September 2017
NEWS
Patented

MAUS
ITALIA

Kattex

Portable multipurpose hydraulic equipment

CE

MADE IN ITALY

ITA REV 0

Innovations of the **Kattex** device

Multi-use

Multipurpose

Innovative tools designed and manufactured by Maus Italia, the **Kattex** device is now configured for cutting and for locking the heat exchanger and boiler tubes.

Wide Range

Wide range of applications

The new larger model of the multipurpose **Kattex** allows you to work on tubes up to 4"(101.60 mm) for the maintenance of industrial boilers.

Tube protrusion

For tubes with long protrusion

New model for cutting tubes with long protrusion
before tube end facing.

Wide Range

Controlled tube centring and locking ("tack expansion")

Centring and locking of the tube before welding is assured by the innovative tools designed by Maus Italia Technical staff.

Timer

Automatic cycle

The new dedicated hydraulic unit gives the possibility to control automatically the entire cycle time (expansion time and release/stop time), ensuring a high level of repeatability and the execution of the correct complete cycle.

Consolidated features of the **Kattex**

Istantaneous

Instant

Hydraulically operated, the multipurpose **Kattex** transmits instant radial expansion to the tools, assuring a high level of productivity.

Clean results

Chip-free

The multipurpose **Kattex**, with its patented cutting system, leaves no metallic residue inside the tube, ensuring a "clean" job.

Multi-power

Power sources

The **Kattex**'s hydraulic unit are the **TP2** series hydraulic units, available in either **E**lectric or **P**neumatic models.

Kattex

Portable multipurpose hydraulic equipment for internal tube cutting and tube locking.

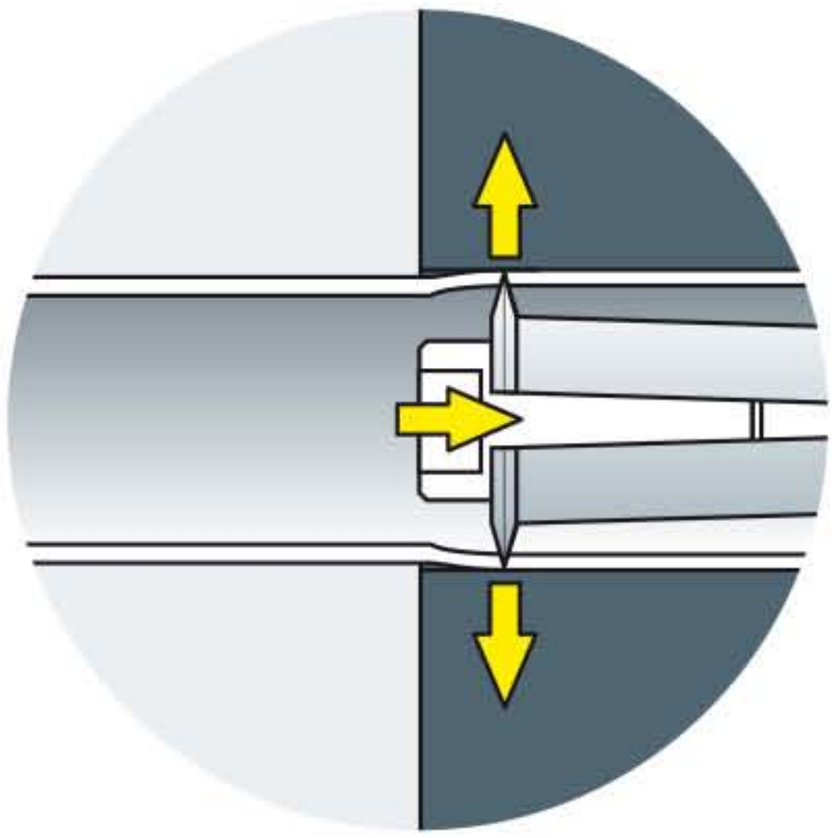
Maus Italia has widened the use of the **Kattex** series (a unique product which has already been patented in 2010 for instant cutting of heat exchanger tubes) by offering **new solutions and innovative features.**

Maus Italia technical staff are on hand to give advice on the ideal solution for all types of application.

Kattex MAUS ITALIA

Kattex

Instant internal cutting of tubes during restoration of tubesheets.



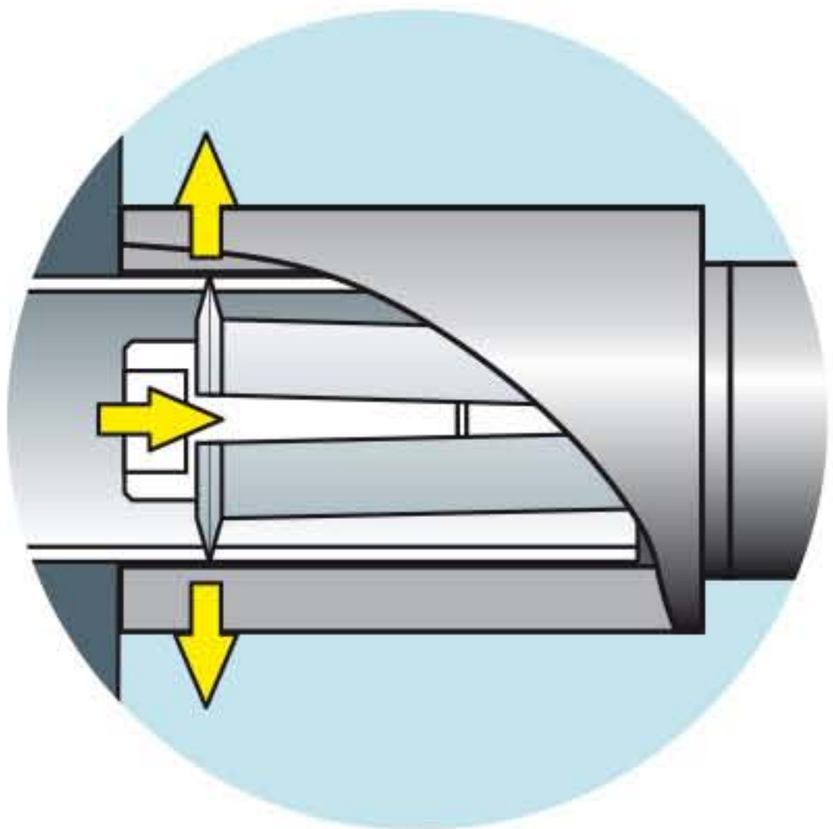
KA-6

Kattex guarantees chip-free cutting in a very short time. Used **before the extraction of the tube stubs** with ***Grippul*** series stub pullers.

KA-4

Kattex LTP

Instant internal cutting of tubes with long protrusion.

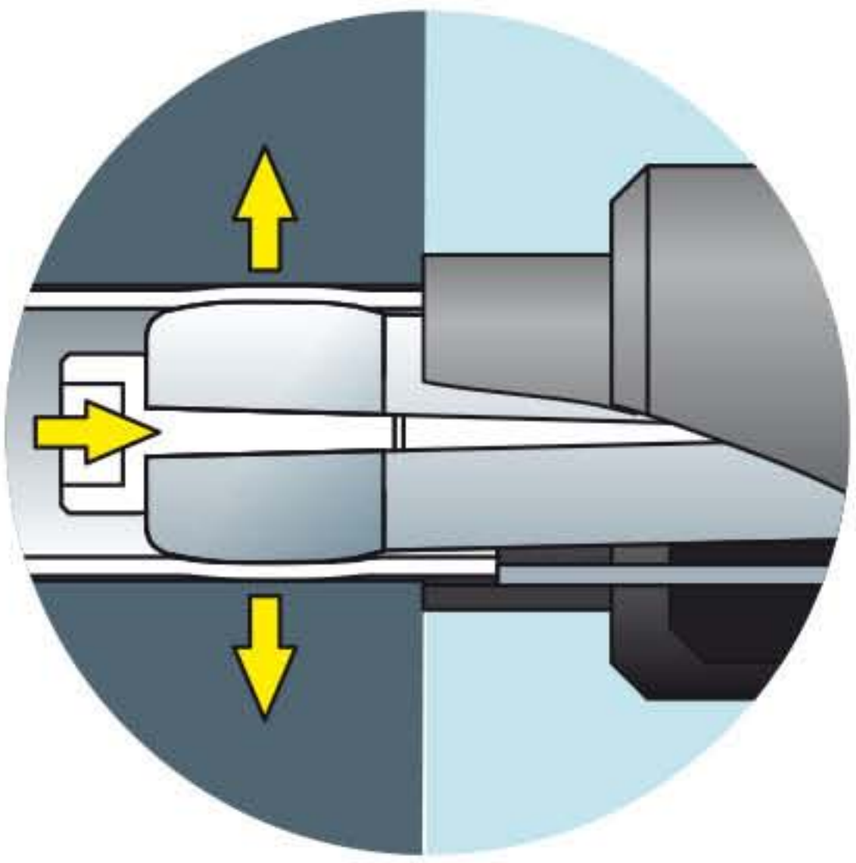


KA-10

Kattex LTP replaces the milling and removal of chips cutting the excess part of the tube ensuring time saving. Use **before tube end facing** with ***Tubend*** series tools

Kattex Fix

Instant locking of tubes using "tack expansion".



Kattex Fix replaces the "tack weld", ensuring precise centring and controlled mechanical expansion ("tack expansion") of the tubes. Use **before TIG *orbital* welding** of the tubes with the **Tubweld** series.

Overview of the features of the Kattex

The hydraulic **Kattex**, with tools and accessories designed and manufactured by Maus Italia, can be transformed for carrying out 3 types of job:

- **Kattex** for tube cutting;
- **Kattex LTP** for cutting tubes with long protrusion;
- **Kattex Fix** for locking ("Tack expansion") the tubes.

To use this setup, you must know:

- which operation is required;
- the diameter of the tube;
- the depth of the operation;
- the type of power supply (electric or pneumatic).

Kattex

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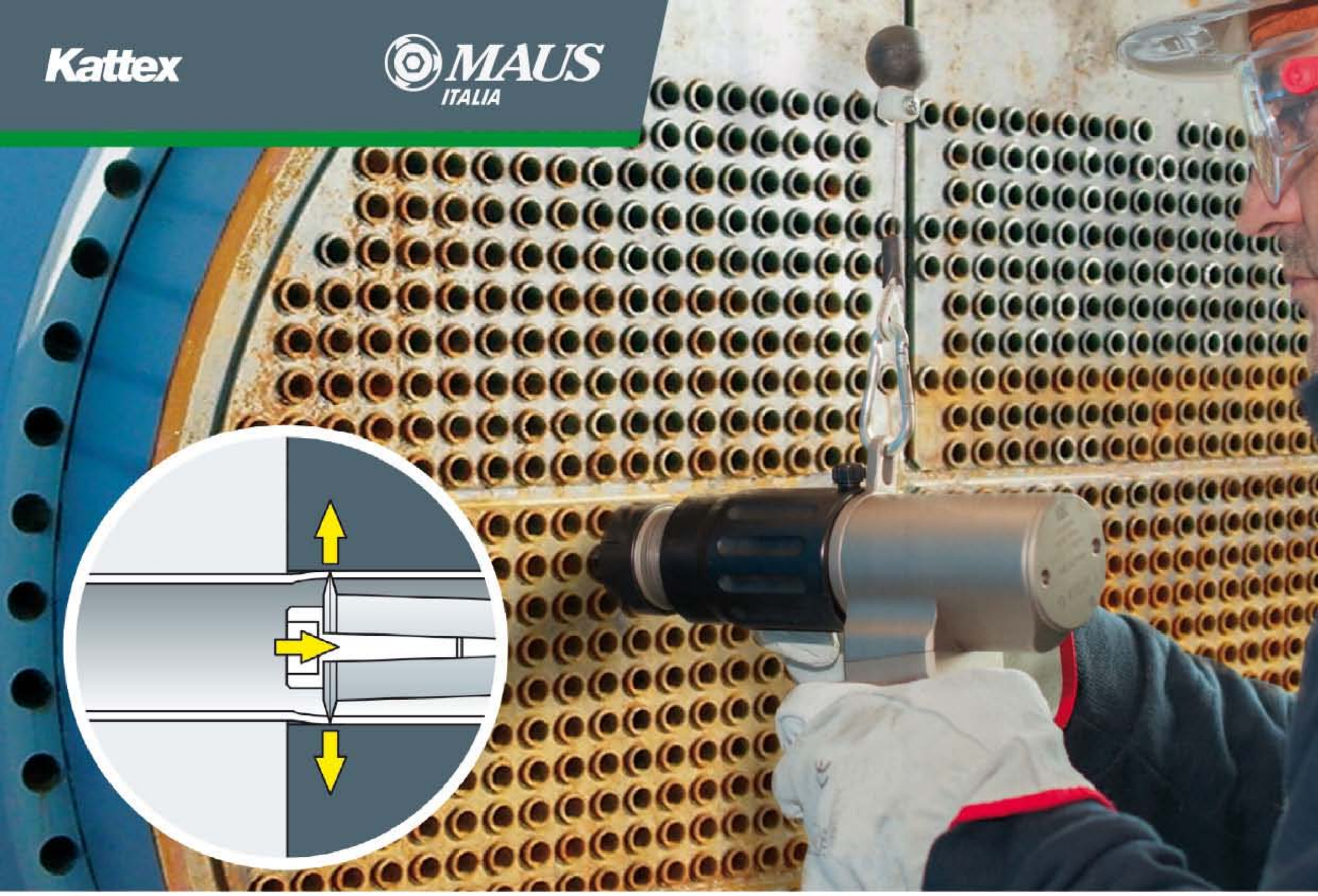
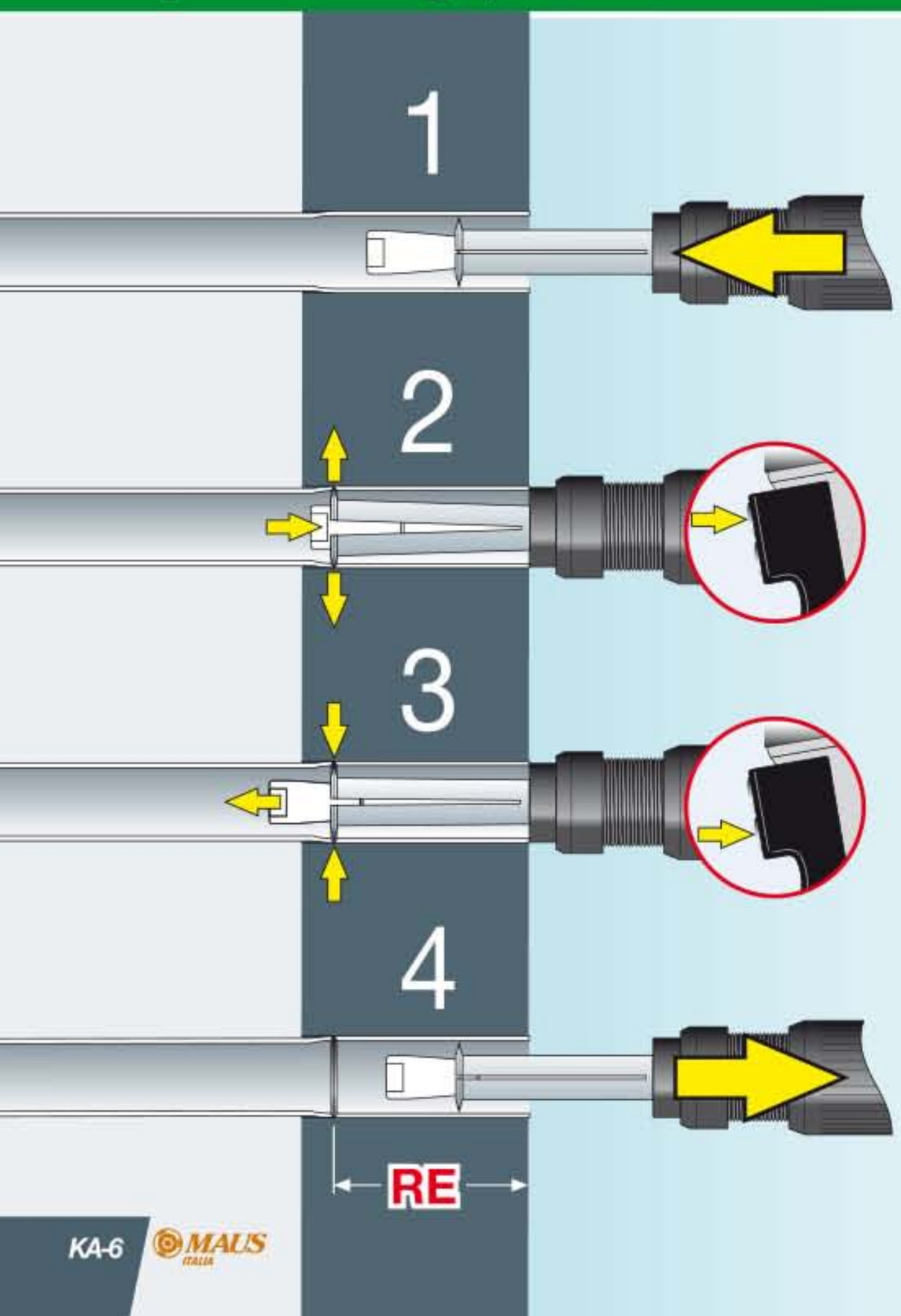


