

**Clamping Units
Single Acting**
Clamping force at 6 bar: 2.4 to 18 kN

- 1 **Clamping units series LSE are single acting pneumatic units with integrated hydraulic intensifiers.**
This principle offers high forces compared to usual pneumatic units.
- 1 **Round, compact design**
- 1 **All materials are corrosion resistant**



Technical Data

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

Single Acting

Models:

LSE Standard

LSE H High pressure version

Operating Pressure:

LSE 4 to 10 bar

LSE H 4 to 7 bar

Operating Temperature:

+10°C to +80°C max.

Position of Installation:

Optional

External Thread:

M36x1.5; M48x1.5; M60x2

Clamping force at 6 bar:

2.4 to 18 kN, depending on external thread and model

Strokes:

3 to 12 mm, depending on external thread and model

Materials:

Barrel: Steel, chemically nickel plated

Clamping piston: Steel, hardened

Cover: Steel, zinc coated

Locking nuts: Steel, zinc coated

Seals: Perbunan / Polyurethane

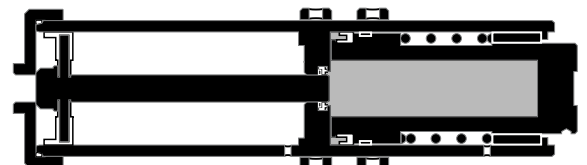
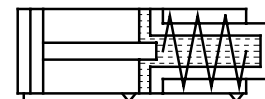
Filling: Hydraulic oil, ISO VG 1000

Ordering Examples

See page N 1.4.133.03

Mountings and Accessories

See page N 1.4.133.03





Clamping Unit Variants

Symbol	Model	Description	Dimensions Page
	LSE	Standard version	04
	LSE H	High pressure version	04

Model Codes Standard

LSE V V V V

Series	Substitute
Standard	LSE

Threads	Substitute
M36x1.5	36
M48x1.5	48
M60x2	60

Strokes	Substitute
3 mm	3
6 mm	6
9 mm	9
12 mm	12*

* For threads ≥ M48x1.5

Model Codes high pressure version

LSE H V V V

Series	Substitute
High pressure version	LSE H

Threads	Substitute
M48x1.5	48
M60x2	60

Strokes	Substitute
3 mm	3
6 mm	6**

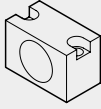



** For thread M60x2 only

Order Numbers | Clamping Force | Operating Pressure | Air Consumption

Thread	Stroke (mm)	Clamping force at 6 bar (kN)	Operating pressure (bar)	Air consumption per stroke at 6 bar (l/cm stroke)	Model	Order No.
M36x1.5	3	2.4	4 to 10	0.09	LSE 363	43 941 20
	6	2.5	4 to 10	0.16	LSE 366	43 941 21
	9	2.6	4 to 10	0.24	LSE 369	43 941 22
M48x1.5	3	5.6	4 to 10	0.22	LSE 483	43 942 20
	6	5.6	4 to 10	0.31	LSE 486	43 942 22
	9	5.8	4 to 10	0.54	LSE 489	43 942 23
	12	5.8	4 to 10	0.70	LSE 4812	43 942 24
M60x2	3	11.0	4 to 10	0.47	LSE 603	43 943 20
	6	12.0	4 to 10	0.78	LSE 606	43 943 22
	9	12.0	4 to 10	1.21	LSE 609	43 943 24
	12	12.0	4 to 10	1.49	LSE 6012	43 943 25
High pressure version						
M48x1.5	3	10.0	4 to 7	0.38	LSE H 483	43 942 45
M60x2	3	18.0	4 to 7	0.67	LSE H 603	43 943 35
	6	18.0	4 to 7	1.18	LSE H 606	43 943 36



Mountings and Accessories

Clamping Unit thread	Bracket, horizontal 	Clamping head 	Spherical clamping head 	V-grooved clamping head 
	Page 04 Order No.	Page 05 Order No.	Page 05 Order No.	Page 05 Order No.
M36x1.5	43 941 50	43 941 55	43 941 56	43 941 57
M48x1.5	43 942 50	43 942 55	43 942 56	43 942 57
M60x2	43 943 50	43 943 55	43 943 56	43 943 57

Materials of Mountings and Accessories

Bracket, horizontal	Aluminium, anodized
Clamping heads	Steel, hardened

Ordering Examples

Clamping Units

To order a standard Clamping Unit with Clamping force 5.8 kN (thread M48x1.5) and stroke 9 mm quote:

