



Installation instructions for sectional doors types iso 34-2 / iso 45-2 , with torsion spring (front mounted = VL, rear mounted = HL)

The manufacturer's liability expires with the improper installation of the doors.

-Have installed by qualified and competent technicians -
Read the these instruction carefully before installation.

Scope of supply:

- Set of sectional door leaves with torsion spring set and box of mounting hardware
- Frame set

To install you will require

- the following tools (inasmuch as the garage has no other entrance, place tools in the garage):
folding rule/tape measure, mason's level, adjustable grips, ratchet with extension and size 7, 10 and 13 hex sockets (otherwise use spanners or socket spanners) Philips screwdrivers no. 2 and 3, slot screwdriver, impact drill with matching Ø10mm drill bit (min. hole depth 65mm), 2 clamps min., ladders, chalk, knives, wire cable cutter or power side cutter, timber beams, hammer, chisels and
- fastening and mounting hardware needed for the base material. **Warning: before using the supplied S8 screws and S9 plugs, ensure that they are suitable for the base material of the garage opening.**

Important:

- **Install sectional doors only after garage opening and floor have been completed!**
- As a precaution compare the garage dimensions with the co-ordinating size of the door.
 - minimum inside width of garage
= co-ordinating width + 180mm
 - minimum garage height ceiling
= co-ordinating height + 220 mm for type VL
= co-ordinating height + 105 mm for type HL (man. op.)
= co-ordinating height + 120 mm for type HL (operator)
 - minimum side room (right and left) = 45mm
- **All references to left/right are made from the perspective of inside the garage looking out through the garage opening! All dimensional specifications in millimetres. All rights reserved. Technical specifications subject to change without notice.**
- **Instructions in:**
 - normal characters: ⇒ apply to VL + HL door types
 - *italic characters:* ⇒ apply to VL types only
 - **inverse characters:** ⇒ apply to HL types only
 - **Letter/numeral combinations, e. g. S8, refer to the respective mounting and installation materials in the illustrated section, a successive subscript L or R, e. g. 1_L, indicates a part for the left or right side (observe markings on parts). The omission of a subscript L or R indicates a part that can be used either left or right. Figures in brackets, e. g. [1.10], refer to the respective illustration in the illustrated section.**

Door frame pre-assembly [1.10], [2.10]

- (1) Pad angle frames 1_R/1_L with wood or similar material (as a protection against scratching). Assemble angle frame 1_R + frame panel 3 + angle frame 1_L + track connector 6 (sheet metal screws pre-assembled) [1.10 a]; [2.10 a]. *Screw Sole plate bracket-VL 4_R/4_L to header angle with S11 [1.10 b].*
Note! When using a row of windows as a header section, We recommend taking the panel seal from frame panel 3 and rotating this by 180 degrees (see sticker on row of windows).
- (2) Position and attach wall anchors 7 to angle frames 1_R/1_L with S6 + S12 in accordance with width of side room/headroom and wall/dowel conditions.
 - (2a) Width of side room/headroom greater than 120mm: position wall anchors 7 outwards [1.10 da].
 - (2b) Width of side room/headroom 45 - 119mm position wall anchors 7 inwards [1.10 db]

Should you use mounting/installation materials other than the included materials, ensure that the material can bear at least the same load as the wall anchors 7 supplied.

Door frame installation [1.15], [2.10]

- (3) Rest door frame against garage open, **secure against tipping**, use mason's level to align sections exactly parallel and square. centre and clip panel retainers 13 to panel 3. 2 panel retainers are included with doors wider than 3530mm. Mount complete angle frames with S8 + S9 [1.15 a, b, c, d] [2.10 b]. **Warning: Do not twist or bend angle frames 1_R/1_L; if necessary pad with wood before tightening screws!!!** *Type VL: observe 5mm minimum spacing between upper frame edge and garage ceiling!!!*

Horizontal track pairs pre-assembly [1.20], [2.10]

- (4) Assemble right 14_R or left 14_L horizontal track pair with end piece 16_R/16_L + connecting plate 18 using (S6 + S12) [1.20 a, b]. Twist of track bracket 19 [1.20 ca, cb]. *Assemble corner castings-VL 20_R/20_L (S6 + S12) [1.20d]. Assemble sole plate bracket-HL 21_R/21_L + profile bracket 100 (S6 + S12) [2.10 d, e, f].*

