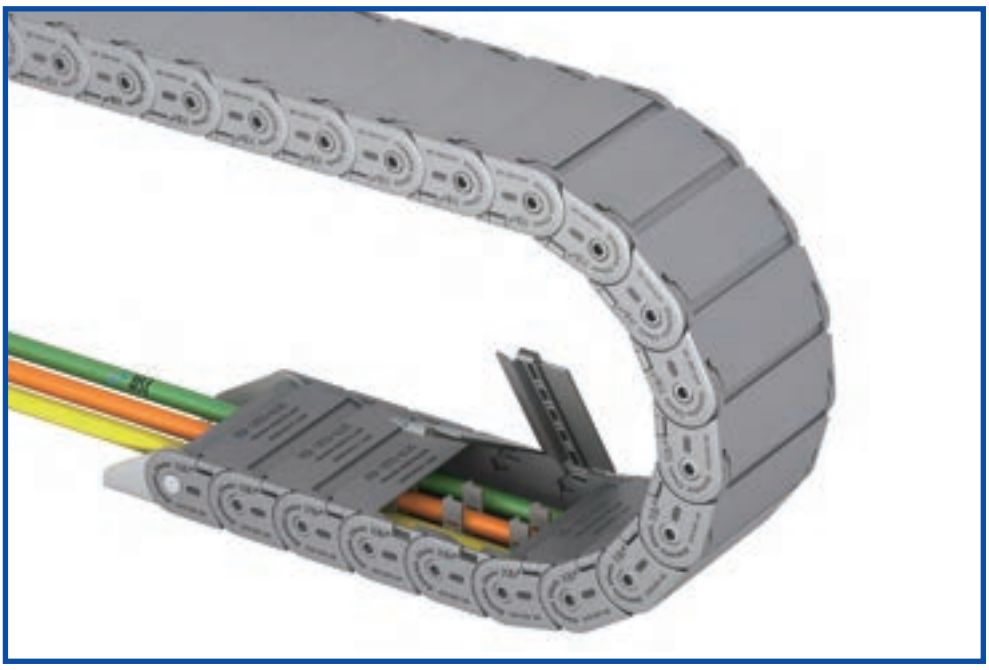


HSSP Supporter (option)

HSSP095N

HSC type

HSC 0450-38C
HSC 0450-58C
HSC 0555
HSC 0665



용도 Application

공작기계, 용접 ROBOT, 자동차산업, 목공기계, 반도체생산설비, 철강설비에 적용

Machining center, Soldering robot, Automobile industry, Wood work machine, Semiconductor production facility and Steel mill industry

특징 Features

- 밀폐형으로 이물질로 부터 Cable, Hose를 보호할 수 있습니다.
- 경량이어서 움직임이 원할합니다.
- 본체의 Cover가 안쪽으로 개폐되어 Cable, Hose의 설치가 쉽습니다.
- 50여종의 다양한 모델이 있습니다.
- End Bracket에 Cable, Hose 고정용 Clamp가 있어서 고정용 Tie를 이용할 경우 꼬임을 방지할 수 있습니다.

•Insulation design prevents cables and hoses from alien materials.
•Its light weight provides prompt movement.
•Body cover can be open for easy installation of cable and hose.
•50 various models are manufactured.
•Special orders can be made.

운용환경 Operation

HSC Type 의 RoboChain는 모든 구성품이 고강도 엔지니어링 플라스틱으로 설계 제작되어 소음이 적고, 깨끗하며 작고, 가벼운 장점이 있습니다. 특히 밀폐형으로 이물질로부터 Cable, Hose 보호에 적합합니다.

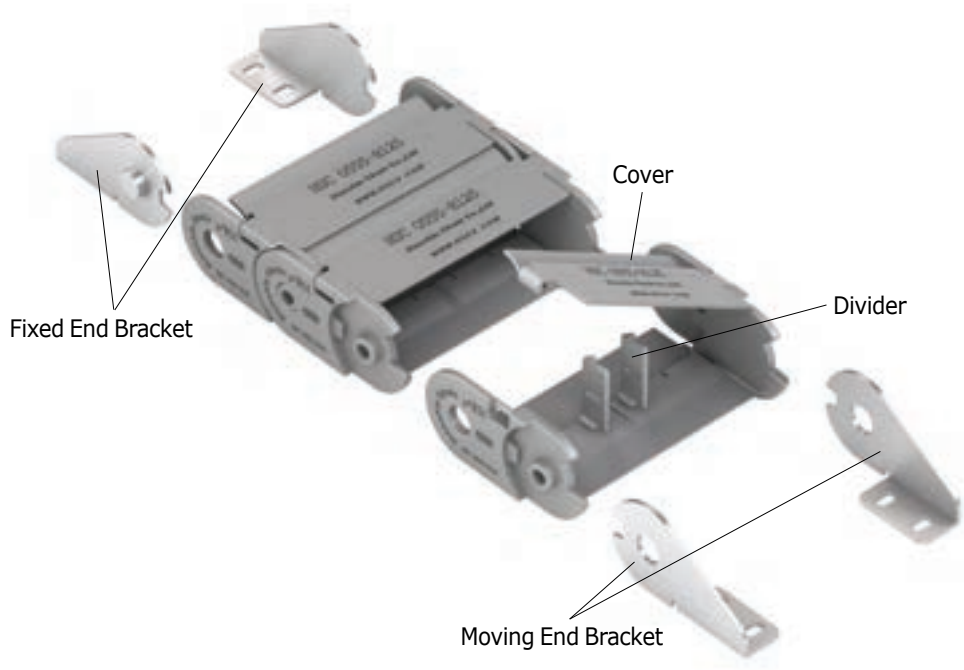
All parts of HSC type RoboChain are made of very high strength engineering plastic, and it is designed for reducing noise and light weight.
In particular, insulation design can prevent cable and hose from alien materials.

주요제원 Properties

- 운동속도 : 200m/min이하 (Freespan내)
- 사용온도 : -25 ~ 100℃
- 기본색 : Black
- 재질 : 엔지니어링 플라스틱

- *Moving Velocity: below 300m/min (within freespan)*
- *Operating Temperature: -25 ~100℃*
- *Basic Color: Black*
- *Material: Engineering Plastic*

구조와명칭 Structure



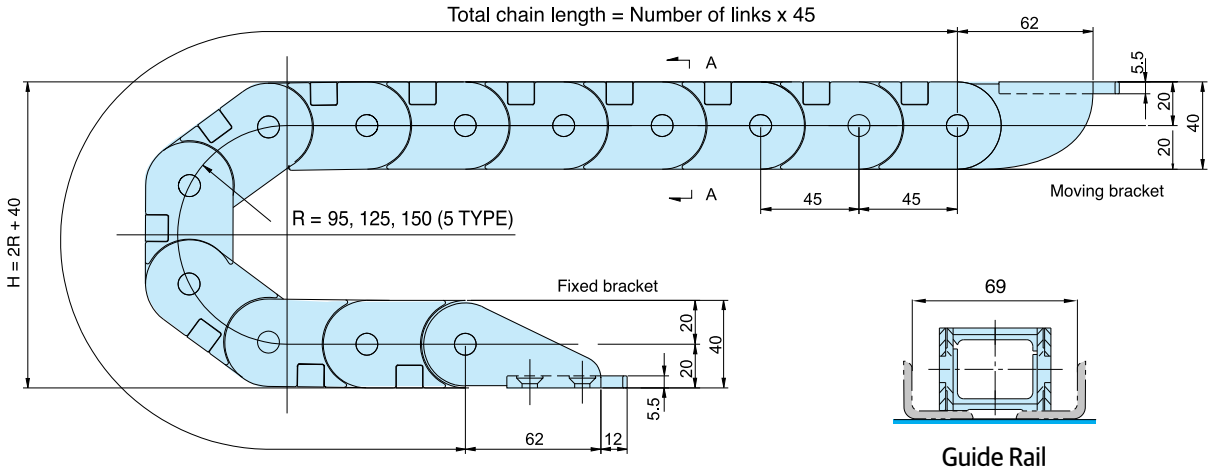
NEW

HSC 0450-38C

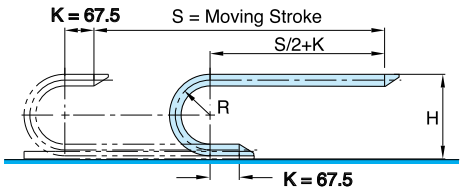
Order Example (주문예)

HSC0450-38C	150R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

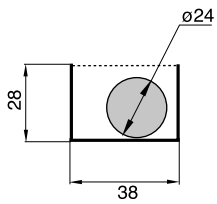


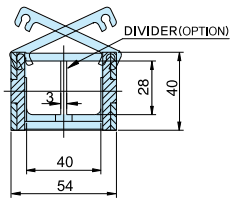
· Length $L = \frac{S}{2} + \pi R + 135$

· Radius
· Height

R	95	125	150
H	230	290	340

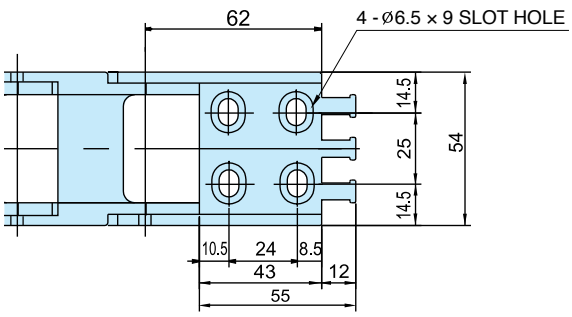
Max. Cable Diameter Cross Section



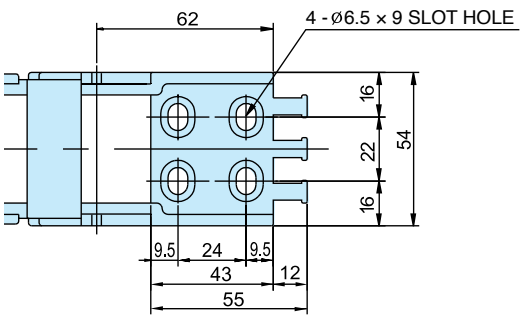


A-A Cross Section

Brackets



Fixed Bracket



Moving Bracket

Hanshin RoboChain®

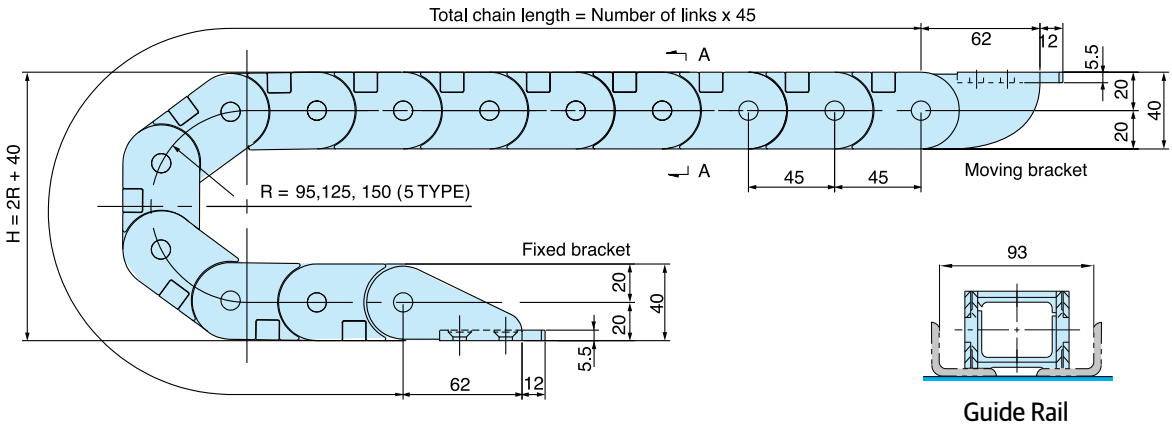
NEW

HSC 0450-58C

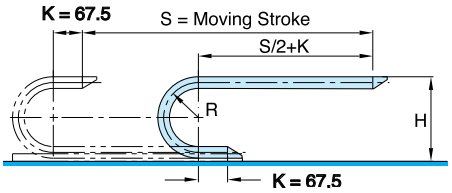
Order Example (주문예)

HSC0450-58C	150R	2000L	3SETS
Type	Radius	Length	Q'ty

Chain, Guide Rail



Guide Rail

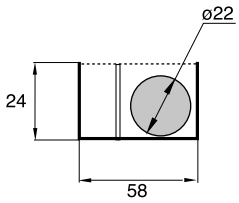


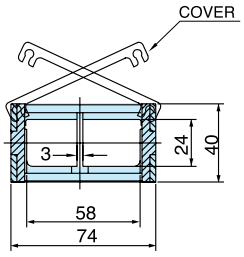
· Length $L = \frac{S}{2} + \pi R + 135$

· Radius
· Height

R	95	125	150
H	230	290	340

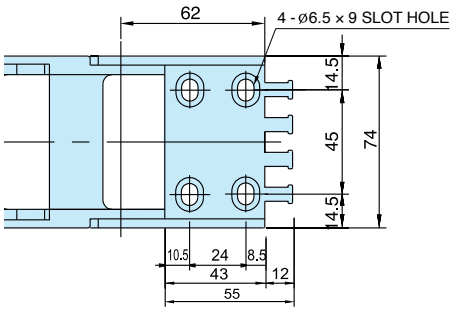
Max. Cable Diameter Cross Section



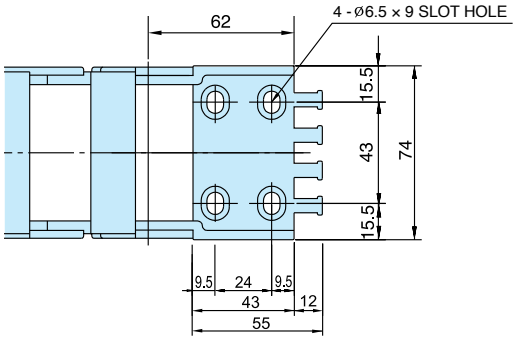


A-A Cross Section

Brackets



Fixed Bracket



Moving Bracket

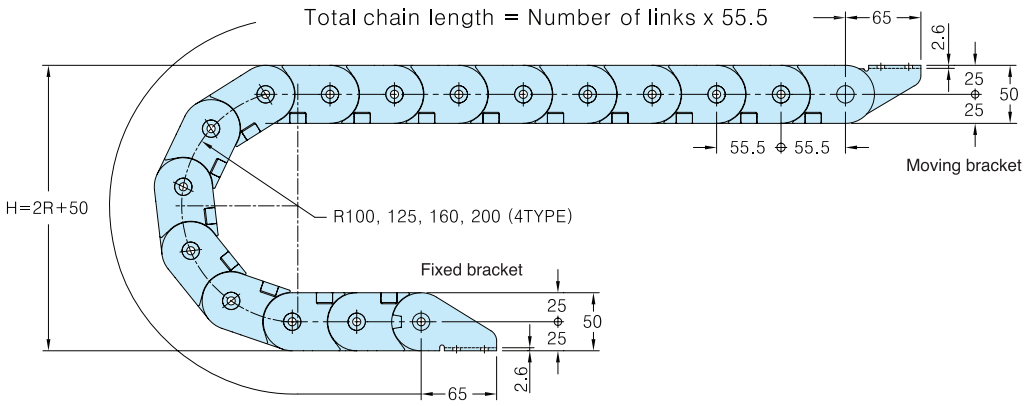
HSC

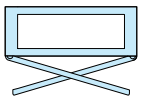
HSC 0555

Order Example (주문예)

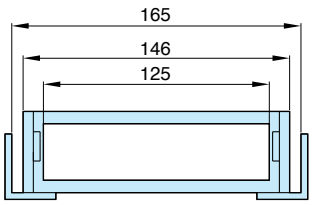
HSC0555	160R	B125	1665L	5SETS
Type	Radius	Width	Length	Q'ty

Chain, Guide Rail

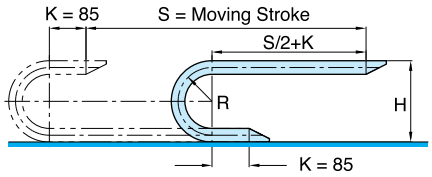


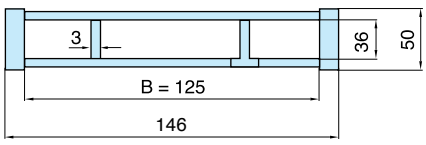


Openable Lower Cover



Guide Rail



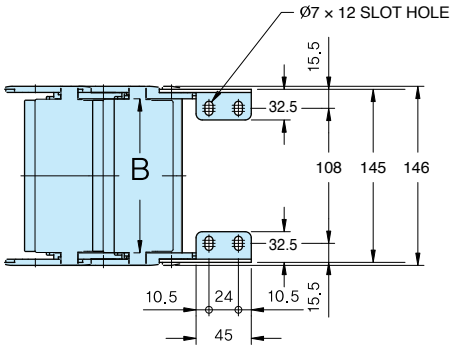


A-A Cross Section

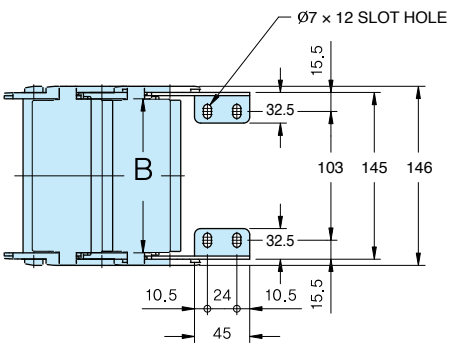
· Length $L = \frac{S}{2} + \pi R + 170$

·Radius	R	100	125	160	200
· Height	H	250	300	370	450

Brackets(Plastic)



Fixed Bracket



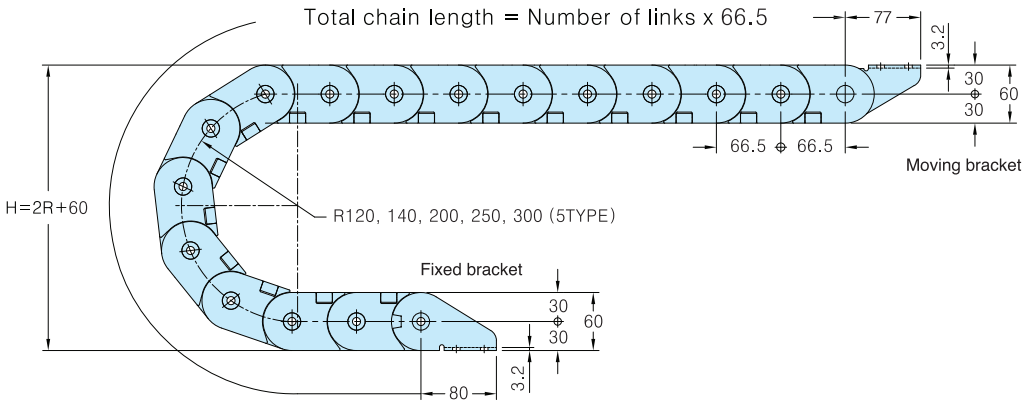
Moving Bracket

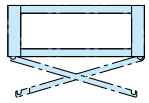
HSC 0665

Order Example (주문예)

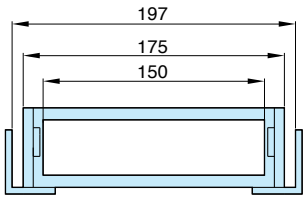
HSC0665	140R	B150	1729L	5SETS
Type	Radius	Width	Length	Q'ty

Chain, Guide Rail

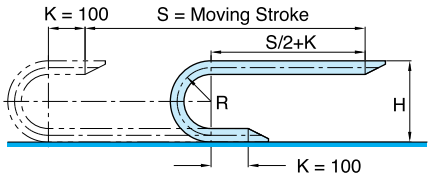


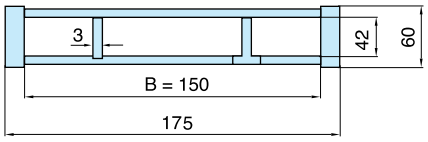


Openable Lower Cover



Guide Rail



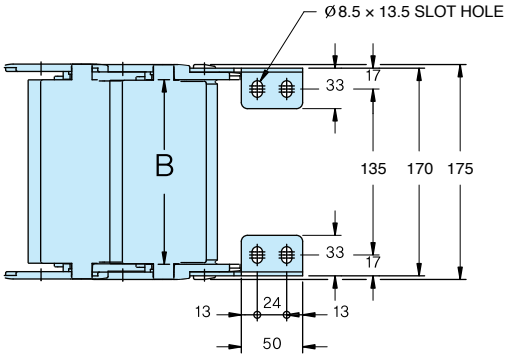


A-A Cross Section

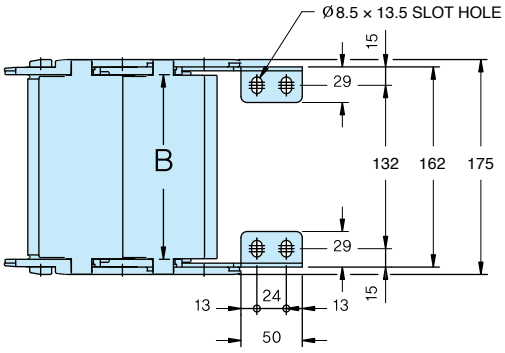
· Length $L = \frac{S}{2} + \pi R + 200$

· Radius	R	120	140	200	250	300
· Height	H	300	340	460	560	660

Brackets(STEEL)



Fixed Bracket



Moving Bracket

기술노트 Technical Note

여유공간

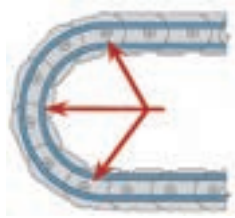
Cable 이나 Hose 삽입 시 사용환경에 따라 허용 용적율에 차이가 있습니다.
아래 표는 사용환경에 따른 허용 용적율을 보여주고 있으며, 허용치를 초과하여 사용할 경우 Cable 및 Hose의 마찰로 분진이 발생되며 단선발생의 주요 원인이 됩니다

	CLEAN ROOM	NORMAL
허용 용적률(%)	40~50%	50~60%

곡률반경

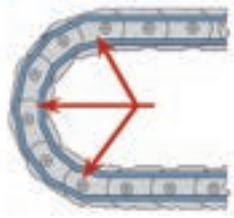
	Cable	Hose
권장 곡률반경(Radius)	외경(Dia) X 7.5	외경(Dia) X 9

아래의 그림을 보면 Cable의 삽입 시 적절한 곡률반경을 선정하여 배치된 사례와 그렇지 않은 사례를 보여주고 있습니다.



