

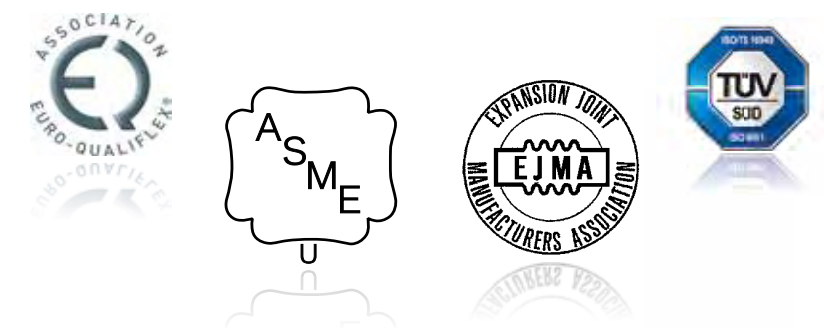
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QUALITY BY WITZENMANN

Converting our prominent development expertise perfectly into customised product solutions that fulfil the highest requirements - this is our standard.

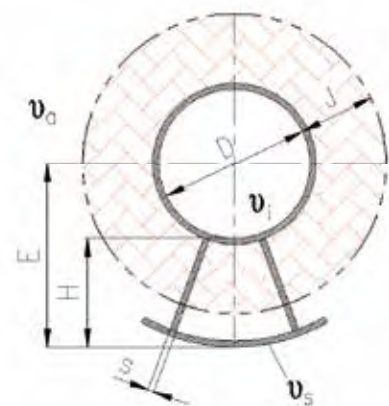


Durability and absolute operational reliability are essential for a company aiming to be the quality leader. It is not only DIN ISO 9001 / TS 16949 certification, but also a wide variety of national and international approvals and certifications such as VDA 6.1, J'ATEX (94/9 CE) or DESP (97/23 CE) that constitute "HYDRA - Quality by Witzmann". Our customers include major companies involved in petrochemicals, industry and plant engineering and construction, power plant operators and suppliers in the energy sector. This is reason enough for us to consistently enhance the qualitative development of our product solutions.

Spin-off effects from other markets

Witzmann is involved in many highly specialised markets. These include, for instance, aerospace, nuclear power and even medical technology. These are all fields in which maximum functional reliability is required under demanding operating conditions. This is one of the coefficients which, thanks to our multi-faceted expertise, makes us an in-demand development partner around the world. The FLEXPERTE software we have developed provides the specialist planner with a simple way of configuring supports, hangers and supports, all the way through to a 3D-CAD presentation. It is compatible with all common planning tools via PDS and PDMS interfaces.

TECHNICAL DATA



Temperature influences

Temperature at the outer insulating support / lower edge of support (contact diameter)

Support temperature (outside) in °C

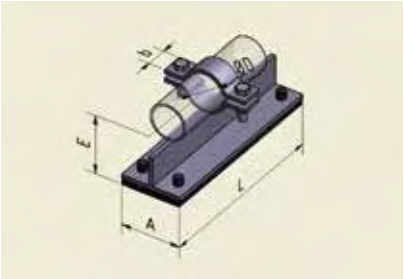
HYDRA® MOVABLE SUPPORT

Type series LKL and LSL, type 20 and 21,
low overall height, up to 95 °C, fixed height, steel to steel or low-friction sliding

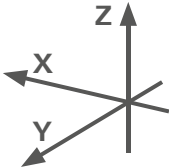
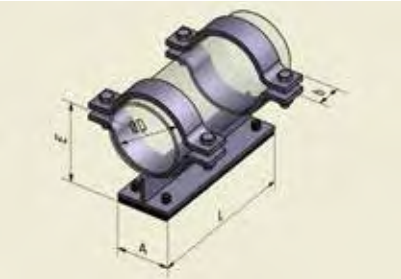
Technical data

- 1 and 2-clamp, clampable
- Nominal height H = 60 mm
(for non-insulated pipelines)
- Materials:
Support: S235JR
Sliding plate: Polyamide PA 66,
glass fibre-reinforced (LKL)
- Surface protection:
steel components hot-dip galvanized
- Coefficients of friction:
Friction for formation LKL PA and steel hot-dip galvanized:
0.2 to 0.3
- Support base thicknesses for clamping system:
LKL 16 mm
LSL 8 mm

Type 20



Type 21



Differences in the type series:

Type series LKL – with clamped polyamide sliding plate

Type series LSL – steel to steel sliding (H and E dimension 8 mm lower than LKL)

Order example: LKL 21.0080.060-37.2

Type 21, nominal diameter 80, nominal height 60 mm, S235JR, hot-dip galvanized

Nominal diameter	Outside pipe diameter	Type LKL ... Type LSL ...	Nominal loads ²⁾			System dimension LKL		Dimensions			Weight
			-F _z	+							