Horizontal track pair installation [1.25], [2.10]

- (5) Mounting anchor rails 27
 - (5a) *For garage inner width of max. door width + 1030mm (centre installation): insert one anchor rail 27 left and one anchor rail right into the track connector 6 fasten with plate 29 and connecting bracket 28 using S6 + S12. Rails must remain extractable [1.25 aa, ab].*
 - (5b) Mount track connectors 6 to the garage ceiling if garage inner width is larger than door width + 1030mm as well as when installing HL type doors.
- (6) Fasten horizontal track pairs 14_R/14_L to header angle at tail end 16_R/16_L so that the assembly can be folded upward [1.25 b]. Depending on door opening assemble as follows:
 - Width of side room/headroom 45 - 119mm: Fasten S13 with S12 loosely. Insert S13 through the square punch out on tail end 16_R/16_L connect to header angle and turn 90°, so that the square snaps into the punch out in the angle frame 1_R/1_L. Tighten S12 finger tight.

The instructions for installation, operating and maintenance must be kept in a safe place as long as the door is in use!



- Width of side room/headroom greater than 120mm: Insert **S5** through square punch out in tail end **16_R/16_L** and insert in header angle and tighten finger tight with **S12**.
- (7) *Connect track connector 6 with two **S6** + **S12** each to corner castings-VL **20_R/20_L** [1.25 c]. **Connect track connector 6 with two **S6** + **S12** each with sole plate bracket-HL **21_R/21_L** [2.10 f].***

Hang horizontal track pairs [1.30], [2.15]

- (8) Lift up horizontal track pairs **14_R/14_L** and **support against dropping (support track connector 6 carefully)**.
- (9) Connect track bends **30** with **S6** + **S12** to angle frames **1_R/1_L** and connecting plates **18** [1.30 a]; [2.15 a] (**align track profiles carefully; the joints must be smooth and level; adjust track bends cautiously, if necessary**).
- (10) *Connect tail ends **16_R/16_L** to header angle with screw **S11** [1.30 a]*
- (11) **Connect upper deflection pulley bracket-HL **101_R/101_L** through header angle with tail end **16_R/16_L** as well as with profile bracket 100 using screw **S11** [2.15 a]**
- (12) Align track connector **6** and horizontal track pairs **14_R/14_L** with mason's level and mount to wall or ceiling. Do not fully tighten screws to allow later adjustment and alignment.
- (12a) *Wall fastening VL: dowel connecting bracket **28** + **S8** + **S9** [1.30 b]*
- (12b) Ceiling fastening: anchor rail **27** + connecting bracket **28** + **S6** + **S12** + **S8** + **S9** [1.30 c]; [2.15 b]. Use additional diagonal braces if problems with stability arise. [1.30 d]; [2.15 c].
- Mount track bracket **19** together with anchor rail **27** + connecting bracket **28** + **S6** + **S12** + **S8** + **S9** to ceiling [1.30 e]. **Warning: co-ordinating width greater than 3530mm and co-ordinating height greater than 2126mm: mount additional ceiling brackets to track pair **14_R/14_L** as well as to track connector 6. Anchor rails **27** + connecting bracket **28** + clip plate **29** + **S6** + **S12** + **S8** + **S9**) [1.30 f]**

Mounting torsion spring [1.35]; [2.15]

- (13) *Insert pre-assembled right torsion spring **35_R** to sole plate bracket **4_R** and fasten with **S11** [1.35 aa, ab]. Mount centre bearing **37** (**S8** + **S9**). [1.35 b, da, db];*
- Insert 2 screws **S5** through clip plates **29** to track connector **6**. Pre-assemble centre bearing **37** and sole plate **103** with **S6** + **S12** and connect with **S12** to the clip plates **29**. [2.15 da, db]. Insert pre-assembled right torsion spring **35_R** into sole plate bracket-HL **21_R/21_L** and connect with **S11**. [2.15 e, f]. Mount ceiling bracket to centre bearing **37** (anchor rails **27** + connecting bracket **28** + **S6** + **S12** + **S8** + **S9**). [2.15 g].**

For doors with a co-ordinating width of up to 3529mm: mount 1 centre bearing **37** (a>120mm).

