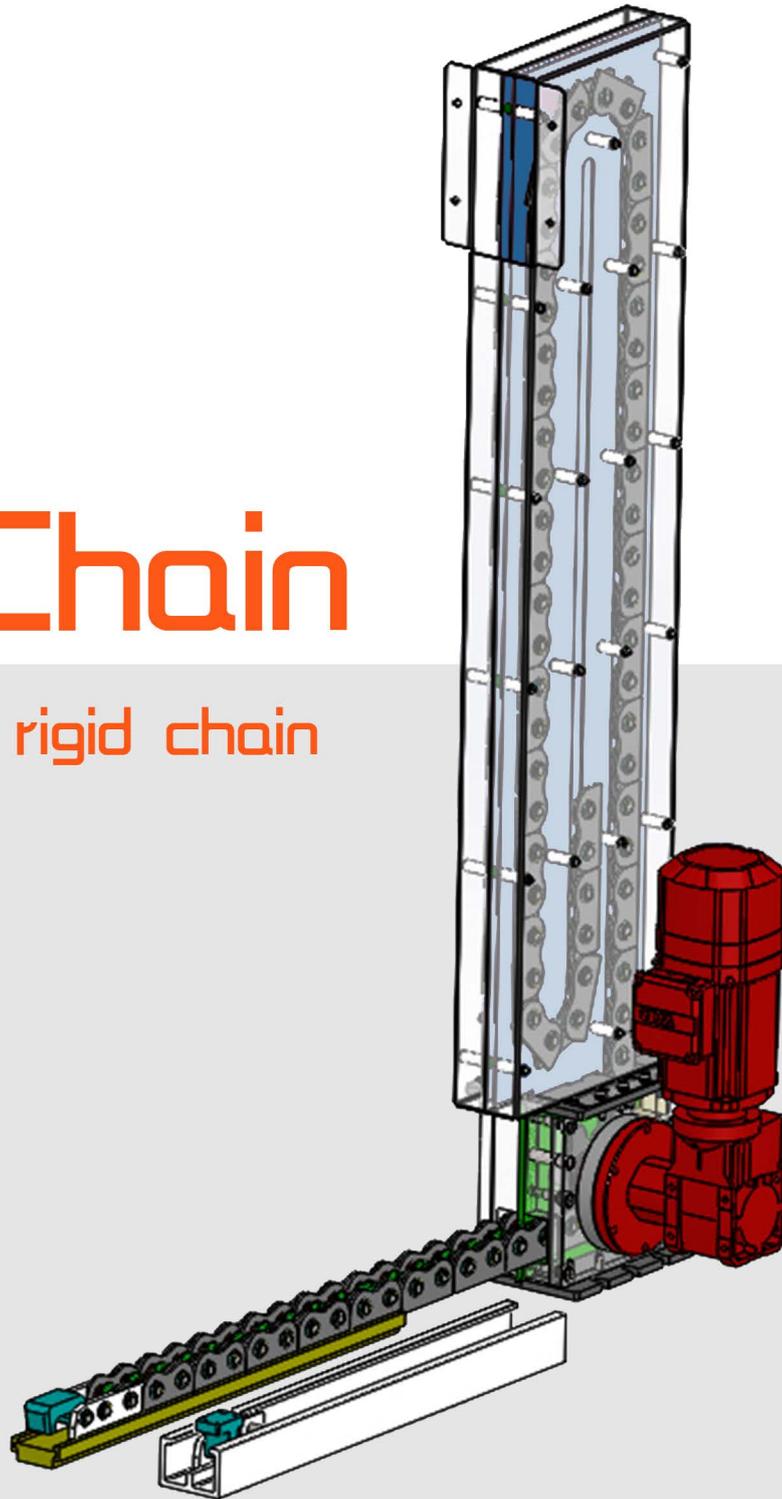
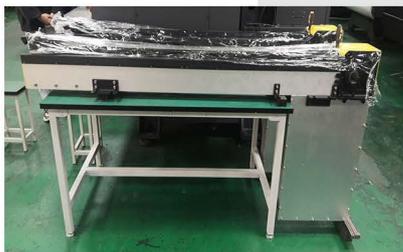




HR Chain

Horizontal rigid chain



LINK-MINT

上海灵铭机器人科技有限公司
Link - Manufactory Intelligence

INDUSTRY

LINK-MINT is a world leader in Rigid Chain Technology (RTC) and offers high-performance solutions through a broad range of mechanical jacks that meet all horizontal transfer and load-raising requirements, whatever the field of activity. It is an efficient, controlled and clean alternative to hydraulic technology.



