INSTALLATION, OPERATION AND MAINTENANCE MANUAL

RAMEX

Spring Retracting Hose Reel

Tecpro AUSTRALIA

Technical Solutions You Can Rely On

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Thank you for purchasing a Ramex spring retracting hose reel. This manual contains all the information necessary for you to use the equipment correctly.

The user is required to read this manual before use and to operate the hose reel in accordance with the instructions it contains.

This owner's manual and maintenance guide must be kept available for frequent use.

Ramex S.r.l. reserves the right to make changes or modifications to this manual and maintenance without prior notice to customers.

DECLARATION OF CONFORMITY

RAMEX S.r.l.
via Salvo d'Acquisto 4/a
42020 Albinea (RE) - Italy

The undersigned Ruozi Franco as the legal representative of the company RAMEX S.r.l.

STATES

under sole responsibility

that the product Automatic Hose Reel with Spring models:

AV1000 - AV1100 — AV 1120- AV 1121- AV1200 - AV1 300 — AV 3500- AV 3501 — AV 3502 — AV 350 3-AV 3550- AV 6000- AV 6001- AV 6002- AV 600 3 — AV 6 300- AV 60 30- AV 6 301- AV 815- AV 820 — AV 816 AV 825 — AV 8 30— AV 81 3 — AV 817 —AV 850— AV 1500 — AV 2000 — AV 2200 — AV 2201 - AV2 300- AV 3000- AV 4000- AV 4500 — AV 5000- AV 800- AVC 3015 — AVC 3020- AVC 3016 — AVC 3022- AVC 1060 AVC 1070- AVC 1014- AVC1514- AVC10 38 — AVC HP — AV 6200- AV 6002 — AV 6000SP- AV 6001SP— AV 2070 — AV 2080 — AV FOOD 1 — AV FOOD 2 —AV 1000 FOOD- AV 2050 — AV 100- AV ATK 1- AV 2050-AV 2055- AV 3500 WE-AV 1100 WE-AV ST 1- AV 1100 BA.

- comply with the requirements of the directive: **2006/42/CE**
- and also meet the following standards:

UNI EN ISO 14121-1:2007 Safety of machinery - Risk assessment Part 1;
UNI EN ISO / TR 14121-2:2010 Safety of machinery - Risk assessment Part 2;
UNI EN ISO 12100-1:2009 Safety of machinery Part 1;
UNI EN ISO 12100-2:2009 Safety of machinery Part 2;

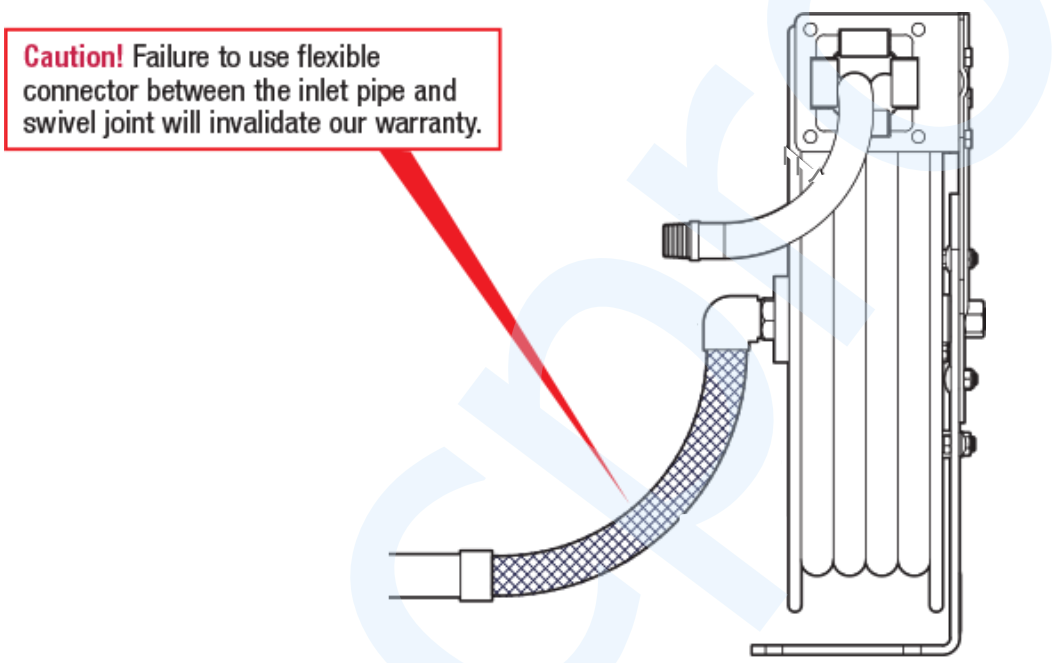
RAMEX Srl Legal Representative
Albinea (RE) Italy 1 January 2010

