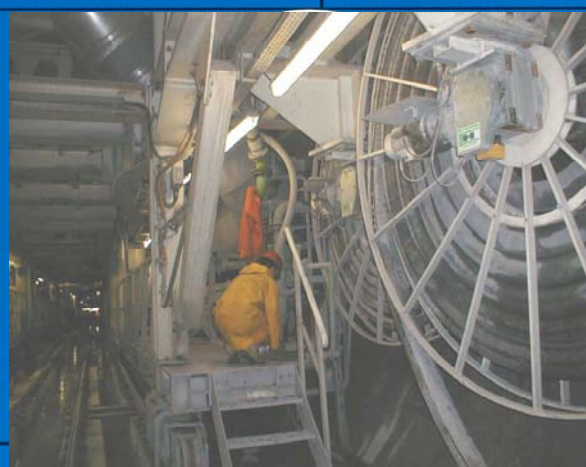


# MOTORIZED HOSEREELS AVTM Series FOR UNDERGROUND



**LINEA UNDERGROUND**



**DIVISION CONDUCTIQUE**

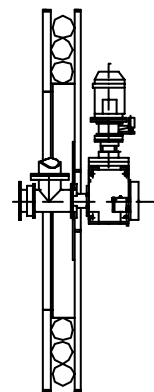
## TECHNICAL MANUAL

## USE

AVTM hose reel is specially designed and manufacture for mobile feeding power systems. The feeding is realized by hoses that carry air, water or other fluids to machine operating in tunnels, or, anyway, in yards or in severe environments. This means that this machine has always to be integrated with other machines as a complement. For this reason it is normally controlled by the machine it is integrated with; rarely, it is equipped with an independent control panel.

## GENERAL FEATURES

Environment	Yard/tunnel
Working temperature	0°C - +50°C
Relative Humidity	between 30% and 90%
Altitude	Max 1000 o.s.l..
Fixing point	By 4 holed galvanized plate
Motors	Standard: asynchronous three-phase electric torque Optional: pneumatic or hydraulic motor.
Stationing Brake	Standard: without brake Optional: pneumatic or with electric brake
Limit Switch	4 adjustable positions



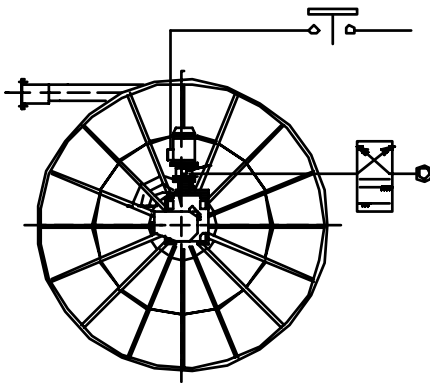
## STANDARD HOSE REEL

Spool	drawn steel plates white painted RAL 9001
Reduction Gear Support	Aluminum casing non painted for AVTM 30 type, cast-iron high resistance gray painted for all others type. Special casehardened and ground steel gears. High resistance steel shafts. Oil-bath lubrication.
Electric Motor	230/400 Vac Voltage three-phase 50 Hz. Protection IP 55, Class F isolation. Aluminum case up to 132, cast iron for bigger dimensions. Blue painted.
Fluidic rotary joint	special steel treated nickel plated. Static steels with single gasket; dynamic steels with double special gaskets. Galvanized steel flanges and pipes.
Bolts and Nuts	Galvanized steel 8 mm.

## OPTIONALS

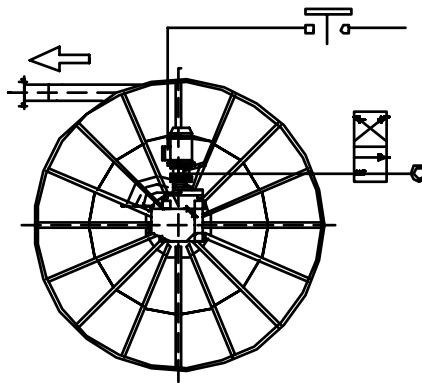
Special motor	- Electric with special amperages up to 660 Vac three-phase - Electrical with tropicalisation T° -15C° +40C° / HR 90% - Pneumatic - Hydraulic
Stationing brake	- Pneumatic with steel disk thickness 8 mm and brake facing thickness 6 mm. - safety electromagnetic brake adjustable assembled on the electrical motor.
Pipe fitting 90° for fixed point	- galvanized steel following ASTM A 234 norms
Bolts & Nuts	- stainless steel
Painting	- Color on demand - Type and cycle on demand

## HOSE REEL WORKING



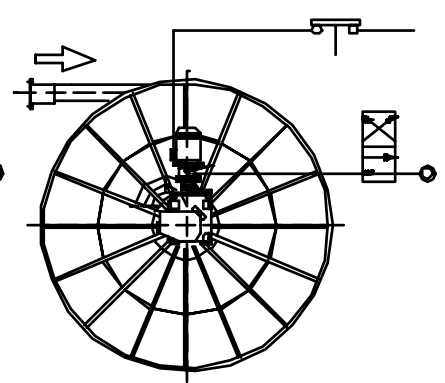
### STANDING PHASE

The motor is not fed, the brake, if present, is on.



### UNWINDING PHASE

The stationing brake, if present, is released, the motor is not fed and the hose is unwound by traction by the operating machine.



### WINDING PHASE

The stationing brake, if present, is released, the motor is fed in the winding sense, until it can give the max traction foreseen.

## HOSES

On AVTM hose reels it is possible to assemble different kind of hoses: here below find the standard hoses (CO.WA.TO/16 and CO.WA.SH/16), that usually cover the market needs. If you need special hoses don't hesitate to contact us.