Operating procedure



Insertion

Insert the **Kattex** into the tube which needs to be cut until the thrust collar is in contact with the tube sheet

Instant cutting

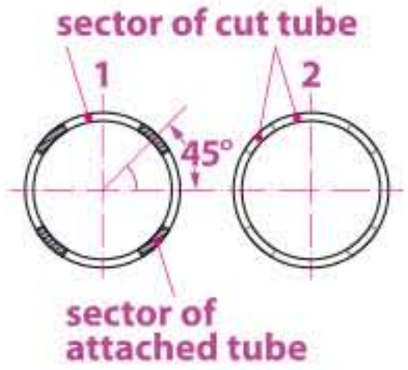
Press the button until the cutter reach the maximum expansion. If necessary, *to cut the tube completely, rotate the Kattex by 45° and repeat the operation*

Release

Press the button until the cutter is completely in the rest position

Removal

Pull out the **Kattex**

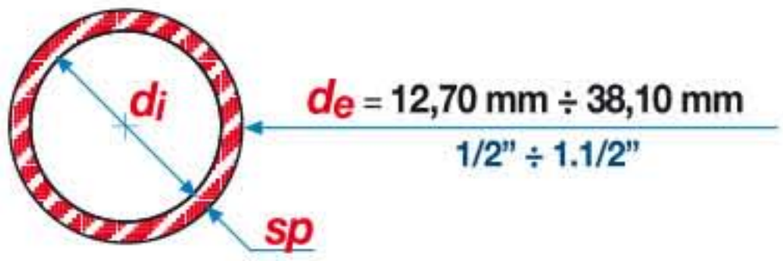


Kattex 6
Kattex 12

Instant, hydraulic, **chip-free** internal tube cutter for the maintenance of heat exchanger tubes and boiler tubes with O.D. up to 101,6 mm (4”).

The ***Kattex*** transforms into an instant internal tube cutter due to its being fitted with cutting tools designed and manufactured by Maus Italia. For use in the maintenance of heat exchangers during the removal or partial retubing of a tube bundle, usually before tube stub extraction with Maus Italia ***Grippul*** stub pullers.

Maus Italia has widened its range by offering, as well as the consolidated ***Kattex 6***, the enlarged ***Kattex 12*** for thick tubes.



Kattex 6

Tube							K5K Knife	Cutters	
de		sp			di				
inches	mm	B.W.G.	mm	inches	mm	inches	Cod.	mm	inches
1/2”	12,70	16	1,65	0.065	9,4	0.370	K5K-1	9,0÷12,5	0.354÷0.492
		18÷24	1,24÷0,56	0.049÷0.022	10,2÷11,6	0.402÷0.456	K5K-2	9,8÷13,3	0.386÷0.524
5/8”	15,87	14	2,11	0.083	11,7	0.459	K5K-3	11,1÷15,3	0.437÷0.602
		16÷24	1,65÷0,56	0.065÷0.022	12,6÷14,8	0.495÷0.583	K5K-4	12,1÷16,3	0.476÷0.642
3/4”	19,05	12	2,77	0.109	13,4	0.532	K5K-5	12,8÷18,1	0.504÷0.713
		14÷24	2,11÷0,56	0.083÷0.022	14,8÷17,9	0.584÷0.766	K5K-6	14,2÷19,5	0.559÷0.768
7/8”	22,22	10	3,40	0.134	15,4	0.607	K5K-7	14,6÷20,6	0.575÷0.811
		13÷24	2,41÷0,56	0.095÷0.022	14,8÷17,9	0.584÷0.766	K5K-8	16,7÷22,7	0.675÷0.894
1”	25,40	10	3,40	0.134	18,6	0.732	K5K-9	17,8÷24,8	0.701÷0.976
		12÷24	2,77÷0,56	0.109÷0.022	19,8÷24,2	0.782÷0.956	K5K-10	19,1÷26,1	0.752÷1.027
1.1/4”	31,75	10	3,40	0.134	25,0	0.982	K5K-11	24,0÷31,0	0.945÷1.220
		12÷24	2,77÷0,56	0.109÷0.022	24,2÷30,7	1.032÷1.206	K5K-12	25,3÷32,3	0.996÷1.272
1.1/2”	38,10	10	3,40	0.134	31,1	1.232	K5K-13	30,3÷37,3	1.193÷1.468
		12÷24	2,77÷0,56	0.109÷0.022	32,5÷37,0	1.282÷1.456	K5K-14	31,7÷38,7	1.248÷1.524

The table is an introduction for tool selection. For more details please refer to the documentation supplied with the equipment.

Incision only

Complete cutting

Kattex 6

Depth **RE** standard adjustable
10 ÷ 75 mm (0.394” ÷ 2.953”)

Depth **RE** max. (extended)
465 mm (18.387”)

Tube diameter **de**
12,7 ÷ 38,1 mm (1/2”÷1.1/2”)

Kattex

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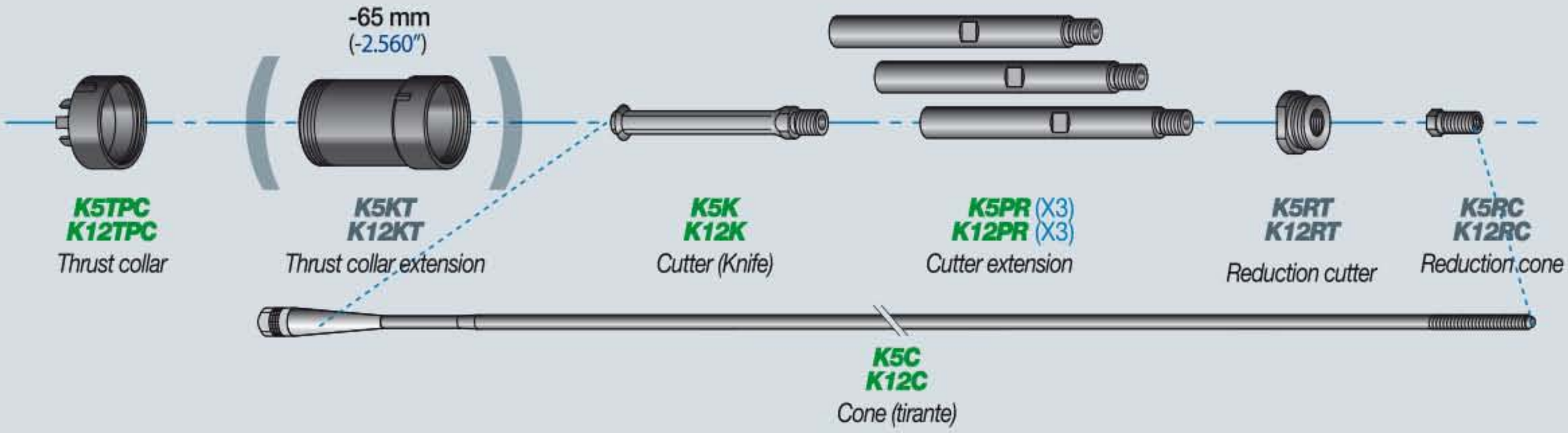
Tube cutting tool assembly diagram



*The diagram shown applies to both **Kattex 6** and **Kattex 12** model.*

Kattex 12

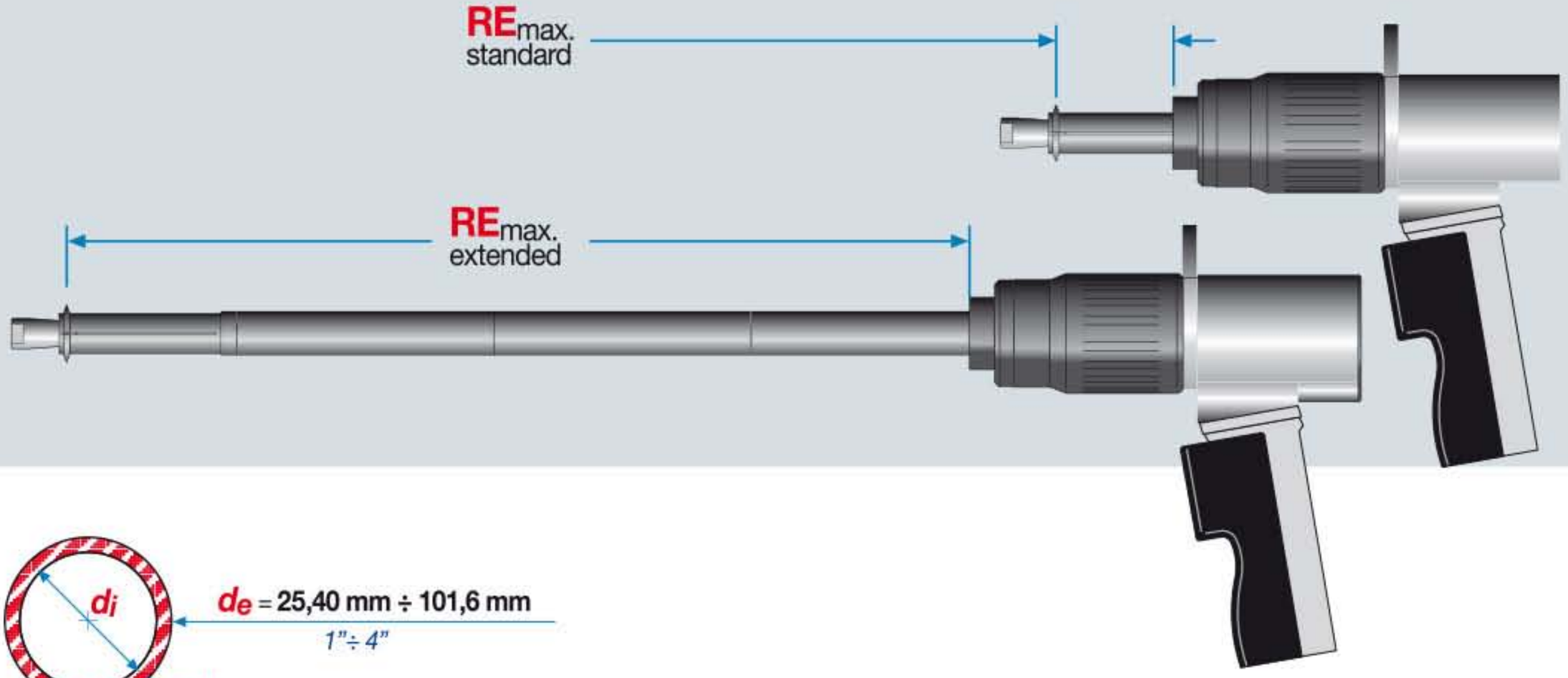
Tube							K12K Knife	Cutters	
de		sp			di				
inches	mm	B.W.G.	mm	inches	mm	inches	Cod.	mm	inches
1"	25,40	10	3,40	0.134	18,60	0.732	K12K-9	17,8÷26,2	0.700÷1.031
		12	2,77	0.109	19,86	0.782	K12K-10	19,2÷27,6	0.756÷1.087
1.1/8"	28,57	10	3,40	0.134	21,77	0.857	K12K-10/A	20,9÷29,3	0.823÷1.153
		12	2,77	0.109	23,03	0.907	K12K-10/B	22,3÷30,7	0.878÷1.208
1.1/4"	31,75	10	3,40	0.134	24,95	0.982	K12K-11	24,0÷32,4	0.945÷1.275
		12	2,77	0.109	26,21	1.032	K12K-12	25,3÷33,7	0.996÷1.327
1.3/8"	34,92	10	3,40	0.134	28,12	1.107	K12K-12/A	27,2÷35,6	1.071÷1.401
		12	2,77	0.109	29,38	1.157	K12K-12/B	28,5÷36,9	1.122÷1.453
1.1/2"	38,10	10	3,40	0.134	31,30	1.232	K12K-13	30,3÷38,7	1.193÷1.524
		12	2,77	0.109	32,56	1.282	K12K-14	31,8÷40,2	1.252÷1.583
1.5/8"	41,27	8	4,19	0.165	32,89	1.295	K12K-15	31,8÷40,2	1.252÷1.583
		10	3,40	0.134	34,47	1.357	K12K-16	33,5÷41,9	1.319÷1.649
1.3/4"	44,45	8	4,19	0.165	36,07	1.420	K12K-17	35,0÷43,4	1.378÷1.708
		10	3,40	0.134	37,65	1.482	K12K-18	36,8÷45,2	1.449÷1.779
1.7/8"	47,62	8	4,19	0.165	39,24	1.545	K12K-19	38,2÷46,6	1.504÷1.835
		10	3,40	0.134	40,82	1.607	K12K-20	39,8÷48,2	1.567÷1.897
2"	50,80	8	4,19	0.165	42,42	1.670	K12K-21	41,4÷49,8	1.630÷1.961
		10	3,40	0.134	44,00	1.732	K12K-22	43,0÷51,4	1.693÷2.024
2.1/8"	53,97	8	4,19	0.165	45,59	1.795	K12K-23	44,5÷52,9	1.752÷2.083
		10	3,40	0.134	47,17	1.857	K12K-24	46,2÷54,6	1.819÷2.149
2.1/4"	57,15	8	4,19	0.165	48,77	1.920	K12K-25	47,6÷56,0	1.874÷2.205
		10	3,40	0.134	50,35	1.982	K12K-26	49,5÷57,9	1.949÷2.280
2.3/8"	60,32	8	4,19	0.165	51,94	2.045	K12K-27	50,8÷59,2	2.000÷2.331
		10	3,40	0.134	53,52	2.107	K12K-28	52,5÷60,9	2.067÷2.397