Warranty

The hose reel, **not the hose**, has a warranty period of 5 years from the date of purchase. The warranty includes the retraction spring and swivel. A warranty claim extends only to replacement of defective parts. The warranty does not cover misuse of the product. Any tampering or modification of the product will void any warranty claim by the customer.

Hose fitted to the reel is covered by the hose manufacturer's warranty. Check with specific hose manufacturer.

NB: If the inlet is hard plumbed, the warranty is void.



Symbols

The following table shows a brief legend indicating the symbols used (the symbols shown are those most frequently used throughout this booklet and the remaining symbols are still easy to understand).

DANGER: Situations or problems that may affect the safety of operators and could result in injury or death.

RESTRICTIONS: Do not perform this action. It will affect the efficiency / security of the system.

IMPORTANT: Draws attention to important information of a general nature which does not affect either the personal safety, nor the proper functioning of the system.

CORRECT USE: Indicates the correct method of operation.

INCORRECT OPERATION: Indicates the incorrect method of operation.

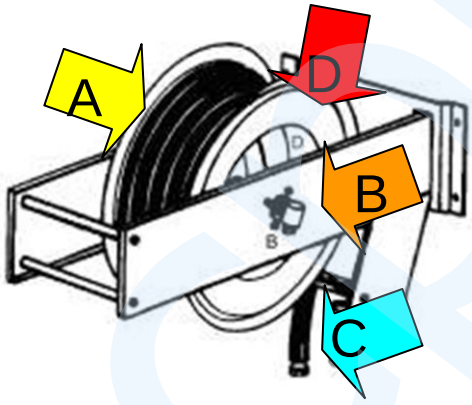
Table of Contents

1. Introduction

1.1 Residual Risks and Security Stickers

The illustration shows the areas of greatest risk, with stickers indicating the residual risk and the main components of the system, as indicated below.

Stickers on the product	
Do NOT force spring container	
Use personal protective equipment	



Main components and residual risks	
A	Pressure parts
B	Fluid inlet
C	Fluid outlet
D	Rotation of Drum

1.2 Uses Not Allowed

Always follow the uses specified in **Table 1, Appendix 1.**

2. Specification

Appendix 1 shows the essential technical characteristics of the different models.

The working pressure of the hose must not exceed the values shown in Appendix 1, High Pressure Suffix Codes.

2.1 Noise

The level of output noise (sound pressure level) is limited (<70 dBA). It remains to the supervisor to check the level of noise exposure for each worker.

2.2 Ambient Temperature

Between 5°C to 40°C.

3. Delivery and Shipping

3.1 Delivery

The operator must:

- Use the reel, complying with the provisions of existing legislation on health and safety at work
- Remove any packaging, and dispose of it correctly
- Check the integrity of components and devices. If needed, contact your local dealer immediately.

3.2 Shipping

These goods must be handled strictly according to the following rules:

- Apply the existing legislation on health and safety (in particular regarding the total weight)
- Remove any other devices that may constitute a hindrance
- In case of manual lifting, firmly grasp the hose reel where required and use a forklift or a suitable harness
- Keep bystanders at a safe distance.