Cable이
RoboChain 내
원만한 곡선을
이루도록 해야한다.

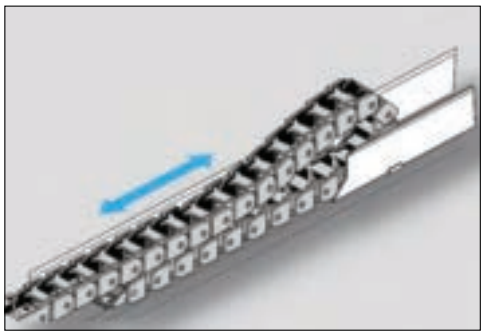
(○)



Cable이
RoboChain 내측에 닿아
각을 이루면서
곡선을 이루게 된다.

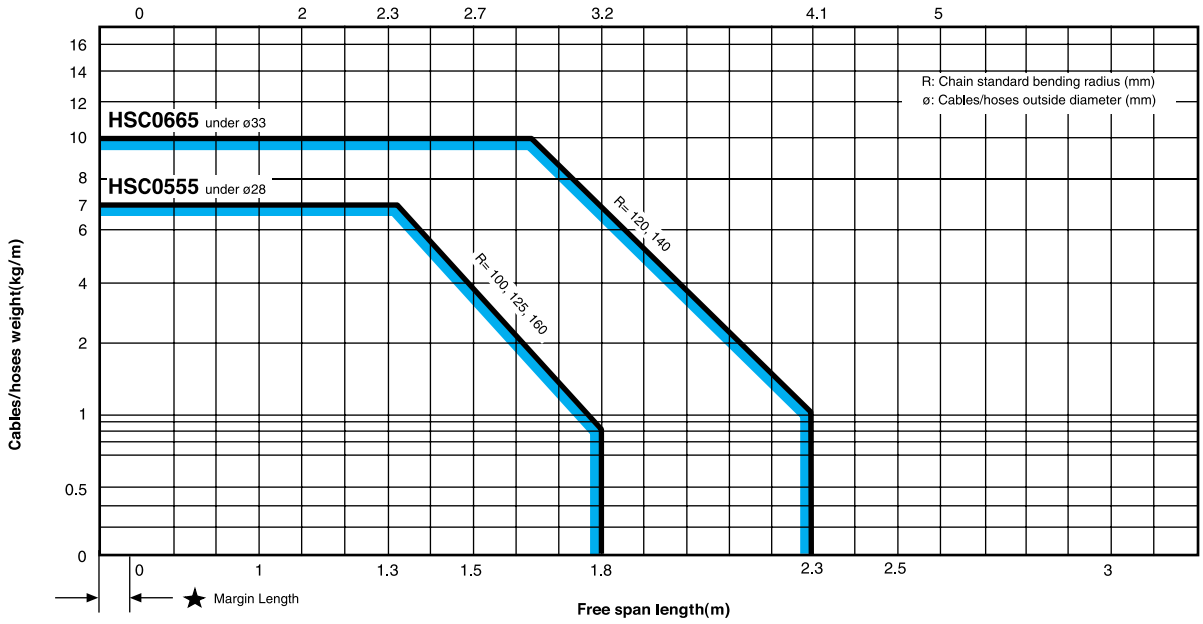
(X)

Guide Rail



Free span(자체 수평 지지가능거리)을 초과하여 사용할 경우
반드시 Guide Rail을 설치하여야 합니다.
Guide Rail은 RoboChain의 이탈을 방지하고,
안정적인 주행을 보장할 수 있는 최선의 방법입니다.
Guide Rail의 형태와 상세치수는 카다로그를 참고하시길 바랍니다.

능력선도(HSC) Capability Graph



사용환경 Environmental and Application Variables

Temperature

Permissible temperature range:
-40℃ to + 100℃

Flammability

Our standard materials correspond and are in accordance with test procedures VDE 0304 Part 3 (05.70) Class II c and also 94-HB

Chemicals

Plastic robochain are extremely resitant to many common chemicals.
If in any doubt, please ask

Weathering

Our standard materials are suitable for use outside and are UV resistant.

Cold Storage Systems

A special material is recommended for robochain operating continuously at very low temperatures.

Resistance to Radiation

No material damage occurs up to a radiation dos of **1 megarad.**
For doses of **100 megarad** the material becomes increasingly brittle and mechanical properties are reduced by 30%.

Explosion Resistance

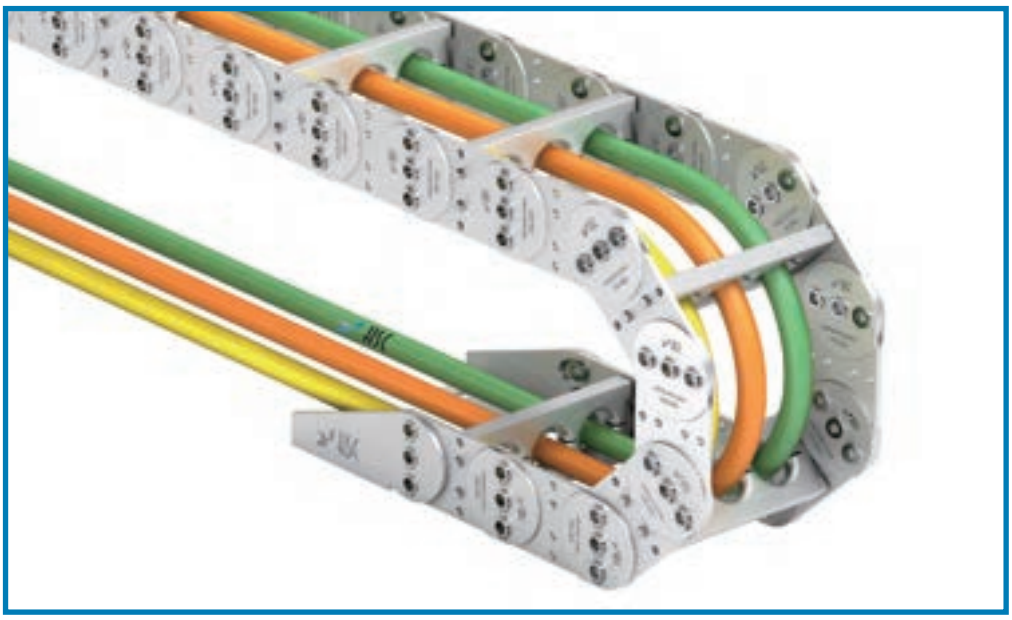
Robochain required for use in explosive environments are available - identified by letters **"EX"**

Vacuum

Our plastic robochain are suitable for use in Vacuumes.
A 1% reduction in mass is possible

HS type

HS 070
HS 095
HS 130
HS 180
HS 250



·실용신안 등록 제 069527호
·실용신안 등록 제 121323호
·실용신안 등록 제 134987호

용도 Application

제철·제강설비, 공작기계, 운반기계, 자동차 생산설비
산업용 플랜트, 냉연·압연설비 등 모든 기계에 적용

Iron and Steel mill industry, Machining center, Conveying machine, Automobile industry, Industrial plant facilities and for most other industrial application

특징 Features

- Steel 체인과 알미늄 Supporter 로 구성되어 강하고 수명이 깁니다.
- 작은판의 링크플레이트는 안전 설계로 되어 있습니다.
- Supporter 구멍을 주문가공하여 Cable, Hose 의 지지가 보다 확실합니다. •
운동량이 많을 경우는 I형,V형을 권합니다.
- 25종의 다양한 모델이 있습니다.
- 운반기계,공작기계, 철강설비 및 모든 기계에 적용하는 표준형입니다.

- *Long life and durability are ensured from steel chain and aluminum supporter.*
- *Link plate is designed for the best safety.*
- *Customized holes of supporter provide better support for cables and hose.*
- *For extensive motion, I- or V-type is recommended.*
- *25 various models are manufactured.*
- *Standardized design is good for transporting machine, milling machine, iron-mill facility and most of industrial application.*

운용환경 Operation

HS Type의 Robochain은 여러가지 응용분야에서 사용하기 때문에 내구성을 높이기 위해 Supporter를 알루미늄으로 제작 공급하고 있습니다. 녹이 발생하는 환경에서 사용하실 경우에는 Plate를 스테인레스 강판으로도 제작 가능합니다. Supporter의Hole은 케이블과 호스의 규격에 맞추어 제작합니다.

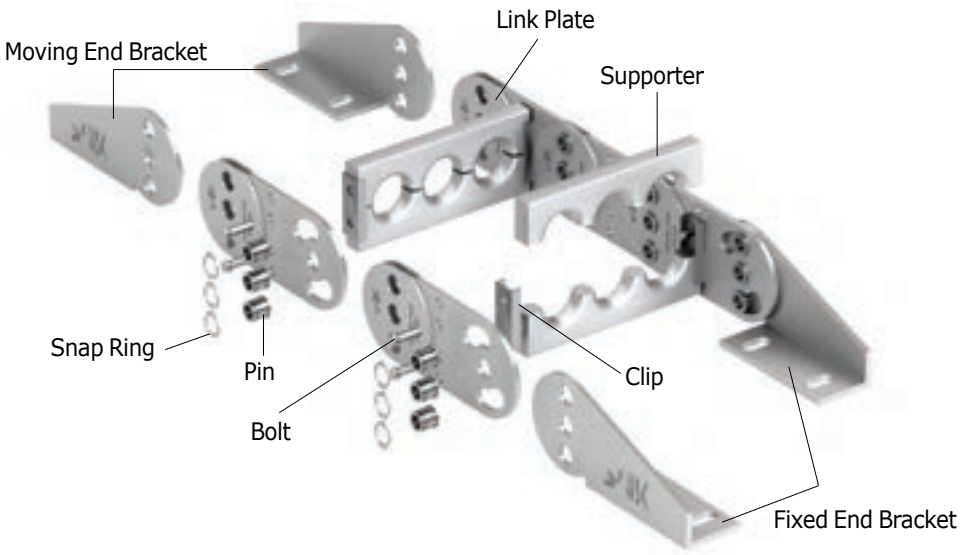
Since HS Type RoboChain is standard model for many use in industrial application, the supporter is made of aluminum to ensure long stroke and durability in harsh environment. For moisture environment, plate can be made of stainless steel.
Hole of support is manufactured according to customer's cable and hose specification.

주요제원 Properties

- 운동속도 : 60m/min 이하
- 케이블 호스의 직경 : 100mm 이하 (이상일 경우 문의 바람)
- 사용온도 : -25 ~ 200℃
- 기본색: 백색 아연 도금
- 재 질: S45CM-S, Aluminum

- *Moving Velocity: below 60m/min*
- *Diameter of Cable Hose: less than 100mm*
- *Operating Temperature: -25 ~ 200℃*
- *Basic Color: White Zinc Coating*
- *Material: S45CM-S, Aluminum*

구조와명칭 Structure

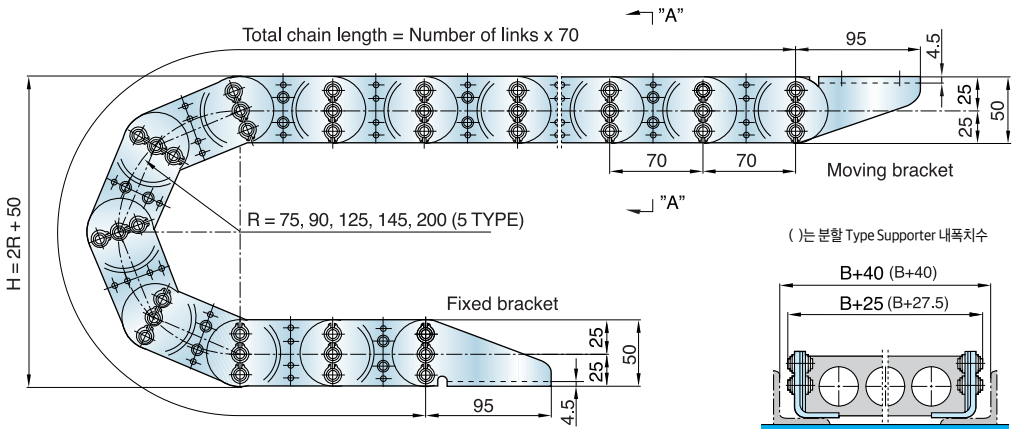


HS 070

Order Example (주문예)

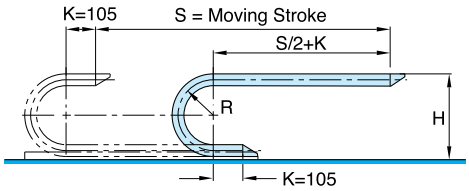
HS070	145R	B200	3500L	3SETS
Type	Radius	Width	Length	Q'ty

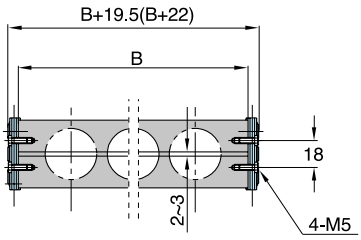
Chain, Cross Section, Guide Rail



( )는 분할 Type Supporter 내폭치수

Guide Rail





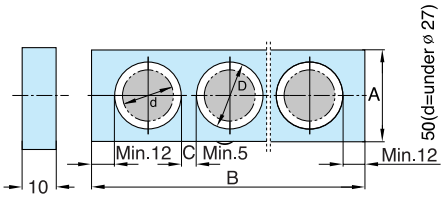
A-A Cross Section

· Length $L = \frac{S}{2} + \pi R + 210$

· Radius	R	75	90	125	145	200
· Height	H	200	230	300	340	450

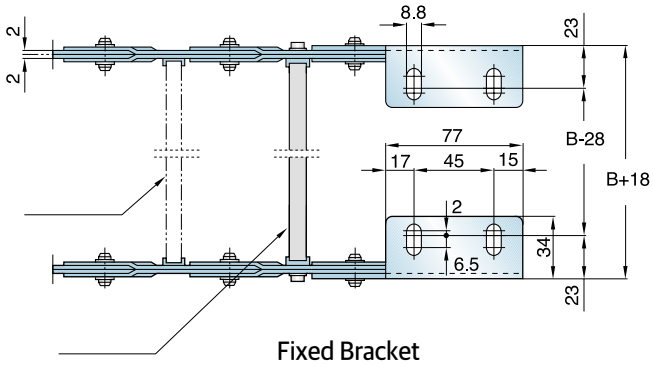
Supporter

Cable/Hose dmax	"A"	"B"							
		60	80	100	125	150	200	250	300
ø27	50	o	o	o	o	o	o	o	o

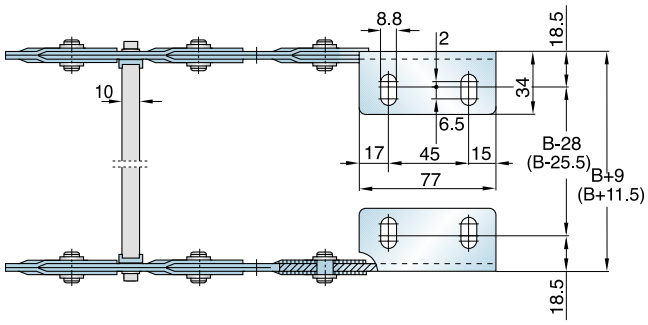


Cable: $D \geq d \times 1.1$
Hose : $D \geq d \times 1.2$

Brackets



Fixed Bracket



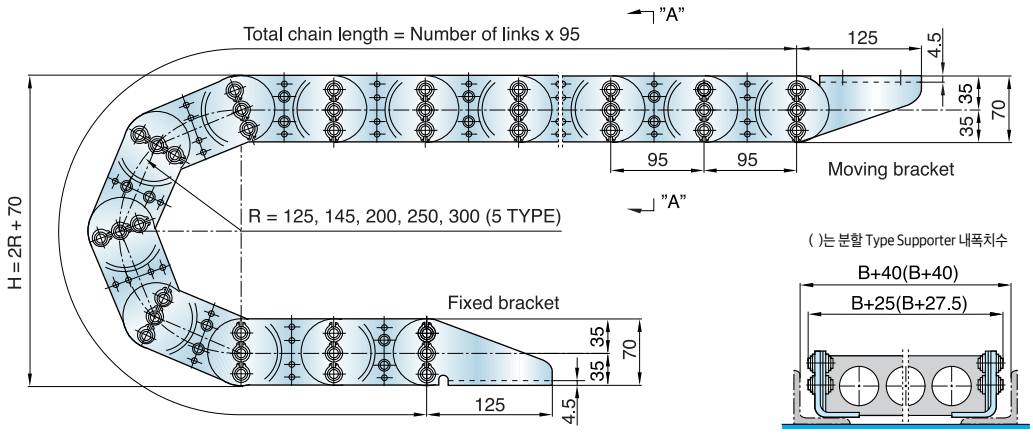
Moving Bracket

HS 095

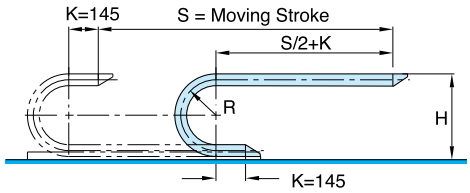
Order Example (주문예)

HS095	300R	B250	4560L	3SETS
Type	Radius	Width	Length	Q'ty

Chain, Cross Section, Guide Rail



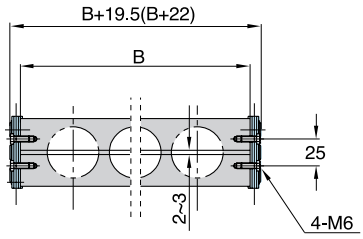
Guide Rail



· Length $L = \frac{S}{2} + \pi R + 290$

· Radius
· Height

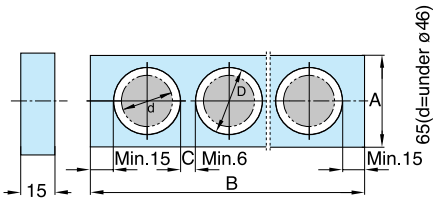
R	125	145	200	250	300
H	320	360	470	570	670