The table is an introduction for tool selection. For more details please refer to the documentation supplied with the equipment.

Incision only

Complete cutting

Kattex 6
Kattex 12



Kattex 12

Tube							K12K Knife	Cutters	
de		sp			di				
inches	mm	B.W.G.	mm	inches	mm	inches	Cod.	mm	inches
2.1/2"	63,50	8	4,19	0.165	55,12	2.170	K12K-29	54,0÷62,4	2.126÷2.457
		10	3,40	0.134	56,70	2.232	K12K-30	55,7÷64,1	2.193÷2.524
2.5/8"	66,67	8	4,19	0.165	58,29	2.295	K12K-31	57,0÷65,4	2.244÷2.575
		10	3,40	0.134	59,87	2.357	K12K-32	58,5÷66,9	2.303÷2.634
2.3/4"	69,85	8	4,19	0.165	61,47	2.420	K12K-33	60,0÷68,4	2.362÷2.693
		10	3,40	0.134	63,05	2.482	K12K-34	62,0÷70,4	2.441÷2.771
2.7/8"	73,02	8	4,19	0.165	64,64	2.545	K12K-35	63,5÷71,9	2.500÷2.831
		10	3,40	0.134	66,22	2.607	K12K-36	65,0÷73,4	2.559÷2.890
3"	76,20	8	4,19	0.165	67,82	2.670	K12K-37	66,5÷74,9	2.618÷2.950
		10	3,40	0.134	69,40	2.732	K12K-38	68,0÷76,4	2.677÷3.008
3.1/8"	79,37	8	4,19	0.165	70,99	2.795	K12K-39	69,5÷77,9	2.736÷3.067
		10	3,40	0.134	72,57	2.857	K12K-40	71,5÷79,9	2.815÷3.145
3.1/4"	82,55	8	4,19	0.165	74,17	2.920	K12K-41	72,5÷80,9	2.854÷3.185
		10	3,40	0.134	75,75	2.982	K12K-42	74,5÷82,9	2.933÷3.264
3.3/8"	85,72	8	4,19	0.165	77,34	3.045	K12K-43	76,0÷84,4	2.992÷3.323
		10	3,40	0.134	78,92	3.107	K12K-44	77,5÷85,9	3.051÷3.382
3.1/2"	88,90	8	4,19	0.165	80,52	3.170	K12K-45	79,0÷87,4	3.110÷3.441
		10	3,40	0.134	82,10	3.232	K12K-46	81,0÷89,4	3.189÷3.520
3.5/8"	92,07	8	4,19	0.165	83,69	3.295	K12K-47	82,0÷90,4	3.228÷3.559
		10	3,40	0.134	85,27	3.357	K12K-48	84,0÷92,4	3.307÷3.638
3.3/4"	95,25	8	4,19	0.165	86,87	3.420	K12K-49	85,5÷93,9	3.366÷3.697
		10	3,40	0.134	88,45	3.482	K12K-50	87,0÷95,4	3.425÷3.756
3.7/8"	98,42	8	4,19	0.165	90,04	3.545	K12K-51	88,5÷96,9	3.484÷3.815
		10	3,40	0.134	91,62	3.607	K12K-52	90,5÷98,9	3.563÷3.894
4"	101,60	8	4,19	0.165	93,22	3.670	K12K-53	92,0÷100,4	3.622÷3.953
		10	3,40	0.134	94,80	3.732	K12K-54	93,5÷101,9	3.681÷4.012

Kattex 12

- Depth **RE** standard adjustable 20 ÷ 130 mm (0.787" ÷ 5.118")
- Depth **RE** max. (extended) 790 mm (31.102")
- Tube diameter **de** 25,4 ÷ 101,6 mm (1" ÷ 4")

Kattex

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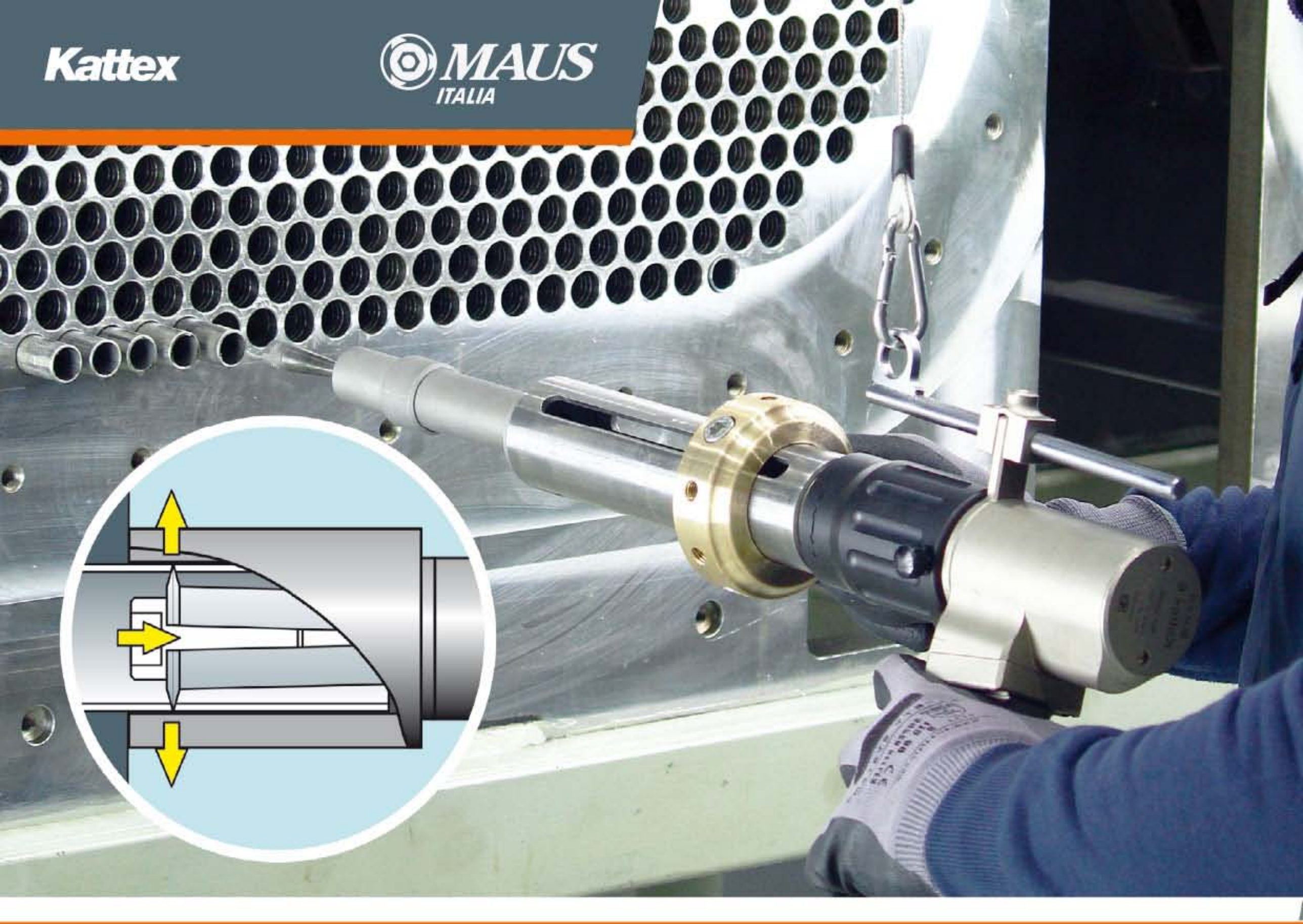
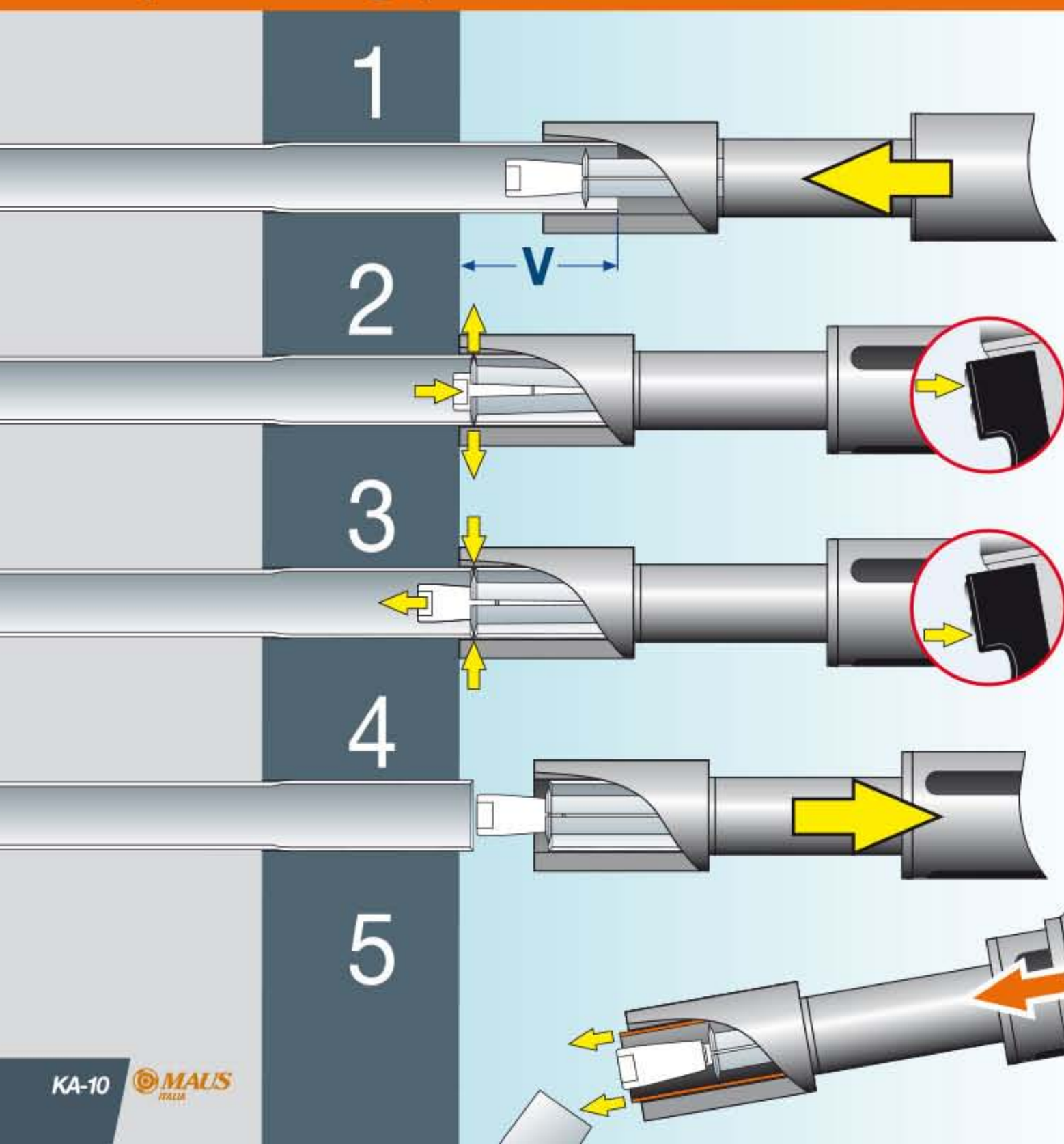


Operating procedure

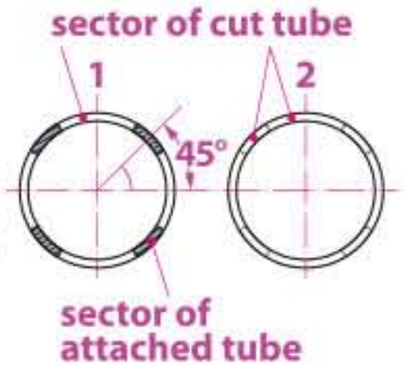


Insertion

Insert the **Kattex LTP** into the tube, push it until the thrust collar is toward the tube sheet

Instant cutting

Press the button until the machine reach the cutting pressure set by the operator. To cut the tube completely, rotate the equipment by 45° and repeat the operation.