- When transporting by vehicle, ensure the hose reel is stable before moving the vehicle.

4. Hose Reel Installation

- The installation of the hose reel must be performed by skilled technicians.
- **Instructions to fit or replace hose can be found in Sections:**
  - **7. Fitting Hose & Tensioning the Spring, and**
  - **8. Removing the Hose**
- Do not place the hose reel near sources of heat or flame.
- Keep a safe distance from power cables.
- The hose reel should be installed in a position which will not endanger the operator's safety.
- Ensure in advance the strength of the wall where hose reel is being installed.
- Assess in advance the total weight of the product (hose reel + hose + fluid) you are installing – both for installing the hose reel and for lifting the hose reel.
- When lifting, use the appropriate lifting harness.
- Strictly follow the existing legislation on work safety.

The installer must follow these rules:

- The hose reel should be attached to the wall by bolts or fastenings adequate and properly sized to the weight of the product and to the stress that could occur during operation.
- The hose reel plate is designed with 13 mm diameter holes which means the anchor bolts can therefore have a maximum diameter of 12 mm.
- Insert wall anchor bolts in all the holes of the hose reel support/base.

NB: Critical

- The connection to the swivel joint (hose reel inlet) must be made through the use of a flexible hose or the warranty is void.

5. Safety

5.1 Working Environment

- Use the product in conditions of adequate lighting.
- The areas of work must be well ventilated and meet regulatory requirements on hygiene and safety at work.

5.2 Preliminary checks

- Keep a safe distance from electrical cables.

5.3 Hose Retraction

- Once you disengage the mechanical latch from the rack, you need to slowly move back towards the hose reel, keeping the hose in hand during the roll-up to avoid a rapid and uncontrolled retraction or rotation of the reel.
- The product is designed for use by a single operator, who is a responsible adult.

5.4 Personal Protective Equipment

- The company is liable to provide appropriate Personal Protective Equipment and inform the staff on their correct use.
- The operator must always observe the instructions given by the sign shown on the product.
- PPE (Personal Protective Equipment) for an operator to use during the operations of use, maintenance and cleaning are: workwear, non-skid shoes, gloves and glasses.



Maintenance

- Do not service when the system is under pressure, or connected to a hose under pressure or an electrical power source.
- When disassembling the reel (eg. to replace the spring) pay particular attention to any sudden movement of the roller to avoid the risk of crushing the hands.
- During maintenance it is recommended to wear appropriate protective equipment.

6. Rules of Use

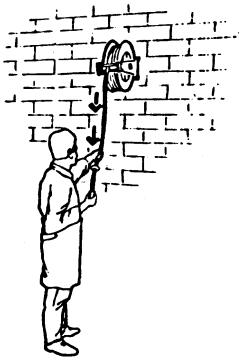
6.1 Preliminary Checks

Always perform the following checks:

Ensure the hose reel is securely mounted to the wall.

Look for the presence of electrical wires under power. Never operate the hose where it could come into contact with electrical currents.

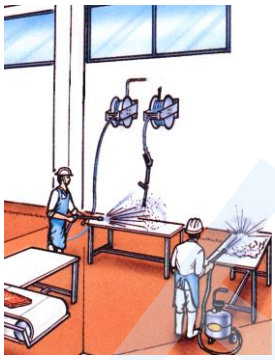
6.2 Using Automatic Hose Reel with Spring



Step 1:

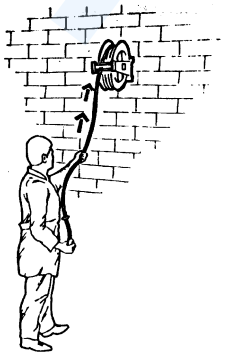
Do not pull the hose off the reel by pulling on the washdown gun as this causes wicking (damage to the internal lining of the hose).