A-A Cross Section

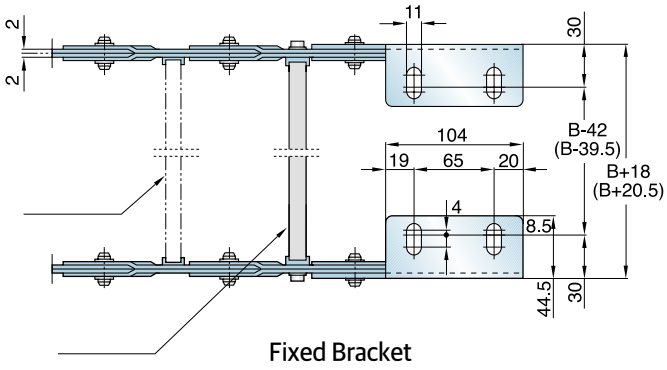
Supporter

Cable/Hose dmax	"A"	"B"								
		80	100	125	150	200	250	300	350	400
ø46	65	-	o	o	o	o	o	o	o	o

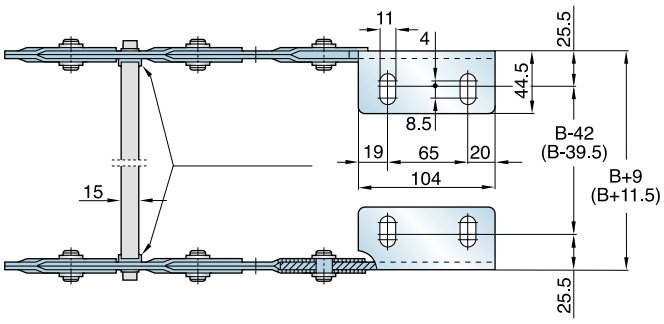


Cable: $D \geq d \times 1.1$
Hose : $D \geq d \times 1.2$

Brackets



Fixed Bracket



Moving Bracket

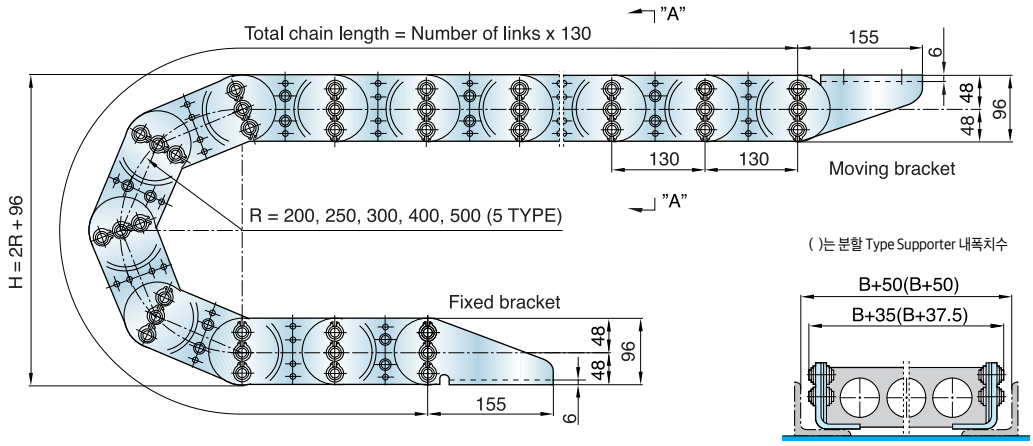
HS

HS 130

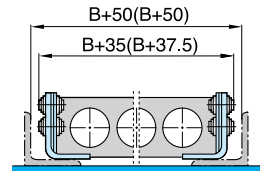
Order Example (주문예)

HS130	400R	B500	5980L	3SETS
Type	Radius	Width	Length	Q'ty

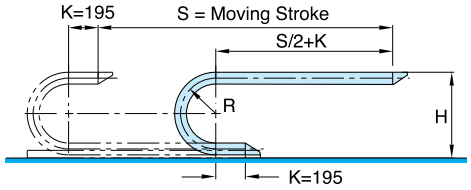
Chain, Cross Section, Guide Rail



( )는 분할 Type Supporter 내폭치수



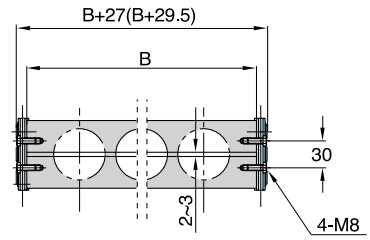
Guide Rail



· Length $L = \frac{S}{2} + \pi R + 390$

· Radius
· Height

R	200	250	300	400	500
H	496	596	696	896	1096

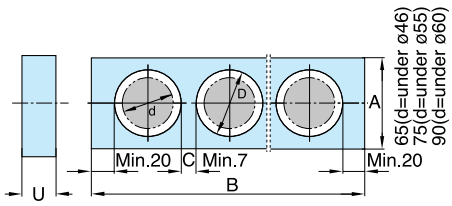


A-A Cross Section

Supporter

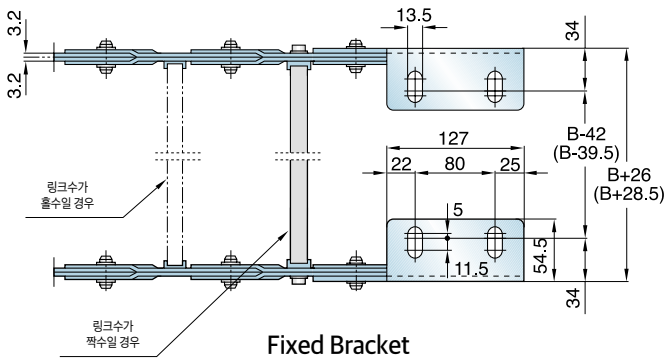
(o): U=15, (•): U=20

Cable/Hose dmax	"A"	"B" 100	125	150	200	250	300	350	400	450	500
ø55	75	o	o	o	o	o	o	o	o	•	•
ø60	90	-	o	o	o	o	o	o	o	•	•

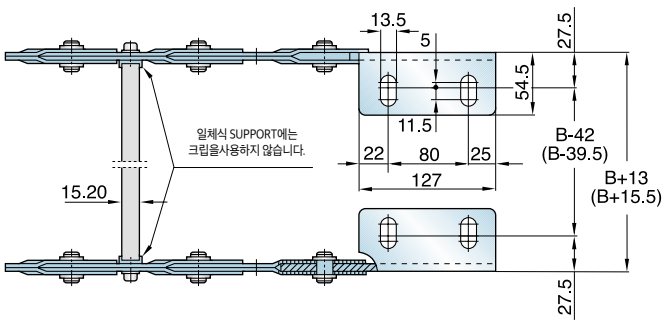


Cable: $D \geq d \times 1.1$
Hose : $D \geq d \times 1.2$

Brackets



Fixed Bracket



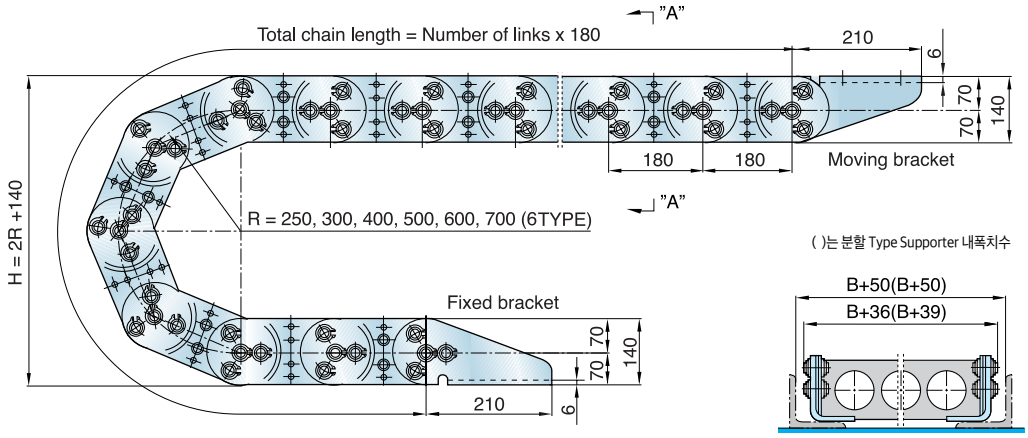
Moving Bracket

HS 180

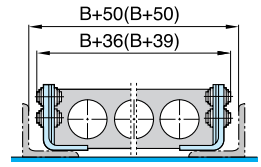
Order Example (주문예)

HS180	700R	B600	7920L	3SETS
Type	Radius	Width	Length	Q'ty

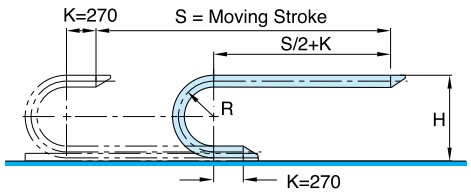
Chain, Cross Section, Guide Rail

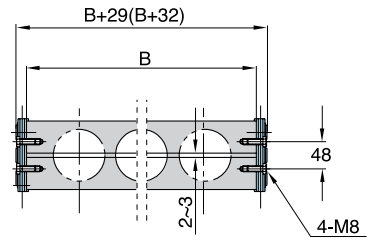


( )는 분할 Type Supporter 내폭치수



Guide Rail





A-A Cross Section

· Length $L = \frac{S}{2} + \pi R + 540$

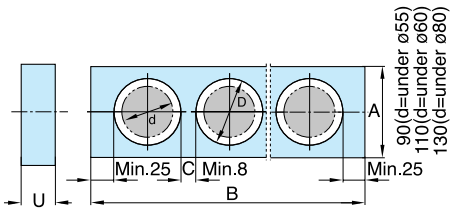
· Radius
· Height

R	250	300	400	500	600	700
H	640	740	940	1140	1340	1540

Supporter

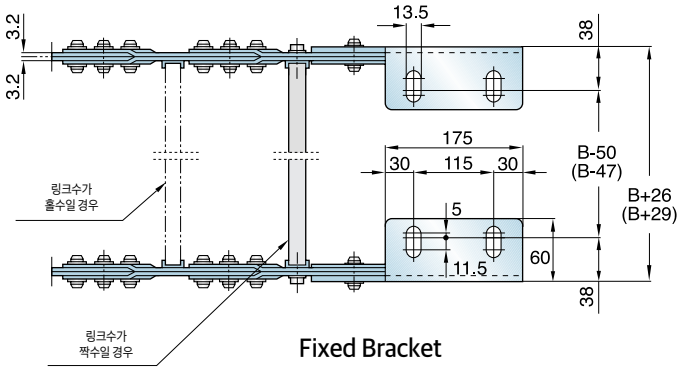
(o): U=15, (•): U=20

Cable/Hose dmax	"A"	"B"											
		100	125	150	200	250	300	350	400	450	500	550	600
ø50	90	o	o	o	o	o	o	o	o	•	•	-	-
ø80	120	-	o	o	o	o	o	o	o	•	•	•	•
ø90	130	-	-	•	•	•	•	•	•	•	•	•	•

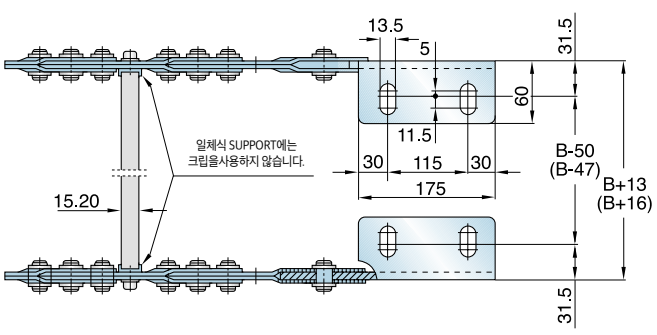


Cable: D ≥ d × 1.1
Hose : D ≥ d × 1.2

Brackets



Fixed Bracket



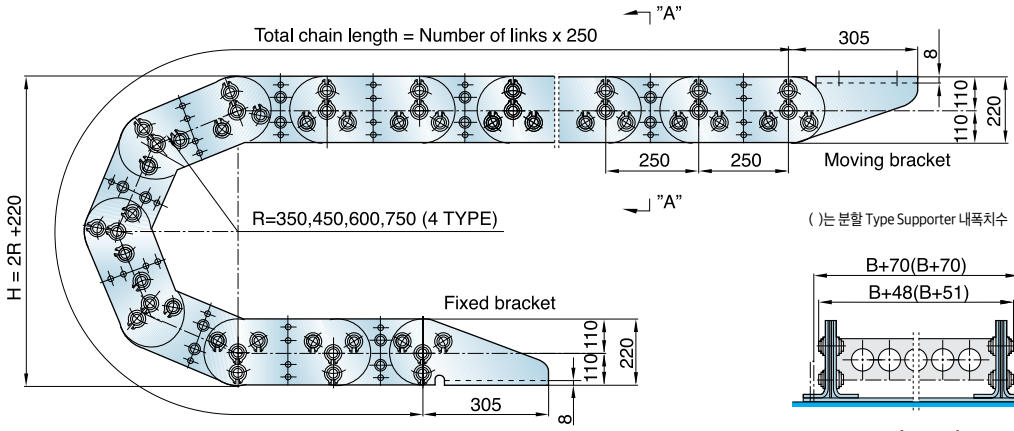
Moving Bracket

HS 250

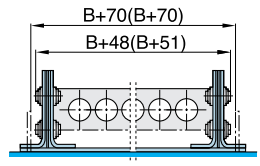
Order Example (주문예)

HS250	750R	B600	9750L	3SETS
Type	Radius	Width	Length	Q'ty

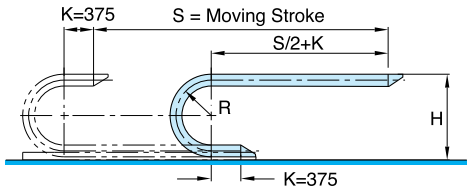
Chain, Cross Section, Guide Rail



( )는 분할 Type Supporter 내폭치수



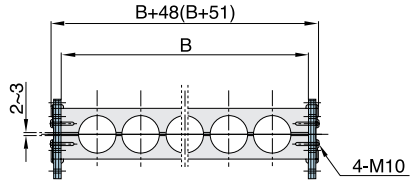
Guide Rail



·Length $L = \frac{S}{2} + \pi R + 750$

·Radius
·Height

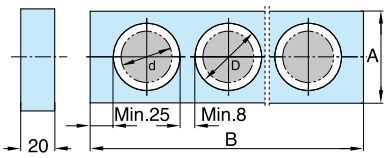
R	350	450	600	750
H	920	1120	1420	1720



A-A Cross Section

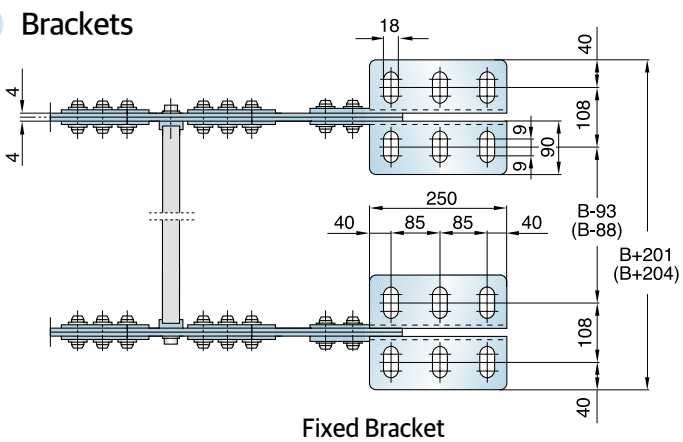
Supporter

Cable/Hose dmax	"A"	"B"					
		350	400	450	500	550	600
ø80	150	o	o	o	o	o	o
ø110	150	-	o	o	o	o	o
ø110over	220	-	-	o	o	o	o

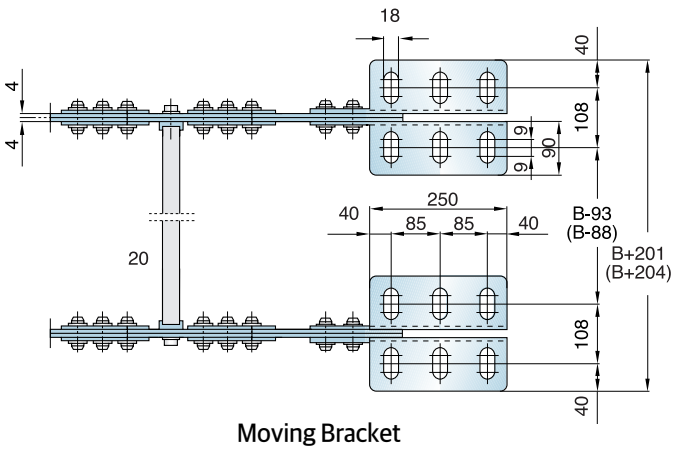


Cable: D ≥ d × 1.1
Hose : D ≥ d × 1.2

Brackets



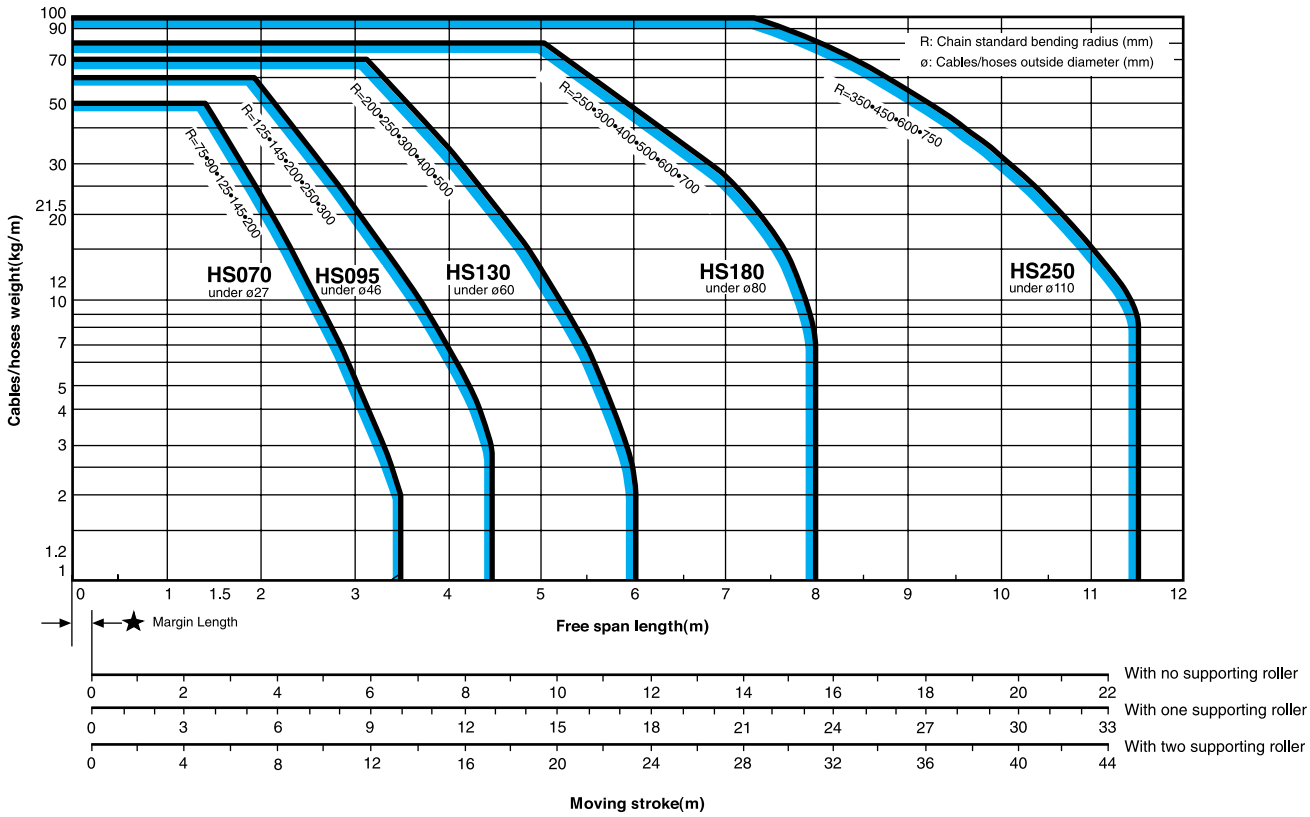
Fixed Bracket



Moving Bracket

※ 홀수 링크로 주문했을 시에만 더블 타입 엔드 브라켓 적용이 가능합니다.

