



About Kale



Kale is located in
İstanbul-Türkiye;
İAYOSB Industrial
zone.



Kale has an
experienced and
expert team in
addition to the
necessary technical
features.

Kale, who has been in the hose clamp sector for over 15 years, is the sector leader in Türkiye and one of the well known companies globally.

As well as being a supplier to the OEMs in the automotive sector, Kale takes its place in the global market with an export ratio of 75% with more than 100 distributors.

Kale is the preferred brand in the joining technology sector not only due to its high product quality or by its agreeable price policy but also by its service quality.



Kale holds the ISO/TS 16949 and ISO 9001 quality management system certificates.



Exports 75% of its production to over 40 countries.



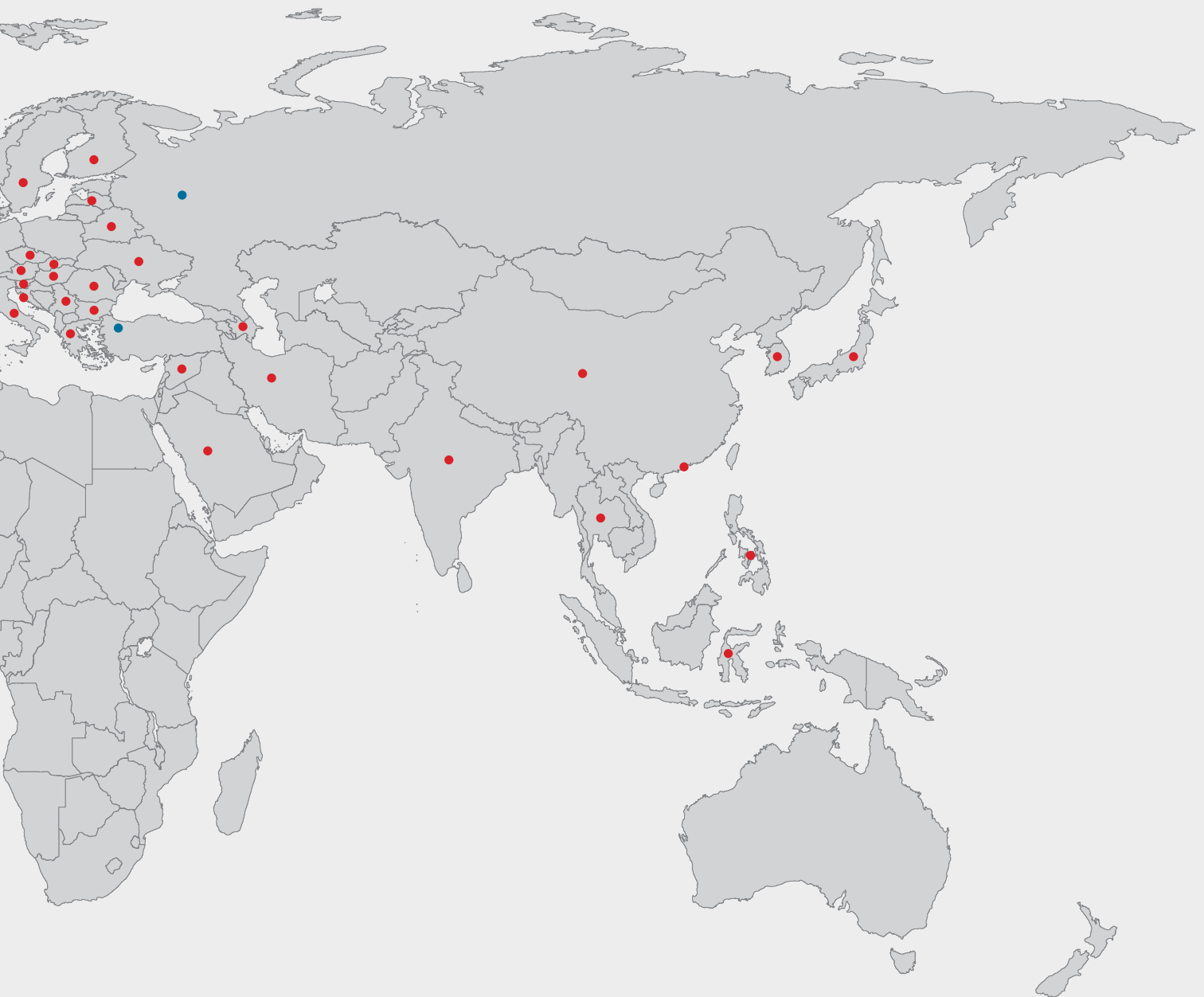
Automotive

Automotive OEMs and their Tier-1 & Tier-2 suppliers are our customers.



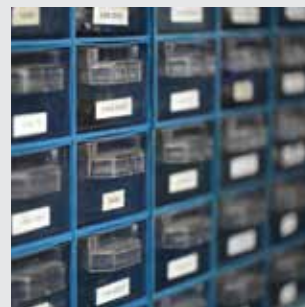
Industry

Our customer portfolio includes production companies in the sectors like construction equipment, marine, autogas, etc.



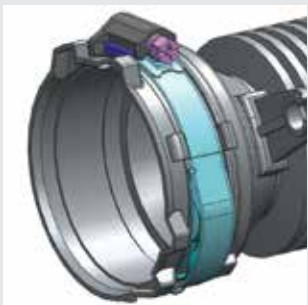
Distribution

Kale products are used in over 40 countries by means of global sales network.



Private Label

Kale is performing private packaging, private logo marking and private labelling for several customers.



Kale works in close cooperation with customers in new projects. Customized solutions are created at application areas.



Kale designs and produces its processes and production lines.

Design & Product Development

Kale designs and develops customer specific products as well as standard products.

Design and manufacturing of production lines, moulds, fixtures and test systems are performed in-house.



