

SmartPipe+[™]

Product Catalog

³⁄₄" to 2¹⁄₂"

kaeser.com

SmartPipe+™

Compressed Air Piping

Kaeser's SmartPipe+ is a modular compressed air distribution system that offers both lower installation costs and lower long term operating costs.

Piping selection directly affects the three key elements of every compressed air system: flow, pressure, and air quality. Poor choices in pipe materials, diameter, and layout cause flow restrictions, often resulting in significant pressure drop. Pressure drop is the main cause of increased energy consumption and underperforming air driven tools and equipment.

Choices in piping also directly impact installation costs. Heavier materials cause fatigue and slow work, especially in overhead installations. The types of fittings used must also be considered. Some connection types cause pressure drop, need special tools, and take more time to install.

SmartPipe+ offers an excellent choice for compressed air and inert gas distribution for pressures up to 232 psig (16 bar) (higher pressures available) in temperatures from -20°F to 200°F (-29°C to 93°C). SmartPipe+ is also ideal for vacuum up to 98.3% (29.5" Hg).





Technical Specifications

SmartPipe+ is designed for use with compressed air, vacuum, and inert gases.

Pressure and Temperature Ranges

- Normal working pressure and temperature: 232 psi, -20°F to ±200°F
- Storage temperature: -40°F to +212°F
- Max vacuum: 98.3% (29.5" Hg)
- · Consult factory for higher pressures or temperatures

Aluminum Pipe Specification

- 6063-T5 aluminum grade
- Extruded pipe conforms to standards EN755.2 and EN755.8
- · Smooth bore ID for optimal flow rate performance
- Powder coat in BLUE (RAL5012) with QUALICOAT CERTIFIED lacquer finish exterior
- · Consult factory for availability of other colors

Flexible Hose Specification

- · Resistant to mineral and synthetic oils
- Maximum working pressure for flexible hose: varies depending on size
- Fire resistance testing conducted per the ISO 8030:2014 standard

Aluminum Fittings Specification

- Connector bodies manufactured in aluminum alloy ASTM B26-356.0
- Nuts are aluminum alloy per ASTM B241-6061 and annodized
- Nut threads meet ANSI B1.20.1 standard
- Fitting bodies are black cataphoresis coated with a minimum thickness of 10 μm

Nomimal Ø (in.)	Outside Ø (in.)	Outside Ø (mm)	Inside Ø (in.)	Inside Ø (mm)	Wall Thickness (in.)	Wall Thickness (mm)
3/4	3/4	20	11/16	18	3/64	1.0
1	1	25	7/8	22.8	3/64	1.1
1-1/2	1-9/16	40	1-1/2	37.4	3/64	1.3
2	2	50	1-7/8	47	1/16	1.5
2-1/2	2-1/2	63	2-5/16	59.4	5/64	1.8



Certification



- SmartPipe+ meets the requirement of ASME B31.1 which stipulates the minimum requirements for the design, materials, fabrication, installation, test, and inspection of power and auxiliary piping systems for industrial plants.
- SmartPipe+ also conforms to European standard 2014/68/EU regarding equipment under pressure.
- Kaeser warrants its SmartPipe+ products to be free of defects in material and workmanship for a period of ten (10) years from the date of purchase of the products.
- QUALICOAT certification is a guarantee of the quality of the lacquer finish applied to the SmartPipe+ aluminum pipe.

Sizing

Select the SmartPipe+ diameter for your application based on required flow and pressure drop

Pressure Loss Chart

Pipe size recommended based on 100 psi and less than 5.5 psi pressure drop

	Equivalent Length (feet)																			
Flow (cfm)	50	150	300	400	500	1000	2000	3000	4000	5000										
10			20	20 20	20	20	20	25	25	25										
25	20	20	20	20	20	25		40	40	40										
50	20		25				40	40		40										
75		25		40	40	40		50	50	50										
100	25	20	40				50			63										
150		10	40	40	40	40	40	40	40	40	40	40	40			50	50	63	63	03
250	40	40		50	50	63	63	03												
500		50		<u>co</u>	63															
750			63	63																
900	63	63																		
1000																				

Branch or Linear Distribution Network

Note: For flows above the range shown, see 76-168 mm SmartPipe.

Looped Distribution Network

	Equivalent Length (feet)										
Flow (cfm)	500	1000	2000	3000	4000	5000					
10	20	20	20	20	20	20					
25	20	20	25	25	40						
50	25			40		40					
75	20	40	40								
100					50	50					
150	40		50	50		00					
250		50	63	63	63	63					
350	50	60	03	03							
500	63	63									
750	03										

Note: For flows above the range shown, see 76-168 mm SmartPipe.