For doors with a co-ordinating width larger than 3530mm: mount 2 centre bearings **37**. Follow above instructions to assemble left torsion spring. **Align centre bearing precisely to ensure that springs run smoothly**. Insert coupling **38** to shaft end and mount left torsion spring **35_L** analogue to right torsion spring **35_R**. Slide coupling **38** over shaft ends and slightly tighten by hand. [1.35 c]; [2.15 h].
Installing door leaves [1.40]; [1.45]; [1.50]; [1.55]; [2.20].

(14) Floor section 44 (B)

- (14a) Insert floor seal **47** in floor guide and add rubber stoppers **45_R/45_L** [1.40a]. Notch protective foil at one end and remove carefully [1.40 ba, bb]. Mount handle **49** with **S10** to floor section [1.40 d].
- (14b) Connect 1 external hinge **48_R/48_L** both left and right to the floor section **44** with **S10** [1.40 c].
- (14c) Before placing the floor section **44** clean the sealing of angle frames **1_R/1_L** with a damp cloth [1.30]. Place floor section **44** between angle frames **1_R/1_L** and secure against tipping. Insert casters **56** in caster retainer **61**, put in vertical track and connect to external hinges **48_R/48_L** with **S5** + **S12** each [1.45 a, aa].
- (14d) *Uncoil wire cable from torsion spring **35_R/35_L** and pull behind external hinges **48_R/48_L** [1.45b].*
Uncoil and remove wire cable from torsion spring-HL **35_R/35_L; this cable is no longer required [2.20 aa]. Screw protective cover for cable reel 106 with **S10** together [2.20 ac]. Pull wire cable **104** (longer version, packed in box with HL frames) through deflection pulley **101_R/101_L** [2.20 ab], pull and claim to torsion spring-HL **35_R/35_L** [2.20 ac], pull down cable wire behind external hinges **48_R/48_L** [2.20 ad], hang into the lower cable fastener **57_R/57_L**. Pull wire cable **104** behind the furrow in the cable reel **106** and stretch it [2.20 ae]. Gauge 1 meter from the wire cable **104** from cable reel **106** and cut excess end with applicable cutting tool (wire cable cutter, power side cutter) [2.20 b]. Pull back wire cable **104**, fixation in cable reel with grub screw and wind wire cable on cable reel [2.20 ac].**
- (14e) Insert casters **56** in caster retainer **61** and connect to the lower cable fasteners **57_R/57_L** with **S5** + **S12**. Connect wire cable with cable eye stiffener and bushing **59** to the bolt and secure with splint **60** [1.45 c]. Insert pre-assembled cable fasteners with casters in the vertical track and screw to floor section with **S10** [1.45 d, e].

(15) Lock section 67 (S)

- (15a) Insert lock section **67** in the angle frames **1_R/1_L**, secure against tipping, and mount both left and right of the lock section **67** one external hinge **48_R/48_L** with **S10**. Insert casters **56** in caster retainer **61**, put in vertical tracks and connect to the external hinges **48_R/48_L** with **S5** + **S12** [1.50a, aa]. Screw central hinges **68** with **S10** to floor and lock section [1.50b].
- (15b) Mount lock to lock section as depicted in explosion diagram [1.50 da]: apron + lock (+ distance frame for iso 34) + exterior handle + interior handle (**69-78**). Insert apron with cover plate into the square punch out from the exterior side and fasten with lock set from interior side. Insert exterior handle through the lock holes (corner-moulding side up) and fasten from the interior side. Caution: lever arm (die-cast zinc) must point to the right!
- (15c) For doors without operators: slide retracting bolt **80** in catch **79** as well as lever arm and fasten to lock section with **S10** [1.50db].

The instructions for installation, operating and maintenance must be kept in a safe place as long as the door is in use!



- (16) Middle section(s) **86** (M)
Assemble and mount middle section(s) **86** to angle frames **1_R/1_L** as described with floor and lock sections with **S10** + **S5** + **S12** + **48_R/48_L** + **56** + **61** + **68**.