All work centres in the workshop are of European and Japanese origin. Their accuracy is without a question one of Kale's indisputable advantages.



Kale follows up the market needs and develops new products.



Kale manages all processes via ERP. For most efficient and optimized production results a barcode tracking system is also used.



All raw materials are obtained from globally leading suppliers. Specifically manufactured raw materials for Kale products are an important factor to product reliability.

Production

Kale manufactures with lean production mentality. Production capacity can be increased quickly depending on projects.

All production processes are managed by the ERP and barcode systems. In parallel, product traceability is 100% secured.

“First time through” is Kale’s fundamental philosophy.



Kale’s efficient planning performance is backed by the preventive and predictive maintenance covering all equipment.



Highly accurate production lines can go up to speeds of 250 pcs/min.



Kale performs all necessary functional tests with vast capability of its laboratory.



With respect to the clamp-hose harmony, PT or PVT tests are carried out with customers when needed.

Quality

From inbound to outbound, in all stages of production;

the ISO/TS standard applications

the control systems and equipment that assure quality
keep Kale production's reliability at the highest level.



Corrosion
resistance
is checked
periodically.



All tests carried out
during production,
assures Kale product
quality

Product Range



Worm Drive Clamps (9mm)



Worm Drive Clamps (12mm)



Worm Drive Clamps with Spring Insert



Customized Clamps



Kale continuously improves its product range in line with customer needs.



Products are offered in several alternative material combinations depending on the areas of application.



Retaining Clamps



Ear Clamps

Heavy Duty Clamps

Spring Tension Heavy Duty Clamps



Specially designed displays make it easy to promote and use Kale products.



Manual and pneumatic tools generate flexibility and speed to the users during the assembly of Kale products.

WD9 - Worm Drive Clamps



Worm drive clamps are produced in compliance with DIN 3017.



7mm hex-head screw for easier assembly

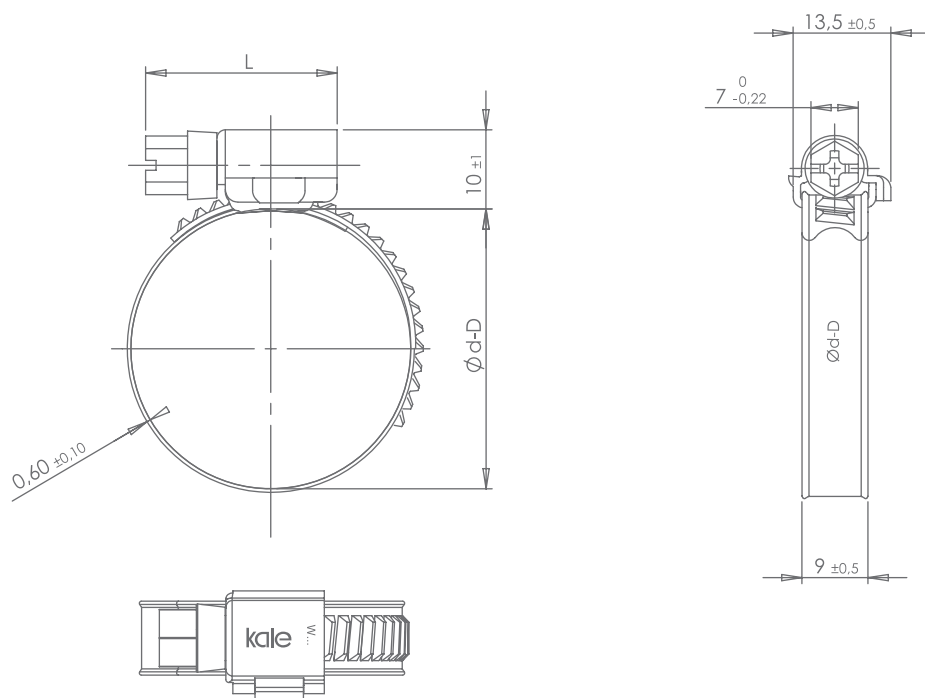


More durable and stronger with the one piece design and the mechanical locking mechanism.



Space and weight saving design

Technical Properties



Ø d - D (mm)	W1 - W2 - W3 - W4 - W5 (Nm)		L (mm) ± 2
	AD max	PD max	
8-16	2,5	3,5	20
12-20	2,5	3,5	20
12-22	3,0	4,0	24
16-25	3,0	4,0	24
16-27	3,0	4,0	24
20-32	3,0	4,0	24
23-35	3,0	4,0	24
25-40	3,0	4,5	24
30-45	3,0	4,5	24
32-50	3,0	4,5	24
40-60	3,0	4,5	24
50-70	3,0	4,5	24
60-80	3,0	4,5	24
70-90	3,0	4,5	24
80-100	3,0	4,5	24
90-110	3,0	4,5	24
100-120	3,0	4,5	24
110-130	3,0	4,5	24
120-140	3,0	4,5	24
130-150	3,0	4,5	24
140-160	3,0	4,5	24
...	...	...	...
380-400	3,0	4,5	24

Screw Head	Philips Type	Slotted
		
W1	●	
W2	●	
W3		●
W4		●
W5		●

Material Code	Housing	Screw	Band
W1	Mild steel	Mild steel	Mild steel
W2	1.4016 DIN EN-10088-2 or equivalent	Mild steel	1.4016 DIN EN-10088-2 or equivalent
W3	1.4016 DIN EN-10088-2 or equivalent	1.4016 DIN EN-10088-3 or equivalent	1.4016 DIN EN-10088-2 or equivalent
W4	1.4301 DIN EN-10088-2 or equivalent	1.4301 DIN EN-10088-3 or equivalent	1.4301 DIN EN-10088-2 or equivalent
W5	1.4401 DIN EN-10088-2 or equivalent	1.4401 DIN EN-10088-3 or equivalent	1.4401 DIN EN-10088-2 or equivalent