Example

An application requires a Kaeser BSD 50 @ 110 psi with the appropriate air treatment. The application process cannot tolerate a pressure drop of more than 5.5 psi in the main header when the main distribution header pressure is 100 psi. *Note: the main distribution header is looped.*

Kaeser BSD 50 @ 110 psi = 232 cfm (FAD) Main distribution pipe length (including equivalent length for all fittings) = 1000 ft. Main header pressure = 100 psi

For a looped distribution network, use 50 mm diameter pipe.

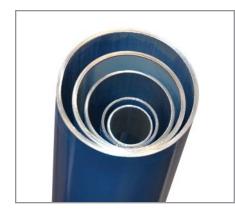
If the distribution network is a branch or linear, use 63 mm diameter pipe.

Note:

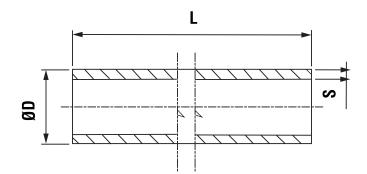
- To calculate the pressure drop at the point of use, add up the equivalent pipe length for all connectors and air treatment equipment.
- 2) It is important to keep in mind the maximum pipe velocity for each section of the compressed air distribution system.
 - a. Not to exceed 15 ft/s (5 m/s) pipe velocity in the compressor room
 - b. Not to exceed 30 ft/s (10 m/s) pipe velocity in main header
 - c. Not to exceed 45 ft/s (15 m/s) pipe velocity in the branch lines



SmartPipe+ Aluminum Pipe



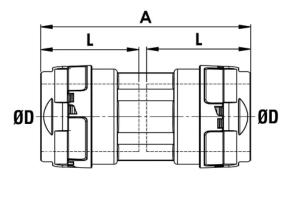
Part No.	ØD (mm)	L	S	Weight
AN8290002010	20		3/64	2.52
AN8290002510	25		3/64	3.17
AN8290004010	40	19' 8-7/32"	3/64	5.68
AN8290005010	50		1/16	7.67
AN8290006310	63		5/64	13.49

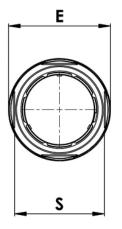


Equal Union



Part No.	ØD (mm)	A	E	L	S	Weight
AN82010020	20	2-13/16	1-7/16	1-7/16	1-1/4	0.17
AN82010025	25	3-3/16	1-5/8	1-9/16	1-7/16	0.22
AN82010040	40	5-1/8	2-1/2	2-1/2	2-1/16	0.82
AN82010050	50	6-7/16	3	3-1/8	2-5/8	1.44
AN82010063	63	7-3/4	3-5/8	3-3/4	3-3/16	2.59

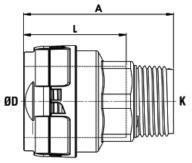


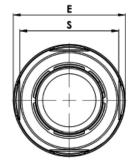


Male Adapter



Part No.	ØD x K (mm x in.)	A	E	L	S	Weight
AN8202002004	20 x 1/2	2	1-7/16	1-7/16	1-1/4	0.10
AN8202002006	20 x 3/4	2-1/8	1-7/16	1-7/16	1-1/4	0.11
AN8202002506	25 x 3/4	2-3/8	1-5/8	1-9/16	1-7/16	0.13
AN8202002508	25 x 1	2-5/8	1-5/8	1-9/16	1-7/16	0.19
AN8202004010	40 x 1-1/4	3-11/16	2-1/2	2-1/2	2-1/16	0.41
AN8202004012	40 x 1-1/2	3-11/16	2-1/2	2-1/2	2-1/16	0.44
AN8202005012	50 x 1-1/2	4-7/16	3	3-1/8	2-5/8	0.70
AN8202005016	50 x 2	4-9/16	3	3-1/8	2-5/8	0.73
AN8202006316	63 x 2	5-11/16	3-5/8	3-3/4	3-3/16	1.17
AN8202006320	63x 2-1/2	5-13/16	3-5/8	3-3/4	3-3/16	1.44

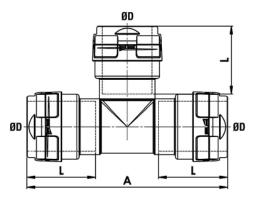


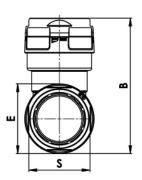


Equal Tee



Part No.	ØD (mm)	A	В	E	L	S	Weight
AN82040020	20	4-1/8	2-3/4	1-7/16	1-7/16	1-1/4	0.27
AN82040025	25	4-13/16	3-1/16	1-5/8	1-9/16	1-7/16	0.36
AN82040040	40	7-3/8	4-9/16	2-1/2	2-1/2	2-1/16	1.04
AN82040050	50	9-3/4	6	3	3-1/8	2-5/8	2.04
AN82040063	63	11-1/8	6-3/4	3-5/8	3-3/4	3-3/16	3.06