- (17) Header section **87** (K)
Put header section **87** into angle frames **1_R/1_L**, secure against tipping and mount on both the left and right of the header section **87** an upper roller block **88** with **S10**. Set upper casters **90_R/90_L** in the upper horizontal track and fasten to roller block **88** with **S5** + **S12** [1.55 aa, ab]. Set upper casters **105_R/105_L** in the upper horizontal track and fasten to roller block **88** with **S5** + **S12** [2.20 c,d]. Fasten hinges on the side and in the centre of the header and middle sections with **S10**.

- (18) Adjusting casters:
(18a) Pull all casters out from door leaf in the direction indicated by the arrow so that the door leaf sits close on the frame seal (space between section skirt from grey segment of frame seal: approx. 1 mm). Casters should turn easily by hand. [1.55b].

Elevation adjustment of upper caster

- (18b) With manually operated doors and NovoPort-operator: centre of caster should slide into the tail end approx. 5mm (starting point: lower edge of upper caster retainer must be flush with the upper castor roller block). [1.55c].
(18c) With door operator on ceiling: Castor should lie in the upper corner of the tail end. [1.55a].

- (19) Adjusting the torsion spring: [1.60]; [2.20].

- (19a) Twist torsion spring by hand in order to tighten the wire cable on the cable reel. Ensure that the cable sits properly. Tighten coupling screws **S11**. [1.60a], [2.20 a]. The left and right versions of the torsion springs can vary due to different lengths and cable wire cross-section.

- (19b) Tightening the torsion spring:
Wear suitable protection whenever tightening/loosening springs. You will find the number of tensioning turns on the type plate.

Tighten torsion spring **35_R** with both tensioning tubes **92** in the direction indicated by the arrows. Always tighten springs from bottom to top. [1.60a], [2.20 a] Cinch holder screws **S11**. Proceed in same fashion to tighten torsion spring **35_L**.

Both springs must be tightened with the same number of turns. The number of tensioning turns can be determined on the tightened spring in according with the diagram. [1.60c]

Use a mason's level to check the door leaf. If it is not exactly horizontal, loosen coupling 38 and turn torsion springs until exactly level. [1.60d] **Secure coupling 38 when finished. S11.**

Warning: After tightening spring, pull spring pin 96 with lug in order to unlock the spring shearing pin [1.60 ea, eb] [2.20 ga, gb] !!!

Important:

When the door is in the closed position, there must be at least 2 windings left on the cable reel.

- (20) For manually-operated doors: mount staple plate **93** as follows: [1.65] [1.70]
(20a) Close door from inside and fix with screw clamps. Hold staple plate **93_R** or **93_L** to the left or right of the catch **79** and fasten to the respective punch

outs (rear series of holes) in the angle frame **1_R/1_L** with **S6** + **S12** (**S13**, if necessary) [1.65aa,ab,ac].

- (20b) Open and close garage door several times to check locking function. When closing, the catch **79** must snap into the staple plate **93_R** or **93_L**. If necessary, slide staple plate **93_R** or **93_L** vertically to adjust. Connect security angle **94** with staple plate **93_R** and **93_L** by screwing them with **S6** and **S12** [1.65 ad].
(20c) Snap retaining clip **95** for tensioning tube to angle frame **1_R** and clip in tensioning tube **92** [1.65 b].
(20d) For manually operated doors: Fasten rope retainer **91** for hand rope **96** with **S10** to the lowest section. Lead rope **96** through the respective holes in the rope retainer **91** secure with knot as well as hang to connecting plate **18** [1.70 a, b].
(20e) Manually open door and mark the endposition of top casters **90_R/90_L**. Close the door and insert track clip **89** at marked position and tighten. Space between rearmost point to lowest point of clip has to be equal [1.70 c].

For door operator do not use hand rope!