AD: Recommended tightening torque
PD: Testing torque

WD12 - Worm Drive Clamps



Convex band edges to prevent damage to the hose



Pre-positioning on the hose with additional accessories

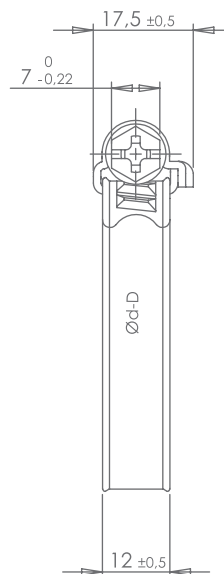
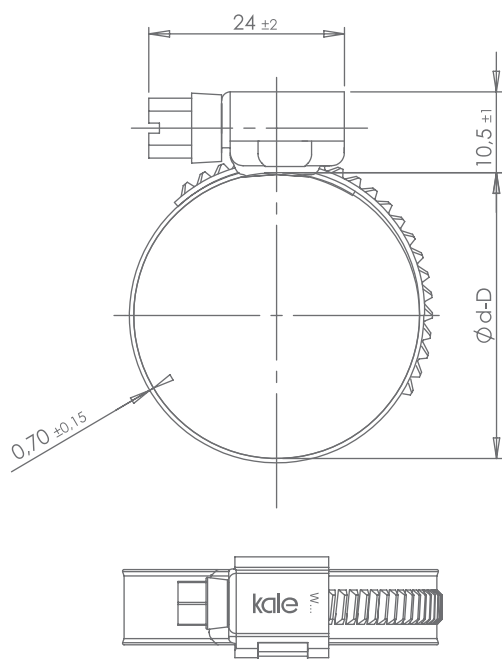


High clamping force with low tightening torque



100% product traceability

Technical Properties



Ø d - D (mm)	W2 - W3 - W4 - W5 (Nm)	
	AD max	PD max
16-25	5,0	6,5
16-27	5,0	6,5
20-32	5,0	6,5
23-35	5,0	6,5
25-40	5,0	6,5
30-45	5,0	6,5
32-50	5,0	6,5
40-60	5,0	6,5
50-70	5,0	6,5
60-80	5,0	6,5
70-90	5,0	6,5
80-100	5,0	6,5
90-110	5,0	6,5
100-120	5,0	6,5
110-130	5,0	6,5
120-140	5,0	6,5
130-150	5,0	6,5
140-160	5,0	6,5
...	...	...
380-400	5,0	6,5

Screw Head	Philips Type	Slotted
W2	●	
W3		●
W4		●
W5		●

Material Code	Housing	Screw	Band
W2	1.4016 DIN EN-10088-2 or equivalent	Mild steel	1.4016 DIN EN-10088-2 or equivalent
W3	1.4016 DIN EN-10088-2 or equivalent	1.4016 DIN EN-10088-3 or equivalent	1.4016 DIN EN-10088-2 or equivalent
W4	1.4301 DIN EN-10088-2 or equivalent	1.4301 DIN EN-10088-3 or equivalent	1.4301 DIN EN-10088-2 or equivalent
W5	1.4401 DIN EN-10088-2 or equivalent	1.4401 DIN EN-10088-3 or equivalent	1.4401 DIN EN-10088-2 or equivalent

AD: Recommended tightening torque
PD: Testing torque

WD12 IS - Worm Drive Clamps with Spring Insert



Automatic re-tensioning effect in the event of temperature changes, dynamic forces and diameter changes



Safe usage in air management & heating-cooling systems.

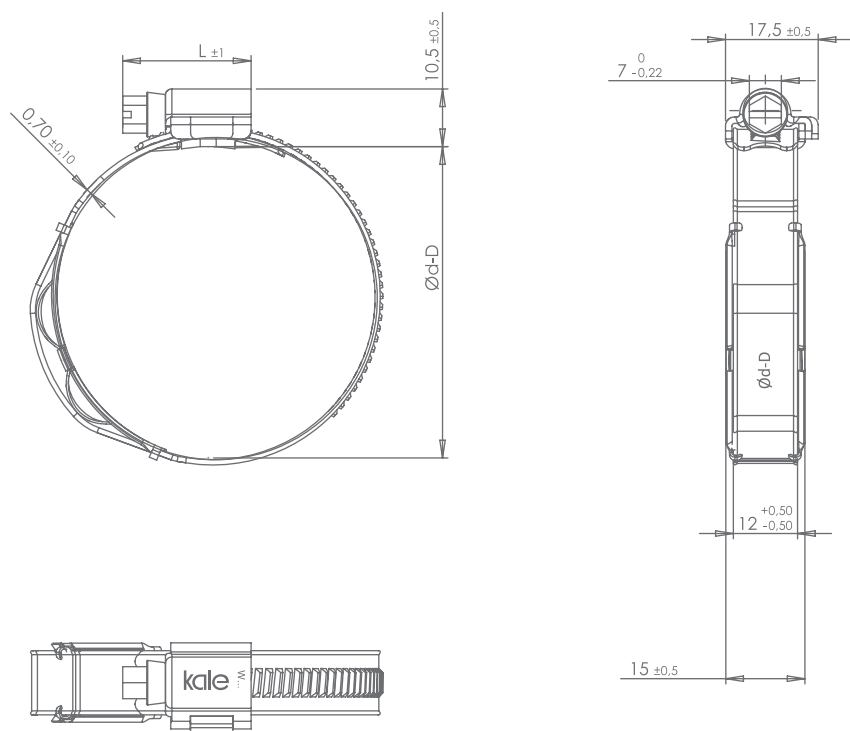


Compact design, economic solution.