Withdrawal

Press the button until the cutter is in the rest position.

Release

Extract the **Kattex LTP** from the cut tube

Stub removal

Remove the stub with the stub puller **Grippul** and proceed to the next cut.

Kattex LTP

Instant, hydraulic, **chips-free** internal tube cutter for the removal of the **protruded tube with a "V"** protrusion up to 150 mm (≈6”).

The ***Kattex*** transforms into the ***Kattex LTP*** by mounting a dedicated cutting system composed by a special collar and by extending the knife's cone.

The ***Kattex LTP*** is for use in the construction of new tube bundles and solves the problem of removal of the excess protruding tube, speeding up and reducing wear on the tools during the tube end facing phase which can be only finished with traditional milling cutters from the Maus Italia ***Tubend*** series.

For tube diameters, please refer to the ***Kattex 6*** table.

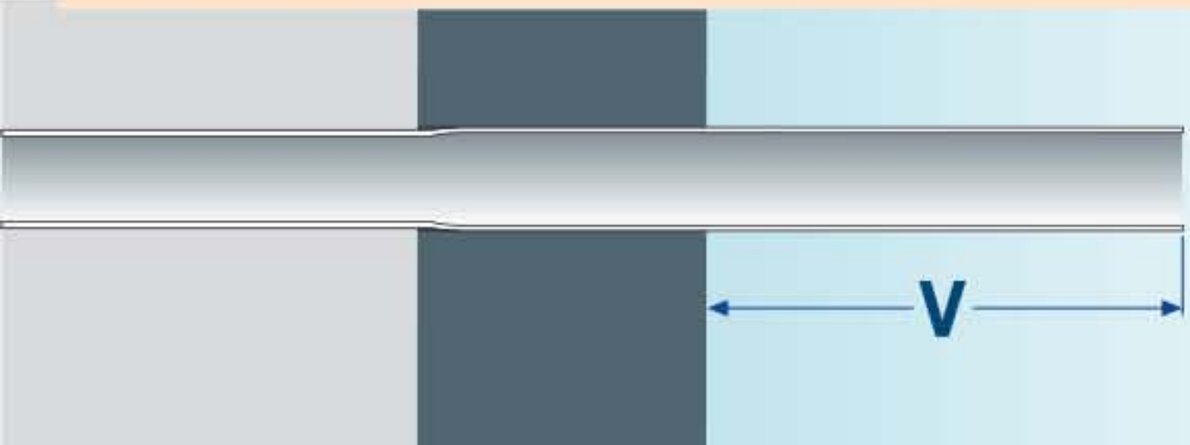
KA-7

Kattex LTP 6

Tube diameters **de**
12,7 ÷ 38,1 mm (1/2”÷1.1/2”)

LTP 6/90	**"V"** protrusion up to 90 mm (≈3,5”)
LTP 6/150	**"V"** protrusion up to 150 mm (≈6”)

Recommended also for use in limited access area where to the traditional tube cutter cannot be used.



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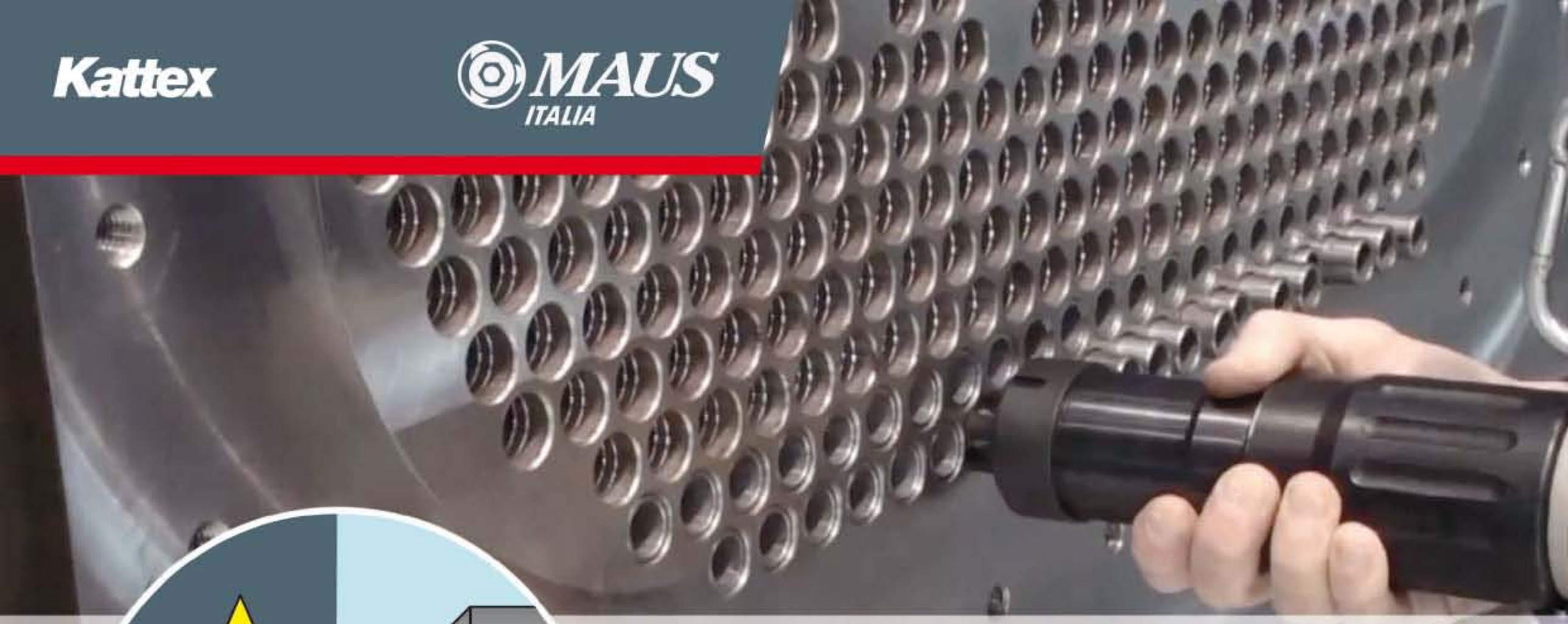
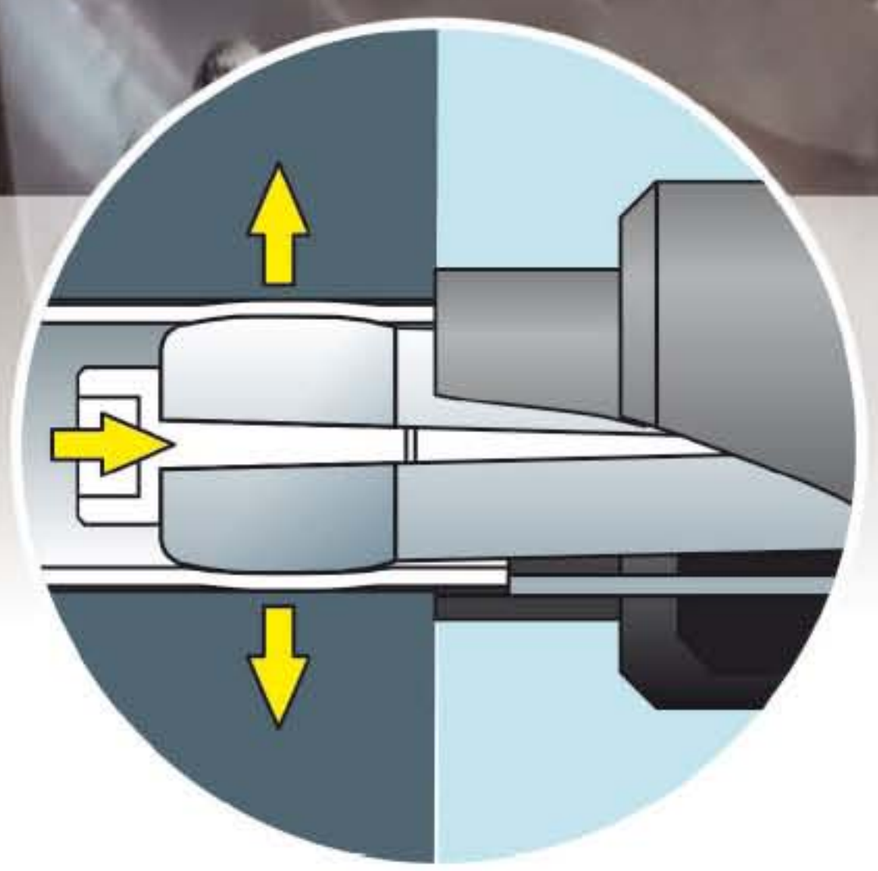
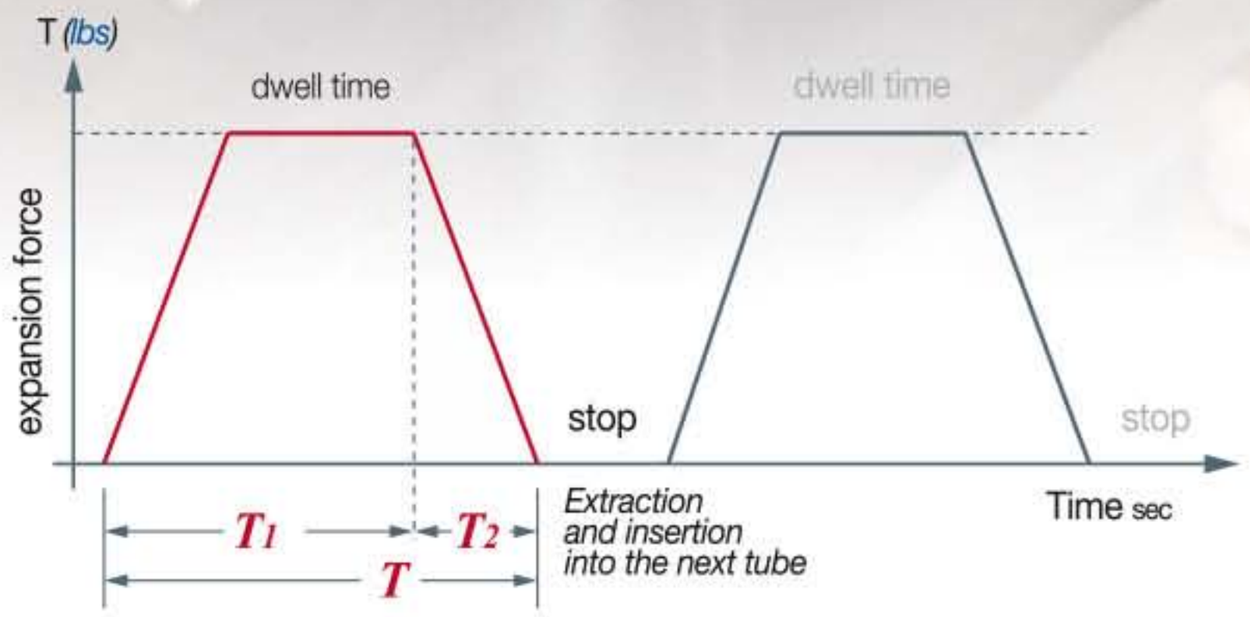
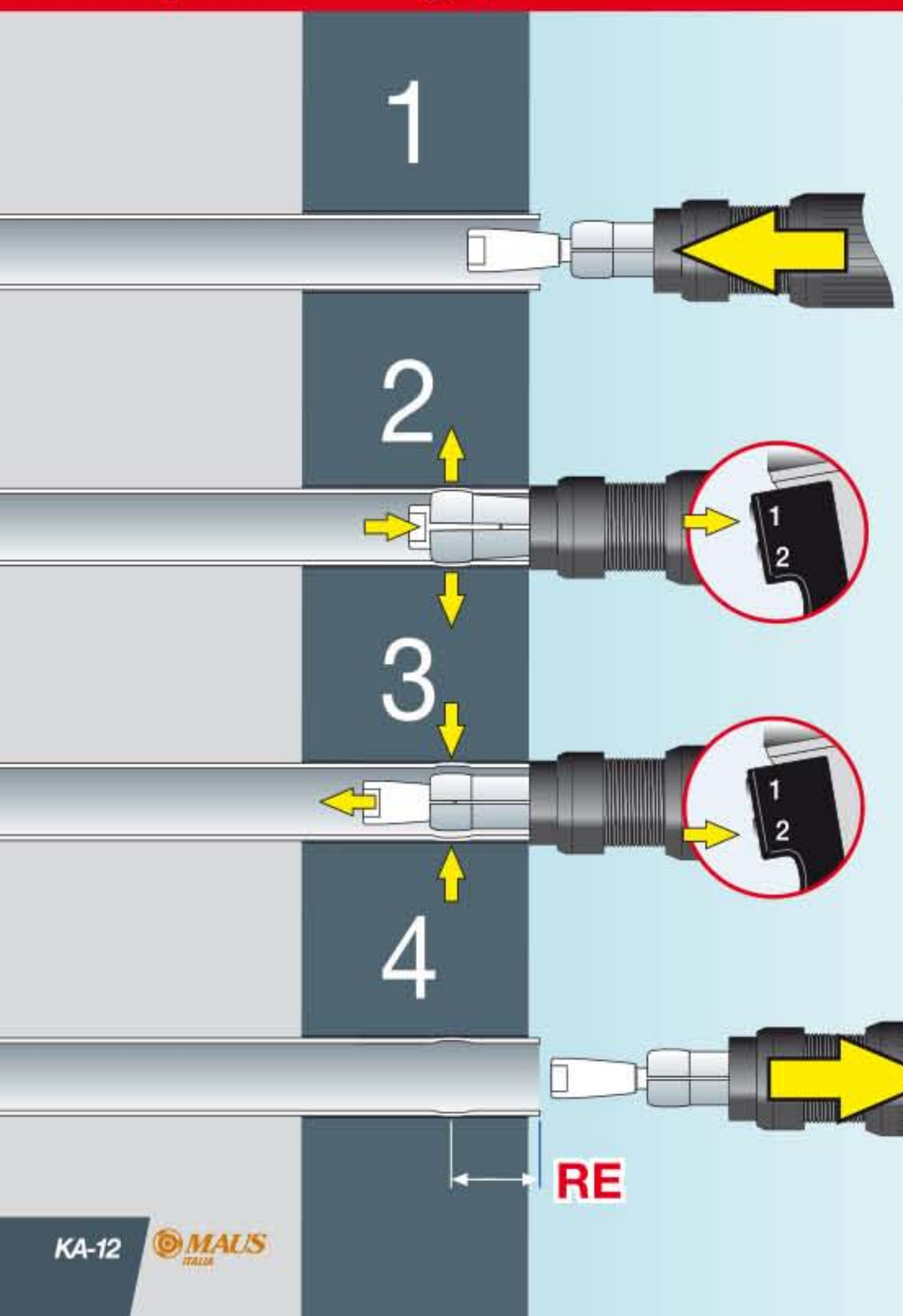






Operating procedure



Manual cycle

Insertion

Insert the **Kattex Fix** into the tube which needs to be locked and push it toward the tub sheet until in contact with the the special **K5TDB** or **K12TDB** thrust collar.