Stand at the hose reel and pull out the required length of hose by grasping the hose and pulling. During this phase, the ratchet disengages from the rack. Move closer to the working area, while maintaining a good grip on the hose, as you pull it off the reel.



Step 2:

As the hose reel begins to rewind, the ratchet will stop the drum turning and prevent the return of the hose. The locking happens every half turn of the drum. When the drum is locked the reel is safe to use.



Step 3:

After use, the operator can pull on the hose to release the ratchet. Maintain a firm grip on the hose as you guide the hose back onto the hose reel drum. Ensure the hose lays on the hose evenly as it retracts.

Once the latch is released it is necessary to walk back towards the hose reel, keeping hold of the hose on the reel to avoid a rapid and uncontrolled movement of the hose.

7. Fitting the Hose and Tensioning the Spring

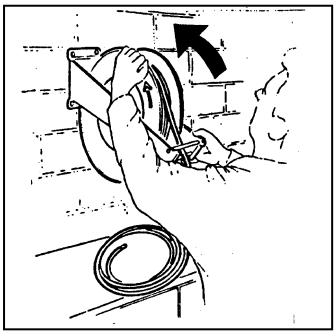
Maintenance

- Do not service the system when the spring is under tension or when there is residual pressure in the connecting hose. Please empty any residual pressure in the hose and store the hose on the hose reel.
- Wear appropriate protective equipment.

Operations must be performed by trained personnel

WARNING: PROTECT YOUR HANDS WITH GLOVES!

7.1 Open Reel style (with hose in sight)

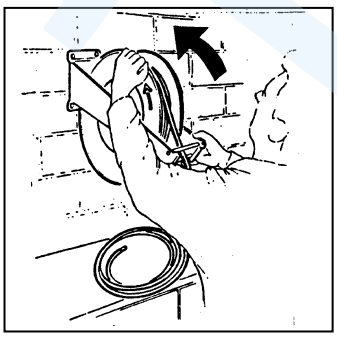


- Connect the hose to the outlet of the hose reel.
- Turn the reel in the direction of the arrow located on the yellow label and as the reel rotates, guide the hose onto the reel.
- Perform the rotation manually, protecting hands with gloves.
- When all of the hose has been wound onto the drum, begin to rotate the drum in the **opposite** direction to the arrow for up to one full rotation, until you begin to feel tension in the spring.
- After sensing the tension, continue to rotate in the opposite direction to the arrow, **the number of turns indicated by the label**. Take care to ensure the hose is held against the drum and doesn't unravel.
- Feed the hose through the roller guide, until the desired length is beyond the guide. Allow the hose to rewind till the ratchet stops the rotation of the drum.
- Fix the hose bumper on the hose.

Operations must be performed by trained personnel

WARNING: PROTECT YOUR HANDS WITH GLOVES!

7.1 Closed Reel style (with cover)



- Remove the four screws on the left side of the hose reel.
- Insert the hose on front opening.
- Connect the hose to the hose reel.
- Wrap the hose on hose reel turning the roller in the direction of the arrow through the insertion of a 10 mm hex socket wrench, on the plastic hub of the left side of the hose reel.
- The rotation in both directions should be undertaken with caution by the user to prevent loss of the hub from the support.
- When there is approximately one metre of hose, fix the hose bumper.
- Determine the starting point of the spring. This position can be found by rotating the roller (with the hex key) to the point where it detects the start of the tension of opposition to the rotation of the spring.
- Turn the hub the number of turns indicated by the label on the reel in the opposite direction to the arrow, always using the 10mm hex key, holding it firmly.
- Always keep a strong grip on the hex key (to avoid rolling the spring and then free rotation of that key) then fix the four screws on the left side of the hose reel.

- Do not put your hands or other objects inside the reel.
- Excessive tension on the spring prevents the complete withdrawal of the hose.

- **DO NOT OPEN THE SPRING CASE. EXTREMELY DANGEROUS!**
- CONTACT TECHNICAL SUPPORT

To perform these operations follow the instructions on the yellow label on hose reel side.