High-performance products to meet every application regarding specific environments

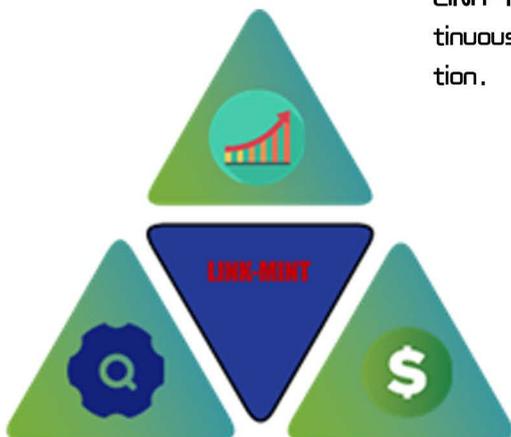
Elevators, scissor lift, platform lifting, container transfer, roof opening and bay windows, oven loading, palletizing of gas cylinders, telescopic mast, tool pusher, self-propelled trolley and rail trolley with integrated pusher are just a few examples of LINK-MINT applications.

Mainly automotive, nuclear, aeronautics, iron and steel, food, building, military, aerospace, thermal, chemical, petrochemical, medical.

LINK-MINT is Industrial Mobility Designer around YOU

LINK-MINT mission is to exceed the expectations of their customers by providing: PERFORMANCE, OPTIMISED COST and QUALITY in LINK-MINT service.

LINK-MINT relies on its well qualified and motivated staff to provide continuous improvement and innovation in order to ensure customer satisfaction.



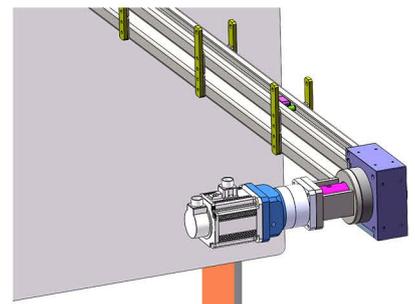
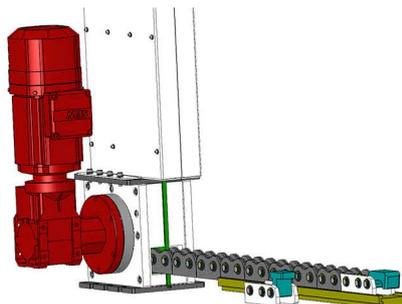
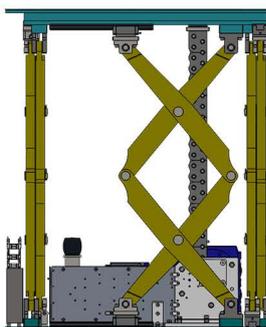
PERFORMANCE