Instant locking

Press and hold down button **1** until the stetted pressure on the hydraulic unit is reach. Holded in position for few second.

Release

Press and hold down button **2** until the tool is unlocked from the tube.

Withdrawal

Extract the **Kattex Fix** from the locked tube and proceed to the next tube.

Automatic cycle

Insertion

Insert the **Kattex Fix** into the tube which needs to be locked and push it toward the tub sheet until in contact with the the special **K5TDB** or **K12TDB** thrust collar.

Press and release button 1

Instant locking

T1 The complete cycle of expansion is programmed on the hydraulic unit **TP2EQ2**. The cycle phases are: expansion, expansion permanence time, unlock expansion time and rest position

Release

T2 Unlocking of the tool and complete extraction of the machine

If necessary, button 2 stops the automatic cycle

Withdrawal

Extract the **Kattex Fix** from the locked tube and proceed to the next tube.

Kattex Fix 6
Kattex Fix 12

Instant hydraulic tube locking (pre-**welding** "tack expansion") for the **production** of shell and tube heat exchangers and boilers. For tubes with an O.D. up to 63.5 mm (2 1/2”).

The ***Kattex Fix*** is created, designed and manufactured by Maus Italia. It is used for tube locking ("tack expansion").

The ***Kattex Fix*** mechanically expands the tube, a delicate operation which pushes the tube in contact with the tube sheet hole. The expansion of the jaw is controlled by the pressure set on the hydraulic unit with the aim of:

- replacing the traditional but inaccurate tack weld for tube-tube sheet locking;
- guaranteeing perfect centring between the tube axis and the tube sheet hole axis;
- ensuring the locking of the tube in the desired position, allowing the necessary passage of welding gases between the tube and the tube sheet hole to prevent welding defects;
- reduce to a minimum the gap between the external Ø diameter of the tube and the Ø of the tube sheet hole with a consequent improvement in the weld quality as well as a reduction in the time needed for this phase.

Recommended before TIG *orbital* welding with equipment from the ***Tubweld*** series.

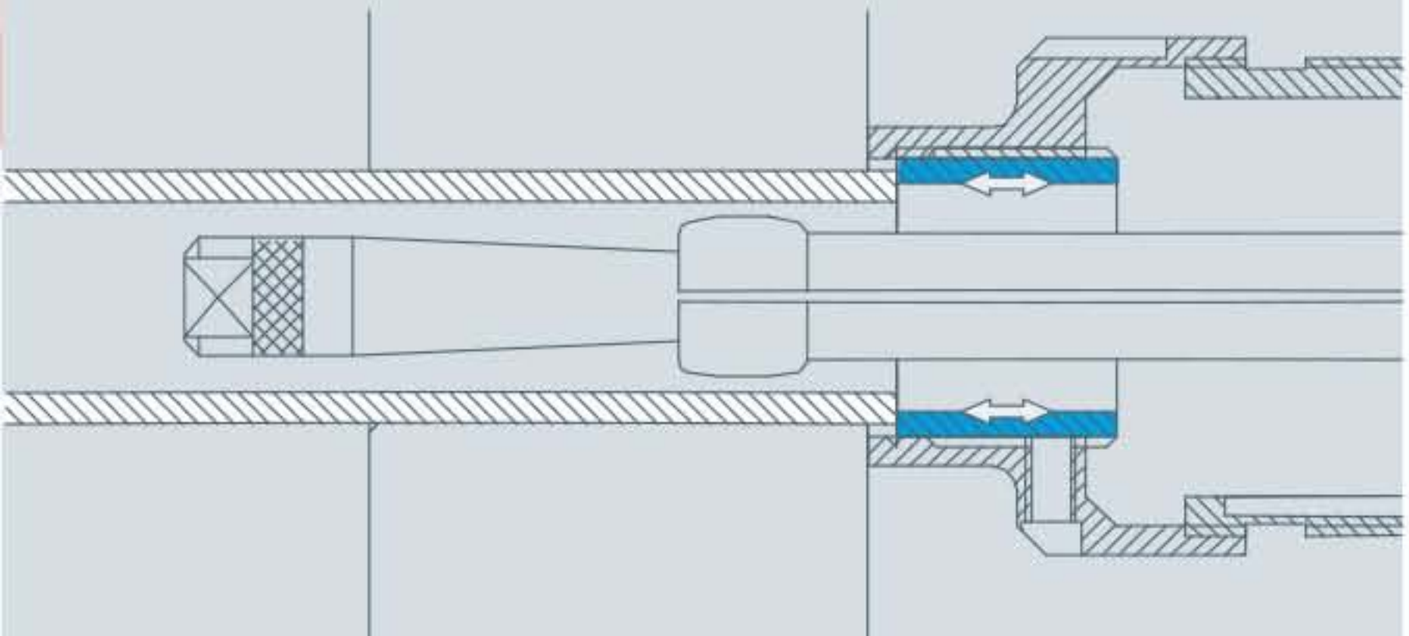
The specifically designed ***TP2 EQ2*** hydraulic unit allows, due to the automatic cycle function, an accurate result and a high level of repeatability.

Fast and accurate

High level of repeatability due the automatic cycle

K5TDB or ***K12TDB*** thrust collar

The ***Kattex Fix*** requires the use of a special thrust collar that can set the protrusion of the tube using as reference the tube sheet. The inner ring is the one that can be set to obtain different protrusion for the tube.

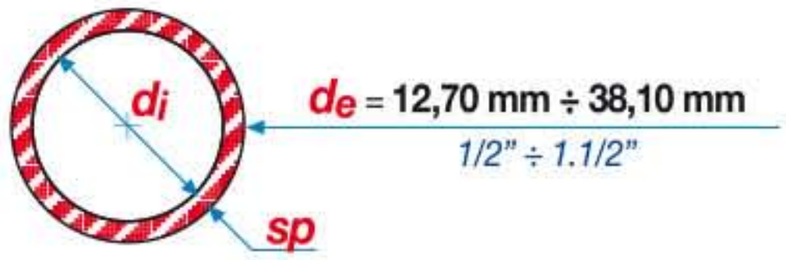


Kattex Fix 6

- Tube diameters de
  12,7 ÷ 38,1 mm (1/2″÷1.1/2″)

Kattex Fix12

- Tube diameters de
  25,4 ÷ 63,5 mm (1″÷2.1/2″)



Kattex 6 Fix

Tube							K5PS Tool	Expansion	
de		sp			di				
inches	mm	B.W.G.	mm	inches	mm	inches	Cod.	mm	inches
3/8"	9,52	19	1,07	0.042	7,3	0.287	K5PS-021	7,0÷9,0	0,276÷0,354
		20	0,89	0.035	7,7	0.303	K5PS-020	7,2÷9,2	0,283÷0,362
		20	0,89	0.035	7,7	0.303	K5PS-019	7,4÷9,4	0,291÷0,370
		21	0,81	0.032	7,9	0.311	K5PS-018	7,6÷9,6	0,299÷0,378
		22	0,71	0.028	8,1	0.319	K5PS-017	7,8÷9,8	0,307÷0,386
		23	0,64	0.025	8,2	0.323	K5PS-016	8,0÷10,0	0,315÷0,394
		24	0,56	0.022	8,4	0.331	K5PS-015	8,2÷10,2	0,323÷0,402
1/2"	12,70	14	2,11	0.083	8,5	0.335	K5PS-016	8,0÷10,0	0,315÷0,394
		14	2,11	0.083	8,5	0.335	K5PS-015	8,2÷10,2	0,323÷0,402
		15	1,83	0.072	9,0	0.354	K5PS-014	8,4÷10,4	0,331÷0,409
		15	1,83	0.072	9,0	0.354	K5PS-013	8,6÷10,6	0,339÷0,417
		16	1,65	0.065	9,4	0.370	K5PS-012	8,8÷10,8	0,346÷0,425
		16	1,65	0.065	9,4	0.370	K5PS-011	9,0÷11,0	0,354÷0,433
		17	1,47	0.058	9,7	0.382	K5PS-010	9,2÷11,2	0,362÷0,441
		17	1,47	0.058	9,7	0.382	K5PS-09	9,4÷11,4	0,370÷0,449
		18	1,24	0.049	10,2	0.402	K5PS-00	9,6÷11,6	0,378÷0,457
		20	0,89	0.035	10,9	0.429	K5PS-00/A	10,1÷13,3	0,398÷0,524
5/8"	15,87	12	2,77	0.109	10,3	0.406	K5PS-00	9,6÷11,6	0,378÷0,457
		12	2,77	0.109	10,3	0.406	K5PS-00/A	10,1÷13,3	0,398÷0,524
		13	2,41	0.095	11,0	0.433	K5PS-01	10,6÷13,8	0,417÷0,543
		14	2,11	0.083	11,6	0.457	K5PS-01/A	11,1÷14,3	0,437÷0,563
		15	1,83	0.072	12,2	0.480	K5PS-02	11,5÷14,7	0,453÷0,579
		16	1,65	0.065	12,6	0.496	K5PS-02/A	12,0÷15,2	0,472÷0,598
		17	1,47	0.058	12,9	0.508	K5PS-03	12,5÷16,0	0,492÷0,630
		18-19	1,24-1,07	0.049-0.042	13,4	0.528	K5PS-04	13,0÷16,5	0,512÷0,650
		20÷22	0,89÷0,71	0.035÷0.028	14,0	0.551	K5PS-1	13,5÷17,0	0,531÷0,669
3/4"	19,05	10	3,40	0.134	12,2	0.480	K5PS-02	11,5÷14,7	0,453÷0,579
		10	3,40	0.134	12,2	0.480	K5PS-02/A	12,0÷15,2	0,472÷0,598
		11	3,05	0.120	12,9	0.508	K5PS-03	12,5÷16,0	0,492÷0,630
		12	2,77	0.109	13,5	0.531	K5PS-04	13,0÷16,5	0,512÷0,650
		13	2,41	0.095	14,2	0.559	K5PS-1	13,5÷17,0	0,531÷0,669
		14	2,11	0.083	14,8	0,583	K5PS-1/A	14,0÷17,5	0,551÷0,689
		15	1,83	0.072	15,4	0.606	K5PS-2	14,5÷18,0	0,571÷0,709
		16	1,65	0.065	15,7	0.618	K5PS-2/A	15,0÷18,5	0,591÷0,728
		17-18	1,47-1,24	0.058-0.049	16,1	0.634	K5PS-3	15,5÷19,0	0,610÷0,748
		19÷22	1,07÷0,71	0.042-0.028	16,9	0.665	K5PS-3/A	16,0÷19,5	0,630÷0,768
7/8"	22,22	10	3,40	0.134	15,4	0.606	K5PS-2	14,5÷18,0	0,571÷0,709
		10	3,40	0.,134	15,4	0.606	K5PS-2/A	15,0÷18,5	0,591÷0,728
		11	3,05	0.120	16,1	0.634	K5PS-3	15,5÷19,0	0,610÷0,748
		12	2,77	0.109	16,7	0.657	K5PS-3/A	16,0÷19,5	0,630÷0,768
		13	2,41	0.095	17,4	0.685	K5PS-4	16,5÷20,0	0,650÷0,787
		14	2,11	0.083	18,0	0.709	K5PS-5	17,3÷20,8	0,681÷0,819
		15	1,83	0.072	18,5	0.728	K5PS-5/A	17,8÷21,3	0,701÷0,839