능력선도 (HS) Capability Graph



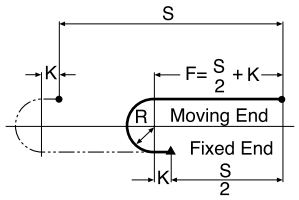
운동거리와 Support Roller Stroke & Support Roller

Robochain의 자체 수평 지지 가능 거리를 Free Span이라 합니다.
Free Span의 길이는 케이블이나 호스의 무게에 의해 결정됩니다.
기계가 움직이는데 요구되는 거리의 반이 Free Span을 넘으면
Support Roller를 사용하여 운동거리를 증가시켜야 합니다.
Support Roller는 Free Span 거리를 확장시켜 줍니다.

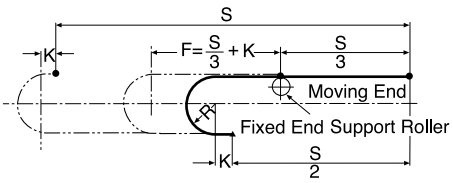
- Support Roller는 39 Page 참조

S: 운동거리 (Stroke)
K: 여유거리 (Margin Length)
F: Free Span

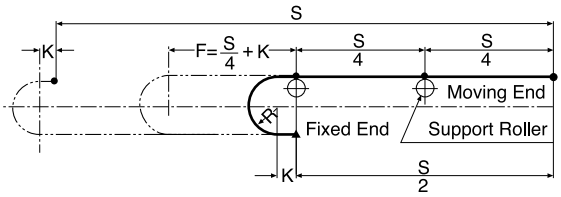
- Support Roller가 없는경우



- Support Roller가 한개로 Free Span을 3배 확장

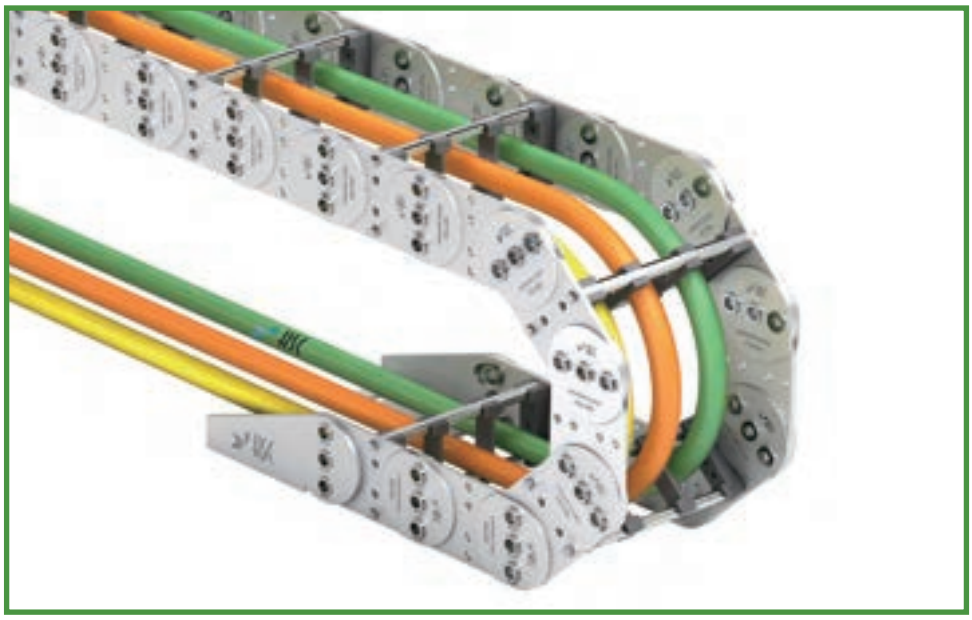


- Support Roller가 두개로 Free Span을 4배 확장



HSS type

HSS 070
HSS 095
HSS 130
HSS 180
HSS 250



·실용신안등록 제 069527호
·실용신안등록 제 121323호
·실용신안 등록 제 134987호

용도 Application

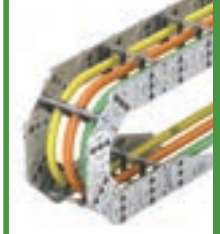
제철·제강설비, 공작기계, 운반기계, 자동차 생산설비, 산업용 플랜트, 냉연·압연설비 등
모든 기계에 적용

Iron and Steel mill industry, Machining center, Conveying machine, Automobile industry, Industrial plant facilities and for most other industrial application

특징 Features

- 간편조작형으로 Cable, Hose의 분해 및 설치가 용이하고 칸막이가 자유롭게 조정됩니다.
- Supporter 부가 규격화되어 간편하며 짧은 납기에 좋습니다.
- 불필요한 무게를 줄였습니다.
- Cable, Hose 의 추가 증설이 용이합니다.
- 5종의 다양한 모델로 구성되어 있습니다.

- *Quick and easy manipulation for assembling and dissembling of cables and hoses.*
- *Movable divider provides more flexibility.*
- *Supporter parts are well standardized to cut the delivery time.*
- *Unnecessary weight is removed.*
- *25 various models are manufactured.*



운용환경 Operation

HSS Type의 Robochain은 HS Type과 Plate는 같습니다만 Supporter가 다릅니다.
HSS Type은 Supporter의 Bar를 분리하여 케이블과 호스를 쉽게 탈·부착 가능토록 간편하게 제작되어 있습니다. 한편, 엔지니어링 플라스틱 Divider를 케이블과 호스의 직경에 맞추어 사용합니다. HSS Type은 Cable, Hose 등의 추가 증설이 용이하도록 설계되었습니다.
녹이 발생하는 환경에서 사용하는 경우에는 Plate를 스테인레스 강판으로도 제작이 가능합니다.

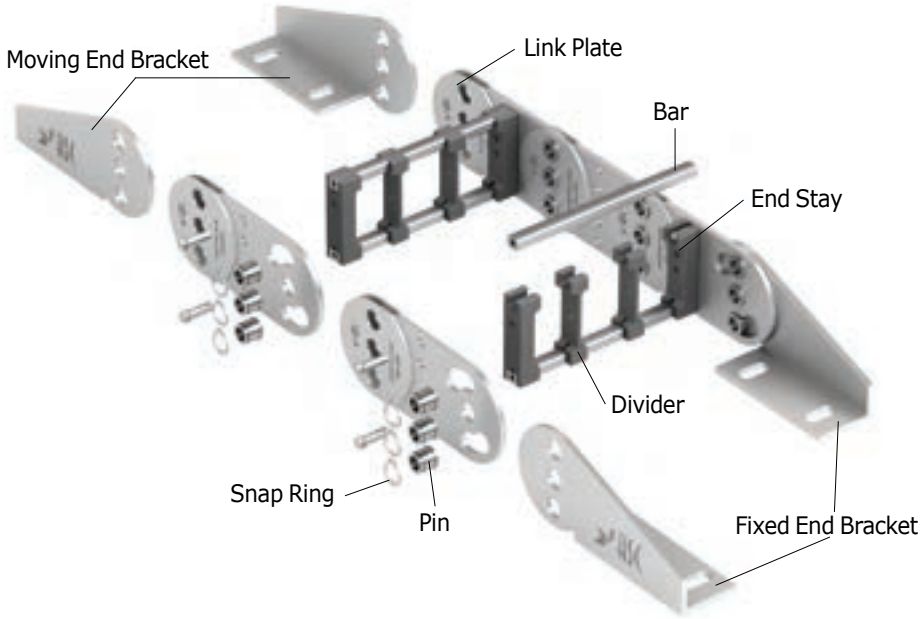
HSS Type shares the same plate with HS Type, however, the supporter is different.
HSS Type is designed for easy assembling and dissembling of cables and hoses through eliminating the bar of supporter. Also, divider made of engineering plastic flexibly moves to accommodate the diameter of cables or hoses.
For moist environments, plates can be made of stainless steel.

주요제원 Properties

- 운동속도 : 60m/min이하
- 케이블 호스의 직경 : 80mm 이하
- 사용온도 : -25 ~ 100℃
- 기본색: 백색아연도금
- 재질: S45CM-S, Aluminum, 엔지니어링 플라스틱

- *Moving Velocity: below 60m/min*
- *Diameter of Cable Hose: less than 80mm*
- *Operating Temperature: -25 ~ 100℃*
- *Basic Color: White Zinc Coating*
- *Material: S45CM-S, Aluminum, Engineering Plastic*

구조와명칭 Structure

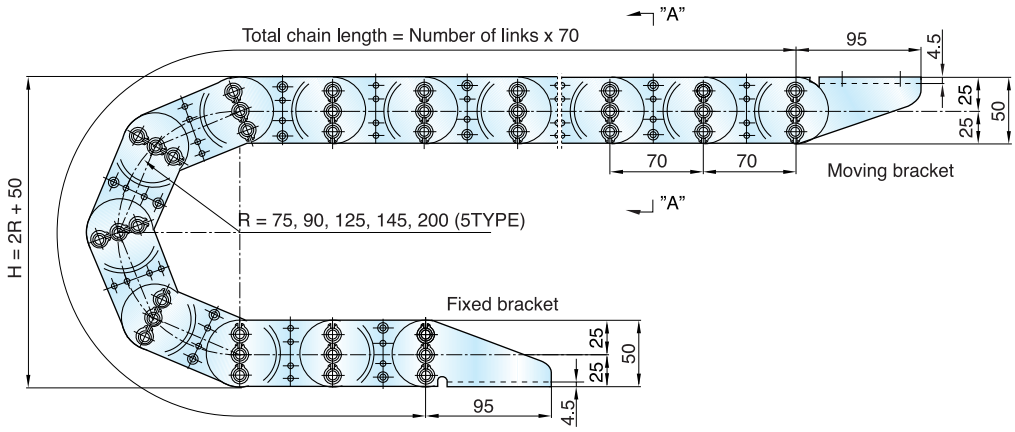


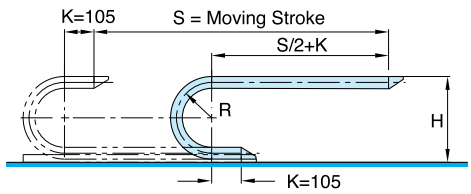
HSS 070

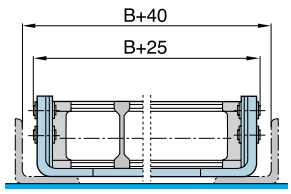
Order Example (주문예)

HSS070	145R	B200	D:3	3500L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

Chain, Guide Rail







Guide Rail

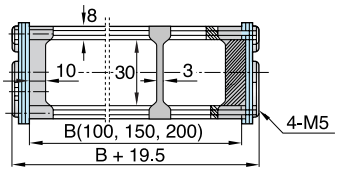
· Length $L = \frac{S}{2} + \pi R + 210$

· Radius
· Height

R	75	90	125	145	200
H	200	230	300	340	450

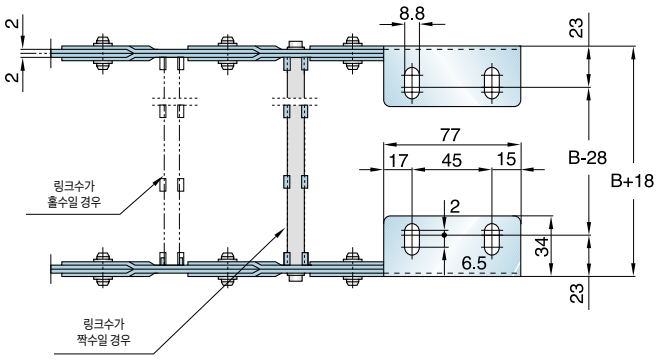
Divider

Cable/Hose	dmax	ø27			
Frame Dim	"B"	100	150	200	250
Divider	Min.No	0	1	2	3
	Max.No	3	5	8	9

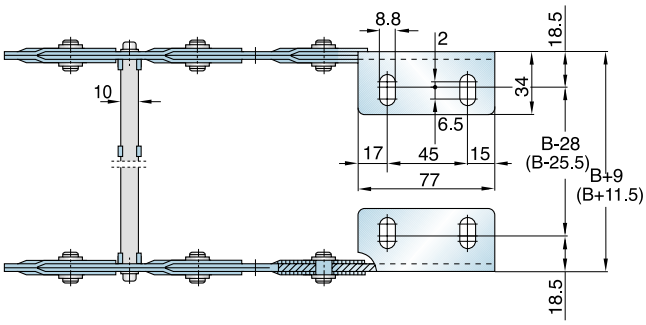


A-A Cross Section

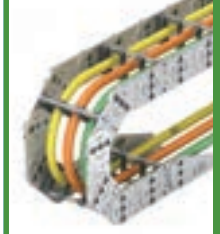
Brackets



Fixed Bracket



Moving Bracket

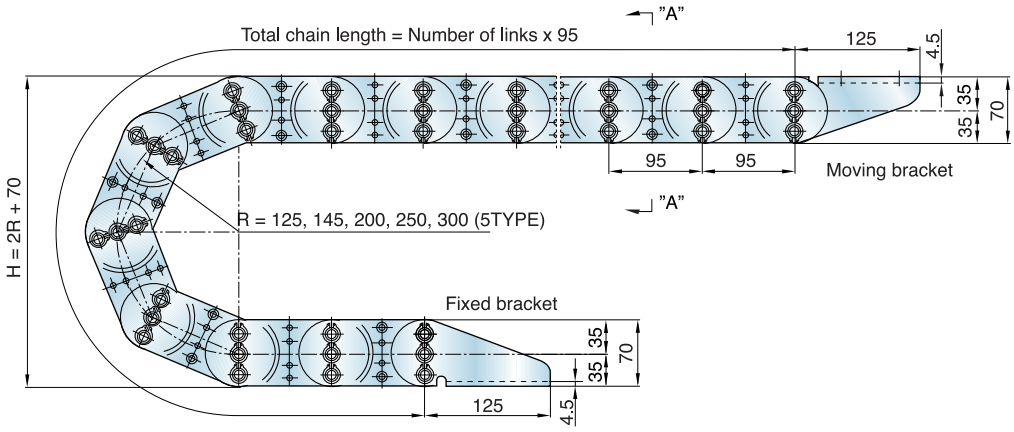


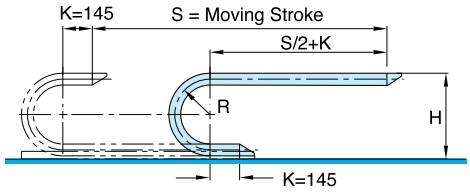
HSS 095

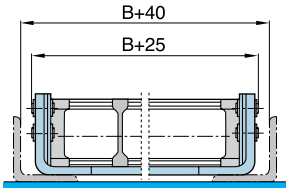
Order Example (주문예)

HSS095	300R	B200	D:3	4560L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

Chain, Guide Rail







Guide Rail

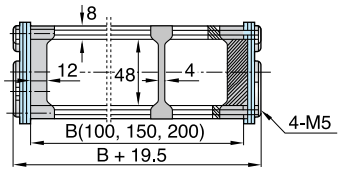
· Length $L = \frac{S}{2} + \pi R + 290$

· Radius	R	125	145	200	250	300
· Height	H	320	360	470	570	670

SDivider

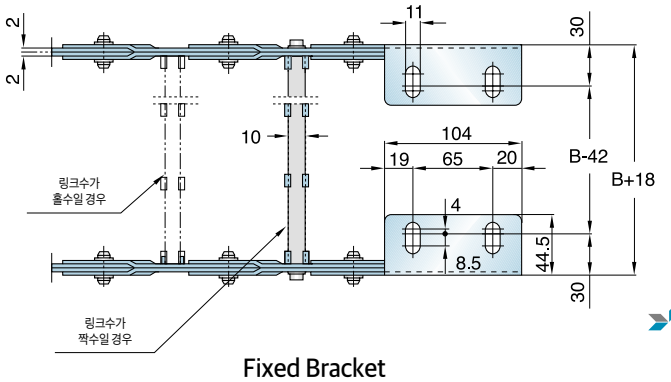
Cable/Hose	dmax	ø42				
Frame Dim	"B"	100	150	200	250	300
Divider	Min.No	0	1	2	3	4
	Max.No	3	5	8	9	10

if "B" >300, "WIDE BAR" (OPTION)

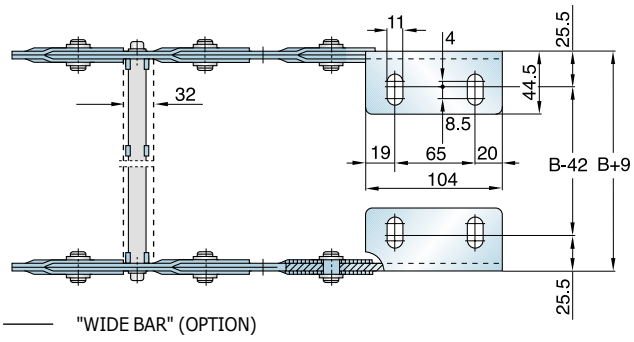


A-A Cross Section

Brackets



Fixed Bracket



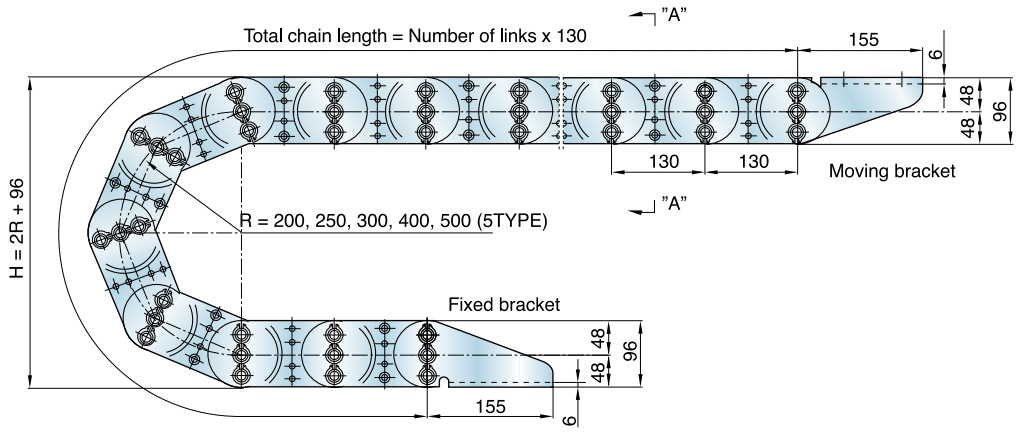
Moving Bracket

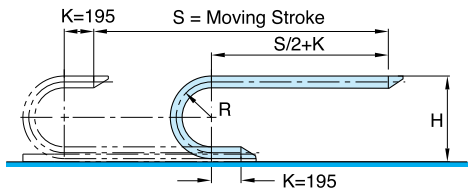
HSS 130

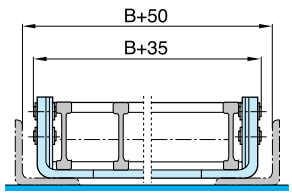
Order Example (주문예)

HSS130	400R	B300	D:4	5980L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

Chain, Guide Rail







Guide Rail

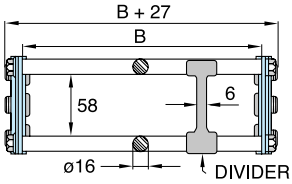
· Length $L = \frac{S}{2} + \pi R + 390$

· Radius
· Height

R	200	250	300	400	500
H	496	596	696	896	1096

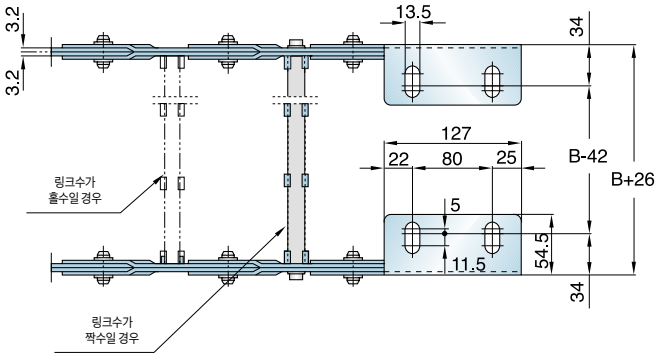
Divider

Cable/Hose	dmax	ø50				
Frame Dim	"B"	200	250	300	350	400
Divider	Min.No	2	3	4	5	6
	Max.No	3	5	8	9	10