QUALITY



OPTIMISED COST



HR Chain



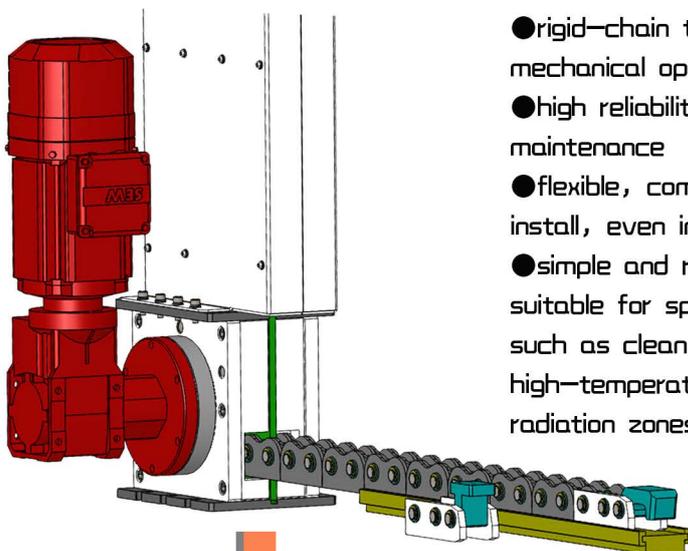
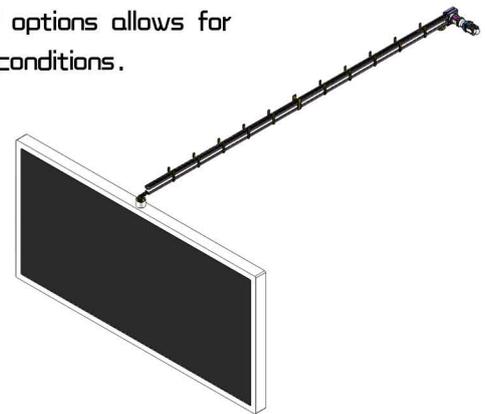
Our HR Chain series offers a wide range of actuators for the transfer and handling of heavy loads. It is the most versatile of LINK-MINT widely used and proven rigid-chain systems.

The rigid chain consists of links that interlock with each other under forward thrust and push the load like a solid bar. In the opposite direction, when retracting, the chain rolls up and can be stored out of the way in a compact magazine. The telescopic mode of operation allows the transfer area to remain unobstructed as long as no load is being moved across it. Thus, the HR Chain is not only easy to install even in confined or difficult environments, it also allows very flexible and efficient operation.

The HR Chain is completely mechanical, with high reliability, a long lifetime and with an energy efficiency of 80 percent making it a sustainable investment, ecologically as well as economically.

The HR Chain standard model range covers applications up to 15 tonnes at a practically unlimited stroke. Multiple units can be combined to achieve even higher load capacity or to optimise system layout. A comprehensive choice of options allows for operation in harsh environments or under heavy-duty, high-cycle conditions.

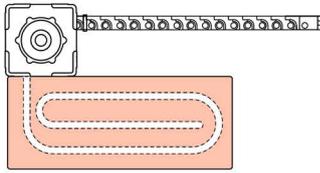
HR Chain - the heavy loads telescopic horizontal rigid-chain



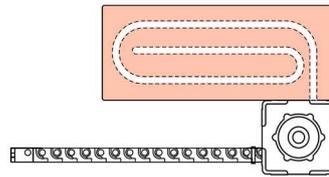
- telescopic actuator with configurable storage magazine
- allows complete withdrawal from transfer path permitting crossing movements
- rigid-chain technology, totally mechanical operation
- high reliability, long lifetime, low maintenance
- flexible, compact and easy to install, even in cramped conditions
- simple and robust construction, suitable for special environments, such as clean rooms, high-temperature manufacturing, or radiation zones
- standard speed up to 300 mm/s, higher speed on demand (up to 1 m/s)
- accurate, repeatable positioning in the millimeter range
- wide range of options and accessories
- powered electrically, to replace hydraulically or pneumatically
- special options: chain made of stainless steel, specific protective coatings, thermal resistance, etc
- associated services: project engineering, layout assistance, design studies, development, installation, etc



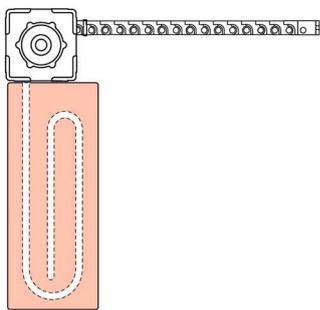
A variety of structures are available



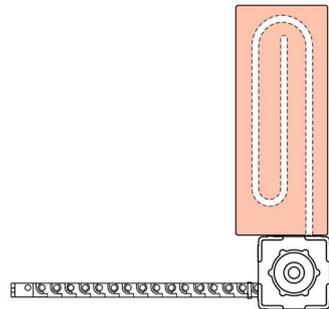
P1: horizontal operation, chain—shoulders up, horizontal magazine below chain path