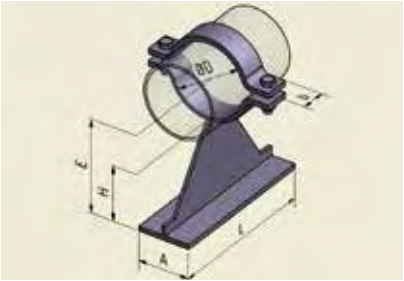
HYDRA® MOVABLE SUPPORT

Type series LKL, LSL and LXL, type 20,
up to 300 °C, fixed height, steel to steel or low-friction sliding

Technical data

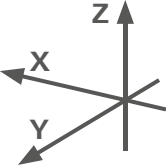
- 1-clamp, clampable
- Max. insulation thickness:
Nominal height H - 10 mm
with clamping system H - 30 mm
- Materials:
Support: S235JR
Sliding plate: Polyamide PA 66,
glass fibre-reinforced (LKL)
Sliding plate: Stainless steel (LXL)
- Surface protection:
steel components hot-dip galvanized
- Coefficients of friction:
Sliding pairing LKL PA steel hot-dip galvanized: 0.2 to 0.3
Sliding pairing LXL stainless steel PTFE: 0.1 (in conjunction
with sliding element LGA or LGV - see pg. 29)
- Support base thicknesses for clamping system:
LKL 17 mm
LSL with nominal height 85 and 190: 9 mm
LSL with nominal height 140: 7.4 mm

Type 20



Type series LKL





Differences in the type series:
Type series LKL – with clamped polyamide sliding plate
Type series LSL – steel to steel sliding (E dimension 8 mm lower than LKL)
Type series LXL – with welded stainless steel sliding plate (E dimension 5 mm lower than LSL)

Order example: LKL 20.0080.150-37.2
Type 20, nominal diameter 80, nominal height 150 mm, S235JR, hot-dip galvanized

Nominal diameter	Outside pipe diameter	Type LKL ... Type LSL ... Type LXL ...	Nominal loads ²⁾ and system dimensions						Dimensions			Weight
			Nominal height H									

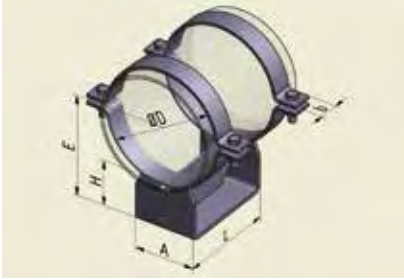
HYDRA® MOVABLE SUPPORT

Type series LKL, LSL and LXL, type 23,
up to 300 °C, fixed height, steel to steel or low-friction sliding

Technical data

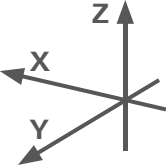
- 2-clamp, clampable
- Max. insulation thickness:
Nominal height H - 10 mm
with clamping system H - 30 mm
- Materials:
Support: S235JR
Sliding plate: Polyamide PA 66,
glass fibre-reinforced (LKL)
Sliding plate: Stainless steel (LXL)
- Surface protection:
steel components hot-dip galvanized
- Coefficients of friction:
Sliding pairing LKL PA steel hot-dip galvanized: 0.2 to 0.3
Sliding pairing LXL stainless steel PTFE: 0.1 (in conjunction
with sliding element LGA or LGV - see pg. 29)
- Support base thicknesses for clamping system:
LKL 18 mm
LSL 10 mm

Type 23



Type series LKL





Difference in the type series:

- Type series LKL – with clamped polyamide sliding plate
- Type series LSL – steel to steel sliding (E dimension with H=107 8 mm lower than LKL)
- Type series LXL – with welded stainless steel sliding plate (E dimension with H=110 5 mm lower,
with H = 153, 203 and 253 3 mm higher than LSL)

Order example: LKL 23.0150.150-37.2

Type 23, nominal diameter 150, nominal height 150 mm, S235JR, hot-dip galvanized

Nominal diameter	Outside pipe diameter	Nominal loads ²⁾	Type LKL ... Type LSL ... Type LXL ...	System dimensions Installation dimension (nominal height)			
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HYDRA® MOVABLE SUPPORT

Type series LSL and LXL, type 23,
up to 600 °C, fixed height, steel to steel or low-friction sliding

Technical data

- 2-clamp, clampable
- Max. insulation thickness:
Nominal height H - 10 mm
with clamping system H - 30 mm
- Materials:
Support: 16Mo3, 13CrMo4-5,

HYDRA® MOVABLE SUPPORT

Type series LVS and LVL, type 20 and 21,
up to 300 °C, height-adjustable, steel to steel or low-friction sliding

Technical data

- 2-clamp, clampable
- Max. insulation thickness:
Nominal height H - 10 mm
with clamping system H - 30 mm
- Materials:
Support: S235JR
Sliding plate: Polyamide PA

HYDRA® MOVABLE SUPPORT

Type series LVS and LVL, type 23,
up to 300 °C, height-adjustable, steel to steel or low-friction sliding