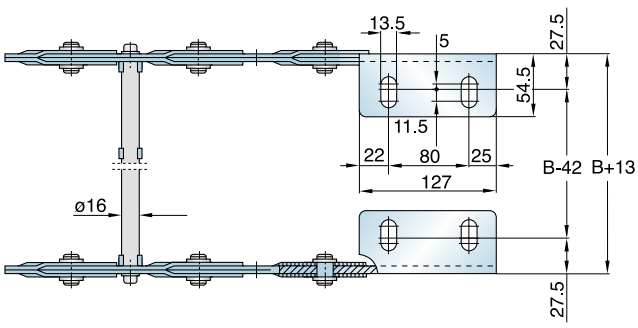


A-A Cross Section

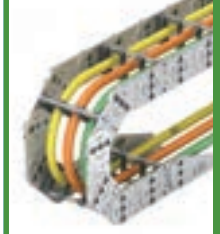
Brackets



Fixed Bracket



Moving Bracket

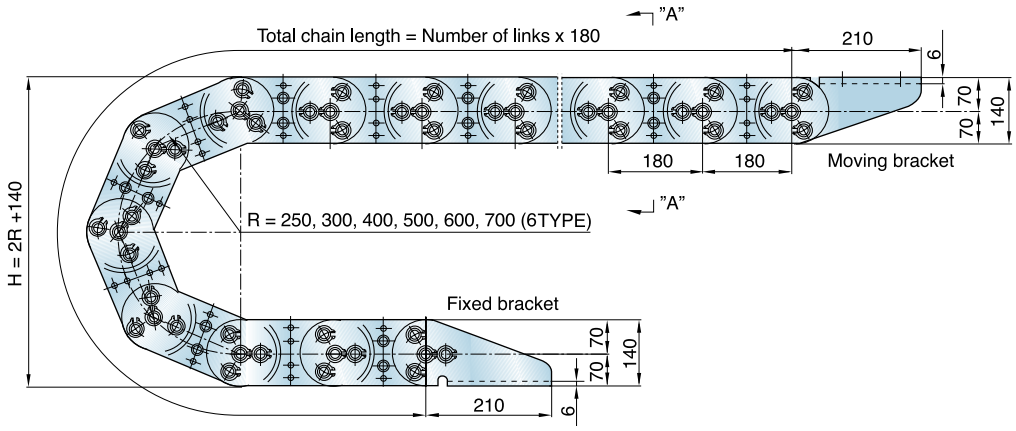


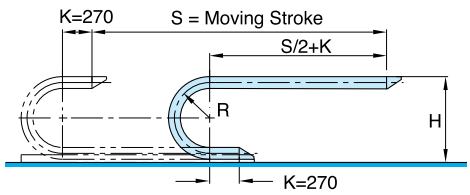
HSS 180

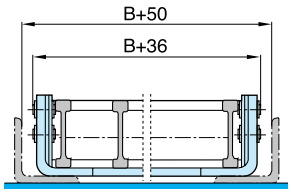
Order Example (주문예)

HSS180	700R	B400	D:4	7920L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

Chain, Guide Rail







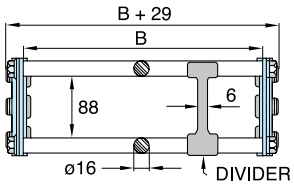
Guide Rail

· Length $L = \frac{S}{2} + \pi R + 540$

· Radius	R	250	300	400	500	600	700
· Height	H	640	740	940	1140	1340	1540

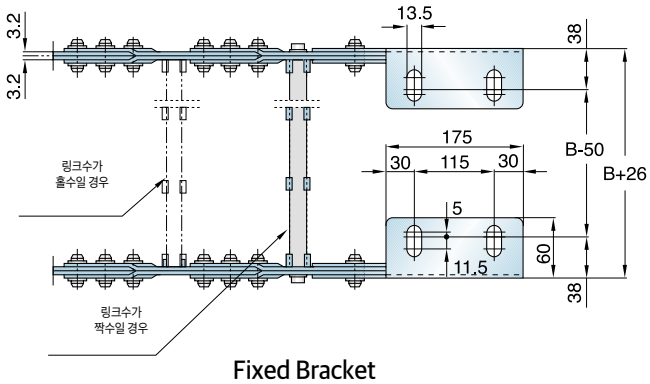
Divider

Cable/Hose	dmax	ø80				
Frame Dim	"B"	300	400	500	600	700
Divider	Min.No	3	4	5	6	7
	Max.No	5	8	10	12	14

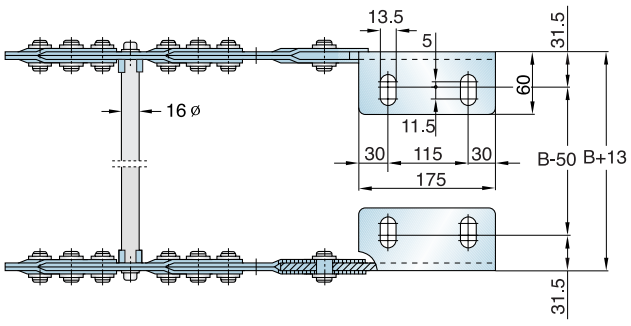


A-A Cross Section

Brackets



Fixed Bracket



Moving Bracket

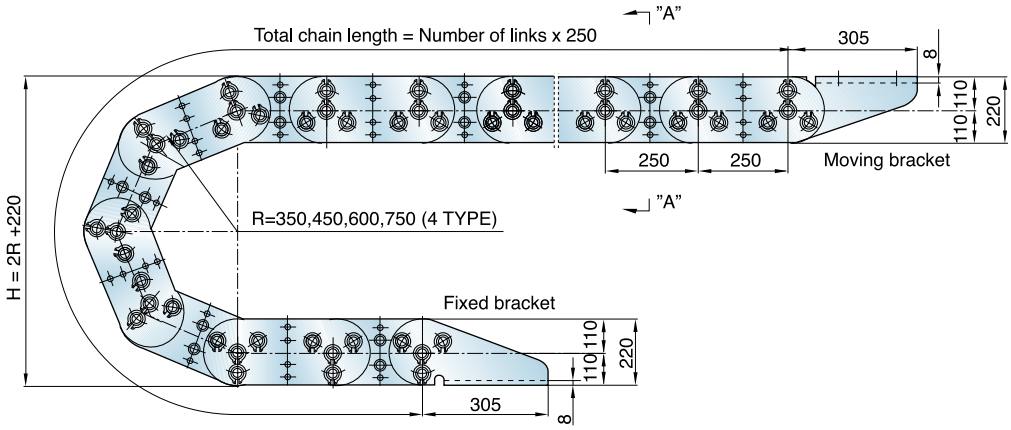
HSS

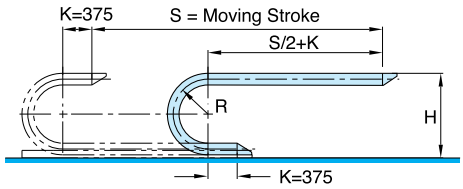
HSS 250

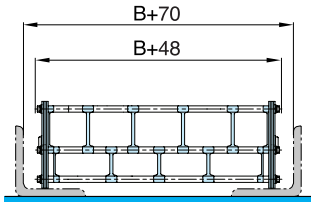
Order Example (주문예)

HSS250	750R	B600	D:6+4	9750L	3SETS
Type	Radius	Width	Divider	Length	Q'ty

Chain, Guide Rail







Guide Rail

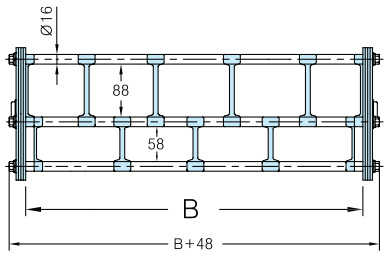
· Length $L = \frac{S}{2} + \pi R + 750$

· Radius
· Height

R	350	450	600	750
H	920	1120	1420	1720

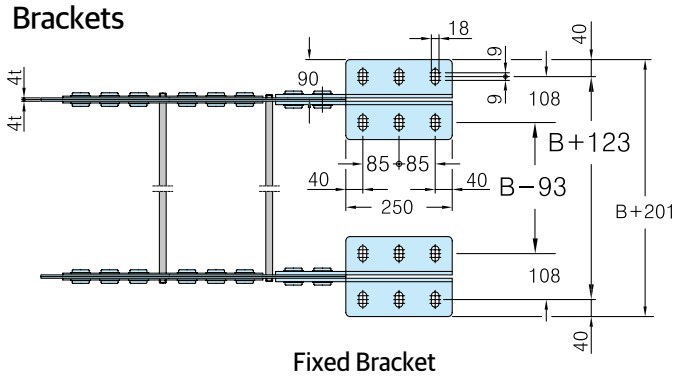
Divider

Cable/Hose	dmax	ø50×ø80				
Frame Dim	"B"	300	400	500	600	700
Divider	Min.No	3	4	5	6	7
	Max.No	5	8	10	12	14

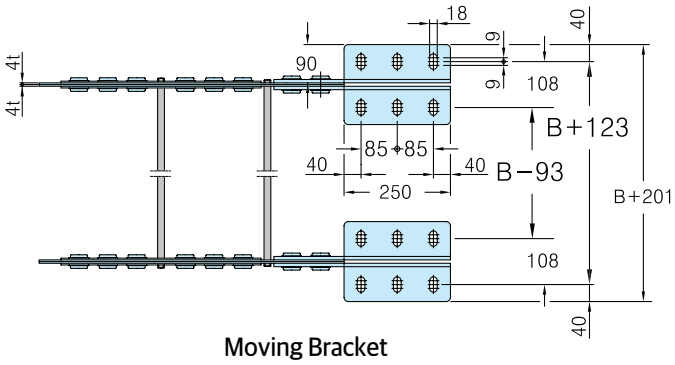


A-A Cross Section

Brackets

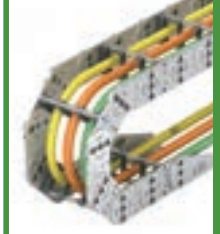


Fixed Bracket



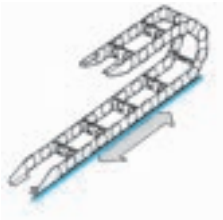
Moving Bracket

※ 홀수 링크로 주문했을 시에만 더블 타입 엔드 브라켓 적용이 가능합니다.



응용 예 Application Examples

Standard Type

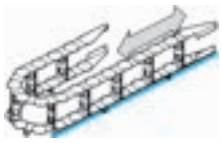


Vertical Type(A)

Vertical Type(B)

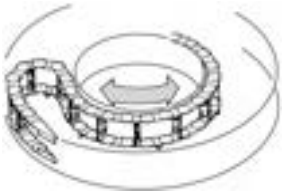
Combination Type

Bed Type



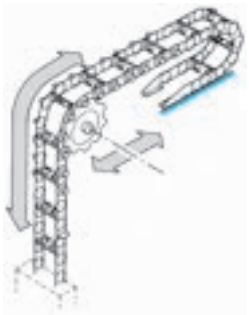
Chip Cover Type

Bend Drum Type(H)

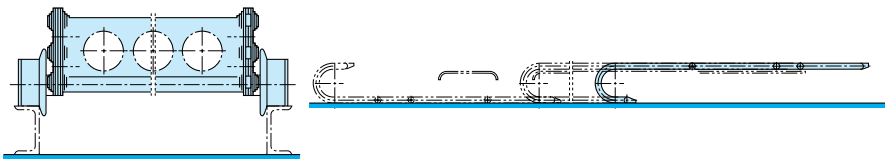


Bend Drum Type(V)

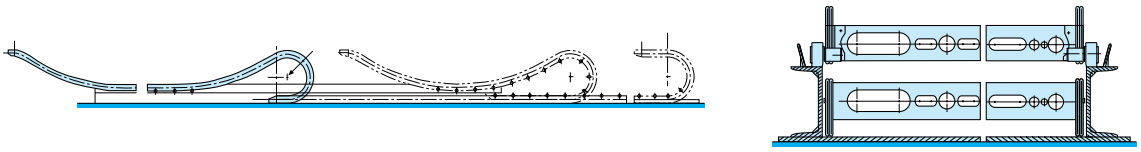
Sprocket Type



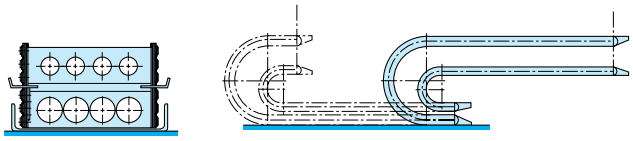
Side Roller Type



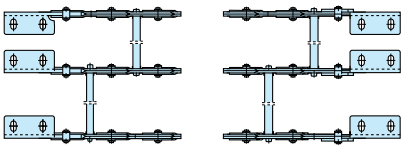
Free Side Roller Type



Double Type(A)

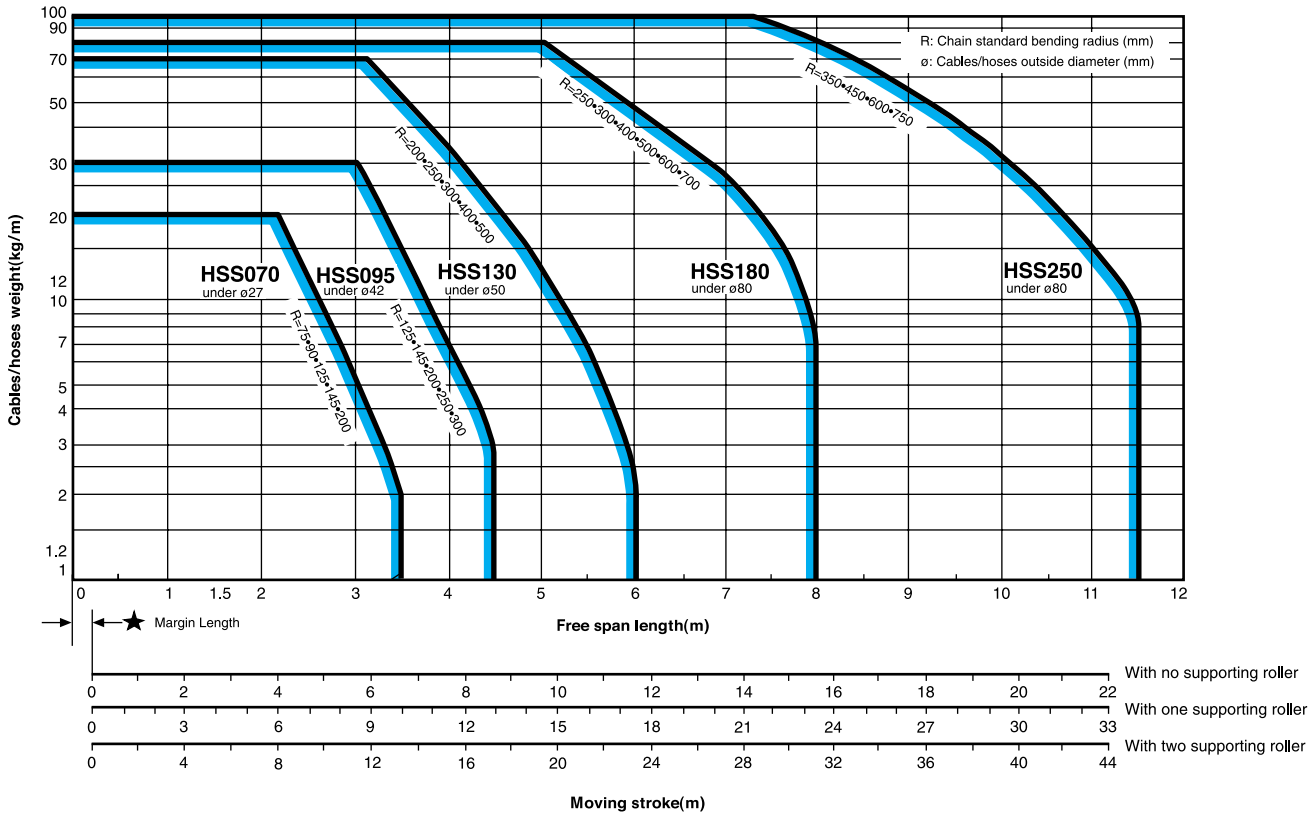


Double Type(B)

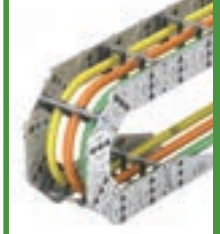


HSS

능력선도(HSS) Capability Graph

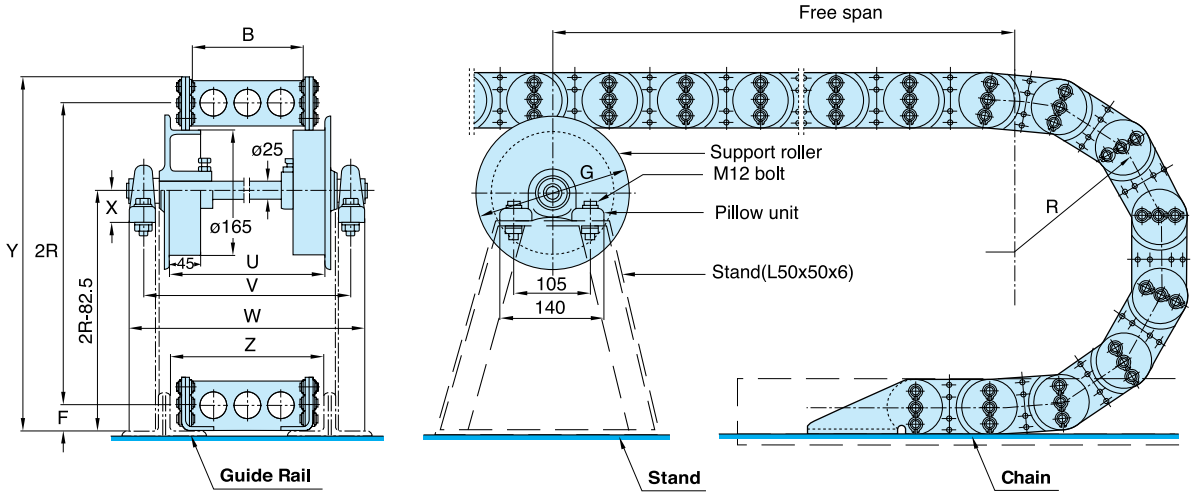


제철소의 연주설비 TUNDISH CAR



Support Roller의 치수

Application Examples



(Dimension: mm)

Approx. Chain Chain Size	Min. Supporter with B	Min. Bending Radius R	U	V	W	F	Y	Z	øG	X
HS070, HSS070	80	125	B+45	B+125	B+163	25	2R+50	B+40	205	36.5
HS095, HSS095						35	2R+70			
HS130, HSS130	100	200	B+55	B+135	B+173	48	2R+96	B+50	285	36.5
HS180, HSS180	125	250				70	2R+140			
HS250, HSS250 (ø40)	350	350	B+75	B+185	B+240	110	2R+220	B+70	365	49.2

대용량의 HSS Type RoboChain

RoboFlex | 로보플렉스

HSRF 2538
HSRF 2849
HSRF 3560
HSRF 4565
HSRF 23B(원형)
HSRF 29B(원형)
HSRF 36B(원형)

용도 Application

크린룸, 반도체, 정밀스테이지, 리니어 모터, 취출 로봇, 용접 로봇,
공작기계, 디스플레이, 정밀측정장비 및 자동화설비

Clean room, Semi-conduct, Precision Stage, Linear Motor, Robot,
Display, Machinery, Automotive, F.A

Fraunhofer TESTED® DEVICE
Hanshin Chain Co., Ltd.
RoboChains RACER and HSRF
Report No. HC 0703-393

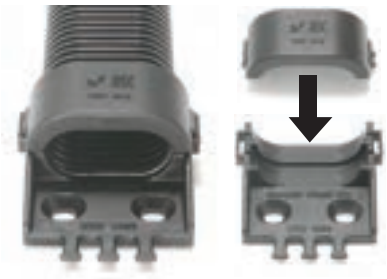
- **Class 1**

TÜV RoboFlex 29dB(A)

- **29dB**

END BRACKET

A TYPE



B TYPE

MIDDLE BRACKET

HSRF

HSRF 2538

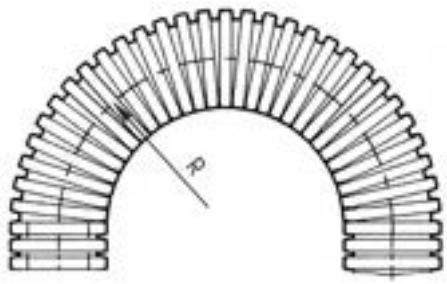
Fraunhofer TESTED DEVICE IPA

Order Example (주문예)

HSRF 2538	1000L	A+B	3SETS
Type	Length	Brackets	Q'ty

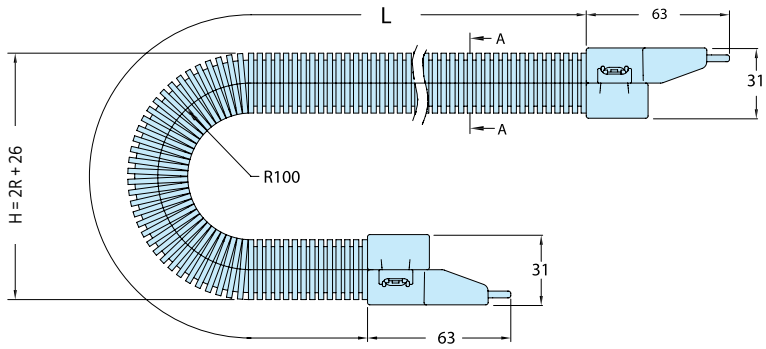
···› stat. R
lowest recommended bending radius for static (fixed) installation.