P2: horizontal operation, chain shoulders down, horizontal

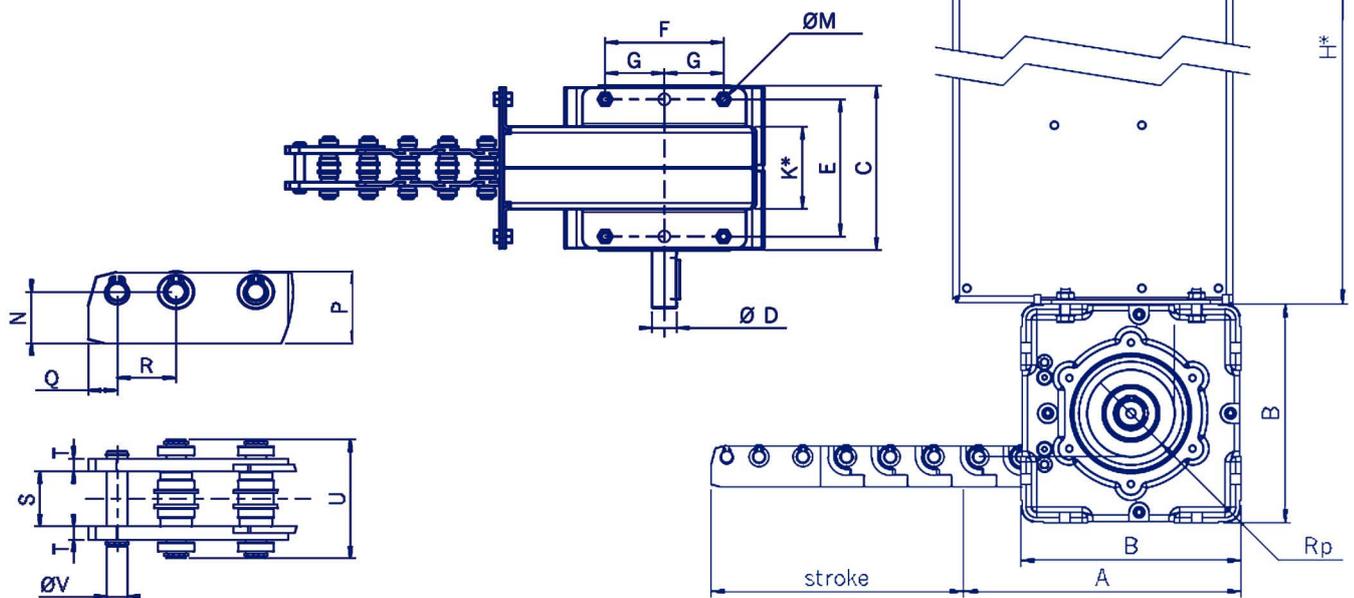


P3: horizontal operation, chain—shoulders up, vertical magazine below chain path



P4: horizontal operation, chain shoulders down, vertical magazine above chain path

Dimensional Drawing





| model | max kN | Rp | A | B | C | D | E | F | G | M | N | P | Q | R | S** | T** | J max | V |
|---------------|------------|----|-----|-----|-----|-----|-----|-----|-----|----|-------|-------|------|------|--------|------|-------|----|
| HR 40 | 7.5 | 40 | 230 | 202 | 168 | 25 | 140 | 120 | - | 10 | 27.5 | 38.5 | 14.5 | 29.5 | 29.4 | 7 | 63.4 | 10 |
| HR S60 | 25 | 60 | 330 | 272 | 200 | 45 | 170 | 140 | - | 14 | 31/39 | 49/57 | 22 | 43 | 40 | 9.2 | 82 | 15 |
| HR D60 | 37 | 60 | 330 | 272 | 245 | 60 | 215 | 140 | - | 14 | 31 | 49 | 22 | 43 | 2x35 | 9.2 | 126 | 15 |
| HR J60 | 50 | 60 | 330 | 272 | 259 | 60 | 229 | 140 | - | 14 | 31 | 49 | 22 | 43 | 2x39.6 | 9.2 | 142 | 15 |
| HR S90 | 80 | 90 | 475 | 400 | 268 | 70 | 300 | 300 | 150 | 17 | 52 | 80 | 34 | 66 | 60 | 15.5 | 147 | 25 |
| HR D90 | 130 | 90 | 475 | 400 | 356 | 100 | 388 | 300 | 150 | 17 | 52 | 80 | 34 | 66 | 2x62.3 | 15.5 | 234 | 25 |
| HR J90 | 160 | 90 | 475 | 400 | 375 | 100 | 407 | 300 | 150 | 17 | 52 | 80 | 34 | 66 | 2x60 | 15.5 | 253 | 25 |
| specific 160+ | on request | | | | | | | | | | | | | | | | | |