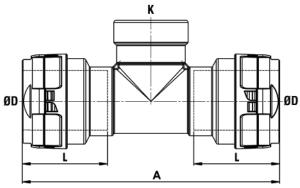


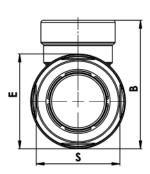


Female Threaded Equal Tee



Part No.	ØD x K (mm x in.)	A	В	E	L	S	Weight
AN8204102004	20 x 1/2	4-1/8	1-7/8	1-7/16	1-7/16	1-1/4	0.23
AN8204102506	25 x 3/4	4-13/16	2-1/4	1-5/8	1-9/16	1-7/16	0.30
AN8204104010	40 x 1-1/4	7-3/8	3-1/16	2-1/2	2-1/2	2-1/16	0.88
AN8204105012	50 x 1-1/2	9-3/4	3-3/4	3	3-1/8	2-5/8	1.78
AN8204106316	63 x 2	11-1/8	4-1/2	3-5/8	3-3/4	3-3/16	2.91

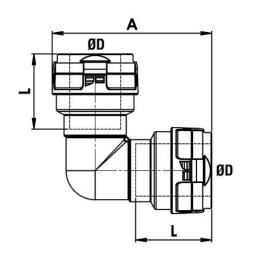


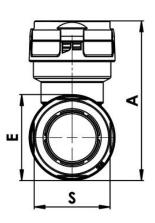


Equal 90° Elbow



Part No.	ØD (mm)	A	E	L	S	Weight
AN82050020	20	2-1/2	1-7/16	1-7/16	1-1/4	0.19
AN82050025	25	3-3/8	1-5/8	1-9/16	1-7/16	0.25
AN82050040	40	5-1/8	2-1/2	2-1/2	2-1/16	1.22
AN82050050	50	6-7/8	3	3-1/8	2-5/8	1.47
AN82050063	63	8-3/16	3-5/8	3-3/4	3-3/16	2.41

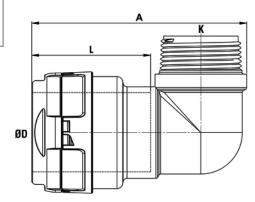


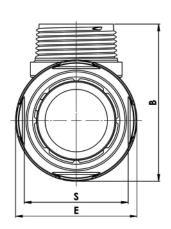


Male Threaded 90° Elbow



Part No.	ØD x K (mm x in.)	A	В	E	L	S	Weight
AN8205202004	20 x 1/2	2-9/16	1-7/8	1-7/16	1-7/16	1-1/4	0.12
AN8205202506	25 x 3/4	3	2-1/4	1-5/8	1-9/16	1-7/16	0.17
AN8205204010	40 x 1-1/4	4-7/8	3-1/16	2-1/2	2-1/2	2-1/16	0.60
AN8205205012	50 x 1-1/2	6-3/16	3-3/4	3	3-1/8	2-5/8	1.04
AN8205206316	63 x 2	7-13/16	4-1/2	3-5/8	3-3/4	3-3/16	2.04

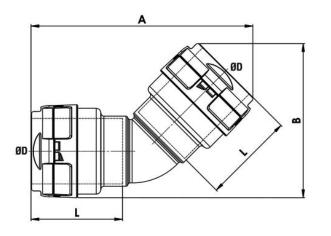


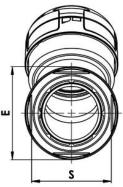


Equal 45° Elbow



Part No.	ØD (mm)	A	В	E	L	S	Weight
AN82053020	20	3-1/2	2-3/8	1-7/16	1-7/16	1-1/4	0.22
AN82053025	25	4-3/16	2-3/4	1-5/8	1-9/16	1-7/16	0.25
AN82053040	40	6-7/16	4-1/8	2-1/2	2-1/2	2-1/16	0.82
AN82053050	50	8-1/4	5-3/16	3	3-1/8	2-5/8	1.60
AN82053063	63	10-1/16	6-1/4	3-5/8	3-3/4	3-3/16	2.74

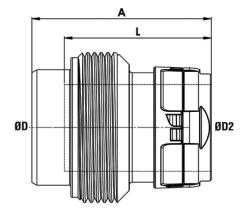


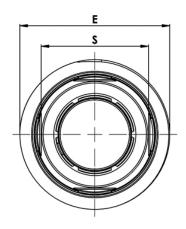


Plug-in Reducer



Part No.	ØD x ØD2 (mm)	A	E	L	S	Weight
AN8202502502	25 x 20	1-15/16	1-7/16	1-7/16	1-1/4	0.12
AN8202504020	40 x 20	2-7/16	1-7/16	1-7/16	1-1/4	0.34
AN8202504002	40 x 25	2-5/8	1-5/8	1-9/16	1-7/16	0.39
AN8202505004	50 x 40	3-3/8	2-1/2	2-1/2	2-1/16	0.57
AN8202506304	63 x 40	3-7/8	2-1/2	2-1/2	2-1/16	0.91
AN8202506305	63 x 50	4-1/8	3	3-1/8	2-5/8	1.03