8. Removing the Hose

8.1 Open Reel style (with hose in sight)

Operations to be performed by trained personnel (two operators)

WARNING: PROTECT YOUR HANDS WITH GLOVES!

Operators 1+2

- Turn off liquid supply
- Position yourself safely next the hose reel

Operator 1

- Unwind the hose completely
- Lock the ratchet

Operator 2

- Tighten the hose reel disk (they should not move), you should not rely on the ratchet. Do not put your hands between sides and the drum but keep them on the edges.

Operator 1

- Unscrew the connection from the reel outlet, and move hose away from the area.

8.2 Closed Reel style (with cover)

Operations to be performed by trained personnel (two operators)

WARNING: PROTECT YOUR HANDS WITH GLOVES!

Operators 1+2

- Turn off liquid supply
- Position yourself safely next to the hose reel.
- Unroll the hose completely.
- Insert 10mm hex wrench (allen key) into the hub, holding the allen key firmly to prevent unwinding of the spring and then free rotation of the drum. Jointly remove the four allen screws on the left side of the hose.
- Rotate the hex allen key into the hub until the spring is completely discharged (remember that the spring is loaded and dangerous).
- At spring download unscrew the hose fitting from the nipple.

9. Accessories

On request, hose reels can be supplied with a swivel bracket. **Appendix 3, Table 3** shows the code of the swivel bracket for each model.

10. Appendices

Appendix 1: Hose Reel selection guide based on product being transported

Appendix 2: Hose Reel selection guide based on hose length and diameter

Appendix 3: Hose Reel dimensions, weights and connection size

Appendix 1 - Table 1: Hose Reel selection guide based on product being transported

Application						
Water and Air	AV 1000	AV 1100	AV 1120	AV 1121	AV 1200	AV 1300
	AV 3500	AV 3501	AV 3502	AV 6000	AV 6001	AV 6003
	AV 815	AV 820	AV 816	AV 825	AV 813	AV 817
	AV 1500	AV 2000	AV 2200	AV 2201	AV 2300	AV 3000
	AV 4000	AV 4500	AV 5000	AV 800	AVC 3015	AVC 3020
	AVC 3016	AVC 3022	AVC 1060	AVC 1070	AVC 1014	AVC 1514
	AVC 1038	AVC HP	AV 6002	AV 6000 SP	AV 2070	AV 2080
	AV 100	AV 6300	AV 6301	AV 3503	AV 3550	AV 6030
	AV 830	AV 850	AV 2055	AV ATK 1	AV 6200	AV 6001SP
Air	AV 2050					
Drinking water and liquid food on request	AV FOOD 1	AV FOOD 2	AV 1000 FOOD			

For liquids other than water, or for gas, breathing air, or steam, use one of the following suffixes:		
Suffix Codes		
DF	Diesel	With seals for diesel
AD	AdBlue®	With flow path & seals for AUS32 (AdBlue®)
AG	Mineral Oil & Grease	With seals for oil and grease
WE	Welding Gas	For welding gases, oxygen & acetylene
BA	Breathing Air	For breathing air
ST 1	Steam	For steam
GZ	Hydrocarbons	For gasoline, natural gas, aviation fuel

Example: AV1000 DF means: Hose Reel suitable for transporting diesel.

High Pressure Suffix Codes	
Suffix Codes	
400	Swivel Joint rated to 400 Bar
600	Swivel Joint rated to 600 Bar

Example: AV1000 400 means: Hose Reel AV1000 rated to 400 Bar.

Hose Reels which have no Suffix in the Catalogue, are made of Stainless Steel AISI 303/304	
Hose Reel Materials Suffix Codes	
316	All metal parts of the reel are AISI 316
FE	The drum and body of the reel is made of Powder Coated Steel
CA	The reel is made of steel treated by a process called catophorisis, which means the application of paint by an electro-phoresic method. The cataphoresis method, which was mainly developed for the car industry, represents one of the most advanced technologies for surface treatment of metal products.