All dimensions in mm.

Note: Dimensions are for information purposes only. For more accurate dimensions please visit our web site or contact LINK-MINT sales.

* Magazines: The dimensions H, J and K are specified in the table of magazines, in following page.

Using the chain unguided

With an unguided chain, the maximum stroke depends on the mode of operation and the load. Capacities of unguided chains decrease with increasing stroke.

The table below specifies the maximum strokes and the minimum-maximum range of loads for each type of HR Chain depending on whether the chain operates with shoulders down (mounting position P1/P3) or up (P2/P4).

| model | position P1/P3 (shoulders down) | | | position P2/P4 (shoulders up) | | |
|--------|---------------------------------|----------|----------|-------------------------------|----------|----------|
| | stroke | load | | stroke | load | |
| | max. [m] | max. [N] | min. [N] | max. [m] | max. [N] | min. [N] |
| HR S40 | 3 | 7500 | 5000 | 3 | 7500 | 2500 |
| HR S60 | 5 | 25000 | 7500 | 3 | 25000 | 12500 |
| HR D60 | 5 | 37500 | 22500 | 3 | 37500 | 20000 |
| HR J60 | 5 | 50000 | 30000 | 3 | 50000 | 25000 |
| HR S90 | 5 | 80000 | 45000 | 3 | 80000 | 45000 |
| HR D90 | 5 | 130000 | 62500 | 3 | 130000 | 62500 |
| HR J90 | 5 | 160000 | 80000 | 3 | 160000 | 87500 |

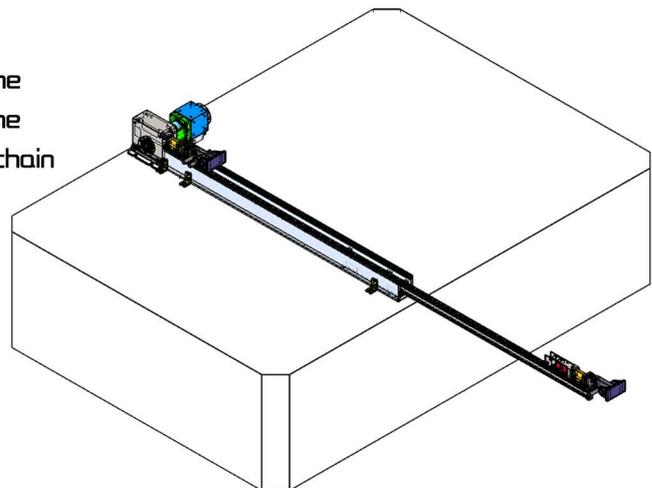
Guided chains

With a guided chain, there is practically no limit to the stroke length, while the load capacity always is at the maximum. Also, it makes no difference whether the chain operates with shoulders up or down.

Guiding the load

With both guided and unguided chains, the load has to be guided, when the transfer system consists of just a single HR Chain unit.

When there are multiple synchronised units, the load need not be guided.