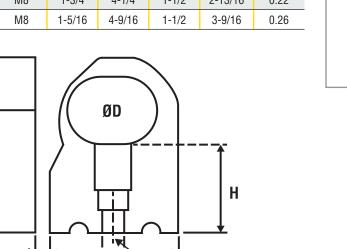


Fixing Clips

L

A

Part No.	ØD (mm)	C	H	L	A	В	Weight
ANK1022	20	M8	15/16	1-15/16	1-3/16	1-3/16	0.04
ANK2022	25	M8	15/16	2-1/8	1-3/16	1-1/2	0.06
ANK4022	40	M8	1-7/8	3-7/8	1-9/16	2-1/4	0.16
ANK5022	50	M8	1-3/4	4-1/4	1-1/2	2-13/16	0.22
ANK6622	63	M8	1-5/16	4-9/16	1-1/2	3-9/16	0.26





Dimensions in inches (in.) and weight in pounds (lbs.) unless otherwise noted. Specifications subject to change without notice.

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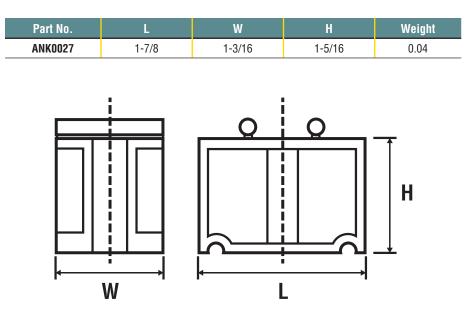
В

Pipes and fittings

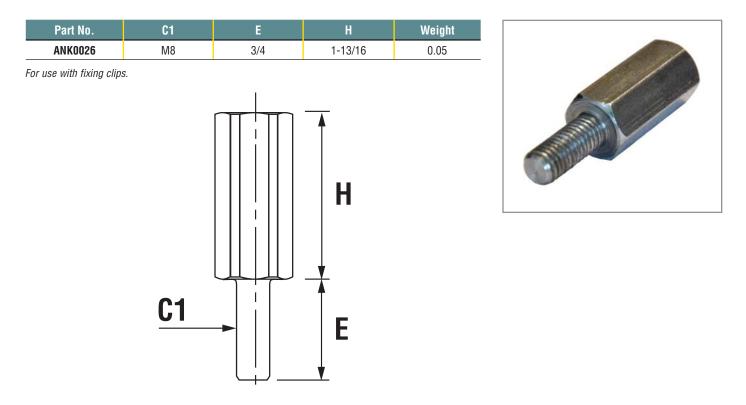
Spacer for Fixing Clips



For 20 and 25 mm fixing clips only to put on the same center line as 40, 50, and 63 mm clips.



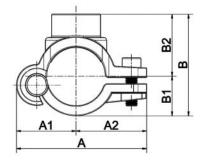
Threaded Rod Adapter



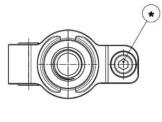
Mini Bracket

Part No.	ØD (mm)	A	A1	A2	В	B1	B2	C	Weight
AN8983502504	25 x 1/2"	2-7/16	1	1-7/16	2	11/16	1-5/16	1-5/16	0.16
AN8983504004	40 x 1/2"	3-9/16	1-5/8	1-15/16	2-3/4	1-1/16	1-11/16	1-7/8	0.36
AN8983505006	50 x 3/4"	4	1-13/16	2-3/16	3-5/16	1-1/4	2-1/16	1-7/8	0.45
AN8983506306	63 x 3/4"	4-13/16	2-5/16	2-1/2	3-7/8	1-9/16	2-5/16	2-1/4	0.78



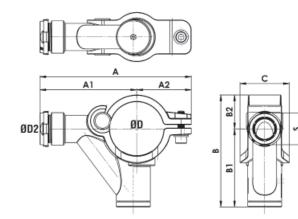






Quick Reducing Bracket

Part No.	ØD x ØD2 (mm)	A	A1	A2	В	B1	B2	C	Weight
AN8983002502	25 x 20	4-1/2	3-1/16	1-7/16	2-3/4	2-1/16	11/16	1-5/16	0.36
AN8983004002	40 x 20	5-5/8	3-3/4	1-7/8	3-15/16	2-7/8	1-1/2	1-1/2	0.77
AN8983004025	40 x 25	5-3/4	3-7/8	1-7/8	3-15/16	2-7/8	1-1/2	1-1/2	0.71
AN8983005020	50 x 20	5-15/16	3-3/4	2-3/16	4-7/16	3-3/16	1-1/4	1-1/2	0.86
AN8983005002	50 x 25	6-1/16	3-7/8	2-3/16	4-7/16	3-3/16	1-1/4	1-1/2	1.26
AN8983006320	63 x 20	6-13/16	4-5/16	2-1/2	5-3/16	3-5/8	1-9/16	1-1/2	1.26
AN8983006302	63 x 25	7	4-1/2	2-1/2	5-3/16	3-5/8	1-9/16	1-1/2	1.15