LSE 489, Order No. 43 942 23

Mountings and Accessories

To order a spherical clamping head for a Unit with thread M48x1.5 quote:

Spherical clamping head, Order No. 43 942 56

Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under 'Technical Data'.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

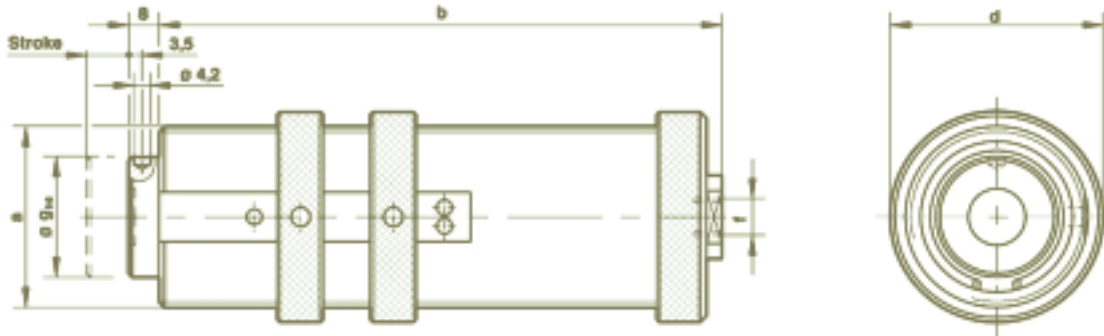
System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.