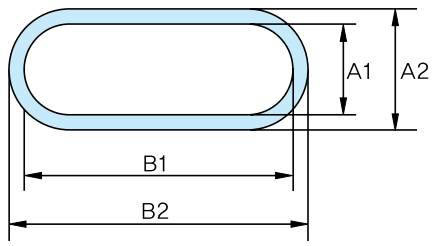
···› dyn. R
lowest recommended bending radius for dynamic (flexible) installation.



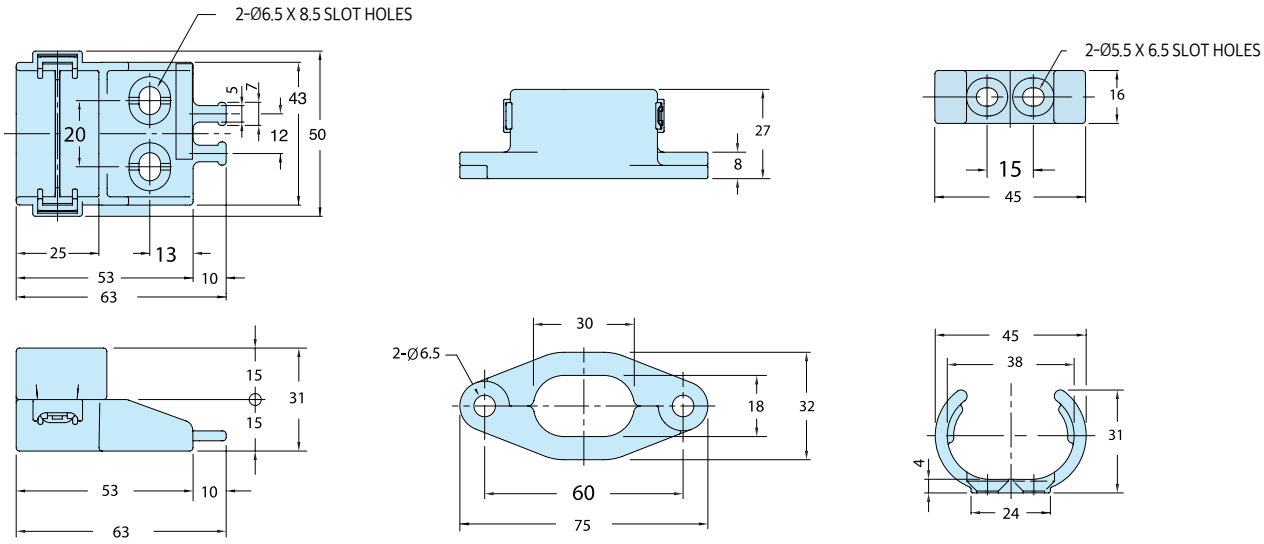
star.R	dyn.R	A1	A2	B1	B2
40	100	18	26	30	38

RoboFlex





Brackets



A TYPE

B TYPE

MIDDLE TYPE

HSRF 2849

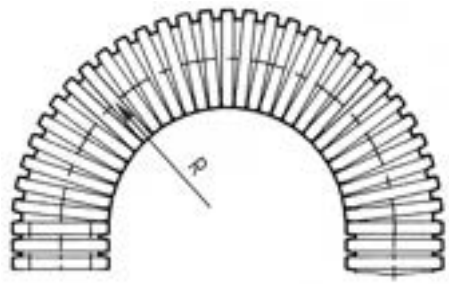
Fraunhofer TESTED DEVICE IPA

Order Example (주문예)

HSRF 2849	1000L	A+B	3SETS
Type	Length	Brackets	Q'ty

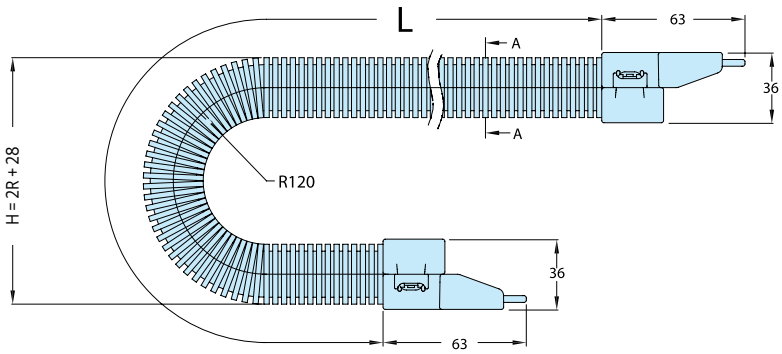
···› stat. R
lowest recommended bending radius for static (fixed) installation.

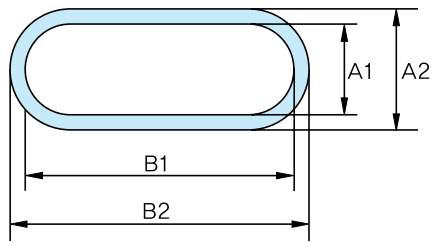
···› dyn. R
lowest recommended bending radius for dynamic (flexible) installation.



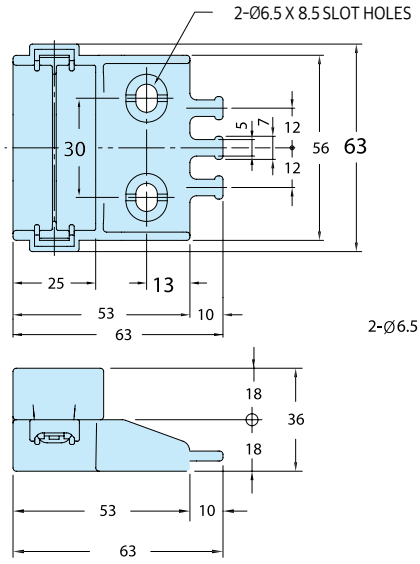
star.R	dyn.R	A1	A2	B1	B2
50	120	21	28	41	48

RoboFlex

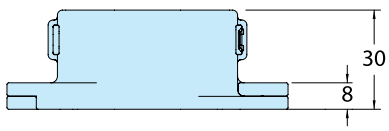


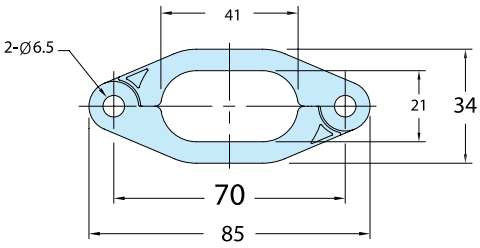


Brackets

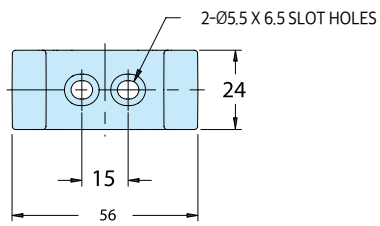


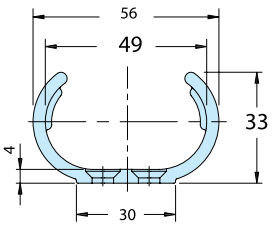
A TYPE





B TYPE





MIDDLE TYPE

HSRF

HSRF 3560

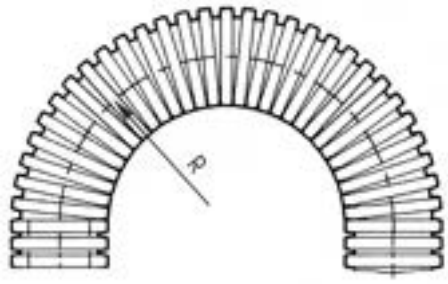
Fraunhofer TESTED DEVICE IPA

Order Example (주문예)

HSRF 3560	1200L	A+B	3SETS
Type	Length	Brackets	Q'ty

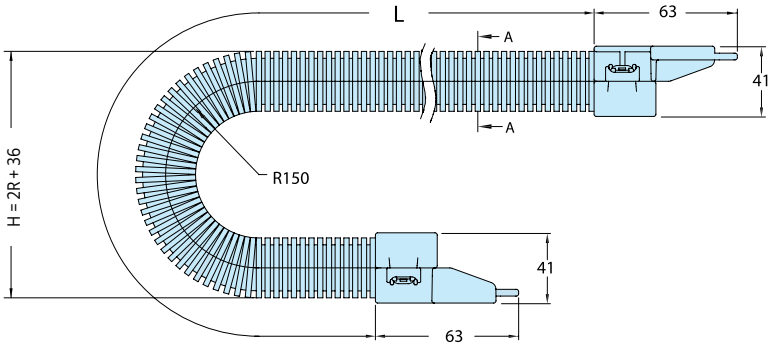
···▸ stat. R
lowest recommended bending radius for static (fixed) installation.

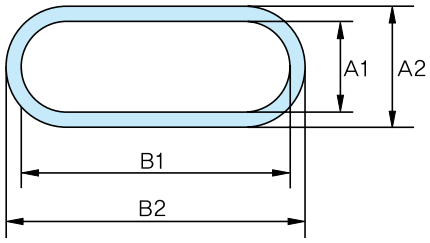
···▸ dyn. R
lowest recommended bending radius for dynamic (flexible) installation.



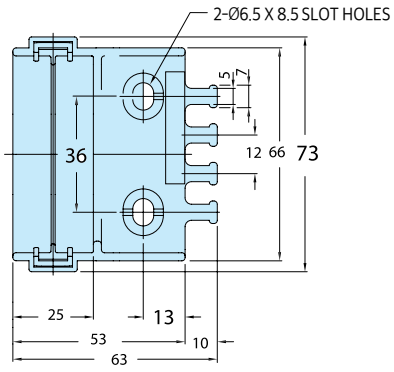
star.R	dyn.R	A1	A2	B1	B2
60	150	28	36	53	61

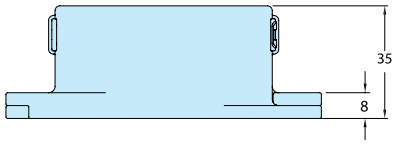
RoboFlex

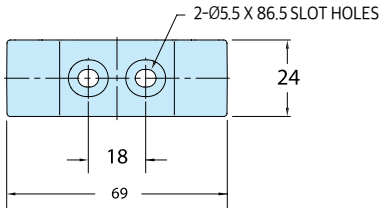


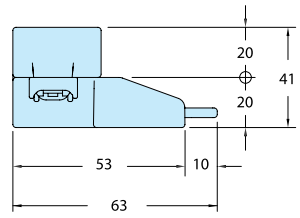


Brackets

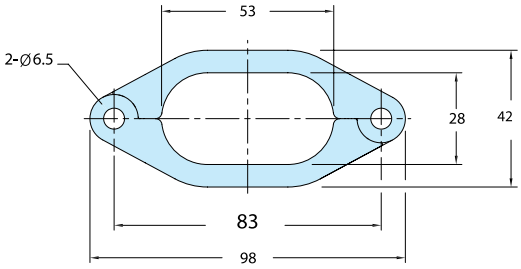




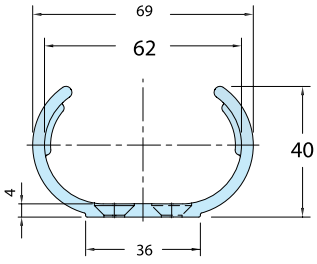




A TYPE



B TYPE



MIDDLE TYPE

HSRF 4565

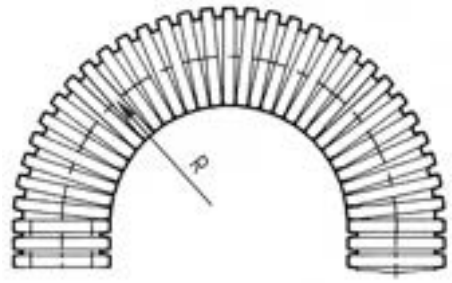
Fraunhofer TESTED® DEVICE IPA
RoboChains RACER and HSRF Report No. HC 0703-393

Order Example (주문예)

HSRF 4565	1500L	A+B	3SETS
Type	Length	Brackets	Q'ty

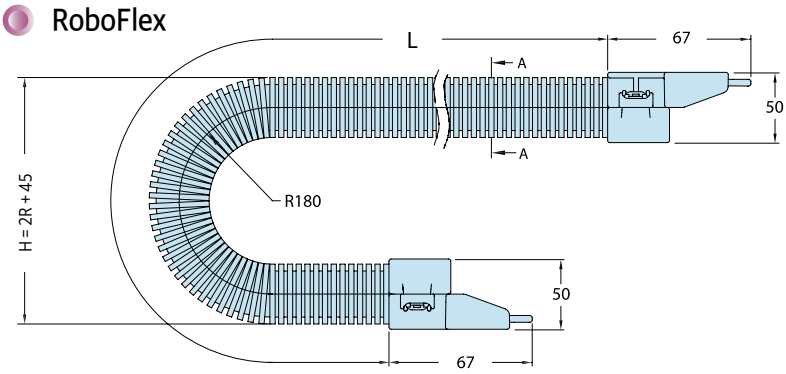
⋯→ stat. R
lowest recommended bending radius for static (fixed) installation.

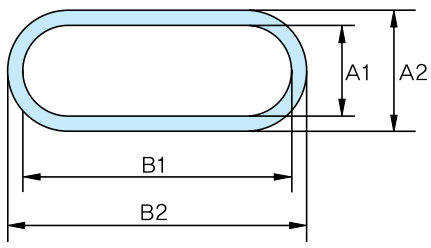
⋯→ dyn. R
lowest recommended bending radius for dynamic (flexible) installation.



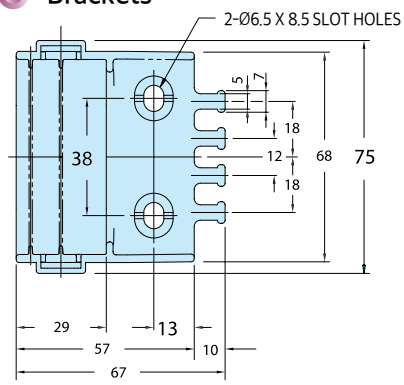
star.R	dyn.R	A1	A2	B1	B2
70	180	37	45	55	63

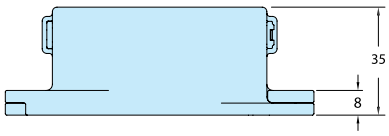
RoboFlex

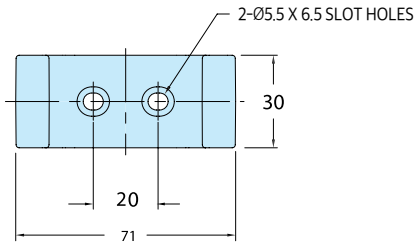


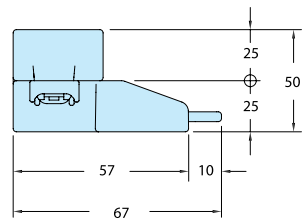


Brackets

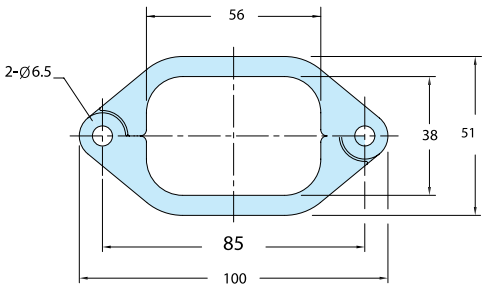




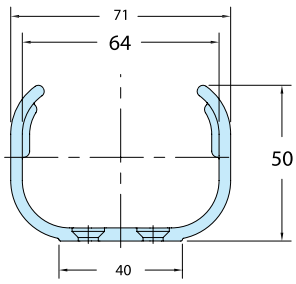




A TYPE



B TYPE



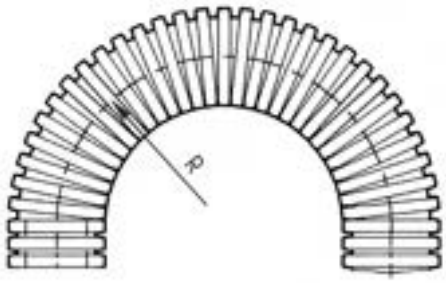
MIDDLE TYPE

HSRF

HSRF 23B, 29B, 36B

Order Example (주문예)

HSRF 29B 30M 10EA



	Dyn. R(mm)	외경(Ø)mm	내경(Ø)mm
HSRF 23B	40	28.5	23
HSRF 29B	50	34.5	29
HSRF 36B	60	42.5	37

로보트용으로 소재가 특별한 원형 로보플렉스

뒤틀림에 매우 강함

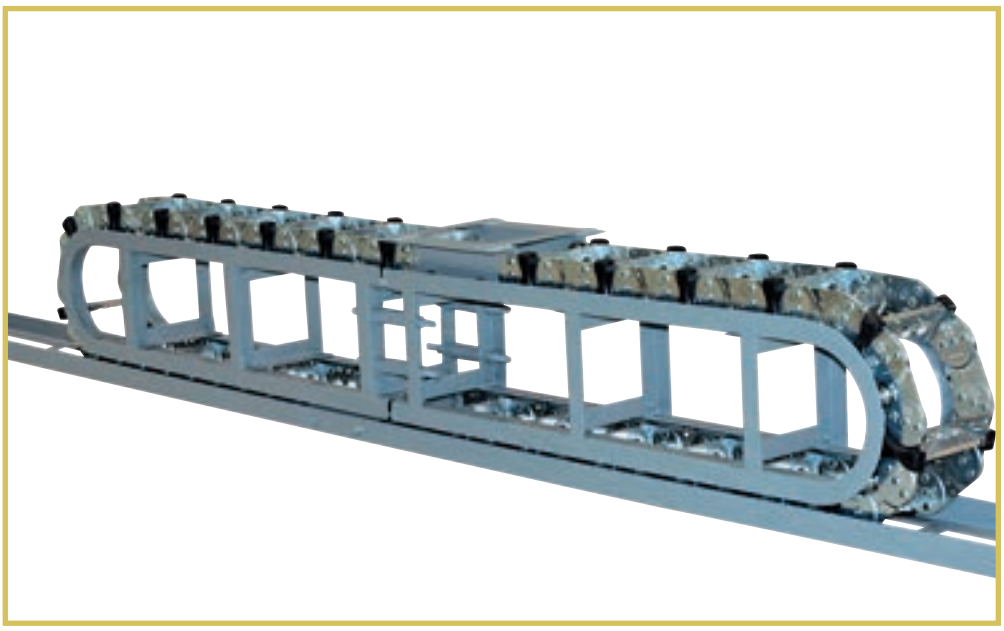
복원 후

RoboFlex | 로보플렉스

END BRACKET

HSV type

HSV 130



용도 Application

자동차 산업, 강관설비 및 대형 공작기계 등에 적용.