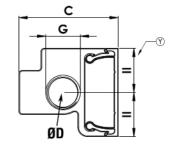


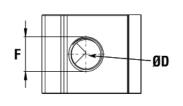
Wall Manifold

Part No.	ØD	Fig.	A	В	C	E	F	G	н	I	Wt.
AN8984406904	3/4 x 1/2	1	2	2-3/16	2-1/2	4	1/2	3/4	1/4	4	0.4
AN8984706904	3/4 X 1/2	2	6-1/16	2-3/10	2-1/2	I	1/2	3/4	1/4	I	1.4

Fig. 1







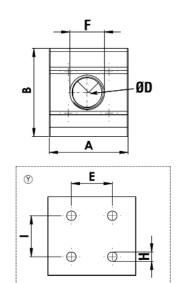
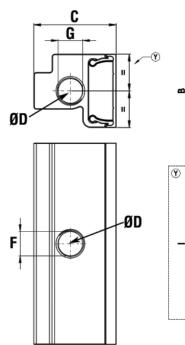
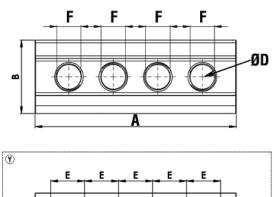
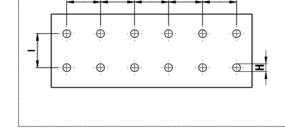


Fig. 2







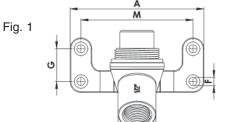


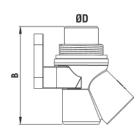
45° Threaded Wall Brackets



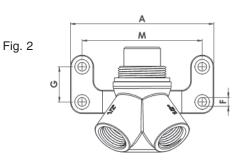
Part No.	ØD (mm)	Fig.	A	В	F	G	м	Wt.
AN8984102504	25 x 1/2"	1	0.7/0	3-1/8	1/4	15/16	3-1/4	0.35
AN8984202504	25 x 1/2" x 1/2"	2	3-7/8	3-1/8	1/4	10/10	3-1/4	0.39

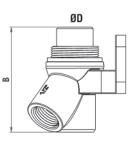
Note: Wall bracket requires an additional 25 mm fitting or ball valve in order to connect to the pipe.





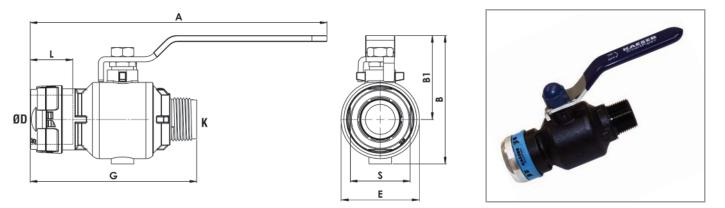






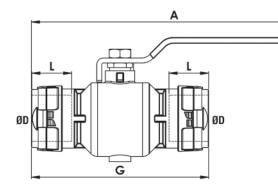
Ball Valve (Pipe to Thread)

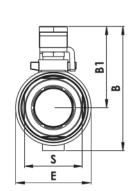
Part No.	ØD x K (mm x in.)	A	B1	В	E	G	L	S	Weight
AN8988202004	20 x 1/2	5-3/8	2-1/4	3-1/8	1-7/16	3-3/4	1-7/16	1-1/4	0.45
AN8988202506	25 x 3/4	6-1/8	2-1/2	3-9/16	1-5/8	4-1/4	1-9/16	1-7/16	0.8
AN8988204010	40 x 1-1/4	8	3-3/8	4-13/16	2-1/2	5-15/16	2-1/2	2-1/16	1.9
AN8988205012	50 x 1-1/2	10-1/2	3-7/8	5-11/16	3	7-13/16	3-1/8	2-5/8	3.26
AN8988206316	63 x 2	12-1/4	4-3/4	6-15/16	3-5/8	9-1/16	3-3/4	3-3/16	5.18



Ball Valve (Pipe to Pipe)