BASIC DIMENSIONS

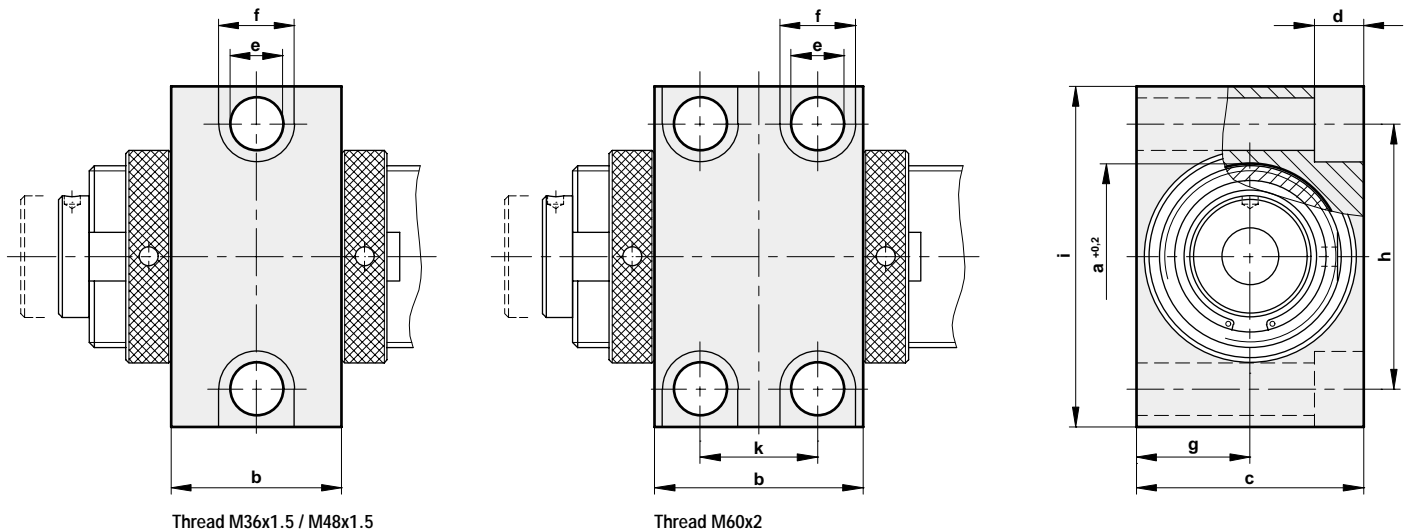
Standard and high pressure version



Model	Order No.	Stroke (mm)	a	b	Δd	f	Δgh_6	Weight
LSE 363	43 941 20	3	M36x1.5	98.0	42	G 1/8	22	0.58 kg
LSE 366	43 941 21	6		127.5	42	G 1/8	22	0.68 kg
LSE 369	43 941 22	9		184.5	42	G 1/8	22	0.91 kg
LSE 483	43 942 20	3	M48x1.5	111.0	56	G 1/4	32	1.08 kg
LSE 486	43 942 22	6		148.0	56	G 1/4	32	1.34 kg
LSE 489	43 942 23	9		188.0	56	G 1/4	32	1.54 kg
LSE 4812	43 942 24	12		234.0	56	G 1/4	32	1.85 kg
LSE 603	43 943 20	3	M60x2	137.5	70	G 1/4	40	2.05 kg
LSE 606	43 943 22	6		174.5	70	G 1/4	40	2.34 kg
LSE 609	43 943 24	9		248.5	70	G 1/4	40	3.13 kg
LSE 6012	43 943 25	12		313.5	70	G 1/4	40	3.82 kg
High pressure version								
LSE H 483	43 942 45	3	M48x1.5	148.0	56	G 1/4	32	1.27 kg
LSE H 603	43 943 35	3	M60x2	171.5	70	G 1/4	40	2.41 kg
LSE H 606	43 943 36	6		289.5	70	G 1/4	40	3.80 kg

MOUNTINGS

Bracket, horizontal

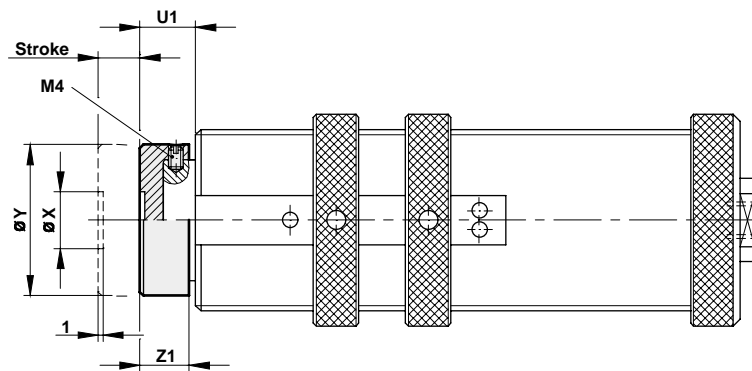


Thread	Order No.	$\phi a_{+0.2}$	b	c	d	ϕe	f	g	h	i	k	Weight
M36x1.5	43 941 50	36.2	40	50	12	11.5	18	24	54	70	-	0.25 kg
M48x1.5	43 942 50	48.2	50	60	13	14	20	30	70	90	-	0.41 kg
M60x2	43 943 50	60.2	60	70	13	14	20	36	90	110	36	0.64 kg