Applicable for Automobile industry, Steel pipe facility and Large scale machining center

특징 Features

- 고속주행에도 진동이 없이 조용하고 원활히 움직입니다.
- Cable, Hose를 좌우로 나누어 장치되어 있으며 Supporter의 폭은 약 1/2로 줄일 수 있습니다.
- 정지 위치가 안정되게 되어 있습니다.
- 4종의 다양한 모델이 있습니다.
- 고속, 저소음용에 적합합니다.

HSI type

HSI Type

용도 Application

크레인, 철강설비, 단조설비 등 중하중, 고속용 기계에 적합.

Good for Heavy weight and high speed application such as crane, steel mill and tinning facility

특징 Features

I 형 RoboChain은 빠른 속도 및 중하중 장거리에서 진동의 영향을 받지 않도록 구조 설계되어 있으며 기동 정지의 빈도가 많을 때와 케이블의 가닥수가 많을 때 적합 하도록 여러가지 기구를 개량하여 한신체인 독자의 특성을 살려 만들어졌기 때문에 기능 및 경제성 면에서 충분히 만족하실 수 있는 기종입니다. 표준사양은 이동거리 100 m이하, 속도 120 m/min 이하, 기동 정지시에 가감속도 1.0m/S2이하로서 설계제작되어 있습니다만 조건이 만족하지 않을 경우 당사와 상담 바랍니다.

- Frame부와 Supporter Chain부로 구성되어 있으며, 진동의 영향을 받지 않게 되어 있기 때문에 내구성이 뛰어납니다.
- 고속 중하중,장거리에 적합합니다. 기동,정지의 빈도가 많은 경우,다수의 Cable, Hose 를 고속 장거리 이동하는 경우에 위력을 발휘합니다.
- 7종의 다양한 모델이 있습니다.

• It consist of frame and supporter parts. Since it is specially designed for bumping vibration, the durability is superior.
• It is suitable for heady load and long stroke application. In particular,the model is best choice for frequent stop-and-go and multiple cable and hose for stroke in high speed.
• 7 different configurations are ready.

- 주문시 당사 기술영업부로 문의바랍니다.

HSD type

HSD - A Type
HSD - B Type

용도 Application

철강설비, 장거리 운반설비, 크레인 등 고부하 고속용 기계에 적합.

Steel mill industry, Long distance conveying system, Crane facility

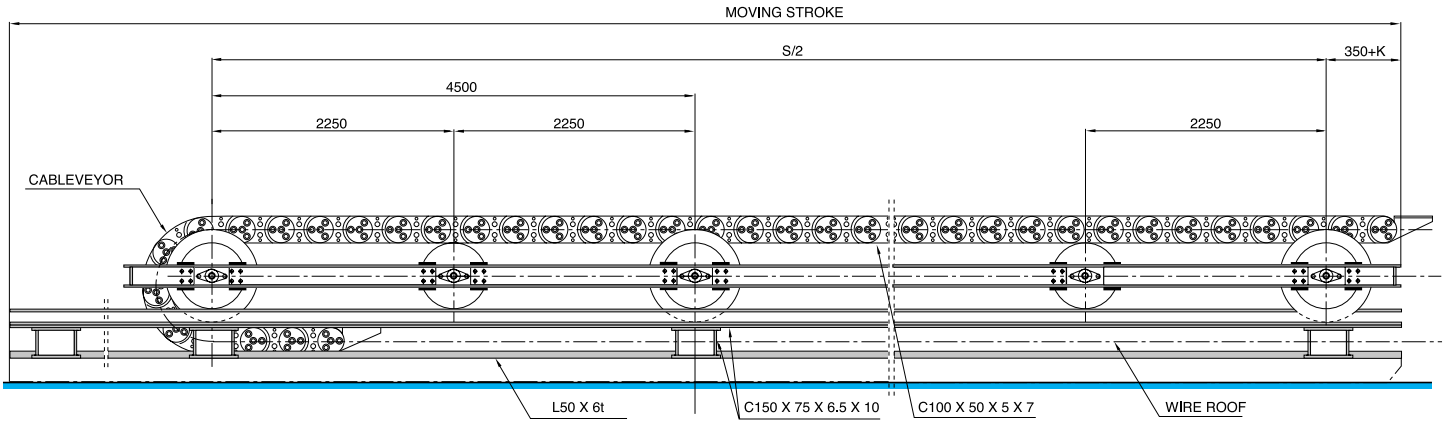
특징 Features

- Stroke 전기장에 걸쳐서 Roller Guide를 설치함으로서 운전거리에 제한을 받지않습니다.
- 어떠한 기후조건에도 적용이 가능하도록 설계되어 실외용으로 적합합니다.
- 탁월한 보호효과를 가져 영구적인 시설물이나 광케이블 등의 응용에 유리합니다.
- 고속과 고부하의 환경에 대응할 수 있는 Type입니다.

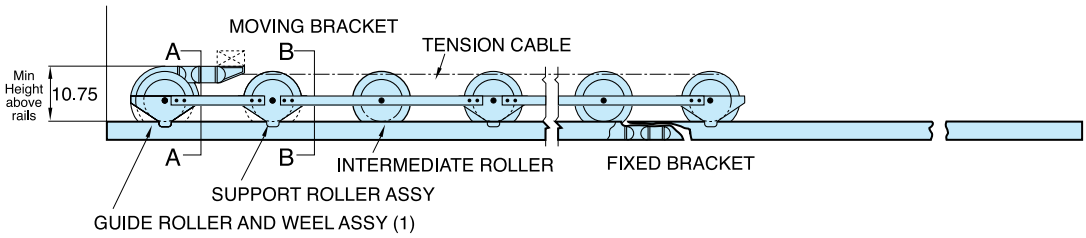
- *Roller guides are used in entire stroke length. Therefore, there is no operation length limitation.*
- *Durable structure is good for use in outdoor application.*
- *Good protection feature makes possible to use for permanent facility like fiber optic.*
- *Applicable for any high speed and heavy weight use.*

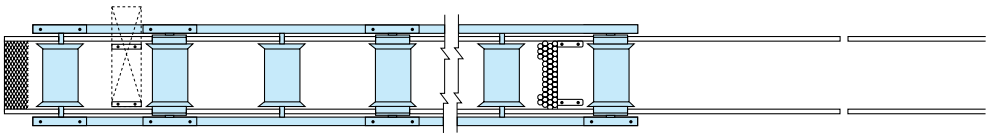
- 주문시 당사 기술영업부로 문의바랍니다.

HSD-A

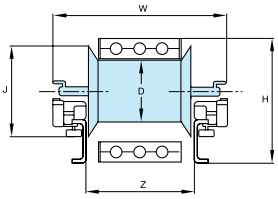


HSD-B

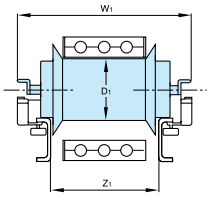




SECTION AA
GUIDE ROLLER

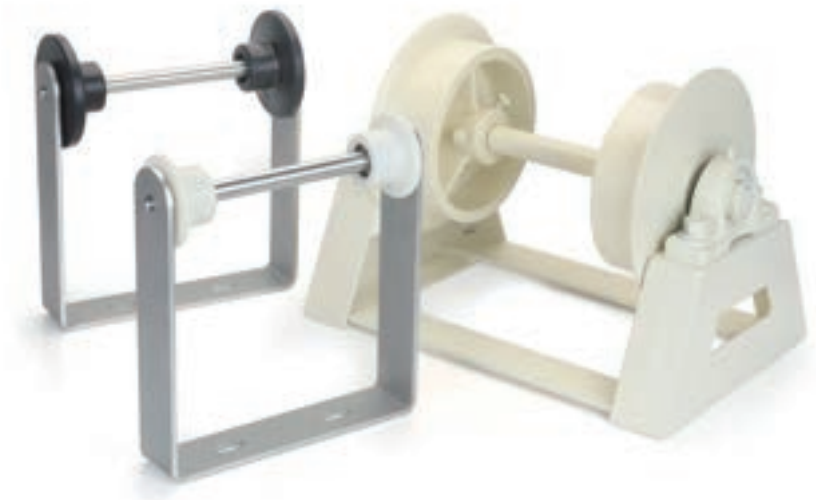


SECTION BB
SUPPORT ROLLER



Support Roller - 써포트 롤라

- Support Roller는 Freespan을 증가하여 처짐을 줄임
- 다양한 규격, 소재 공급 가능



적용모델 : 전 규격 로보체인에 적용 가능

Slider - 슬라이더(장거리용)

- 장거리 주행시 간단히 슬라이더를 부착하여 로보체인의 수명을 연장

적용모델 : HSSP, HSS 등

Guide Rail - 가이드 레일

- 로보체인과 함께 반드시 사용 권장
- Roller 부착형 사용시 마모 최소

적용모델 : 전 규격 로보체인에 적용 가능

HST-RAIL - HST 레일

- 가이드 레일과 로보체인이 마찰하는 부위에 부착하여 마모 줄임
- 접착형으로 쉽게 부착

적용모델 : 전 규격 로보체인에 적용 가능

Strain Relief - 스트레인 릴리프

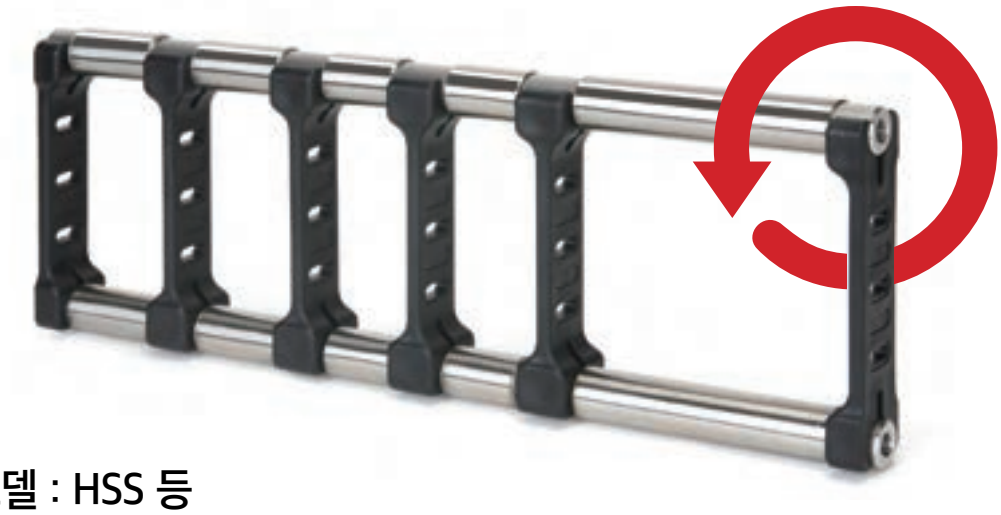
케이블, 호스의 꼬임 방지

고정부위 Cable의 뒤틀림과 꼬임현상을 막기 위해 Fixed End Bracket에 Strain Relief의 부착을 권장
RoboChain 주행시 움직이지 않는 부분을 반드시 두어야 Cable의 마모 및 수명을 연장

적용모델 : 전 규격 로보체인에 적용 가능

Sleeve Bar - 회전하는 써포트 바

로보체인의 주행 횟수가 많아 케이블, 호스의 피복이 손상 시에 적용



적용모델 : HSS 등

Ask for Samples - 샘플 문의

- 신제품 개발, 전시회, 대모 장비를 위한 로보체인 샘플 문의 환영

Ask for Samples!

(샘플 문의)

적용모델 : RACER PLUS, HSP, HSSP 등

Test & Approved - 신뢰성 테스트

- 귀사의 개발 장비와 유사한 환경에서 테스트

- 저속
- 고속
- 수직
- 수평
- 장거리

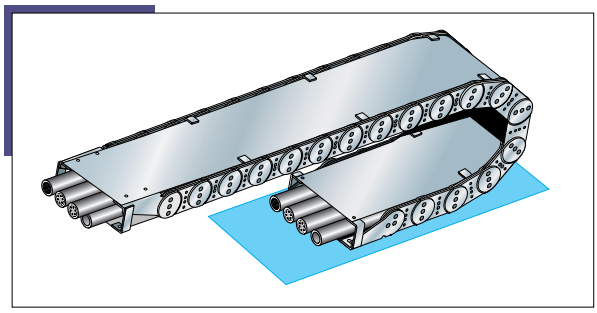
적용모델 : 전 규격 로보체인에 적용 가능

선택사양 Option

Chip Cover Type

Robochain의 양쪽면에 Stainless Chip Cover를 부착하여 공작기계의 각종 Chip이나 제철설비 Slag 등으로 부터 Cable 및 Hose를 보호할 수 있는 System입니다.

Stainless Chip Cover attached in both sides of RoboChain protect the cable and hose from chip and slag.



Slider

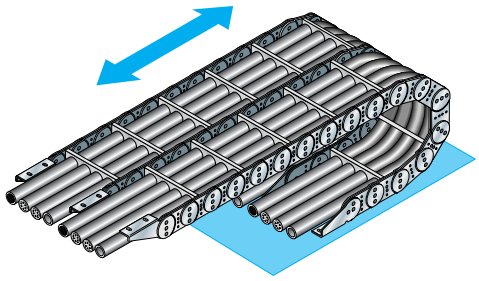
장거리용으로 Support Roller, Side Roller를 부착할 수 없는 경우 RoboChain 자체를 Slide하도록 설계되었습니다.

When support roller or side roller is not applicable typically in long stroke application, the slider enables for the chain to slide on the top of other side of chain.

Double Type

표준사양 이상의 환경으로 사용하실 경우에는 그림과 같이 Double Type으로 설계, 제작 합니다.

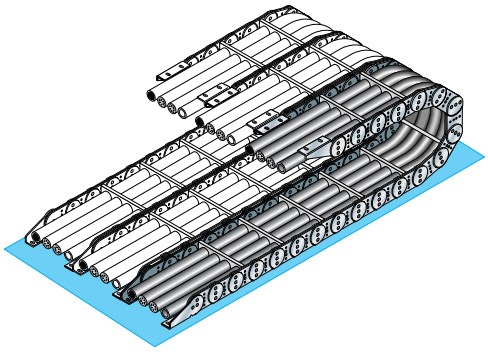
When used in non-standard configuration, double type can be designed for customer's specification.



Triple Type

복합형의 경우, 최대 Triple Type까지 설계, 제작합니다.

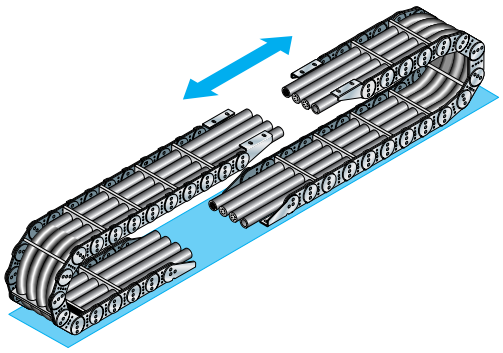
For mixed type, maximum triple type configuration can be designed for customer's specification.



● Opposed Travel

협소한 공간에서 많은 용량의 Cable 및 Hose의 보호에 필요한 System 입니다. Support Roller는 부착할 수 없습니다.

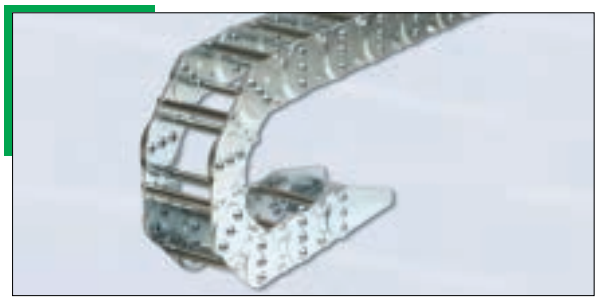
This system protects a large amount of cable and hose in particularly tight space. Support roller can not be attached.



● Sleeve Bar

RoboChain의 곡률반경은 작고 작동횟수가 많은 경우 Support봉에 Sleeve를 부착하여 Cable 및 Hose의 손상을 방지합니다.

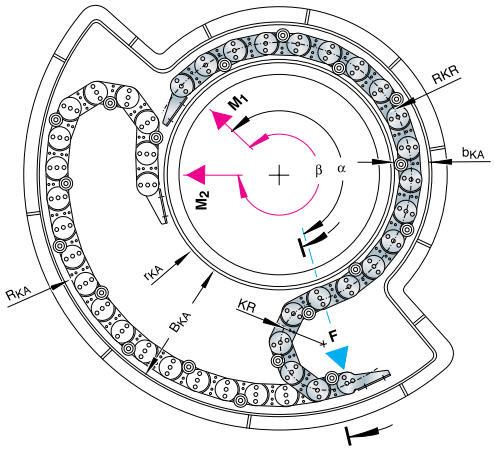
The sleeve attached to support pole is particularly useful for small radius and frequent operation.



● Bend

기존의 System과는 달리 역방향으로 굽힐 수 있게 한 System입니다.

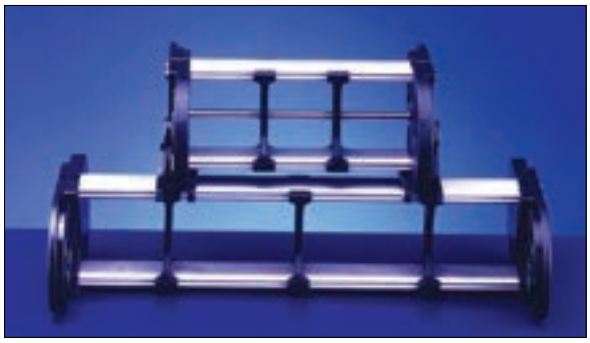
Unlike conventional configuration, the bend drum enables to bend to reverse direction.



● Combination Bar

Suppoter 내에 외경이 작고 많은 양의 Cable, Hose를 장착할 경우 Combination Bar를 부착합니다.

Combination bar is used for installing many small cables an hoses within supporter.



연결 및 조립예 Assembling Example

HS, HSS, HSSP 및 HSP Type의 RoboChain은 편리한 포장 및 안전한 운송을 위해 적당한 길이로 분리하여 납품하고 있습니다.
연결 및 조립은 특별한 공구없이 쉽고 빠르게 하실수 있습니다.

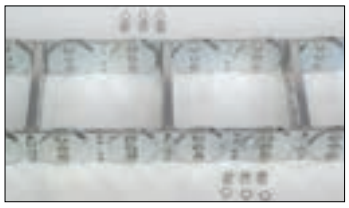
HS, HSS, HSSP and HSP Type Robochains are separated in a proper length for convenient transportation and packing.
Assembling and connection is accomplished in ease manner without any special tools.

링크 연결 방법

HS, HSS type

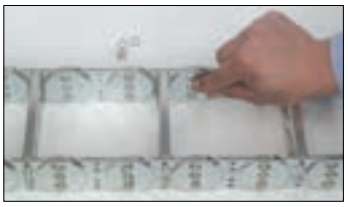
Supporter의 바깥쪽을 밑으로 놓습니다.

Put the outside of supporter in bottom.



Robochain의 양측구멍을 정렬시킵니다.

Arrange the both end holes of robochain in line.



핀을 삽입하여 Snap Ring으로 고정시킵니다.

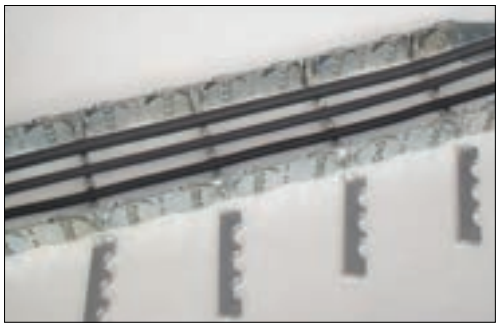
Insert pin and fix the guide by snap ring.

HSP, HSPNC, HSC, HSSP type

연결부분을 함께 놓고 밀어넣으시면 같은 방향으로 연결되며, 분리도 쉽게하실 수 있습니다.

Arrange the connection part in line. Then push it for tightening.

HS(분리형 Supporter type)



안쪽 Supporter를 떼어냅니다. 제거가 어려울때에는 반대편 Supporter의 볼트를 약간 풀어줍니다. 다음에 케이블호스를 Hole속에 넣고 Supporter를 다시 결합하여 볼트를 느슨하게 조입니다. Supporter를 완전히 조립전까지 볼트를 완전히 조이시면 안됩니다. Robochain을 완전히 조립하신 후 볼트를 완전히 조여 주십시오.