Part No.	ØD (mm)	A	B1	В	E	G	L	S	Weight
AN8988102002	20	5-1/4	2-7/8	4-1/4	1-7/16	3-7/8	1-7/16	1-1/4	0.5
AN8988102520	20 x 25	5-3/8	2-7/8	4-1/4	1-7/16, 1-5/8	4	1-7/16, 1-9/16	1-1/4, 1-7/16	0.85
AN8988102502	25	6-3/8	3-7/16	4-13/16	1-5/8	4-3/8	1-9/16	1-7/16	0.55
AN8988104004	40	9-3/16	4-3/4	6-7/8	2-1/2	6-5/8	2-1/2	2-1/16	2.1
AN8988105005	50	12-3/16	6-1/8	9-1/4	3	7-7/8	3-1/8	2-5/8	3.66
AN8988106306	63	14-3/16	6-15/16	9-13/16	3-5/8	10	3-3/4	3-3/16	6.28







45° Wall Bracket with Ball Valve

Part No.	ØD (mm)	FIU		Wt.
AN8988502005	20 x 1/2"	1	1 port	0.8
AN8988602004	20 x 1/2"	2	2 port	0.9
AN8988502505	25 x 1/2"	1	1 port	1.15
AN8988602504	25 x 1/2"	2	2 port	1.2



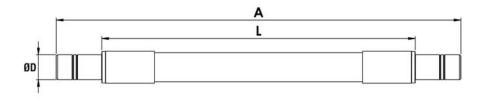


Hose (Pipe to Pipe)



Use part number AN66989903, anti-whiplash strap. Refer to installation information for proper bend radius and proper installation practices.

Part No.	ØD (mm)	L	MATL 1	MATL 2	A	Weight
AN8992002010	20	11-13/16			15-1/4	0.95
AN8992002011	20	39-3/8			42-13/16	1.95
AN8992002510	25	11-13/16			15-1/2	1.4
AN8992002511	25	39-3/8			43-1/16	2.78
AN8992004010	40	19-11/16	AL	Rubber	25-3/16	3.37
AN8992004011	40	39-3/8	AL		44-7/8	5.0
AN8992005010	50	19-11/16			26	5.3
AN8992005011	50	39-3/8			45-11/16	5.7
AN8992006310	63	19-11/16			27-3/16	8.5
AN8992006311	63	39-3/8			46-7/8	11.2



Anti-whiplash Strap

	Weight	Part No.
AN66989903 0.47	0.47	AN66989903

Prevents whiplash should SmartPipe+ flexible hose be disconnected while under pressure. Conforms to ISO 4414 safety standard.

Lockable Handle

Part No.	ØD (mm)	Weight
AN89888020	20	0.1
AN89888025	25	0.15
AN89888040	40	0.25
AN89888050	50	0.44
AN89888063	63	0.52

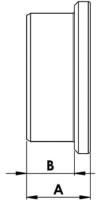


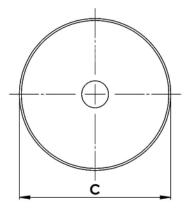


Internal Plug



Part No.	ØD (mm)	A	В	C	Weight
AN89866020	20	1/2	3/8	1	0.03
AN89866025	25	9/16	3/8	1-3/16	0.04
AN89866040	40	11/16	1/2	1-15/16	0.14
AN89866050	50	3/4	9/16	2-3/8	0.24
AN89866063	63	1	3/4	2-15/16	0.51





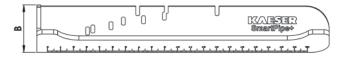


Dimensions in inches (in.) and weight in pounds (lbs.) unless otherwise noted. Specifications subject to change without notice.

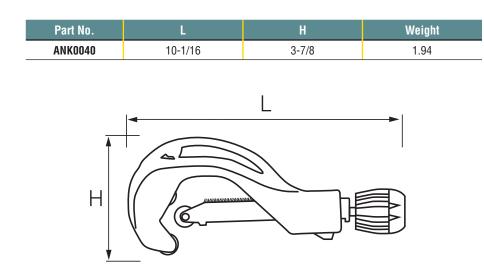
Marking Tool for Aluminum Pipe



Part No.	L	A	В	C	Weight
AN89531001	8-7/8	1-3/8	1-7/16	1-9/16	0.09
	<u></u>	L			c



Pipe Cutter





ANK0040, 20 mm - 63 mm (3/4" to 21/2") Pipe Cutter, uses replacement blades ANK0240.