Inspection instructions

For the sectional door to function properly and smoothly as well as to ensure the maximum serviceable life, it is essential that all parts are properly installed. In the event that the door does not function perfectly, check the following items:

- (21) Are the side angle frames, the frame panels and the horizontal track pairs horizontally, vertically and diagonally exactly aligned and securely fastened? [1.15]
(22) Have all screws been securely tightened?
(23) Have the vertical track pair ceiling brackets been properly mounted? [1.30]
(24) Are the track joints between the angle frames and the 89°-bends smooth and well-aligned?
(25) Have the torsion springs been uniformly tightened? Check spring tension: open door half-way. The door must rest in this position without additional support.
(25a) Should the door sink or close, increase the tension of the torsion springs.
(25b) Should the door open further, reduce the tension of the torsion springs.
(26) Was the door leaf properly tightened using the coupling and torsion spring and was the second spring retightened to compensate?
(27) Are the cable windings exactly in the guides on the cable reels? Are there at least two windings on each reel?
(28) Are the centre bearings exactly aligned in order to ensure a smooth movement of the springs? [1.35] [2.15]
(29) Casters: Can all casters be easily turned by hand when the door is closed? [1.55b]
(30) Has the upper caster been properly aligned and adjusted?
(31) Do the caster axles protrude uniformly out of the retainers when the garage door is open? [1.50a]
(32) For doors with operators: was the locking mechanism removed? [1.50db]

The instructions for installation, operating and maintenance must be kept in a safe place as long as the door is in use!



Dismounting instructions for sectional doors, types iso 34-2 / iso 45-2 , with torsion springs (front-mounted -VL-, rear-mounted -HL-)

- Dismounting only by qualified technicians -

Read carefully before commencing with dismounting!

You require the following tools to dismount the garage door:

Spanners or socket spanners sizes 7, 10 and 13, ratchet with extension and sockets sizes 7, 10 and 13, Philips screw drivers nos. 2 and 3, at least to screw clamps, eventually a hammer and chisel.

(33) Loosening torsion springs

Warning: When loosening springs wear suitable protection and have secure footing!

Close door leaf. Insert tensioning tube in holder and loosen screws carefully. Remove tension from torsion spring **35_R** by turning tensioning tubes in the opposite direction indicated by the arrows. Always loosen springs from top to bottom.

(34) Remove wire cables and dismount torsion springs.

(35) Secure horizontal track pairs against falling.

(36) Dismount 89° bends.

(37) Unscrew the horizontal track pairs brackets on the ceiling and walls

(38) Tilt horizontal track pairs, remove horizontal track pairs from door frame.

(39) Dismount anchor rails.

(40) Remove horizontal track pairs from track connectors.

(41) Dismount from top to bottom casters and hinges section by section and remove each sectional leaf as disassembled.

(42) **Secure door frame against tipping.** Loosen wall and floor fasteners, remove door frame from garage opening and place on garage floor. Disassemble in reverse order of installation instructions.

Operating and Maintenance Instructions for sectional doors, types iso 34-2 / iso 45-2 , with torsion spring (front-mounted -VL-, rear-mounted -HL-)

The manufacturer's liability becomes void of any legal substance if maintenance and operating instructions are not properly observed and/or if non-OEM parts and components are used, as well as any changes are made to the door design. Whenever the door is used for commercial purposes, please observe national and international regulations.

Operation:

The mechanical mechanisms of this garage door have been designed to reduce the risk of bruising, cutting and in any way injuring persons operating or standing near the door. The following items are essential for the safe operation of the garage door:

- Before and during door actuation ensure that no other person is near any of the moving door parts (e. g. door leaf, casters etc.).
- For manually operated doors: open and close the door with the external or internal handle or the service rope only. Keep hands away from any moving parts.
- Lock function
 - By turning the key fully in the lock it is possible to open and close the garage door without a key.

- By turning the key a $\frac{3}{4}$ turn, it is possible to open the door and by turning the key back a $\frac{3}{4}$ turn the door is locked.
- By sliding the inner locking button the door can be opened and closed with out a key.

- Keep persons and objects away from open and closing doors.
- When opening the door leaf wait until the door is in the final position before approaching the door. Sufficient spring tension is essential.

Warning: Spring tension must be adjusted by qualified personnel.

- Ambient operative temperature range for this garage door is -30°C to $+40^{\circ}$.
- When closing the sectional door ensure that the catch snaps into the locked position.
- When equipping this door with an operator:
 - the door facility must conform with all EU guidelines (machine guidelines, low-voltage guidelines, EMC guidelines etc.) as well as all national and international standards and regulations
 - the door facility must be properly marked with the manufacturer's type plate and CE mark of conformity
 - transfer documentation in the respective language of the country must be prepared and filed for the duration of serviceable life
 - the locking mechanism (catch and staple plate) must be dismantled.