Easy and correct assembly with specific pre-positioning accessories

Technical Properties



Ø d - D (mm)	W3 - W4 - W5 (Nm)		Tightening Speed (rpm)	L (mm) ± 2
	AD max	PD max		
20-32	5,0 - 5,5	6,5	350	24
23-35	5,0 - 5,5	6,5	350	24
25-40	5,0 - 5,5	6,5	350	24
32-50	5,0 - 5,5	6,5	350	24
40-60	5,0 - 5,5	6,5	350	24
45-65	5,0 - 5,5	6,5	350	24
50-70	5,0 - 5,5	6,5	350	24
60-80	5,0 - 5,5	6,5	350	24

Material Code	Housing	Screw	Band	Spring
W3	1.4016 DIN EN-10088-2 or equivalent	1.4016 DIN EN-10088-3 or equivalent	1.4016 DIN EN-10088-2 or equivalent	1.4310 DIN EN-10088-2 or equivalent
W4	1.4301 DIN EN-10088-2 or equivalent	1.4301 DIN EN-10088-3 or equivalent	1.4301 DIN EN-10088-2 or equivalent	1.4310 DIN EN-10088-2 or equivalent
W5	1.4401 DIN EN-10088-2 or equivalent	1.4401 DIN EN-10088-3 or equivalent	1.4401 DIN EN-10088-2 or equivalent	1.4310 DIN EN-10088-2 or equivalent

Screw Head	Slotted
W3	●
W4	●
W5	●

AD: Recommended tightening torque
PD: Testing torque

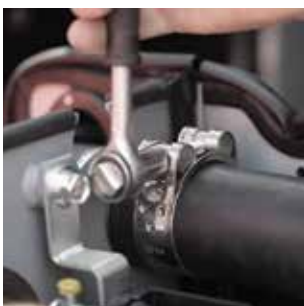
HD - Heavy Duty Clamps



High tightening torque
for high pressures



Durable design with
three welding points

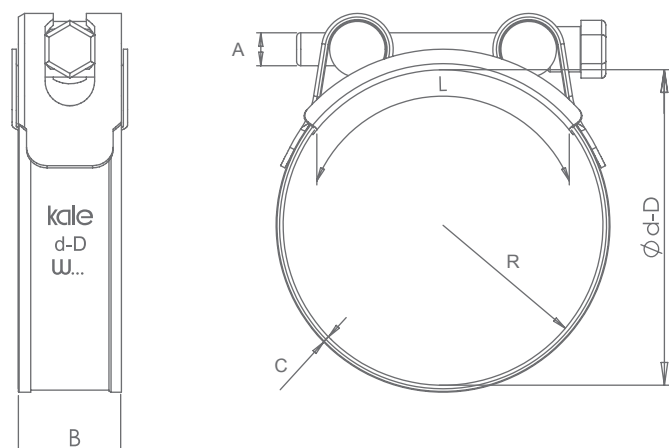


Ease of assembly due
to the simple design



Uniform clamping
force throughout
360 degrees

Technical Properties



Material Code	Band	Tab	Bolt	Tube
W1	Mild steel	Mild steel	8.8 Mild steel	-
W2	AISI 304	AISI 304	8.8 Mild steel	-
W4	AISI 304	AISI 304	AISI 304 A2	AISI 316