Example: AV1000 316 means: Hose Reel AV1000 with all metal parts (except spring) AISI 316 stainless steel.

NB: All retraction springs are made of German spring steel.

Appendix 2 - Table 2: Hose Reel selection based on hose length and diameter

Synoptic Hose Reel

- ✓ **Yellow Shading: Closed Hose Reel**

Hose Diameter							
¼"	⅜"	½"	¾"	1"	1 ¼"	1 ½"	2"
Hose Length 1.5 metres							
AV 100 1/8"							
Hose Length 5 metres							
		AVC 1070					
Hose Length 6 metres							
			AV ATK 1				
Hose Length 8 metres							
				AV 1200			
				AV 2201			
Hose Length 10 metres							
AVC 1060	AVC 1038			AVM 9320			AV 2080
AVC 1014				AVM 9620			AV FOOD 2
AVC HP				AVM 9814			DN 50 VACUUM AV 2055
Doppi Tubo AV 1120							
Hose Length 12 metres							
				AV 817			
Hose Length 13 metres							
			AV 813	AV 3501			
			AV 1200	AVM 9815			
			AV 2201	AV FOOD 1			
			AVM 9814				
Hose Length 15 metres							
AV 800, AV 815, AV 1000, AV 1500			AVM 9815	AV 1300		AV 6003	
AVC 1514		AVC 3015		AV 2300		AV 2070	
		AVC 3016		AV 3502			
		AV 1000 FOOD		AVM 9816			
				AVM 9922			
Hose Length 17 metres							
			AV 817				
Hose Length 18 metres							
		AV820	AV 1300	AVM 9923			
			AV 2300				
Hose Length 20 metres							
	AV 820		AV 3501	AVM 9520	AV 6002		DN 50 AIR VACUUM AV 2050
AV 1100, AV 2000, AV 2200			AV FOOD1	AVM 9720			
AVM 9000, AVM 9002			AVM 9320	AVM 9817			
		AVC 3020	AVM 9620				
		AVC 3022	AVM 9816				AVM 2090
			AVM 9922				
Hose Length 22 metres							
		AV 825		AVM 9924			
Hose Length 25 metres							
AV 816	AV 825	AVM 9810	AV 3502 GZ	AV 3503			
AV 3000			AVM 9817	AV 5000			
			AVM 9923	AV6001			
Hose Length 28 metres							
				AVM 9925			

Hose Diameter							
¼"	⅜"	½"	¾"	1"	1 ¼"	1 ½"	2"
Hose Length 30 metres							
AV 830	AV 830FE		AV 5000	AV 6030			
			AV 6001SP				
Hose Length 35 metres							
AV 3500			AV EK 2, AV EK 5				
	AVM 9810	AVM 9310	AV 3502	AVM 9851			
		AVM 9610	AV 3503				
		AVM 9811	AVM 9520				
			AVM 9720				
			AVM 9924				
Hose Length 40 metres							
	AV 4000	AV 4500	AV 6001				
		AVM 9918	AVM 9925				
Hose Length 43 metres							
		AVM 9812					
Hose Length 45 metres							
	AVM 9918						
Hose Length 50 metres							
AV 850	AVM 9310	AV 6000SP	AV 6301	AV 6501			
AVM 9810	AVM 9610	AV 3550	AVM 9851				
	AVM 9811	AVM 9510					
		AVM 9710					
		AVM 9813					
		AVM 9920					
		AVM 9919					
		AV EK 3					
Hose Length 60 metres							
AV 6000, AV 6200			AV 6501				
	AV EK 3						
	AV 3550						
	AVM 9812						
	AVM 9919	AVM 9921					
Hose Length 70 metres							
AVM 9811	AVM 9510						
	AVM 9710						
	AVM 9813						
Hose Length 75 metres							
	AVM 9920						
Hose Length 80 metres							
AVM 9812		AVM 9850					
		AVM 9921					
Hose Length 100 metres							
AV EK 3	AV 6300						
AVM 9813	AVM 9921						
	AVM 9850						
Hose Length 150 metres							
	AV EK 0, AV EK 1, AV EK 4						
AV 6500							