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Kattex

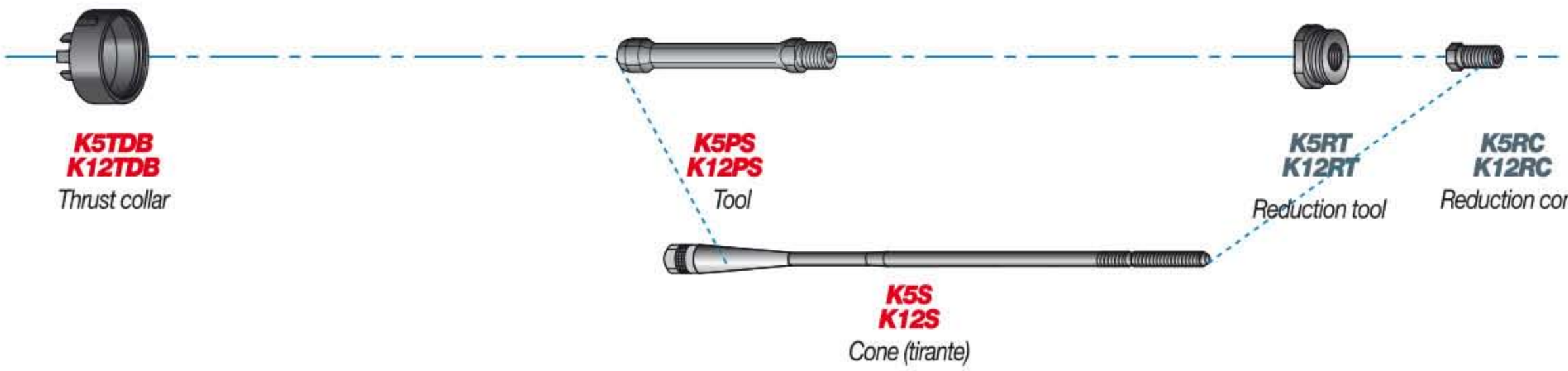
Kattex Fix 6
Kattex Fix 12

Kattex 6 Fix

Tube							K5PS Tool	Expansion	
de		sp			di				
inches	mm	B.W.G.	mm	inches	mm	inches	Cod.	mm	inches
7/8"	22,22	16-17	1,65-1,47	0.065-0.058	18,9	0.744	K5PS-6	18,3÷21,8	0,720÷0,858
		18	1,24	0.049	19,6	0.772	K5PS-7	19,0÷22,5	0,748÷0,886
		20	0,89	0.035	20,4	0.803	K5PS-7/A	19,5÷23,5	0,768÷0,925
		22	0,71	0.028	20,8	0.819	K5PS-8	20,0÷23,5	0,787÷0,925
1"	25,40	8	4,19	0.165	17,0	0.669	K5PS-4	16,5÷20,0	0,650÷0,787
		9	3,76	0.148	17,9	0.705	K5PS-5	17,3÷20,8	0,681÷0,819
		10	3,40	0.134	18,6	0.732	K5PS-5/A	17,8÷21,3	0,701÷0,839
		11	3,05	0.120	19,3	0.760	K5PS-6	18,3÷21,8	0,720÷0,858
		12	2,77	0.109	19,8	0.780	K5PS-7	19,0÷22,5	0,748÷0,886
		12	2,77	0.109	19,8	0.780	K5PS-7/A	19,5÷23,5	0,768÷0,925
		13	2,41	0.095	20,6	0.811	K5PS-8	20,0÷23,5	0,787÷0,925
		14	2,11	0.083	21,2	0.835	K5PS-8/A	20,5÷24,0	0,807÷0,945
		15	1,83	0.072	21,7	0.854	K5PS-9	21,0÷24,5	0,827÷0,965
		16	1,65	0.065	22,1	0.870	K5PS-9/A	21,5÷25,0	0,846÷0,984
		17-18	1,47-1,24	0.058-0.049	22,5	0.886	K5PS-10	22,0÷25,5	0,866÷1,004
		20÷22	0,89÷0,71	0.035-0.028	23,6	0.929	K5PS-11	23,0÷26,5	0,906÷1,043
1.1/8"	28,57	8	4,19	0.165	20,2	0.795	K5PS-7	19,0÷22,5	0,748÷0,886
		8	4,19	0.165	20,2	0.795	K5PS-7/A	19,5÷23,5	0,768÷0,925
		9	3,76	0.148	21,2	0.835	K5PS-8	20,0÷23,5	0,787÷0,925
		9	3,76	0.148	21,2	0.835	K5PS-8/A	20,5÷24,0	0,807÷0,945
		10	3,40	0.134	21,7	0.854	K5PS-9	21,0÷24,5	0,827÷0,965
		11	3,05	0.120	22,4	0.882	K5PS-9/A	21,5÷25,0	0,846÷0,984
		12	2,77	0.109	23,0	0.906	K5PS-10	22,0÷25,5	0,866÷1,004
		13-14	2,41-2,11	0.095-0.083	23,7	0.933	K5PS-11	23,0÷26,5	0,906÷1,043
		15-16	1,83-1,65	0.072-0.065	24,9	0.980	K5PS-12	24,0÷27,5	0,945÷1,083
		18	1,24	0.049	26,1	1.028	K5PS-12/A	25,0÷28,5	0,984÷1,122
1.1/4"	31,75	8	4,19	0.165	23,4	0.921	K5PS-10	22,0÷25,5	0,866÷1,004
		9	3,76	0.148	24,2	0.953	K5PS-11	23,0÷26,5	0,906÷1,043
		10-11	3,40-3,05	0.134-0.120	24,9	0.980	K5PS-12	24,0÷27,5	0,945÷1,083
		12	2,77	0.109	26,2	1.031	K5PS-12/A	25,0÷28,5	0,984÷1,122
		13-14	2,41-2,11	0.095-0.083	26,9	1.059	K5PS-13	26,0÷29,5	1,024÷1,161
		15÷18	1,83÷1,24	0.072÷0.049	28,1	1.106	K5PS-13/A	27,0÷30,5	1,063÷1,201
1.3/8"	34,92	8	4,19	0.165	26,5	1.043	K5PS-12/A	25,0÷28,5	0,984÷1,122
		9	3,76	0.148	27,4	1.079	K5PS-13	26,0÷29,5	1,024÷1,161
		10	3,40	0.134	28,1	1.106	K5PS-13/A	27,0÷30,5	1,063÷1,201
		11-12	3,05-2,77	0.120-0.109	28,8	1.134	K5PS-14	28,0÷31,5	1,102÷1,240
		13-14	2,41-2,11	0.095-0.083	30,3	1.193	K5PS-14/A	29,0÷32,5	1,142÷1,280
		15-16	1,83-1,65	0.072÷0.065	31,2	1.228	K5PS-15	30,0÷33,5	1,181÷1,319
1.1/2"	38,10	8-9	4,19-3,76	0.165-0.148	29,7	1.169	K5PS-14/A	29,0÷32,5	1,142÷1,280
		10	3,40	0.134	31,2	1.228	K5PS-15	30,0÷33,5	1,181÷1,319
		11-12	3,05-2,77	0.120-0.109	32,0	1.260	K5PS-15/A	31,0÷34,5	1,220÷1,358
		13-14	2,41-2,11	0.095-0.083	33,3	1.311	K5PS-16	32,0÷35,5	1,260÷1,398
		15÷20	1,83-0,89	0.072÷0.035	34,3	1.350	K5PS-16/A	33,5÷37,0	1,319÷1,457

The table is an introduction for tool selection. For more details please refer to the documentation supplied with the equipment.

Tube locking tool assembly diagram



*The diagram shown applies to both the **Kattex 6 Fix** and the **Kattex 12 Fix***

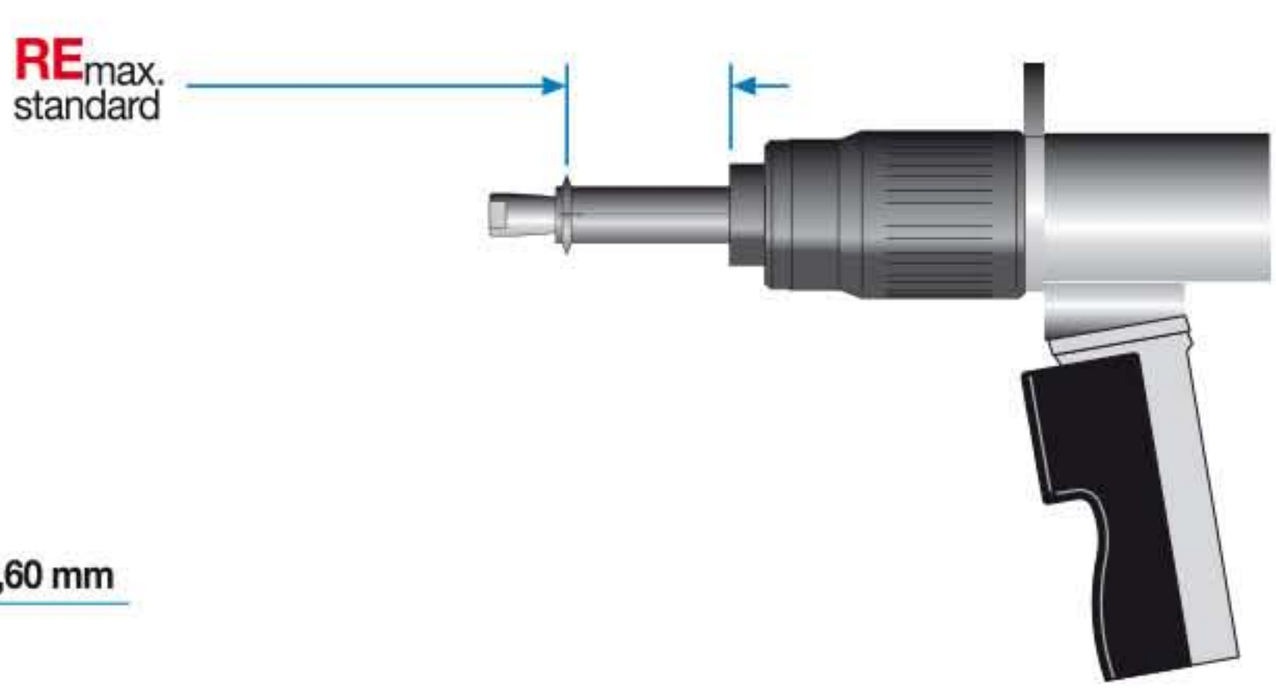
Kattex 12 Fix

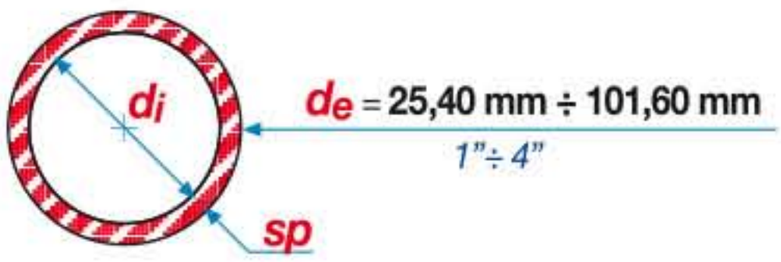
Tube							K12PS Tool	Expansion	
de		sp			di				
inches	mm	B.W.G.	mm	inches	mm	inches	Cod.	mm	inches
1"	25,40	10	3,40	0.134	18,60	0.732	K12PS-09	17,8÷23,0	0.700÷0.905
		12	2,77	0.109	19,86	0.782	K12PS-10	19,2÷24,4	0.756÷0.961
1.1/8"	28,57	10	3,40	0.134	21,77	0.857	K12PS-10/A	20,9÷26,1	0.823÷1.027
		12	2,77	0.109	23,03	0.907	K12PS-10/B	22,3÷27,5	0.878÷1.083
1.1/4"	31,75	10	3,40	0.134	24,95	0.982	K12PS-11	24,0÷29,2	0.945÷1.150
		12	2,77	0.109	26,21	1.032	K12PS-12	25,3÷30,5	0.996÷1.201
1.3/8"	34,92	10	3,40	0.134	28,12	1.107	K12PS-12/A	27,2÷32,4	1.071÷1.275
		12	2,77	0.109	29,38	1.157	K12PS-12/B	28,5÷33,7	1.122÷1.327
1.1/2"	38,10	10	3,40	0.134	31,30	1.232	K12PS-13	30,3÷35,5	1.193÷1.397
		12	2,77	0.109	32,56	1.282	K12PS-14	31,8÷37,0	1.252÷1.457
1.5/8"	41,27	8	4,19	0.165	32,89	1.295	K12PS-15	31,8÷37,0	1.252÷1.457
		10	3,40	0.134	34,47	1.357	K12PS-16	33,5÷38,7	1.319÷1.524
1.3/4"	44,45	8	4,19	0.165	36,07	1.420	K12PS-17	35,0÷40,2	1.378÷1.583
		10	3,40	0.134	37,65	1.482	K12PS-18	36,8÷42,0	1.449÷1.653
1.7/8"	47,62	8	4,19	0.165	39,24	1.545	K12PS-19	38,2÷43,4	1.504÷1.708
		10	3,40	0.134	40,82	1.607	K12PS-20	39,8÷45,0	1.567÷1.772
2"	50,80	8	4,19	0.165	42,42	1.670	K12PS-21	41,4÷46,6	1.630÷1.835
		10	3,40	0.134	44,00	1.732	K12PS-22	43,0÷48,2	1.693÷1.898
2.1/8"	53,97	8	4,19	0.165	45,59	1.795	K12PS-23	44,5÷49,7	1.752÷1.957
		10	3,40	0.134	47,17	1.857	K12PS-24	46,2÷51,4	1.819÷2.024
2.1/4"	57,15	8	4,19	0.165	48,77	1.920	K12PS-25	47,6÷52,8	1.874÷2.079
		10	3,40	0.134	50,35	1.982	K12PS-26	49,5÷54,7	1.949÷2.154
2.3/8"	60,32	8	4,19	0.165	51,94	2.045	K12PS-27	50,8÷56,0	2.000÷2.205
		10	3,40	0.134	53,52	2.107	K12PS-28	52,5÷57,7	2.067÷2.272

The table is an introduction for tool selection. For more details please refer to the documentation supplied with the equipment.