Ø d - D (mm)	L (mm)	R (mm)	A (mm)	B (mm)			C (mm)		Fracture torque M_{MM} (Nm)	
			W1 - W2 - W4	W1	W2	W4	W1	W2 - W4	W1 - W2	W4
17-19	23	9,0	M5 x 35	18 +0,3	18 +0,5	18 +0,5	0,60 ± 0,05	0,60 ± 0,03	11,3	13,1
20-22	24	10,5	M5 x 35	18 +0,3	18 +0,5	18 +0,5	0,60 ± 0,05	0,60 ± 0,03	11,3	13,1
23-25	26	12,0	M5 x 35	18 +0,3	18 +0,5	18 +0,5	0,60 ± 0,05	0,60 ± 0,03	11,3	13,1
26-28	28	13,5	M5 x 35	18 +0,3	18 +0,5	18 +0,5	0,60 ± 0,05	0,60 ± 0,03	11,3	13,1
29-31	30	15,0	M5 x 35	18 +0,3	18 +0,5	18 +0,5	0,60 ± 0,05	0,60 ± 0,03	11,3	13,1
32-35	40	17,0	M6 x 50	20 +0,3	20 +0,5	20 +0,5	1,00 ± 0,08	1,00 ± 0,05	19,1	26,3
36-39	45	19,0	M6 x 50	20 +0,3	20 +0,5	20 +0,5	1,00 ± 0,08	1,00 ± 0,05	19,1	26,3
40-43	48	21,0	M6 x 50	20 +0,3	20 +0,5	20 +0,5	1,00 ± 0,08	1,00 ± 0,05	19,1	26,3
44-47	50	23,0	M6 x 50	20 +0,3	20 +0,5	20 +0,5	1,00 ± 0,08	1,00 ± 0,05	19,1	26,3
48-51	55	25,0	M6 x 50	20 +0,3	20 +0,5	20 +0,5	1,00 ± 0,08	1,00 ± 0,05	19,1	26,3
52-55	58	27,0	M6 x 50	20 +0,3	20 +0,5	20 +0,5	1,00 ± 0,08	1,00 ± 0,05	19,1	26,3
56-59	60	29,0	M6 x 55	20 +0,3	20 +0,5	20 +0,5	1,00 ± 0,08	1,00 ± 0,05	19,1	26,3
60-63	62	31,0	M6 x 55	20 +0,3	20 +0,5	20 +0,5	1,00 ± 0,08	1,00 ± 0,05	19,1	26,3
64-67	75	33,0	M6 x 55	20 +0,3	20 +0,5	20 +0,5	1,00 ± 0,08	1,00 ± 0,05	19,1	26,3
68-73	75	35,5	M8 x 70	25 +0,4	25 +0,5	25 +0,5	1,50 ± 0,10	1,20 ± 0,06	48,2	60,6
74-79	75	38,5	M8 x 70	25 +0,4	25 +0,5	25 +0,5	1,50 ± 0,10	1,20 ± 0,06	48,2	60,6
80-85	80	41,5	M8 x 70	25 +0,4	25 +0,5	25 +0,5	1,50 ± 0,10	1,20 ± 0,06	48,2	60,6
86-91	80	44,5	M8 x 70	25 +0,4	25 +0,5	25 +0,5	1,50 ± 0,10	1,20 ± 0,06	48,2	60,6
92-97	80	47,5	M8 x 70	25 +0,4	25 +0,5	25 +0,5	1,50 ± 0,10	1,20 ± 0,06	48,2	60,6
98-103	85	50,5	M8 x 70	25 +0,4	25 +0,5	25 +0,5	1,50 ± 0,10	1,20 ± 0,06	48,2	60,6
104-112	85	55,0	M8 x 80	25 +0,4	25 +0,5	25 +0,5	1,50 ± 0,10	1,20 ± 0,06	48,2	60,6
113-121	85	59,5	M8 x 80	25 +0,4	25 +0,5	25 +0,5	1,50 ± 0,10	1,20 ± 0,06	48,2	60,6
122-130	90	64,0	M8 x 80	25 +0,4	25 +0,5	25 +0,5	1,50 ± 0,10	1,20 ± 0,06	48,2	60,6
131-139	90	68,5	M8 x 80	25 +0,4	25 +0,5	25 +0,5	1,50 ± 0,10	1,20 ± 0,06	48,2	60,6
140-148	90	73,0	M8 x 80	25 +0,4	25 +0,5	25 +0,5	1,50 ± 0,10	1,20 ± 0,06	48,2	60,6
149-161	90	79,5	M8 x 90	25 +0,4	25 +0,5	25 +0,5	1,80 ± 0,10	1,50 ± 0,07	48,2	60,6
162-174	90	86,0	M8 x 90	25 +0,4	25 +0,5	25 +0,5	1,80 ± 0,10	1,50 ± 0,07	48,2	60,6
175-187	90	92,5	M8 x 90	25 +0,4	25 +0,5	25 +0,5	1,80 ± 0,10	1,50 ± 0,07	48,2	60,6
188-200	90	99,0	M8 x 90	25 +0,4	25 +0,5	25 +0,5	1,80 ± 0,10	1,50 ± 0,07	48,2	60,6
201-213	90	105,5	M8 x 90	25 +0,4	25 +0,5	25 +0,5	1,80 ± 0,10	1,50 ± 0,07	48,2	60,6
214-226	90	112,0	M8 x 90	25 +0,4	25 +0,5	25 +0,5	1,80 ± 0,10	1,50 ± 0,07	48,2	60,6
227-239	90	118,5	M8 x 90	25 +0,4	25 +0,5	25 +0,5	1,80 ± 0,10	1,50 ± 0,07	48,2	60,6
240-252	90	126,5	M8 x 90	25 +0,4	25 +0,5	25 +0,5	1,80 ± 0,10	1,50 ± 0,07	48,2	60,6

Notice for application: Recommended tightening torque should not exceed 75% of the fracture torque

ST - Spring Tension Heavy Duty Clamps



Perfect solution for applications including high pressure, vacuum and dynamic loads.



Easy assembly with hex-head & long screw.

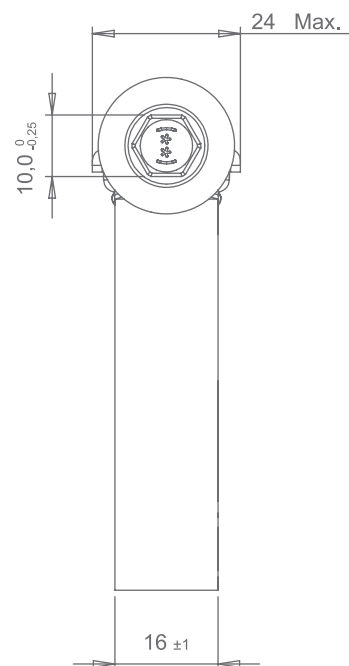
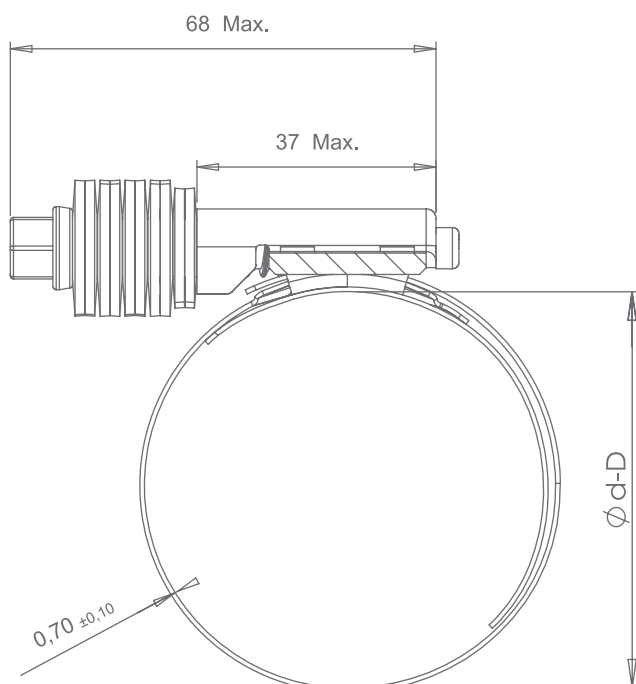


Constant clamping force with spring washers



The liner on the inner surface prevents damage or shear for 100% hose safety.

