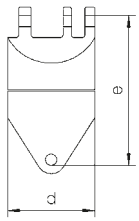
KWB
Safety in action

Original operating manual for Swivel SW/S

Swivel SW/S





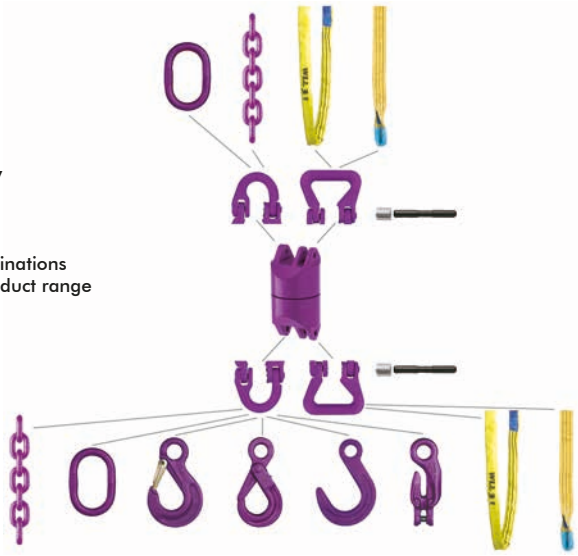
Can be rotated when loaded because of roller bearing.
Admissible operating temperature: 100 °C.

Scope of delivery: 1 swivel, 1 bolt and 1 bush with adaptor sleeve.
For mounting the swivel, an additional connecting link V/S or a webbing coupling link RSK/S is needed.

Chain		Code	Dimensions		Weight	Working Load Limit
			e	d		
mm	inch		mm		kg	kg
7	9/32	SW/S 7	90,8	53	1.12	1,900
8	5/16	SW/S 8	91,2	53	1.12	2,500
10	3/8	SW/S 10	110,7	63	2.00	4,000

Assembly options:

Many other combinations with our wide product range are possible.



Static test coefficient = 2.5; Safety factor = 4

These Swivels SW/S are designed for the assembly of chain slings and, after reading the operating manual as well as the current national norms for lifting and transporting purposes. Swivels SW/S are attached to other KWB components like KWB Star Alloy chains, connecting links, hooks and master links to build chain slings. This product meets the requirements of the EU Machinery Directive 2006/42/EC and is only to be used when taking into consideration the declaration of incorporation and after reading and understanding the operating manual. The operating manual must always be available to the user until the Swivels SW/S are discarded. It is updated continuously and is only valid in its latest version, which can be downloaded from the following link www.kwb-ketten.at

Conditions of use

Use purposes: these Swivels SW/S are designed for lifting and transporting purposes and can also be rotated when loaded. Therefore, they are mounted on chain slings in order to rotate and situate loads in the right position. Moreover, they are also used to balance uncontrollable rotations during the loading and transporting process.
Load: the load must only act in the longitudinal direction with a maximum working load limit described in the table above. Swivels SW/S must be mounted so that they do not come into contact with the load in order to avoid additional loadings.
Admissible operating temperature: -40 °C to 100 °C.
Impacts: the load must be applied without any impact or shock loading.
- Swivels SW/S must only be used by competent personnel
- Swivels SW/S must be checked before each use for visible signs of damage

Restrictions of use

Under certain conditions, the use of Swivels SW/S is restricted (see table below). The table below describes certain loads with their corresponding reduction factors. Safe working load values are calculated by multiplying the working load limit with the reduction factor defined in the table. If more restrictions of use are applicable during a lifting process, all corresponding reduction factors must be taken into account.

Reduction factors			
Temperature*	below -40 °C	-40°C – 100 °C	above 100 °C
Reduction factor	Impermissible	1	Impermissible
Impact Load	**Slight impacts** created, for example, when accelerating during the lifting or lowering movement	**Medium impacts** created, for example, when the chain is loaded but it slips while adjusting to the shape of the load	**Strong impacts** created, for example, when the load falls onto an unloaded chain
Reduction factor	1	0.7	Impermissible

* The use at temperatures below -40 °C and above 100 °C is forbidden!