Hole Saw Bits

Part No.	Description	Weight
ANK0043	14 mm Hole Saw Bit	0.04
ANK0143	ANK0143 19 mm Hole Saw Bit	
ANK0342	24 mm Hole Saw Bit (includes Arbor and Pilot)	0.34
ANK0243	Drill Arbor and Pilot Bit (14 mm to 25 mm)	0.20





Drill arbor and pilot bit

Hole saw bits

Deburrer / Reamer / Chamfer Tools

Part No.	Fig.	Description	Weight
ANK0141	1	20 mm - 50 mm (3/4" to 2") Pipe Deburrer	1.27
AN113835	2	20 mm - 50 mm Manual/Electric Pipe Deburrer	1.00
ANK0042	3	Hole Deburrer	0.08
AN292110	4	63 mm - 100 mm (2-1/2" to 4") Chamfer Tool	1.38







Fig. 4 Uses replacement blade AN292011

Accessories

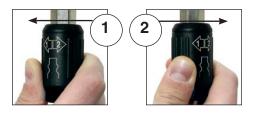
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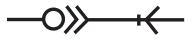
Fig. 2



Composite Quick-Connect Couplers and Plugs



SmartPipe couplers are designed for easy one-handed connection and disconnection. To connect, simply press the plug into the coupler port. To disconnect, twist the coupler sleeve once to the left to vent pressure, then once to the right to release the plug. These couplers comply with ISO 4414 and EN 983 safety standards.



ISO B 1/4 ISO 6150 B AFNOR NF 4-053 US.MIL.C4109 CEJN 310 RECTUS 23-24



ISO 6150 B AFNOR NF 4-053 US.MIL.C4109 CEJN 430 RECTUS 30

ISO B 3/8

Pressure Loss in Couplers

0.8 0.6 <u>.</u> 0.4

0.2

0 <u>,</u>

Cv rating = 1.24

Pressure Loss in psi

18



36

cfm

ARO B 1/4 ARO 210 CEJN 300 ORION 44510 PARKER 50 RECTUS 14-22

54

ISO B 1/4 Body

Male NPT

Product Photo	Part No.	NPT
	ANCP05U1N02	1/4
	ANCP05U1N03	3/8
	ANCP05U1N04	1/2

Male Plug NPT

Product Photo	Part No.	NPT
And Minu	ANCA84U1N02	1/4"
	ANCA84U1N03	3/8"

Female Plug NPT

Product Photo	Part No.	NPT
	ANCA83U1N02	1/4"
	ANCA83U1N03	3/8"

ISO B 3/8 Body

Male NPT

Product Photo	Part No.	NPT
	ANCP05U2N02	1/4
	ANCP05U2N03	3/8
	ANCP05U2N04	1/2

Male Plug NPT

Product Photo	Part No.	NPT
Real Manuel	ANCA84U2N02	1/4"
	ANCA84U2N03	3/8"
Female Plug NPT		
Product Photo	Part No.	NPT

Product Photo	Part No.	NPI	
	ANCA83U2N02	1/4"	
	ANCA83U2N03	3/8"	

ARO 1/4 Body

Male NPT

Product Photo	Part No.	NPT
	ANCP05A1N03	3/8
181	ANCP05A1N04	1/2

Male Plug NPT

Product Photo	Part No.	NPT
Alex Man	ANCA84A1N02	1/4"
	ANCA84A1N03	3/8"

Female Plug NPT

Product Photo	Part No.	NPT
	ANCA83A1N02	1/4"
	ANCA83A1N03	3/8"

Warranty



SmartPipe+™ 3/4" to 2-1/2"

Model:	Serial No:	Start-up Date:
		· ·

Kaeser Compressors, Inc. herein referred to as "Kaeser," warrants the Kaeser SmartPipe+[™] delivered hereunder will be free of defects in material and workmanship for a period of ten (10) years from the date of purchase of the products.

Kaeser does not warranty the design, assembly or installation of the system, but only the components as stated herein. Kaeser is not responsible for improper design, assembly or installation, or for any modifications of the Kaeser products.

Should any failure to conform with the above warranties occur during the specified period under normal use, and the components have been proven to Kaeser's satisfaction to have been properly stored, installed and maintained, and purchaser has complied with all procedures outlined in the service manual or installation instructions then Kaeser shall, with prompt notice correct the non-conformities at its option either by replacement or by refund of the purchase price of the non-conforming equipment. Return of such component to such delivery point as Kaeser may direct pursuant to this paragraph shall be at the purchaser's risk and expense. Kaeser warrants any components replaced pursuant to the above warranty, under normal use, to be free from defects in workmanship and material for a period of ninety (90) days after the shipment of such replaced components or for a period ending on the expiration of the original component warranty, whichever is longer. Unless otherwise expressly agreed, Kaeser shall not be responsible for labor charges, loss or damage resulting from improper operation, maintenance or repairs made by personnel other than those authorized in writing by Kaeser, or damage to equipment caused by the use of non-authorized replacement parts.