A note on system design

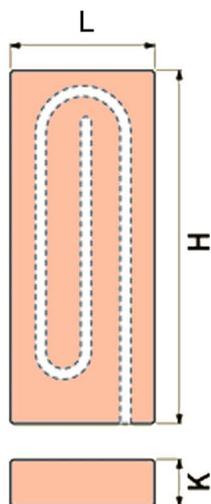
The specifications given in this brochure should be used only as guidelines, for use in intermittent duty applications in a typical industrial environment. Dirty, harsh or unusual environments may require special sizing or adaptations. In such cases, please consult our engineering department.

If your application does not fall within the specifications given here, LINK-MINT is ready to design and integrate a complete linear-motion system to fit your needs.

Chain magazines

Our range of standard chain magazines cover LINK-MINT types HR S40, S60, D60 and J60, up to a stroke of 5 m. For any other LINK-MINT units, magazines are made to measure.

The following guidelines obtain:



Standard magazines for the HR40

| Stroke | 2 tracks | | 3 tracks | | 5 tracks | | 2/3/5 tracks |
|--------|----------|-----|----------|-----|----------|-----|--------------|
| | H | L | H | L | H | L | W |
| 500 | 400 | 190 | | | | | 85 |
| 1000 | 650 | 190 | | | | | 85 |
| 1500 | 900 | 190 | | | | | 85 |
| 2000 | 1150 | 190 | 800 | 260 | 535 | 400 | 85 |
| 3000 | | | 1135 | 260 | 735 | 400 | 85 |
| 4000 | | | 1470 | 260 | 935 | 400 | 85 |
| 5000 | | | 1800 | 260 | 1135 | 400 | 85 |

Standard magazines for the HR S60, D60 and J60

| Stroke | 2 tracks | | 3 tracks | | 5 tracks | | 2/3/5 tracks W | | |
|--------|----------|-----|----------|-----|----------|-----|----------------|--------|--------|
| | H | L | H | L | H | L | HR S60 | HR D60 | HR J60 |
| 1000 | 690 | 265 | | | | | 110 | 145 | 160 |
| 2000 | 1190 | 265 | 840 | 360 | | | 110 | 145 | 160 |
| 3000 | 1690 | 265 | 1175 | 360 | 840 | 555 | 110 | 145 | 160 |
| 4000 | 2190 | 265 | 1505 | 360 | 1040 | 555 | 110 | 145 | 160 |
| 5000 | 2690 | 265 | 1840 | 360 | 2205 | 555 | 110 | 145 | 160 |