Technical Properties



Ø d - D (mm)	Band width (mm)	Tightening torque max (Nm)
25 - 45	16 +1	14,1
32 - 54	16 +1	14,1
45 - 67	16 +1	14,1
57 - 79	16 +1	14,1
70 - 92	16 +1	14,1
83 - 105	16 +1	14,1
95 - 117	16 +1	14,1
108 - 130	16 +1	14,1
121 - 143	16 +1	14,1
133 - 155	16 +1	14,1
146 - 168	16 +1	14,1
159 - 181	16 +1	14,1
172 - 193	16 +1	14,1
184 - 206	16 +1	14,1
197 - 219	16 +1	14,1
210 - 232	16 +1	14,1

Material Code	Screw	Band	Housing	Washer
W2	AISI 1018 - 1022 Hex. Head, zinc coated	AISI 304	AISI 304	AISI 301

CC - Retaining Clamps



Kale Retaining Clamps are produced in compliance with DIN 3016.



Wide range of material and rubber options

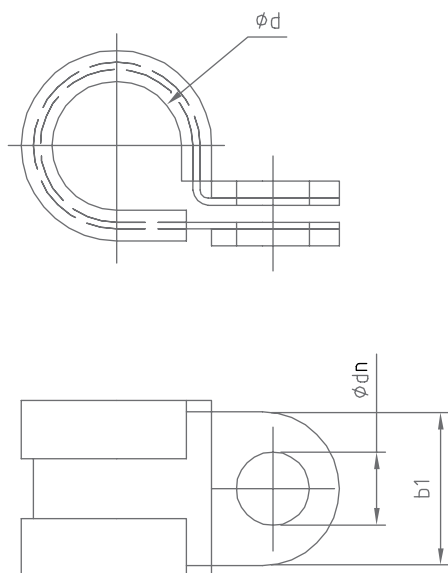


Reinforced band ends for high mechanical loads.

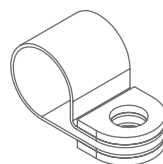


Extensive use in many sectors like automotive, industry, white goods, etc.

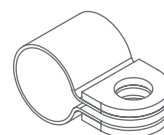
Technical Properties



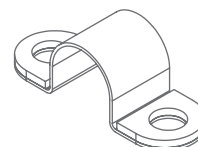
Tip A1



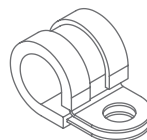
Tip B1



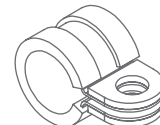
Tip C1



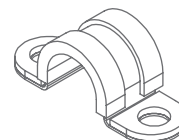
Tip D1



Tip E1



Tip F1



$\varnothing d$ (mm)	b1 = 12,0 mm dn = 5,3 mm	b1 = 15,0 mm dn = 6,4 mm	b1 = 20,0 mm dn = 8,4 mm	b1 = 25,0 mm dn = 10,4 mm
4,0	●	-	-	-
5,0	●	●	-	-
6,0	●	●	-	-
7,0	●	●	-	-
8,0	●	●	-	-
9,0	●	●	-	-
10,0	●	●	●	-
11,0	●	●	●	-
12,0	●	●	●	-
13,0	●	●	●	-
14,0	●	●	●	-
15,0	●	●	●	●
16,0	●	●	●	●
17,0	●	●	●	●
18,0	●	●	●	●
19,0	●	●	●	●
20,0	●	●	●	●
...	...	...	...	...
50,0	●	●	●	●
...	...	...	...	...

Material Code	Description
W1	Mild steel
W3	X6Cr17 (1.4016) EN 10088-2
W4	X5CrNi18-1017 (1.4301) EN 10088-2
W5	X5CrNiMo17-12-2 (1.4401) EN 10088-2

Rubber Type	CR	EPDM
Colour	Black	Black
Temperature (C°)	-35 - +100	-35 - +100
Ozone Resistance	Very good	Very good
Light Resistance	Very good	Very good
Fuel Resistance	Sufficient	Insufficient
Oil Resistance	Good	Insufficient
Alcohol Resistance	Good	Good
Acid Resistance	Good	Good
Base Resistance	Good	Good