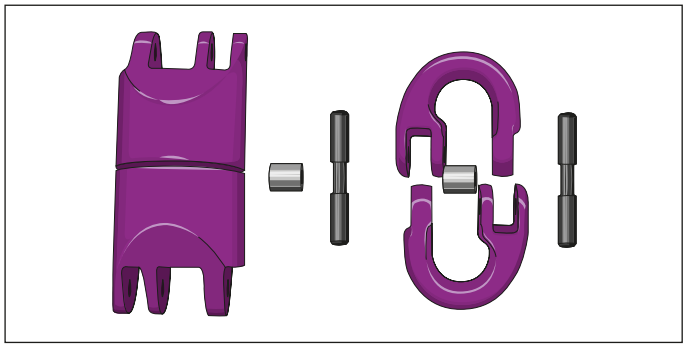
All instructions given in this operating manual assume the absence of extremely dangerous conditions. Such extremely dangerous conditions include offshore activities, lifting of people and potentially dangerous loads, such as liquid metals or nuclear material. In these cases, the admissibility and extent of the risks are to be assessed by KWB.

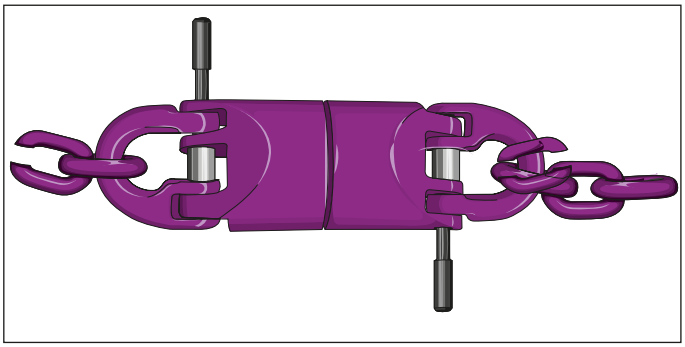
Reasonably foreseeable misuse

Swivels SW/S are not designed to be used with food, cosmetics or pharmaceutical products, and must not be subjected to severe corrosive influences (e.g. acids, sewage…). They must not be used in explosion-protected areas or exposed to the fumes released by acids or chemicals. They also must not be used under other circumstances as the one described in Conditions of use and Restrictions of use – e.g. transverse or flexural loading. The casing must not be dismantled. Do not apply any surface coating procedure with damaging effects on the materials (e.g. hot galvanizing or electrogalvanizing) and do not subject them to heat, welding or drilling processes.

Assembly instructions

The assembly process may only be executed by a qualified person. KWB Star Alloy Swivels SW/S are attached to the chain by means of connecting links. When attached to textile lifting means, webbing coupling links must be used. Swivels SW/S are provided with a bolt and a security bush for the assembly process. The assignment of the right connecting link/ webbing coupling link and chain dimensions is determined by the product code (e.g. SW/S 13) and the grade (10), with which the parts are also marked. For example, SW/S 13 must be used with V/S 13 Connex connecting links/ RSK/S 13 Round Sling Connecting Links and Star Alloy 13 mm chains. 13 indicates the diameter of the material which the chains are made of, 10 indicates the grade. It is vital to pay attention to the right working load limit marking of the whole system (WLL on identification tag).
The weakest part will determine the working load limit. The lifting accessory into which the Swivel SW/S is to be incorporated must be declared in conformity with the provisions of the Directive 2006/42/EC. Only non-damaged parts must be assembled. Defective Swivels SW/S must not be assembled and used Swivels SW/S must be inspected before the assembly process as described below under the section Maintenance, Inspections and Repairs.





Replacement parts

Bolts and Safety Bush type BG-V/S – the same replacement parts as for V/S Connecting Link / RSK/S Webbing Coupling Link.

Safety precautions to be taken by the user

Safety glasses must be worn during the assembly process and gloves must always be worn when using this product. When conditions with restrictions of use take place, working load limit values must be reduced by the above reduction factors in order to assure the required security level.