HR Chain

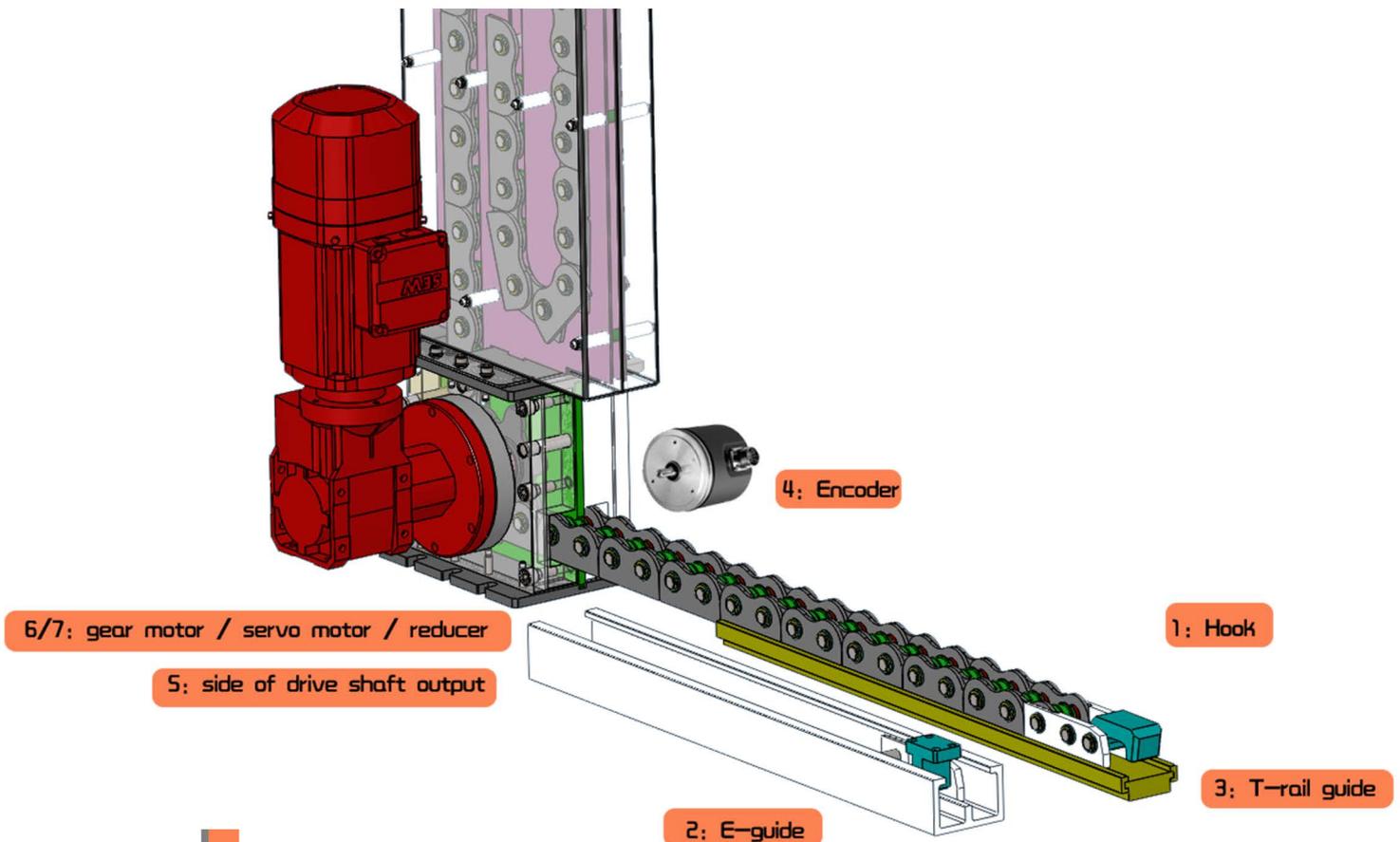


Ordering your specific HR Chain

To order a HR Chain unit or to obtain advice about selecting a suitable model, have the following information at hand:

| | information | remarks | |
|-----------------------------|------------------------------|---|----------------------------|
| model | HR... | load: kg | pushing / pulling force: N |
| stroke | m | | |
| horizontal speed | mm/s | speeds > 200 mm/s require a frequency converter | |
| cadence | | cycles per day: | days per year: |
| option 1: hook | <input type="checkbox"/> yes | Drawing code | |
| option 2: E-guide | <input type="checkbox"/> yes | | |
| option 3: T-rail guide | <input type="checkbox"/> yes | | |
| option 4: encoder | <input type="checkbox"/> yes | number of positions: | absolute or incremental |
| option 5: shaft output side | <input type="checkbox"/> yes | type of gear motor / reducer: | |
| option 6*: gear/servo motor | <input type="checkbox"/> yes | Brand/Power Supply: | |
| option 7*: reducer | <input type="checkbox"/> yes | Brand: | |

* Notice: If the gear motor / reducer is supplied by the user, type and brand should be specified.





Option 1: Hook

The hook needs to be produced according to the drawings agreed with the customer

Option 2: E-guide

The hook needs to be produced according to the drawings agreed with the customer

The guide rail is fixed under or directly beside the load path. To keep the transfer area clear, the guides have to be flush-mounted beneath the surface.

Option 3: 4 T-rail guide

guiding of chains with lateral grippers

The guide rail is fixed on the load path. Thanks to its low profile it can be easily recessed into the work top to keep the transfer area clear.

Option 4: encoder

position detection and control of acceleration and deceleration

The encoder can be absolute or incremental.