Appendix 3 - Table 3: Hose Reel dimensions, weights & connection size

Model	Diameter Swivel Joint	Maximum Hose Length						Maximum Pressure	Weight	Packing	Swivel bracket
	Inch	1/8″ ¼″	⅜″	½″	¾″	1"	1 ¼" 1 ½″ 2″	Bar	kg	cm	
AV100	½″	1.5 1/8″						10	1	20x20x10	
AV800	½″	15 ¼″	15	15				200	13	28x60x53	ST 15
AV813	1″				13			20 - 80	14	28x60x53	ST 20
AV815	½″	15 ¼″	15	15				200 - 600	13	28x60x53	ST 15
AV816	½″	25 ¼″						200 - 600	13	28x60x53	ST 15
AV817	1″				17	12		20 - 80	14	46x56x65	ST 20
AV820	½″		20	18				200 - 600	13	28x60x53	ST 15
AV825	½″		25	22				200 - 600	18	28x60x53	ST 20
AV830	½″	30 ¼″						200	19	28x60x53	ST 20
AV850	½″	50 ¼″						200	30	46x56x53	ST 20
AV1000	½″	15 ¼″	15	15				200 - 600	13	28x60x53	ST 15
AV1100	½″	20 ¼″	20	20				200 - 600	17	28x60x53	ST 20
AV1120	n.2 x ½″			10				200	17	28x60x53	ST 20
AV1121	½″ + ¼″			20				200+10	17	28x60x53	ST 20
AV1200	1″				13	8		20 - 80	14	28x60x53	ST 20
AV1300	1″				18	15		20 - 80	22	46x56x65	ST 22
AV1500	½″	15 ¼″	15	15				200 - 600	13	28x60x53	ST 15
AV2000	½″	20 ¼″	20	20				200 - 600	17	28x60x53	ST 20
AV2050	DN 50						20 DN 50	Vacuum	40	60x70x80	
AV2055	2″						10 DN 50	Vacuum	30	50X70X80	
AV2070	1 ½″						15 1½″	10	60	60x70x80	
AV2080	2″						10 2″	10	60	60x70x80	
AV2200	½″	20 ¼″	20	20				200 - 600	20	33x53x61	ST 20
AV2201	1″				13	8		20 - 80	14	33x53x61	ST 20
AV2300	1″				18	15		20 - 80	22	46x56x65	ST 22
AV3000	½″	25 ¼″	25	25				200 - 600	26	46x56x65	ST 30
AV3500	½″	35 ¼″	35	35				200 - 600	28	33x61x65	ST 30
AV3501	1″				20	13		20 - 80	28	33x61x65	ST 30
AV3502	1″				25	15		20 - 80	28	33x61x65	ST 30
AV3503	1″				35	25		20 - 80	28	34x60x60	
AV3550	½″		60	50				200 - 600	35	33x61x65	ST 30
AV4000	½″		40					200 - 600	33	46x56x65	
AV4500	½″			40				200 - 600	26	46x56x65	