Kattex Fix 6
Kattex Fix 12

*Locking tubes with the **Kattex 6 Fix** and the **Kattex 12 Fix** does not require the use of extensions. Maus Italia technical staff can consider customized tooling for special cases.*





Kattex 12 Fix

Tube							K12PS Tool	Expansion	
de		sp			di				
inches	mm	B.W.G.	mm	inches	mm	inches	Cod.	mm	inches
2.1/2"	63,50	8	4,19	0.165	55,12	2.170	K12PS-29	54,0÷62,4	2.126÷2.457
		10	3,40	0.134	56,70	2.232	K12PS-30	55,7÷64,1	2.193÷2.524
2.5/8"	66,67	8	4,19	0.165	58,29	2.295	K12PS-31	57,0÷65,4	2.244÷2.575
		10	3,40	0.134	59,87	2.357	K12PS-32	58,5÷66,9	2.303÷2.634
2.3/4"	69,85	8	4,19	0.165	61,47	2.420	K12PS-33	60,0÷68,4	2.362÷2.69
		10	3,40	0.134	63,05	2.482	K12PS-34	62,0÷70,4	2.441÷2.771
2.7/8"	73,02	8	4,19	0.165	64,64	2.545	K12PS-35	63,5÷71,9	2.500÷2.831
		10	3,40	0.134	66,22	2.607	K12PS-36	65,0÷73,4	2.559÷2.890
3"	76,20	8	4,19	0.165	67,82	2.670	K12PS-37	66,5÷74,9	2.618÷2.950
		10	3,40	0.134	69,40	2.732	K12PS-38	68,0÷76,4	2.677÷3.008
3.1/8"	79,37	8	4,19	0.165	70,99	2.795	K12PS-39	69,5÷77,9	2.736÷3.067
		10	3,40	0.134	72,57	2.857	K12PS-40	71,5÷79,9	2.815÷3.145
3.1/4"	82,55	8	4,19	0.165	74,17	2.920	K12PS-41	72,5÷80,9	2.854÷3.185
		10	3,40	0.134	75,75	2.982	K12PS-42	74,5÷82,9	2.933÷3.264
3.3/8"	85,72	8	4,19	0.165	77,34	3.045	K12PS-43	76,0÷84,4	2.992÷3.323
		10	3,40	0.134	78,92	3.107	K12PS-44	77,5÷85,9	3.051÷3.382
3.1/2"	88,90	8	4,19	0.165	80,52	3.170	K12PS-45	79,0÷87,4	3.110÷3.441
		10	3,40	0.134	82,10	3.232	K12PS-46	81,0÷89,4	3.189÷3.520
3.5/8"	92,07	8	4,19	0.165	83,69	3.295	K12PS-47	82,0÷90,4	3.228÷3.559
		10	3,40	0.134	85,27	3.357	K12PS-48	84,0÷92,4	3.307÷3.638
3.3/4"	95,25	8	4,19	0.165	86,87	3.420	K12PS-49	85,5÷93,9	3.366÷3.697
		10	3,40	0.134	88,45	3.482	K12PS-50	87,0÷95,4	3.425÷3.756
3.7/8"	98,42	8	4,19	0.165	90,04	3.545	K12PS-51	88,5÷96,9	3.484÷3.815
		10	3,40	0.134	91,62	3.607	K12PS-52	90,5÷98,9	3.563÷3.894
4"	101,60	8	4,19	0.165	93,22	3.670	K12PS-53	92,0÷100,4	3.622÷3.953
		10	3,40	0.134	94,80	3.732	K12PS-54	93,5÷101,9	3.681÷4.012

Kattex Fix12

- Tube diameter **de** tubi 25,4 ÷ 101,6 mm (1"÷4")

Kattex

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This picture is to be considered merely indicative and is not a product offer.

Kattex 6 E
Kattex 12 E

Technical features		Kattex 6 E	Kattex 12 E
Max working pressure	bar *(psi)*	350 *(5000)*	350 *(5000)*
Max expansion force	T *(lbs)*	6 *(13200)*	12 *(26400)*
Cycle time (expansion + return)	sec	5	14
Weight	kg *(lbs)*	3,5 *(7.7)*	7,0 *(15.4)*
Level of Protection	IP	55	55
Controls - Low voltage *(handle)*	V C.A.	24	24
max tube Ø (ext.) **de**	mm *(inches)*	38,1 *(1.1/2")*	63,5 *(2.1/2")*
Length **A**	mm *(inches)*	290 *(11.4")*	309 *(12.2")*
Width **B**	mm *(inches)*	220 *(8.6)*	320 *(12.6)*
Height (Ø) **C**	mm *(inches)*	67 *(2.6)*	89 *(3.5)*
Vibrations	m/s^2	0.413	0.413
Colours		Al OX - RAL9005	Al OX - RAL9005

Electric

MAUS ITALIA

Kattex

Kattex 6 E
Kattex 12 E

Electrically-powered
hydraulic equipment.

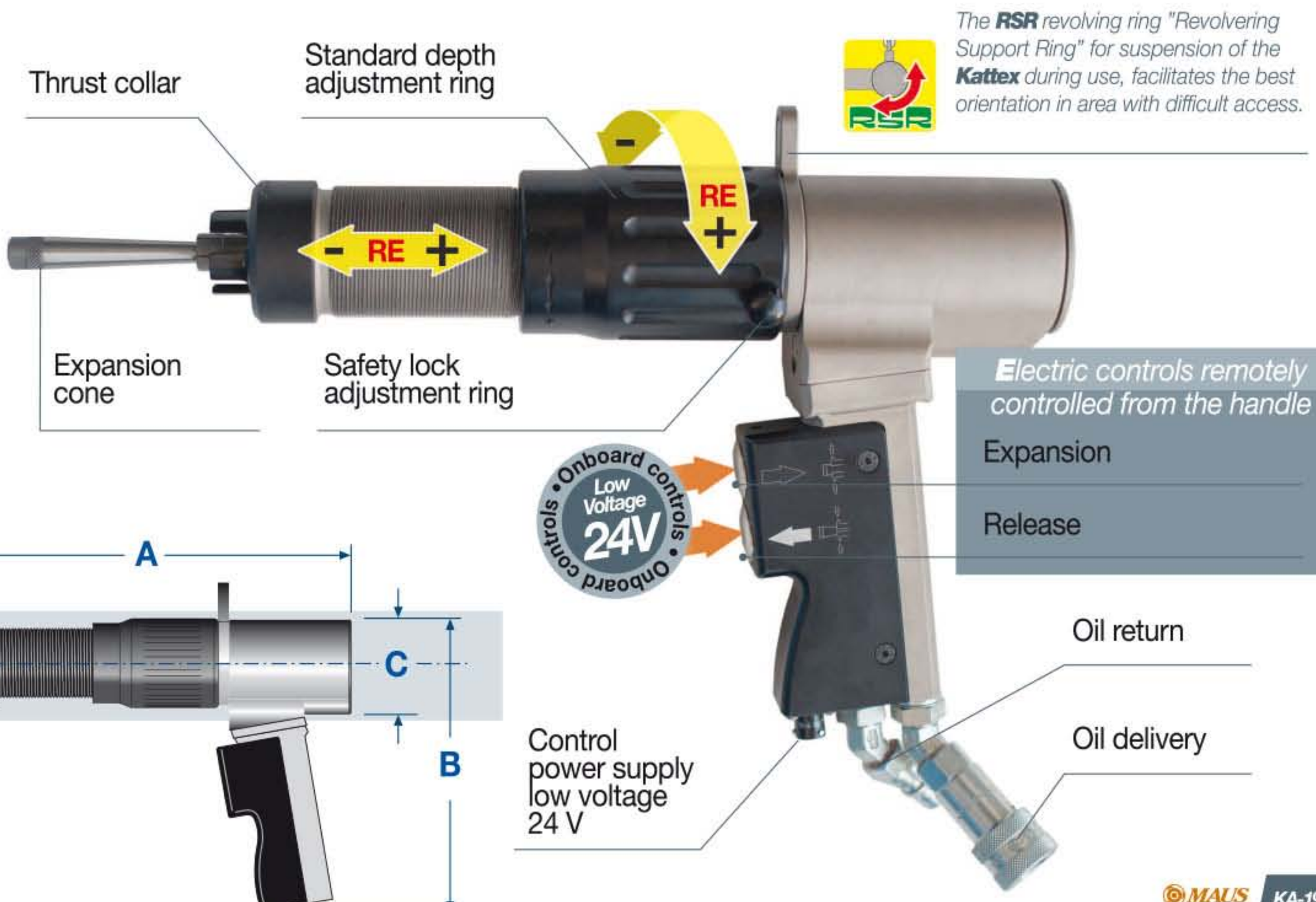
Standard supply

- Hydraulic equipment: ***Kattex 6 E*** or ***Kattex12 E***
- Set of reduction cones
- Set of service wrenches
- Thrust collar extension
- Multipole electric cable (with TEAFLEX sheath) - Length 6 m (19.7 ft)
- 2No. hydraulic tubes R8 - 1/4 (oil delivery and return) - Length 6 m (19.7 ft)
- Instruction manual
- Tool box
- Accessories for required transformation

Maus Italia ***TP2*** series ***E****electric*
hydraulic units for use with ***Kattex 6 E***
and ***Kattex 12 E***

TP2 E KA-22

TP2 EQ2 KA-23



*The **RSR** revolving ring "Revolvering Support Ring" for suspension of the **Kattex** during use, facilitates the best orientation in area with difficult access.*

E*lectric controls remotely controlled from the handle*

Expansion

Release

Kattex

MAUS ITALIA

This picture is to be considered merely indicative and is not a product offer.

Kattex 6 P
Kattex 12 P

Technical features			Kattex 6 P	Kattex 12 P
Max working pressure		bar *(psi)*	350 *(5000)*	350 *(5000)*
Max expansion force		T *(lbs)*	6 *(13200)*	12 *(26400)*
Cycle time (expansion + return)		sec	5	14
Weight		kg *(lbs)*	3,5 *(7.7)*	7,0 *(15.4)*
max tube Ø (ext.)	de	mm *(inches)*	38,1 *(1.1/2")*	63,5 *(2.1/2")*
Length	A	mm *(inches)*	290 *(11.4")*	309 *(12.2")*
Width	B	mm *(inches)*	220 *(8.6)*	320 *(12.6)*
Height (Ø)	C	mm *(inches)*	67 *(2.6)*	89 *(3.5)*
Vibrations		m/s^2	0.413	0.413
Colours			Al OX - RAL9005	Al OX - RAL9005

Kattex 6 P
Kattex 12 P

Pneumatically powered
hydraulic equipment

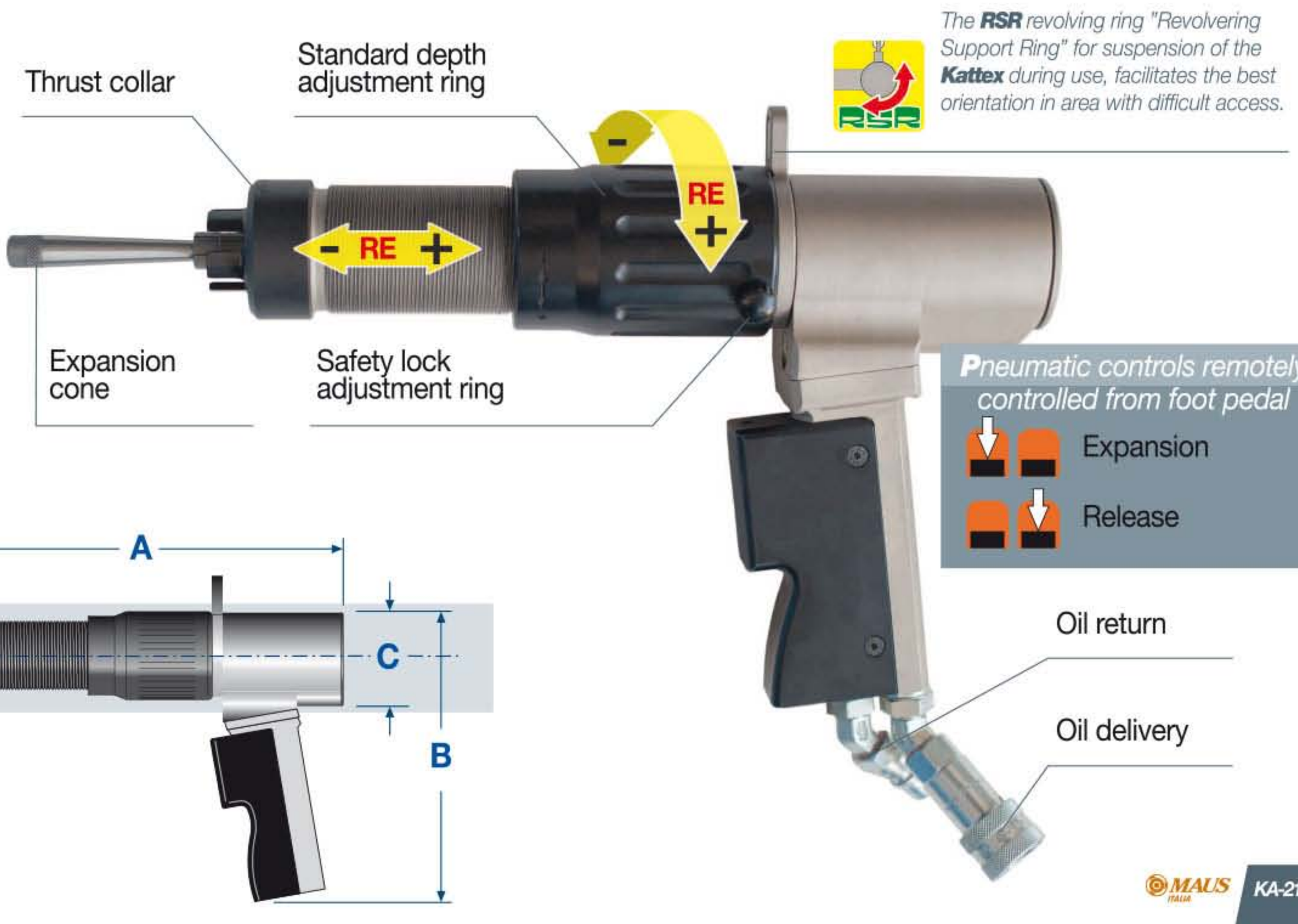
Pneumatic

Standard supply

- Hydraulic equipment: ***Kattex 6 P*** or ***Kattex12 P***
- Set of reduction cones
- Set of service wrenches
- Thrust collar extension
- 2No. hydraulic tubes R8 - 1/4 (oil delivery and return) - Length 6 m (19.7 ft)
- Instruction manual
- Tool box
- Accessories for required transformation