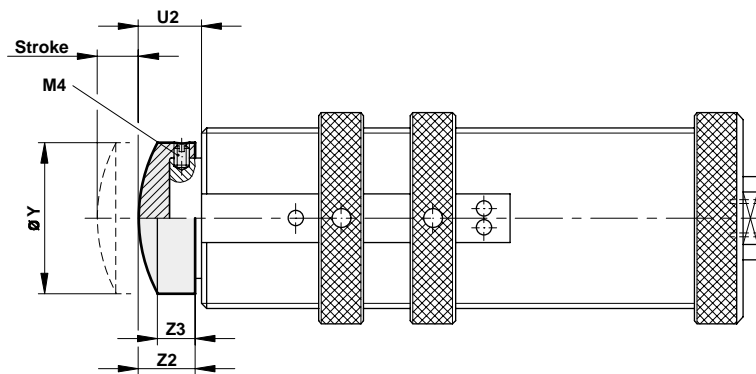


ACCESSORIES

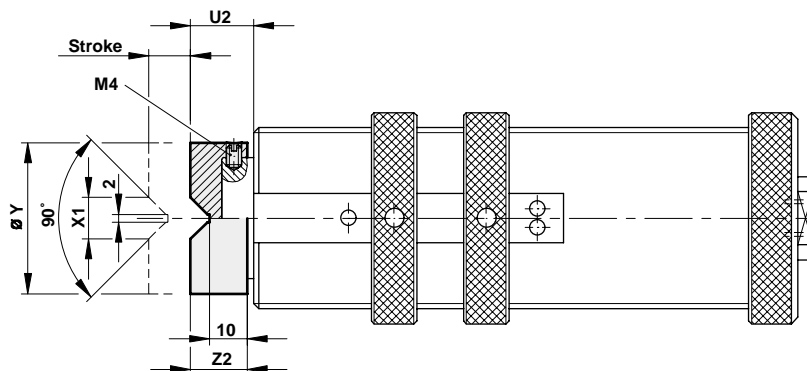
Clamping head



Spherical clamping head



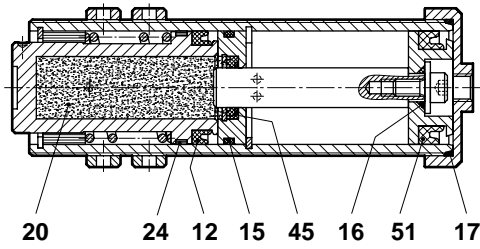
V-grooved clamping head



Thread	U1	U2	Ø X	X1	Ø Y	Z1	Z2	Z3	Clamping head		Spherical clamping head		V-grooved clamping head	
									Order No.	Weight	Order No.	Weight	Order No.	Weight
M36x1.5	14	16	10	11	30	13	15	10	43 941 55	0.05 kg	43 941 56	0.05 kg	43 941 57	0.05 kg
M48x1.5	14	16	15	11	40	13	15	10	43 942 55	0.09 kg	43 942 56	0.08 kg	43 942 57	0.09 kg
M60x2	19	19	15	15	50	18	18	11	43 943 55	0.21 kg	43 943 56	0.15 kg	43 943 57	0.19 kg



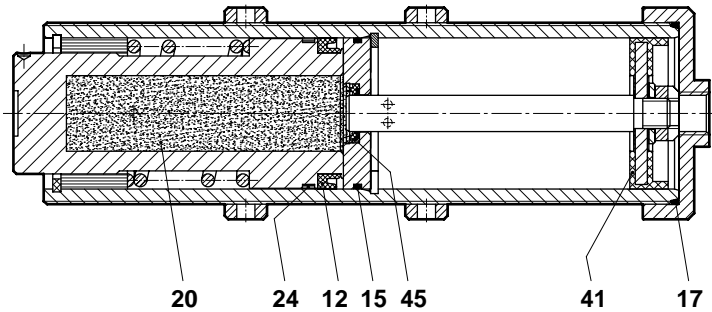
**Spares LSE 363
LSE 366
LSE 369**



Model	Model Order No.	Spares kit Order No.	Comprising					
			Item	Description	Quantity	Item	Description	Quantity
LSE 363	43 941 20	11 014 29	12	Seal	1	20	Special oil	1
LSE 366	43 941 21		15	'O'-ring	1	24	Guide strip	1
LSE 369	43 941 22		16	'O'-ring	1	45	Seal	1
			17	'O'-ring	1	51	Seal	1

Note: Please quote the unit model number when ordering spares kits.

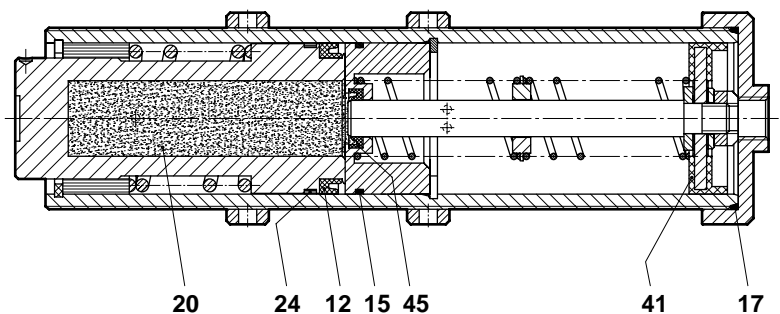
**Spares LSE 483, LSE 486,
LSE 489, LSE 4812,
LSE 603, LSE 606,
LSE 609, LSE 6012**



Model	Model Order No.	Spares kit Order No.	Comprising					
			Item	Description	Quantity	Item	Description	Quantity
LSE 483	43 942 20	11 014 30	12	Seal	1			
LSE 486	43 942 22		15	'O'-ring	1			
LSE 489	43 942 23		17	'O'-ring	1			
LSE 4812	43 942 24	11 014 31	20	Special oil	1			
LSE 603	43 943 20		24	Guide strip	1			
LSE 606	43 943 22		41	Piston	1			
LSE 609	43 943 24		45	Seal	1			
LSE 6012	43 943 25							

Note: Please quote the unit model number when ordering spares kits.

**Spares LSE H 483
LSE H 603
LSE H 606**



Model	Model Order No.	Spares kit Order No.	Comprising					
			Item	Description	Quantity	Item	Description	Quantity
LSE H 483	43 942 45	11 261 43	12	Seal	1	24	Guide strip	1
LSE H 603	43 943 35	11 261 45	15	'O'-ring	1	41	Piston	1
LSE H 606	43 943 36	11 261 45	17	'O'-ring	1	45	Seal	1
			20	Special oil	1			

Note: Please quote the unit model number when ordering spares kits.