Separate the inside part of supporter. Next, put the cable and hose into the robochain. Put the supporter back into the position and loosely connect the bolts. After assembling entire robochain, not to tighten the bolts.

HS(일체형 Supporter type)

케이블과 호스를 End Link 쪽으로 부터 넣으시면 됩니다. *Insert the cable and hose from the end link side.*

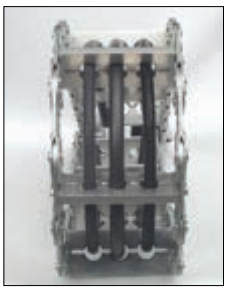
HSS, HSSP type

Supporter의Bar를 90°회전하여 장착시킵니다. *Rotate supporter bar in 90 for assembling.*

로보체인의 조정과 최종조립

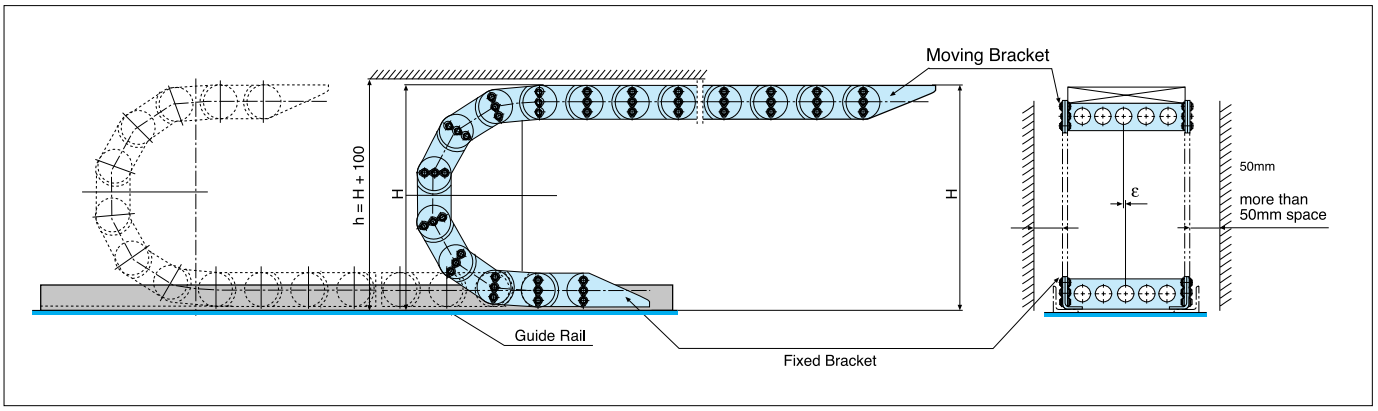
케이블과 호스가 삽입되고 Supporter가 결합된 후에 RoboChain을 사진과 같이 놓습니다. RoboChain이 정위치에 있을 때 볼트를 다시 한번 확실하게 조입니다. RoboChain이 작동중에 뒤틀리지 않아야 하므로 볼트를 확실히 조여야 RoboChain이 똑바로 됩니다. 마지막으로 조립하거나 작동중에 볼트가 풀려 있는지를 확인하여 주십시오.

After cable and hose are successfully inserted and all necessary assembling is done , sit the RoboChain depicted in the pictures below.
Tighten the boos when the RoboChain is in right position.
For proper running of RoboChain, tightening the bolts is important to run in straight way.
Last caution needs to be paid to secure the bolt tightening.



기술 노트 Technical Note

● 로보체인과 케이블•호스의 취급방법



(1) 로보체인은 Guide Rail이 필요하며 Guide Rail은 철판이나 앵글로 제작하여주십시오.

(2) Size는 아래표와 같습니다.

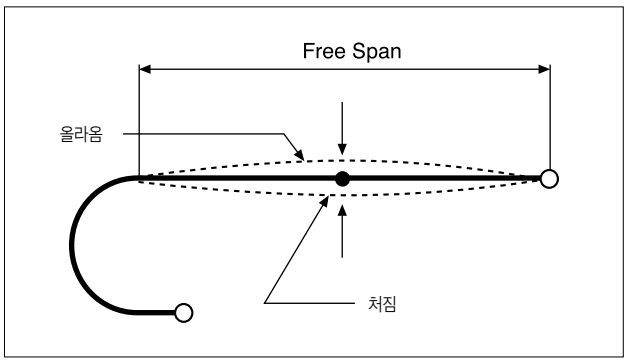
(3) 로보체인은 본체와 케이블 호스의 중량에 따른 처짐을 보안키 위해 약간 올라오게 제작됩니다.
한편, 사용하는 조건과 환경에 따라 Free Span보다 올라오거나 처짐이 생깁니다. 간섭이 없을 경우에는 문제가 없습니다만, 속도가 빠른 경우는 진동이 생기기 때문에 로보체인의 상하의 여유를 잡아 주십시요.

(1) Guide Rail is necessary for RoboChain. An angled steel plate is best recommended.

(2) The dimension shown in figure above are follows.

(3) Note the chain will bow in shape in its unloaded condition as it is designed to straighten out by its own weight and cable/hoses weight when attached.

Chain Size	ε 이하	H'
HS070,HSS070	4	H+10
HS095,HSS095	6	
HS130, HSS130	8	
HS180, HSS180	10	
HS250, HSS250	15	
HSP0130,HSP0180	3	H+(10~30)
HSP0320,HSP0450	4	
HSP0625	6	
HSSP	6	
HSC	6	
RACER PLUS	5	



ε = Moving·Fixed Bracket의 조립 허용오차
H = 로보체인의 높이
H' = 이동하는 로보체인 면의 높이
h = 공간의 높이

(4) 로보체인에는 원칙적으로 기름을 칠 필요는 없습니다만 HS, HSS Type의 경우에는 사용환경에 따라 구리스를 발라 주시면 수명을 연장할 수 있습니다.

(5) 케이블 호스에 관하여

① 케이블·호스의 끝부분은 통상 외경의 30배의 여유길이가 필요합니다.

② 필요한 케이블·호스의 길이 ((피치×링크수) + Bracket길이)×1.015 가 적당한 케이블·호스의 길이 입니다. 그러나 호스에 압력이 가해지면 길이의 축소가 생깁니다. 그러므로 다소간의 여유길이가 있어야 합니다. 한편, 이상의 장력이 가해지지 않도록 양쪽 Bracket에 클램프가 필요합니다.

③ 케이블·호스는 굴곡성과 내마모성이 우수한 제품으로 사용하여 주십시요.

④ 로보체인의 굴곡반경은 케이블·호스의 허용반경보다 크게 하여 주십시요. 작은 반경으로 사용하시면 굴곡에 대한 반발이 생기므로 상호간에 손상이 생깁니다.

⑤ 케이블·호스는 반복하여 동작하므로 내부에서 자연적으로 길이에 변화가 발생되므로 정기적 점검이 필요합니다.

⑥ 운반시나 로보체인의 주행시 진동 등에 의하여 볼트가 풀릴 수 있기 때문에 운전 후에는 정기적인 점검이 필요합니다.

⑦ 로보체인 위에는 사람이나 그 밖의 중량물이 올라타면 파손의 위험이 있으므로 피하여 주십시요.

(4) Under the normal condition lubrication is not necessary. However, for corrosive conditions a lubricant should be used for rust prevention.

(5) Notes on fitting cables or hoses into RoboChain

a) Usually, the extension margin of the end of the cable hose should have 30 times the hose diameter.

b) The minimum cable hose length:
((Chain pitch × Link number) + Bracket length) × 1.015
However, the hose's internal pressure causes a slight reduction in hose length. This should be considered when attaching cables.

c) Cables and hoses should be moving type with flexibility and anti- abrasiveness.

d) The bending radius of robochain should be bigger than that of cable hose. Both RoboChain and cable hose will be damaged when the bending radius of RoboChain is smaller.

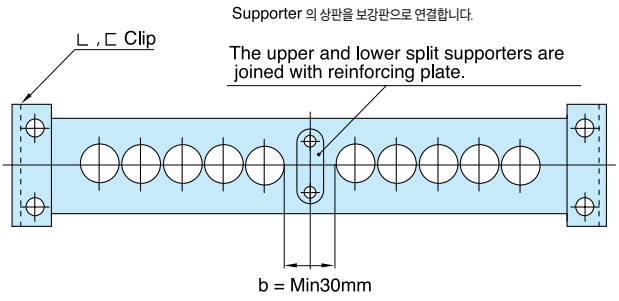
e) Cable hose should be arranged in a row and kept tidy by dividers if available.

f) Check that bolts and other hardware are fixed tight when assembling and operating, since they may become loose through operation vibration.

g) Please do not put heavy objects or allow people to sit on the RoboChain as this will result in chain damage.

● Supporter의 폭(B)에 관하여

(1) Supporter는 본 Catalog 내용보다 큰 Spec도 제작 가능합니다.
(2) 원칙적으로 B폭이 600mm 이상일 경우에는 Support를 ㄴ혹은 ㄷ형의 크립을 체결하며, 분할형 Support는 보강판을 그림과 같이 연결해야 합니다.
(3) B폭은 Spec이외의 size도 제작 공급합니다.
(4) B폭은 가능하면 Spec내에서 설계하여 주십시요.



(주) 한 신 체 인
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주문서 Order Sheet

회사명 :
주소:
TEL :
FAX :
담당자:
E-mail :

HANSHIN ROBOCHAIN

DATE . . .

Type of Machine	(기계명)	
Model of Robochain	(모델명)	HS -
Bending Radius (R)	(곡률반경)	R
Moving Stroke (S)	(이동거리)	mm
Moving Speed	(이동속도)	m/min
Number of Chain Links	(링크수)	LINK
Total Chain Length	(기장)	mm
Width of Chain Supporter	(Dimension A and B)	A:( ) B:( )
Number of Divider	(HSS의 경우 Divider 수량)	EA
Number of Hole	(케이블수)	EA
Hole Size	(케이블경)	
Quantity	(수량)	SET
Delivery	(납기)	20 . . .
Delivery Method	(출고방법)	화물 / 택배

여유공간

Cable 이나 Hose 삽입 시 사용환경에 따라 허용 용적률에 차이가 있습니다.
아래 표는 사용환경에 따른 허용 용적률을 보여주고 있으며, 허용치를 초과하여 사용할 경우 Cable 및 Hose의 마찰로 분진이 발생되며 단선발생의 주요 원인이 됩니다.

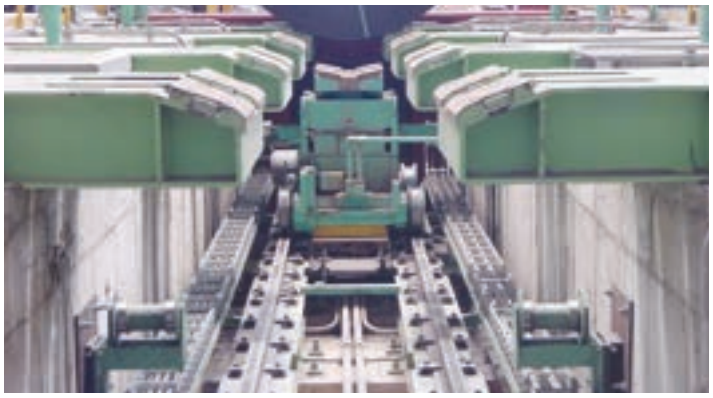
허용 용적률(%)	CLEAN ROOM	NORMAL
	40~50%	50~60%

곡률반경

Hose 허용곡률반경 (r) ≥ Hose 외경 × 9
Cable 허용곡률반경 (r) ≥ Cable 외경 × 7.5

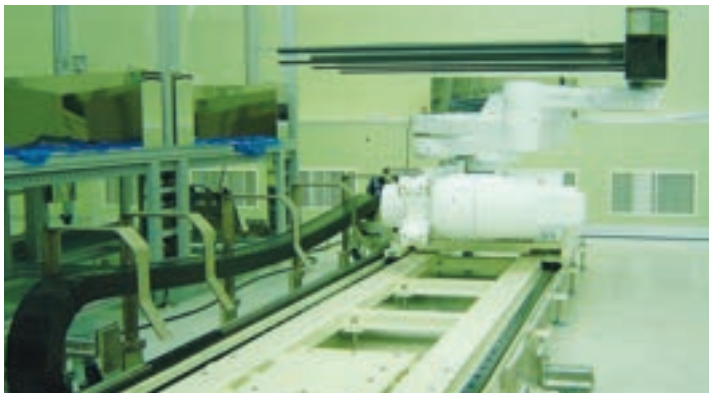
사용 예 Application Example

HSP 0450-3BN



HS 180

RACER SL - 033



HSC 0665

사용 예 Application Example

HSSP 095
Pipe Cutting Machine

HSI

HSSP 130S
Plasma Cutting Machine

HSI

사용 예 Application Example

HSS 130 AL CHIP COVER

HSS 250

HS 180

Walking Beam Transfer Car

HS 180

사용 예 Application Example

HSS 250
Tundish Car

HSP 0450 - 4BN

HSS 070, 095
Making Block Line

HSSP 095S
Pipe Welding Machine Line

사용 예 Application Example

HSS 180S

HSSP 095NS

RACER SL-033

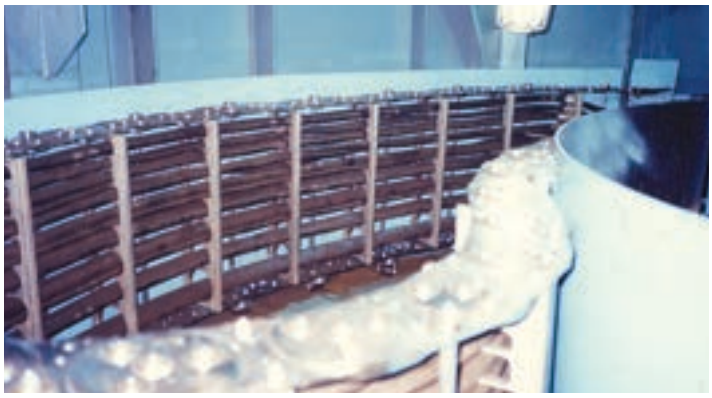
Printing Machine

HSS 095

Special Vehicle

사용 예 Application Example

HS 180
Stacker Reclaimer



HS 180
Stacker Reclaimer

HS 180
Special Purpose Boat

HSI
Over Head Crane

사용 예 Application Example

HSSP 100
Boarding bridge

HSSP 100
Boarding bridge

HSSP 100S
Container crane

Robotics

사용 예 Application Example

HSSP 130S

HSSP 130S

HSS 250

사용 예 Application Example

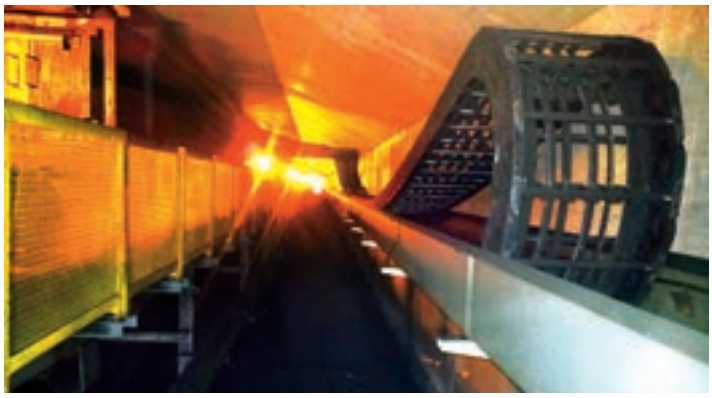
HSS 250

HSS 250

HSSP 130NS

RACER SL - 033

사용 예 Application Example



HSSP 130NS

RACER S - 033

HSP 0450

HSS 180

사용 예 Application Example

HSS 130

HS 130

HSS 095

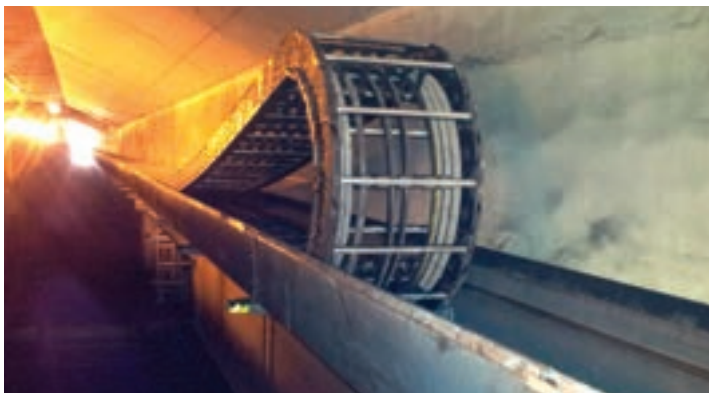
RACER SL - 033

사용 예 Application Example

HSI

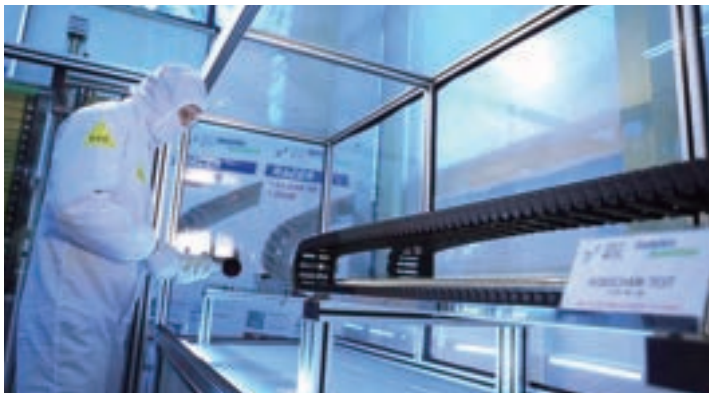
HSI

HSSP 130NS



HSSP 130NS

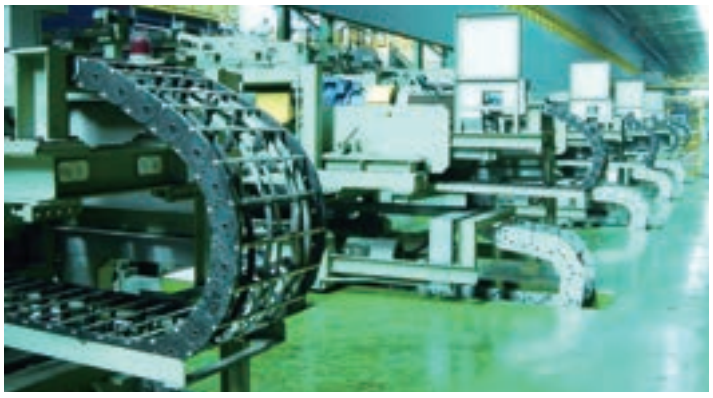
사용 예 Application Example



RACER PLUS

RACER PLUS

HSS 130



HSSP 095 + HSS 250

사용 예 Application Example

HSSP 100

HSSP 100

HSP 0625-2BN

RACER + ROBOFLEX

사용 예 Application Example

RACER PLUS

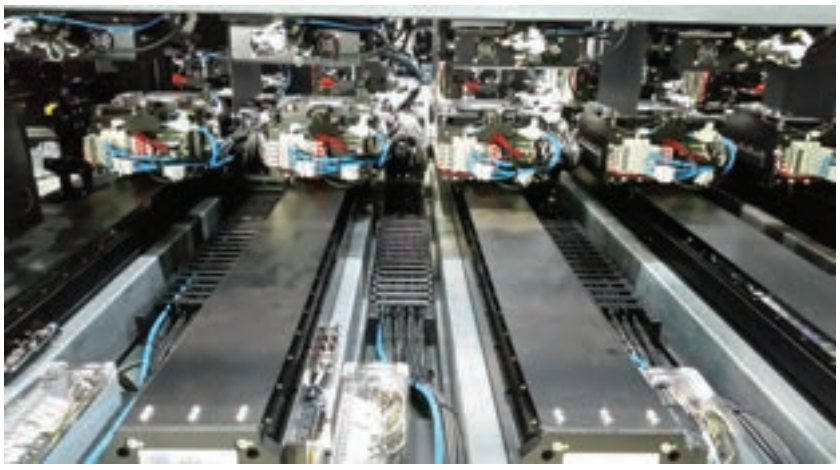
HS 180

HSS 180

사용 예 Application Example

RACER PLUS

HSS 180



RACER PLUS

Lit. No. 2023

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Hanshin Chain Co., Ltd.

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