Residual risks

Overloading because of exceeding the working load limit or not reducing the working load limit when influences under severe conditions such as, asymmetry, edge load or impact occur, can lead to failure of the Swivel SW/S. Other factors are unsatisfactory adjustment, transgression of the permitted angle of inclination, high vibrations with heavy load, transverse loading, and the use of uninspected Swivels SW/S or no original parts. In such cases, the load could fall causing injuries or fatalities among the workers who operate and work in the danger zone of the lifting equipment.

How to act in case of accidents or damages

After deformation of individual parts of the Swivel SW/S because of overloading or other extraordinary events, take the lifting assembly out of service for inspection or repair by a qualified person.

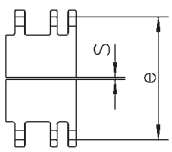
Maintenance, Inspections and Repairs

Maintenance: Swivels SW/S shall be cleaned regularly, dried when in contact with wet atmospheres and protected from corrosion, e.g. lightly oiled.

Inspections: Swivels SW/S including their bolts and safety bushes need to be inspected in a clean condition – they must not contain oil, dirt or rust. Painting is only permissible if an evaluation of the Swivel SW/S condition is possible. When cleaning, do not subject Swivels SW/S to processes which cause material embrittlement (e.g. pickling), overheating (e.g. flame cleaning), material abrasion (e.g. sand blasting), etc. Surface cracks or other defects must not be covered. Swivels SW/S must be checked before each use for visible signs of damage. Once a year an inspection must be carried out by a competent person. However, this period must be shortened in view of the conditions of use – e.g. because of frequent use with maximum load capacity or under conditions with restrictions of use, wear or corrosion. It is recommended to subject Swivels SW/S every two years to a crack test. There are different ways of crack testing: subjecting the Swivel SW/S to a load test with 2 times the working load limit, followed by a visual inspection, a magnetic crack test or a dye-penetration method.

Withdrawal:
- Broken parts, deformation, notches, cracks of all types
- Signs of heat (e.g. discoloration or coating-burn off)
- In the case of doubts about the safety and correct functioning of the Swivel SW/S
- Unrecognizable identification marking
- If wear or excessive corrosion occurs and the tolerable change of measurement is transgressed (see following table)
- Bolts that are not completely assembled or secured by the bush
- If the Swivel SW/S is stiff or cannot be rotated

Measure	Maximal permitted change
e	+5 %
s	SW/S 7+8 > 1.3 mm / SW/S 10 > 1.7 mm



Repair:
Swivels SW/S are only to be repaired by a qualified person. Damaged accessories must be replaced by new, original replacement parts. Welding, heat treatments, as well as the straightening of bent Swivels SW/S are not permitted. Inspections and repairs have to be documented and the corresponding reports have to be retained during the service life of the Swivel SW/S.

Storage

KWB Star Alloy Swivels SW/S shall be stored cleaned, dried, protected from corrosion, e.g. lightly oiled. While stored, they must not be exposed to corrosive, mechanical or thermal influences.

Declaration of incorporation

In accordance with the requirements established in Annex II, part B, of the EU Machinery Directive 2006/42/EC for components in lifting accessories:

This is to inform you that the product mentioned in this original operating manual is designed to be incorporated in lifting accessories complying with all essential requirements of the EU Machinery Directive 2006/42/EC. This product must not be put into service until the final lifting accessory into which it is to be incorporated has been declared in conformity with the provisions of the Directive 2006/42/EC. Moreover, it is a precondition that this operating manual has been read and understood. This declaration has no legal effect if any changes to the product are introduced without KWB's approval.

Following essential safety and health requirements of Annex I of the Directive are applied and fulfilled:
1.1.3, 1.3.4, 1.5.4, 4.1.2.3, 4.1.2.5, 4.3, 4.4.1.

Additionally, we declare that the relevant technical documentation is compiled in accordance with part B of Annex VII and will be transmitted electronically due to a well-founded request by the national competent authority.

The person authorised to compile the technical documentation:
DI Bernhard Oswald; Mariazeller Straße 143; A-8605 Kapfenberg

Klagenfurt, 2011-09-01

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Technical changes and misprints are subject to alteration.