Maus Italia ***TP2*** series ***P**neumatic*
hydraulic units for use with ***Kattex 6 P***
and ***Kattex 12 P***

TP2 P KA-24



Kattex

MAUS ITALIA

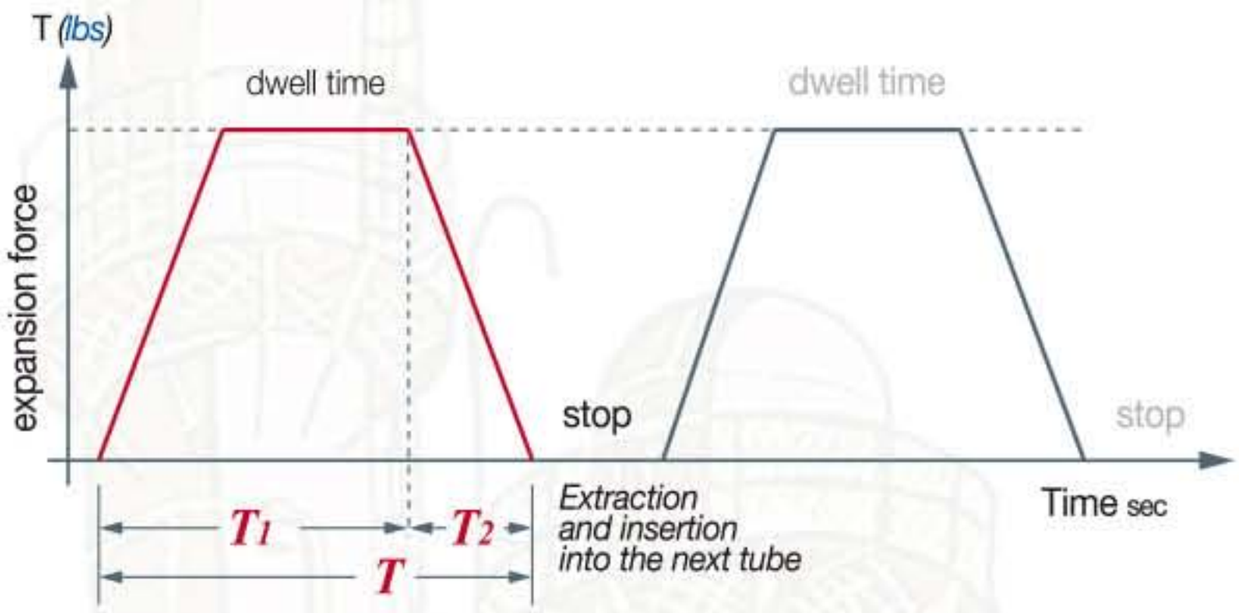
With calibrable control system

TP2 EQ2

E**lectric* automatic hydraulic unit with ***control of the work cycle with transformation of ***Kattex Fix***

The ***TP2 EQ2*** hydraulic unit, an evolution of the "entry level" ***TP2 E*** model, as shown below, has been designed and manufactured by Maus Italia to power the ***Kattex Fix***Kattex Fix hydraulic equipment where sensitivity in the locking of the tubes ("tack expansion") is essential.

A calibratable timer allows the operator to programme the two expansion control timings ***T1*** **expansion+dwell time and return time),** guaranteeing repeatability of the **"T"** work cycle with a significant increase in efficiency.



*For all components of the **TP2 EQ2**, please refer to the layout alongside **TP2 E***

Expansion timing control

TP2 EQ2
TP2 E

Power supply			TP2 EQ2		TP2 E	
Voltage	V-ph		400-3		400-3	
Frequency	Hz		50/60		50/60	
Installed power	kW		1,1		1,1	
Power to the remote control	V		24		24	
Dimensions						
Length (depth)	mm	*inches*	520	*20.4*	370	*14.5*
Width	mm	*inches*	330	*12.9*	280	*11.0*
Height	mm	*inches*	815	*32.0*	650	*25.6*
Weight (no load)	kg	*lbs*	47	*103*	33	*73*
Weight (full load - oil)	kg	*lbs*	61	*134*	40	*88*
Sound pressure	dB		<70 (A)		<70 (A)	
Level of protection	IP		55		55	
Colours	RAL		7035-9005		7035-9005	
Work capacity						
Max oil flow rate	l/min	*US gpm*	1,8	*0.47*	1,8	*0.47*
Min pressure	bar	*psi*	40	*580*	40	*580*
Max pressure	bar	*psi*	320	*4641*	320	*4641*
Tank capacity	l	*US Gal*	16	*4.2*	8	*2.1*
Hydraulic oil	ISO		H46		H46	

TP2 E

*E*lectric hydraulic unit.

The **TP2 E** hydraulic unit is a lightweight and cost-effective machine, designed and manufactured by Maus Italia to power the **Kattex** hydraulic equipment in its different version for internal and external tube cutting.

Kattex

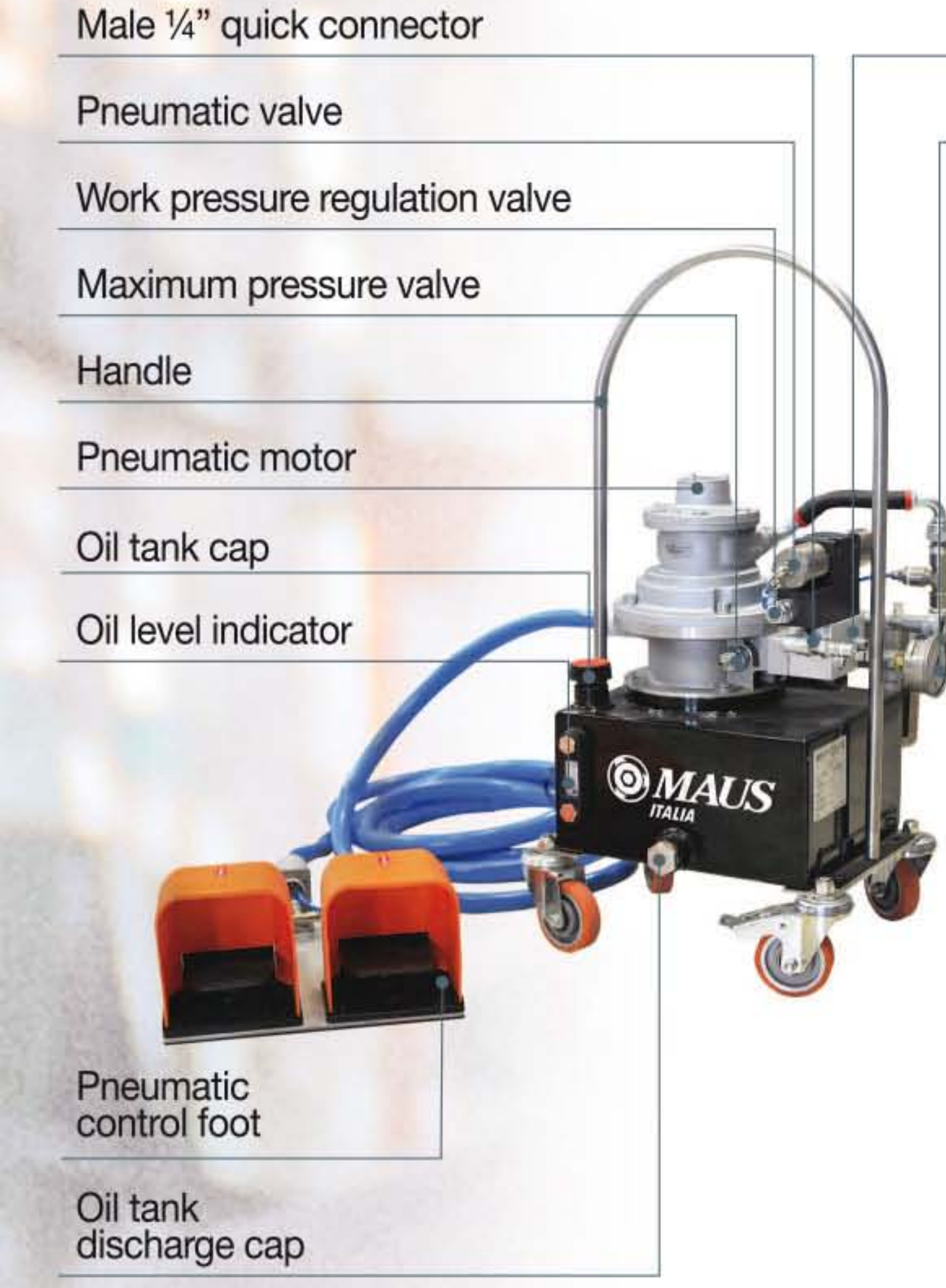
MAUS ITALIA

TP2 P

Pneumatic hydraulic unit.

The **TP2 P** hydraulic unit is a lightweight and cost-effective machine, designed and manufactured by Maus Italia to power **Kattex** hydraulic equipment in its different version for internal and external tube cutting.

It is supplied with a pneumatic foot pedal remote control for controlling the movement of oil during use.



TP2 P

Power supply			TP2 P	
Pressure	bar	*psi*	5-7	*72-101*
Absorbed power	kW		3	
Air consumption	l/min	*US gpm*	3000	*792*
Dimensioni				
Length (depth)	**A** mm	*inches*	370	*14.6*
Width	**B** mm	*inches*	280	*11.0*
Height	**C** mm	*inches*	650	*25.6*
Weight (no load)	kg	*lbs*	36	*79.3*
Weight (full load - oil)	kg	*lbs*	43	*94.7*
Sound pressure	dB		87 (A)	
Colours	RAL		9005	
Work capacity				
Max oil flow rate	l/min	*US gpm*	1,8	*0.47*
Min pressure	bar	*psi*	40	*580*
Max pressure	bar	*psi*	290	*4205*
Tank capacity	l	*US Gal*	8	*2.1*
Hydraulic oil	ISO		H46	

MAUS ITALIA

Kattex

Multipurpose device *Kattex*

Electric

de
12,7 ÷ 38,1 mm
(1/2"÷1.1/2")

Kattex 6 E
Electric

de
25,4 ÷ 63,5 mm
(1"÷2.1/2")

Kattex 12 E
Electric

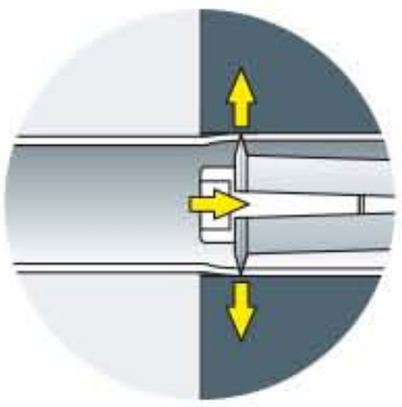
Pneumatic

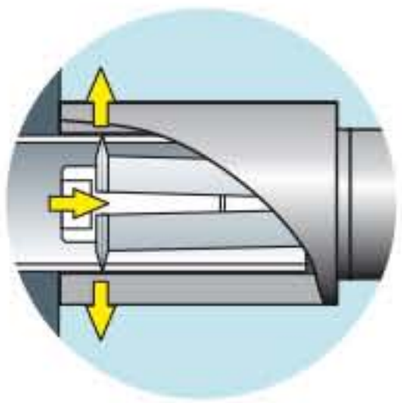
de
12,7 ÷ 38,1 mm
(1/2"÷1.1/2")

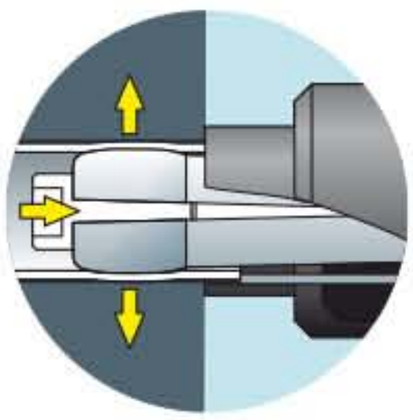
Kattex 6 P
Pneumatic

de
25,4 ÷ 63,5 mm
(1"÷2.1/2")

Kattex 12 P
Pneumatic







	Kattex 6 E	Kattex 12 E	Kattex 6 P	Kattex 12 P
Kattex 6 E	✓	✗	✗	✗
Kattex 12 E	✗	✓	✗	✗
Kattex 6 P	✗	✗	✓	✗
Kattex 12 P	✗	✗	✗	✓
Kattex LTP 6 E	✓	✗	✗	✗
Kattex LTP 6 P	✗	✗	✓	✗
KattexFix 6 E	✓	✗	✗	✗
KattexFix12 E	✗	✓	✗	✗
KattexFix6 P	✗	✗	✓	✗
KattexFix12 P	✗	✗	✗	✓

Hydraulic units			Support		Other Hydraulic units	
Electric		Pneumatic			Electric	Pneumatic
						
TP2 EQ2 *Electric + Timer*	**TP2 E** *Electric*	**TP2 P** *Pneumatic*	**TPB 1** *Balancer*	**TPB 2** *Balancer*	**TP10 E** *Electric*	**TP10 P** *Pneumatic*
✓	✔	✘	✔	✘	✔	✘
✓	✔	✘	✘	✔	✔	✘
✘	✘	✔	✔	✘	✘	✔
✘	✘	✔	✘	✔	✘	✔
✓	✔	✘	✔	✘	✔	✘
✘	✘	✔	✘	✔	✘	✔
✔	✓	✘	✘	✔	✔	✘
✔	✓	✘	✘	✔	✔	✘
✘	✘	✔	✘	✔	✘	✔
✘	✘	✔	✘	✔	✘	✔

✔ Recommended ✓ Possible ✘ Not possible

Refer to ***Maintenance*** *catalogue*

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