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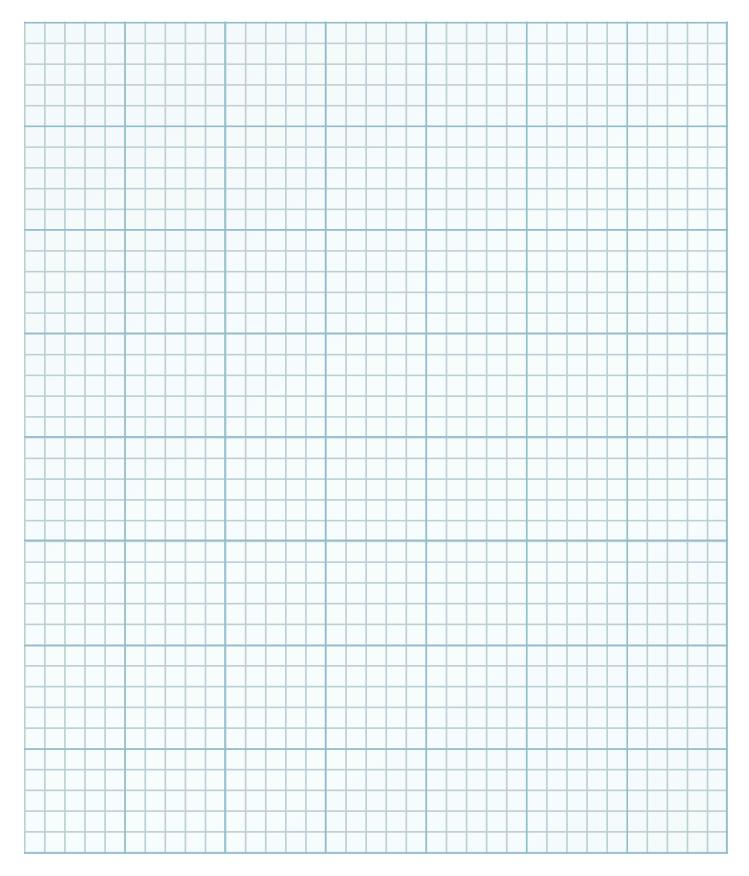


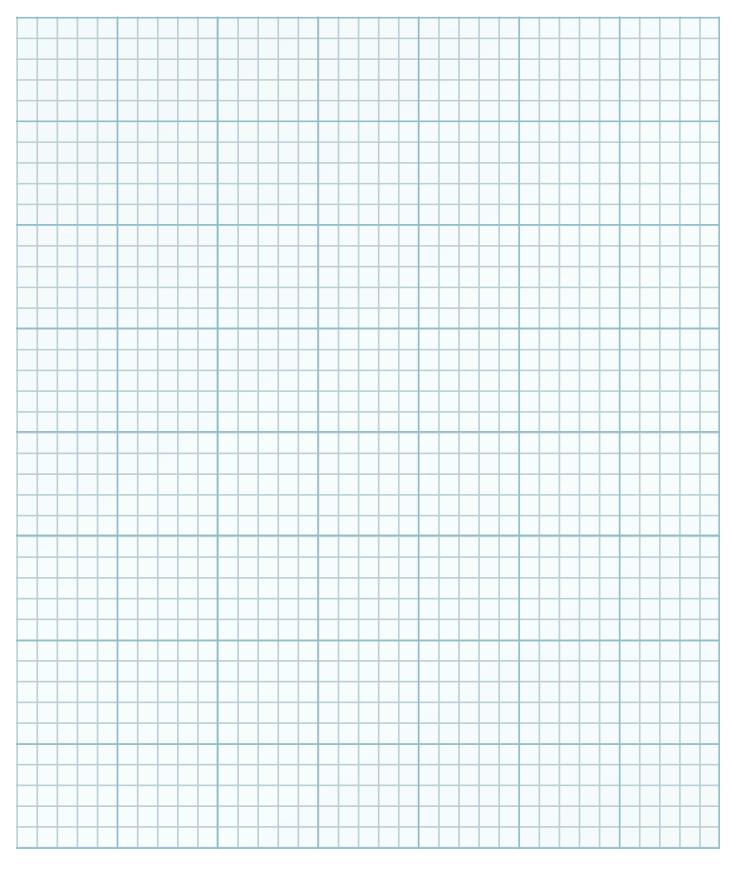




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System Sketch and Notes





The world is our home

As one of the world's largest compressed air systems providers and compressor manufacturers, Kaeser Compressors is represented throughout the world by a comprehensive network of branches, subsidiary companies and factory trained partners.

With innovative products and services, Kaeser Compressors' experienced consultants and engineers help customers to enhance their competitive edge by working in close partnership to develop progressive system concepts that continuously push the boundaries of performance and compressed air efficiency. Every Kaeser customer benefits from the decades of knowledge and experience gained from hundreds of thousands of installations worldwide and over ten thousand formal compressed air system audits.

These advantages, coupled with Kaeser's worldwide service organization, ensure that our compressed air products and systems deliver superior performance with maximum uptime.





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