It is essential to dismount service rope!!

Settings and adjustments to the operator must be carried out by qualified personnel only!

Maintenance:

The maintenance intervals are dependent on frequency of use and field of application, but at least once in the year.

Maintenance by non-professional or qualified technicians:

- After installing the sectional door and after approximately 5000 duty cycles, **grease** the caster axles in the caster retainers, clean horizontal track pairs.
- Do not oil cylinder lock; use graphite lubricant only.
- Ensure that the door and door frame have adequate ventilation (drying); ensure that water can run off.
- Protect sectional door against acidic, aggressive agents, e. g. acid, alkaline solutions, salt. Use household cleansers only!
- Sectional doors with steel filling are supplied with a polyester coating. Additional coating must be applied within three months after delivery with a two-component epoxy primer. After hardening the door sections can be coated with commercial lacquers.
- Repaint or restrain the door sections as environmental and atmosphere conditions required.

Maintenance by qualified technicians:

- **Check** door as per inspection instructions.
- Tighten screws and clamping joints. Check fittings and tighten wherever necessary.
- Check wearing parts (springs, wire cables etc) and replace with OEM parts if necessary.
- Check spring tension. Adjust spring tension as described in the installation instructions.
- Replace torsion springs and wire cables after approx. 25,000 duty cycles.

The instructions for installation, operating and maintenance must be kept in a safe place as long as the door is in use!



This is necessary for:

0 - 5	duty cycles per day after	14	years
6 - 10	" "	7	years
11 - 20	" "	3.5	years

• **Spring rapture: [3.05].**

- 1 Slowly close door leaf. (The detent pawl snaps into the cogs of the locking wheel and hinders the slumping of the garage door.) [3.10b].
- 2 Secure door leaf in open position with a screw clamp [3.10ca].
- 3 Press detent pawl 1 in the direction indicated by the arrow and turn spring fixed head 2 in the direction indicated by the arrow so that the detent pawl releases the locking wheel. [3.10cb].
- 4 Fix spring fixed heat with spring pin **97** to sole plate. Spring pin should be in the upper perforation in the angle frame. [3.10cc].
- 5 Close door leaf carefully. [3.10d].
- 6 Carefully release the tension on functioning spring
Warning: When loosening springs wear suitable protection and have secure footing!
- 7 Replace torsion spring **35_R/35_L** completely (cf. installation instructions) and activate shearing pin.
- 8 Check door and replace any defective or worn parts.

10-year manufacturer's guarantee on sectional doors, types iso 34-2 / iso 45-2, with torsion springs (front-mounted -VL-, rear-mounted -HL-)

In addition to our guarantee obligation defined in our Terms of Sale and Delivery, the aforesaid sectional doors are covered by a 10-year manufacturer's guarantee or 50,000 duty cycles.

Should the door or any part thereof prove defective due to material or production flaw or should such flaws seriously impair the door's usability, we will repair or replace at our discretion the defective door.

This guarantee does not cover damages caused by improper installation and mounting, improper commissioning and operation, insufficient maintenance, misappropriate or non-intended use as well as by any and all changes in the design and functionality of the sectional door. This guarantee exclusion also applies to damages caused by transport, force majeure, external influences or natural wear and tear as well as by extreme atmosphere conditions. This applies particularly to the primary lacquer coat .

Finish painting by the purchaser must be carried out within 3 months after delivery.

Any unauthorised changes or modification to the operating parts or application of additional volumetric weight that the statutory multiple spring sets cannot counterbalance renders the guarantee void of any legal substance.

The Buyer undertakes to immediately inform in writing the Manufacturer of any defects and shall return the defective part or parts upon the Manufacturer's due request. The costs and expense of dismounting, mounting, freight and postage shall be borne by the Buyer. Should a complaint prove unjustified, the Buyer shall refund the Manufacturer the costs and expense incurred.

The aforesaid guarantee is valid only in conjunction with the paid invoice and commences with the day of delivery.

The instructions for installation, operating and maintenance must be kept in a safe place as long as the door is in use!