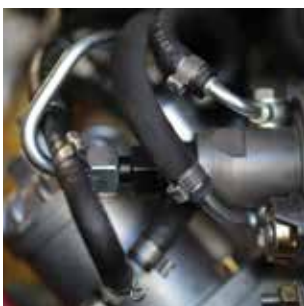
TK - Single Ear Clamps



Practical and economic with its plain design



Safe usage in all fluid circulation systems



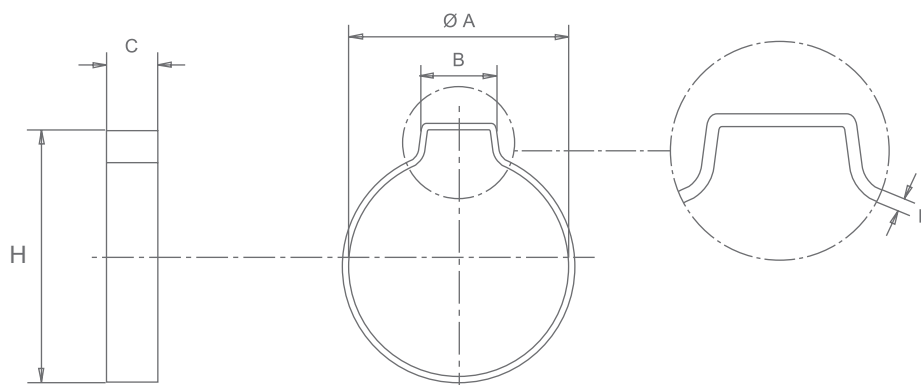
Easily used in tight spaces



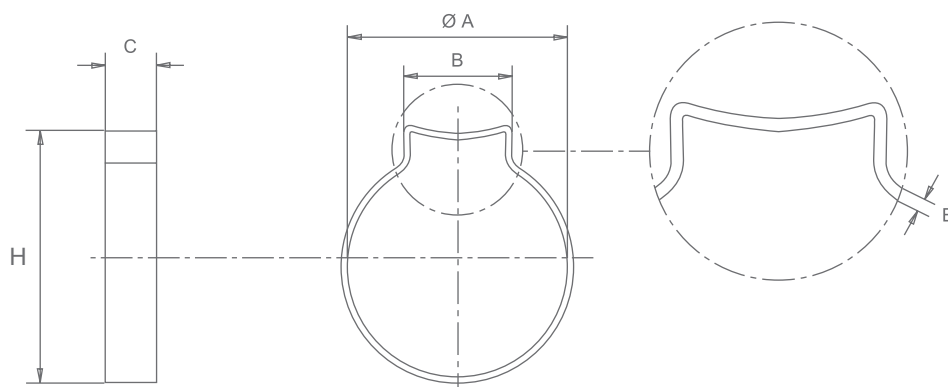
Easy installing with simple tools

Technical Properties

W1



W4



Ø d - D (mm)	W1	W4	A (mm)	B (mm)	C (mm)	E (mm)	H (mm)
7 - 9	●	●	9,3	5,5	6,0	0,8	13,0
8 - 10	●	●	10,3	6,0	6,0	0,8	14,0
9 - 11	●	●	11,3	6,5	6,5	0,8	15,0
10 - 12	●	●	12,3	7,0	6,5	0,8	16,0
11 - 13	●	●	13,3	7,5	6,5	0,8	17,0
12 - 14	●	●	14,3	8,0	7,0	1,0	18,5
13 - 15	-	●	15,3	8,0	7,0	1,0	19,5
14 - 16	●	●	16,3	8,5	7,0	1,0	20,5
15 - 17	-	●	17,5	9,0	7,0	1,0	22,0
16 - 18	●	●	18,5	9,5	7,0	1,0	23,0
17 - 19	-	●	19,5	9,5	7,5	1,0	24,0
18 - 20	-	●	20,5	10,0	7,5	1,0	25,0

Material Code	Band
W1	St 34 Steel (DIN 2393 C) Cr3 Zinc Coated
W4	AISI 304 Stainless Steel

TKY - Single Ear Clamps with Inner Ring



Additional inner ring
provides 360 degrees
uniform clamping force



Safe usage in all
fluid circulations
systems



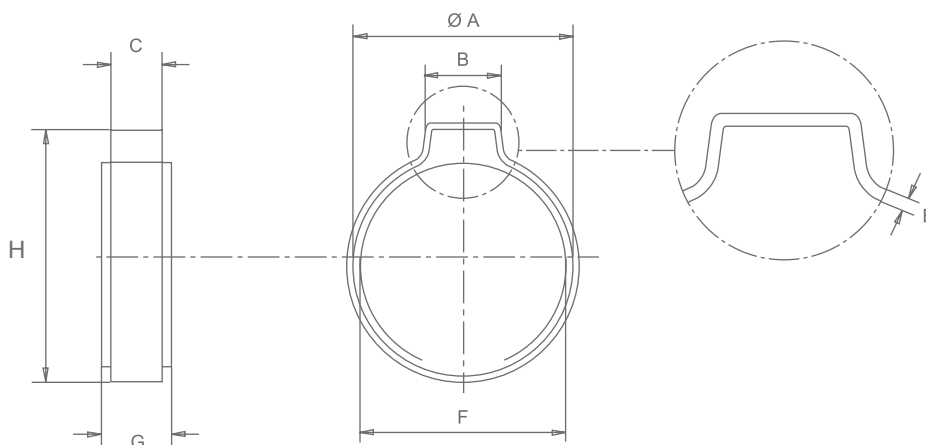
Easy assembling
with simple tools



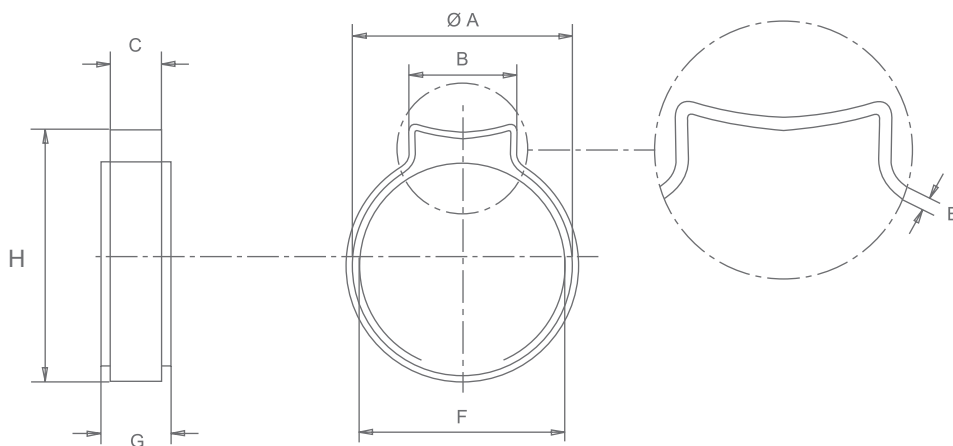
Two alternative
material options.