Technical data

- 2-clamp, clampable
- Max. insulation thickness:
Nominal height H - 10 mm
with clamping system H - 30 mm
- Materials:
Support: S235JR
Sliding plate:

HYDRA® MOVABLE SUPPORT

Type series IKL, type 23 and 24,
up to 300 °C, for pre-insulated pipelines, fixed height, low-friction sliding

Technical data

- 2-clamp, clampable
- Max. insulation thickness:
Nominal height H - 10 mm
with clamping system H - 30 mm
- Materials:
Support: S235JR
Sliding plate

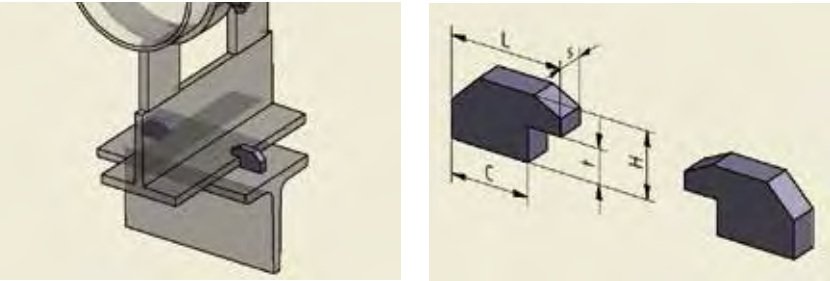
UPLIFT RESTRAINT TO WELD ON

Type series LAW

Technical data

- Material: S235JR
- Surface protection: primed

LAW



HYDRA® FIXED SUPPORT

Type series FLN, type 21, 22 and 23,
low overall height, fixed height, clampable

Technical data

- 2-clamp, clampable
- Nominal height H = 60 mm
(for non-insulated pipelines)
- Clamp carrier T-shaped:
Carrier width 80 (100) to 14

HYDRA® FIXED SUPPORT

Type series FLN, type 21,
up to 300 °C / 450 °C, fixed height, clampable

Technical data

- 2-clamp, clampable
- Clamp carrier T-shaped:
Carrier width 80 to 140 mm
Support base thickness 7 to 19 mm

HYDRA® FIXED SUPPORT

Type series FLN, type 23,
up to 300 °C / 450 °C, fixed height, clampable

Technical data

- 2-clamp, clampable
- Clamp carrier T-shaped:
Carrier width 80 (100) to 140 mm
Support base thickness 7 to 19 mm
- Max. insulation

HYDRA® FIXED SUPPORT

Type series FVN, type 21,
up to 300 °C, height-adjustable, clampable

Technical data

- 2-clamp, clampable
- Clamp carrier T-shaped:
Carrier width 80 to 140 mm
Support base thickness 7 to 19 mm
- Max. insulation thickness:
Nominal height H -

HYDRA® FIXED SUPPORT

Type series FVN, type 23,
up to 300 °C, height-adjustable, clampable

Technical data

- 2-clamp, clampable
- Clamp carrier T-shaped:
Carrier width 100 to 140 mm
Support base thickness 7 to 19 mm
- Materials:
Support: S235JR
-

HYDRA® GUIDES

Type series LSF and LXF, type 23,
up to 600 °C, fixed height, steel to steel or low-friction sliding

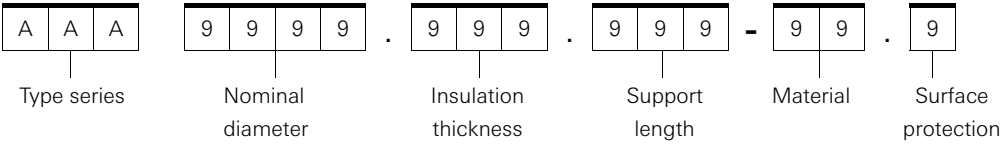
Technical data

- 2-clamp, clampable
- Max. insulation thickness:
Nominal height H - 10 mm
with clamping system H - 30 mm
- Materials:<

HYDRA® PIPE SADDLES

Type series, names, variants
if standard, then no information

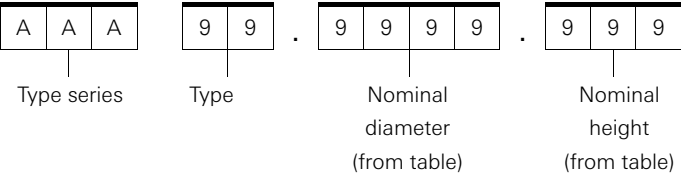
Type designation IDO / IDR / INO / INB / INS / ITB / SMR



HYDRA® SPECIAL VERSIONS

Type series, names, variants

Type designation LKL / LKG / FLN



HYDRA® VERTIKAL PIPE SUPPORT

Type series PRV,
up to 540 °C, vertical pipeline, heavy version, with clamps to prop up

Technical data

- 2-clamp
- Materials: S235JR, 16Mo3, 13CrMo4-5
Material is temperature-dependent, see pg 9
- Surface protection: hot-dip galvanized, prim