Model	Diameter Swivel Joint	Maximum Hose Length						Maximum Pressure	Weight	Packing	Swivel bracket
	Inch	1/8" ¼"	⅜"	½"	¾"	1"	1 ¼" 1 ½" 2"	Bar	kg	cm	
AV5000	1"				30	25		20 - 80	40	55x55x62	ST 50
AV6000	½"	60 ¼"	60	60				200 - 600	50	60x60x60	
AV6000SP	½"			50				200 - 600	60	60x60x60	
AV6001	1"				40	25		20 - 80	51	60x60x60	
AV6001SP	1"				30			20 - 80	65	60X60X60	
AV6002	1¼"						20 1¼"	10	52	60x60x60	
AV6003	1 ½"						15 1 ½"	10	52	60X60X60	
AV6030	1"					30		20 - 80	52	60x60x60	
AV6200	½"	60 ¼"	60	60				200 - 600	48	60x60x60	
AV6300	½"	100 ¼"	100	100				200 - 600	60	60x60x60	
AV6301	1"				50			20 - 80	60	60x60x60	
AV6500	½"			150				200 - 600	50	80x62x63	
AV6501	1"				60	50		20 - 80	50	80x62x63	
AVC1014	¼"	10 ¼"						10	7	24x36x38	Included
AVC1038	3/8"		10					10	7	24x36x38	Included
AVC1060	¼"	10 ¼"						10	9	30x40x41	
AVC1070	½"			5				10	9	30x40x41	
AVC1514	¼"	15 ¼"						10	7	24x36x38	Included
AVC3015	½"			15				200	13	33x53x61	ST 25
AVC3020	½"			20				200	21	33x53x61	ST 26
AVC3016	½"			15				200 - 400	13	33x53x61	ST 27
AVC3022	½"			20				200 - 600	21	33x53x61	ST 28
AVCHP	½"	10 ¼"						100	10	24x36x38	Included
AVATK1	½"				6			20 - 80	13	28X60X53	
AVFOOD1	1"				20	13		10	28	33x61x65	ST 30
AVFOOD2	2"						10 2"	10	60	65x70x80	
AVM2090	2"						20 2"	10	60	60x70x80	
AVM9000	½"		20	20				200 - 600	9	30x40x41	
AVM9002	½"		20	20				200 - 600	10	30x40x41	
AVM9310	½"		50	35				200 - 600	12	33x53x61	
AVM9320	1"				20	10		20 - 80	12	33x53x61	
AVM9510	½"		70	50				200 - 600	13	33x53x61	
AVM9520	1"				35	20		20 - 80	13	33x53x61	
AVM9610	½"		50	35				200 - 600	12	33x53x61	
AVM9620	1"				20	10		20 - 80	12	33x53x61	
AVM9710	½"		70	50				200 - 600	13	33x53x61	
AVM9720	1"				35	20		20 - 80	13	33x53x61	
AVM9810	½"	50 ¼"	35	25				200 - 600	7.5	33x53x61	
AVM9811	½"	70 ¼"	50	35				200 - 600	8.5	33x53x61	

Model	Diameter Swivel Joint	Maximum Hose Length						Maximum Pressure	Weight	Packing	Swivel bracket
	Inch	1/8" ¼"	⅜"	½"	¾"	1"	1 ¼" 1 ½" 2"	Bar	kg	cm	
AVM9812	½"	80 ¼"	60	43				200 - 600	9.5	46x56x65	
AVM9813	½"	100 ¼"	70	50				200 - 600	10.5	46x56x65	
AVM9814	1"				13	10		20 - 80	8	33x53x61	
AVM9815	1"				15	13		20 - 80	9	33x53x61	
AVM9816	1"				20	15		20 - 80	10	46x56x65	
AVM9817	1"				25	20		20 - 80	11	46x56x65	
AVM9850	1"		100	80				200 - 600	10	60x60x60	
AVM9851	1"				50	35		20 - 80	10	60x60x60	
AVM9918	½"		45	40				200 - 600	13	60x60x60	
AVM9919	½"		60	50				200 - 600	13	60x60x60	
AVM9920	½"		75	65				200 - 600	13	60x60x60	
AVM9921	½"		100	80				200 - 600	13	60x60x60	
AVM9922	1"				20	15		20 - 80	10	60x60x60	
AVM9923	1"				25	18		20 - 80	11	60x60x60	
AVM9924	1"				35	22		20 - 80	12	60x60x60	
AVM9925	1"				40	28		20 - 80	13	60x60x60	