Option 5: side of drive shaft output

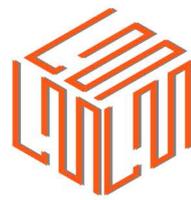
side where motor is mounted

shaft output can be to A (left), B (right) side, or both sides

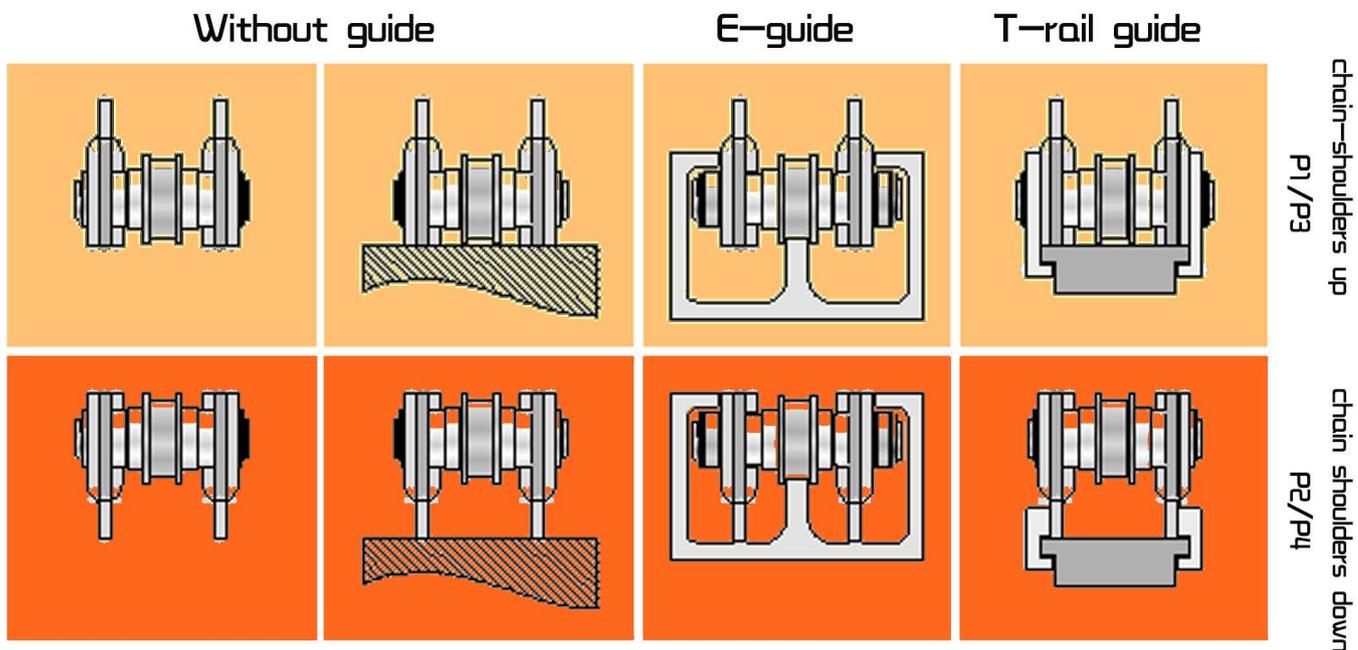
Option 6/7: gear motor / servo motor / reducer

It is recommended that customers choose the motor reducer by themselves. If asking LINK-MINT selects the motor, please provide power supply information and the brand of the motor & reducer. For high-precision positioning requirements, it is recommended to use servo motors instead of gear motors and reducers.





Common method of using a rigid chain



* The shoulder-facing T-guide guide is suitable for 60 and 90 series only.

Typical applications

- Push and pull the train maintenance nose.
- Mould pushing and pulling
- The cinema screen moves horizontally.
- Palletising cans of preserves in automatic packaging line
- Handling heavy workpieces in assembly lines

WWW.LINK-MINT.COM

E-mail Box: sales@link-mint.com
 Shanghai LINK-MINT Root Tech. Ltd
 Tel: (86)-21-64 45 89 30

Sales Manager:
 Melone Zhou / (86) 15 60 18 01 219
Melone.zhou@Link-Mint.com

Project Manager:
 Vincent Chen / (86) 13 81 62 22 730
Vincent.Chen@Link-Mint.com



LINK-MINT

上海灵铭机器人科技有限公司
link - Manufactory Intelligence