Technical Properties

W1



W4



Ø d - D (mm)	W1	W4	A (mm)	B (mm)	C (mm)	E (mm)	F (mm)	G (mm)	H (mm)
7,5 - 8,5	●	●	9,3	5,5	6,0	0,8	8,5	7,8	13,0
8,0 - 9,5	●	-	10,3	6,0	6,0	0,8	9,5	7,8	14,0
8,2 - 9,5	-	●	10,3	6,0	6,0	0,8	9,5	7,8	14,0
9,0 - 10,5	●	●	11,3	6,5	6,5	0,8	10,5	7,8	15,0
10,0 - 11,5	●	●	12,3	7,0	6,5	0,8	11,5	7,8	16,0
10,5 - 12,5	●	●	13,3	7,5	6,5	0,8	12,5	7,8	17,0
11,5 - 13,3	●	-	14,3	8,0	7,0	1,0	13,3	8,8	18,5
11,5 - 13,5	-	●	14,3	8,0	7,0	1,0	13,5	8,8	18,5
12,5 - 14,5	-	●	15,3	8,0	7,0	1,0	14,5	8,8	19,5
13,0 - 15,3	●	●	16,3	8,5	7,0	1,0	15,3	8,8	20,5
14,0 - 16,3	-	●	17,5	9,0	7,0	1,0	16,3	8,8	22,0
15,0 - 17,3	●	●	18,5	9,5	7,0	1,0	17,3	8,8	23,0
16,0 - 18,3	-	●	19,5	9,5	7,5	1,0	18,3	9,8	24,0
17,0 - 19,3	-	●	20,5	10,0	7,5	1,0	19,3	9,8	25,0

Material Code	Band	Inner Ring
W1	St 34 Steel (DIN 2393 C) Cr3 Zinc Coated	AISI 301 Stainless Steel
W4	AISI 304 Stainless Steel	AISI 301 Stainless Steel

CK - Double Ear Clamps



Wide clamping range
with the double ear
design



Expert in tight
spaces due to its
compact design

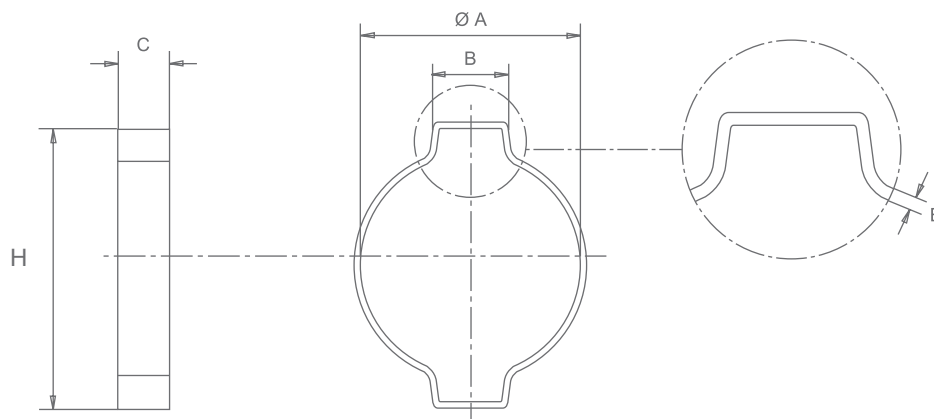


Extensive use in many sectors
like automotive, autogas,
agriculture machinery, etc.



Easy assembly and
disassembly

Technical Properties



Ø d - D (mm)	W1	W4	A (mm)	B (mm)	C (mm)	E (mm)	H (mm)
5 - 7	●	●	7,3	4,3	6,0	0,6	11,0
7 - 9	●	●	9,3	4,8	6,0	0,8	13,5
9 - 11	●	●	11,3	5,3	6,5	0,8	17,0
10 - 12	●	-	12,3	5,5	6,5	0,9	18,0
11 - 13	●	●	13,3	5,8	6,5	0,9	19,0
13 - 15	●	●	15,3	6,3	7,0	1,0	21,5
14 - 17	●	●	17,5	6,6	7,0	1,2	24,0
15 - 18	●	●	18,5	7,0	7,5	1,2	25,0
17 - 20	●	●	20,5	7,6	7,5	1,2	27,0
18 - 21	●	●	21,5	7,9	8,0	1,2	28,0
20 - 23	●	●	23,5	8,5	8,0	1,3	31,0
22 - 25	●	●	25,5	9,1	8,5	1,4	33,0
23 - 27	●	-	27,5	9,4	8,5	1,4	35,0
25 - 28	●	-	28,5	10,0	9,0	1,4	36,0
28 - 31	●	-	31,5	10,6	9,0	1,4	39,0
31 - 34	●	-	34,5	11,0	9,5	1,4	42,0
34 - 37	●	-	37,5	11,5	9,5	1,6	46,0
37 - 40	●	-	40,5	12,0	10,0	1,6	49,0
40 - 43	●	-	43,5	12,5	10,0	1,6	53,0
43 - 46	●	-	46,5	13,0	10,5	1,6	56,0

Material Code	Band
W1	St 34 Steel (DIN 2393 C) Cr3 Zinc Coated
W4	AISI 304 Stainless Steel



With a side slot on the band, pre-positioning on the hose is obtained. Secures correct and easy fastening at assembly lines.



Positioning accessories on the housing provide simple and easy pre-positioning on the hose.

Customized Products and Applications

Product Engineering department satisfies all demands to meet customer needs by modifying current products or developing new product ranges. Rapid prototypes and initial samples enable customers to make trials and tests before the serial production.



This clip enables pre-positioning from the hose edge. Secures correct and easy assembly



Corrosion resistance is increased with customized coating.



All material handlings are executed by the ERP linked barcode systems.



Kale's warehouse has a capacity of 1200 pallets. Simultaneous loading and unloading can be carried out in multiple locations.

Packaging and Logistics



Alternative packaging options are available



Pre-delivery inspection is performed as a double cross-check.



Experienced in all delivery terms of export.



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