Hose type  
Application

- **CO. WA. TO./ 16**
- Suction and delivery of non corrosive fluids and natural liquids.

Tube

- Black, smooth in synthetic rubber compound, mud resistance, black liquids and waste water, weak and acid alkaline ph between 5 and 8

Reinforcement

- High resistance synthetic tissues and incorporated steel spiral.

Cover

- Black, smooth (wrapped finish), in synthetic rubber, weathering and ozone resistance.

Working pressure

- 16 Bar

Burst pressure

- 48 Bar

Temperature

- - 35C° + 70C°

Max length

- m. 125, up to DN 100 included
- m. 61 between DN 125 and DN 200 included

- **CO. WA. SH./ 16**

- Delivery of concrete at casting location, deflection resistance

- Black, smooth in synthetic rubber compound, resistant to the abrasive action of the concrete ph between 5 and 8

- Plies of 6 metallic cloths steel wires.

- Black, smooth (wrapped finish), in synthetic rubber, weathering and ozone resistance

- 80 Bar

- 200 Bar

- - 40C° + 70C°

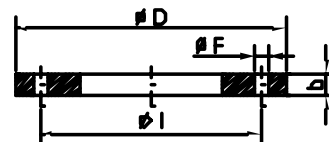
- m. 60

Name		Traction Max	radius Bending rad.	CO. WA. TO./ 16 HOSES				CO. WA. SH./ 16 HOSES				
hose	DN			Inch.	(N)	(mm)	Diameter (mm)		Diameter (mm)		Weight (Kg/m)	
					inside	outside	vacuum	with H2O	inside	outside	vacuum	with H2O
	50	2500	260	2"	51	65	2.20	4.20	51	67,5	3,60	5,60
	65	2500	320	2"1/2	63.5	79	2.95	6.10	65	89	4,83	7,98
	80	4000	400	3"	76	92	3.35	7.76	76	104	6,20	10,61
	100	5000	600	4"	102	120	4.85	12.70	100	126	7,83	15,68
	125	6000	750	5"	127	149	8.30	20.56	125	153	9,54	21,80
	150	6000	950	6"	152	177	12.00	29.66	152	184	14,95	32,61
	200	7500	1200	8"	203	233	20.70	52.10				

## FITTINGS

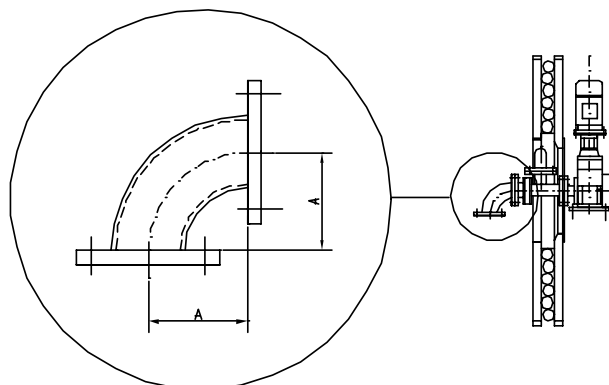
**FLANGES** the pipe fittings to the rotary joint (both fixed and mobile part), are supplied in the flanged version with galvanized steel flanges 2278-67. The wound flexible hoses must have also the same pipe fitting on the side to be connected to the joint, the one that you want to use on the opposite side. Find here below the dimensions table of these flanges, subdivided on their sizes.

FLAT FLANGES TABLE UNI 2278-67 PN 16					
NAME		DIMENSIONS (mm)			
DN	Inch.	Ø D	Ø I	b	Number x Ø F
50	2"	165	125	18	4 x 18
65	2"1/2	185	145	18	4 x 18
80	3"	200	160	20	8 x 18
100	4"	220	180	22	8 x 18
150	6"	285	240	24	8 x 22
200	8"	340	295	26	12 x 22



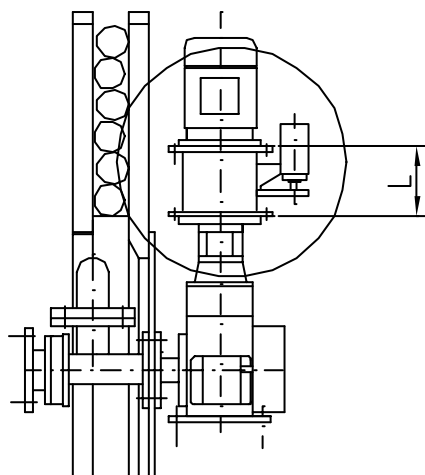
**90° BENDS** on the fixed feeding point of the rotary joint, it is possible to assembly a 90° binding pipe fitting. The galvanized steel pipe fitting is assembled following the ANSI B 16.9 norms. The dimensions are here below in the table.

BENDING FLANGES TABLE 90° ANSI B 16.9			
NAME		DIMENSIONS (mm)	
DN	Inch.	Outside Ø. hose	Radius A
50	2"	60.3	76.2
65	2"1/2	73	95.2
80	3"	88.9	114.3
100	4"	114.3	152.4
125	5"	141.3	190.5
150	6"	168.3	228.6
200	8"	219.1	304.8



**BRAKE** It is possible, on demand, to assemble on all the hose reels a pneumatic brake that, not only assure the non unwinding of the hose in the stationing phase, but also allows to insert a reacting torque during the unwinding phase. It is also possible to adjust the torque of the brake itself. Normally this brake is set on pneumatically. Here below find the dimensions of the brake as to the hose reel dimensions.

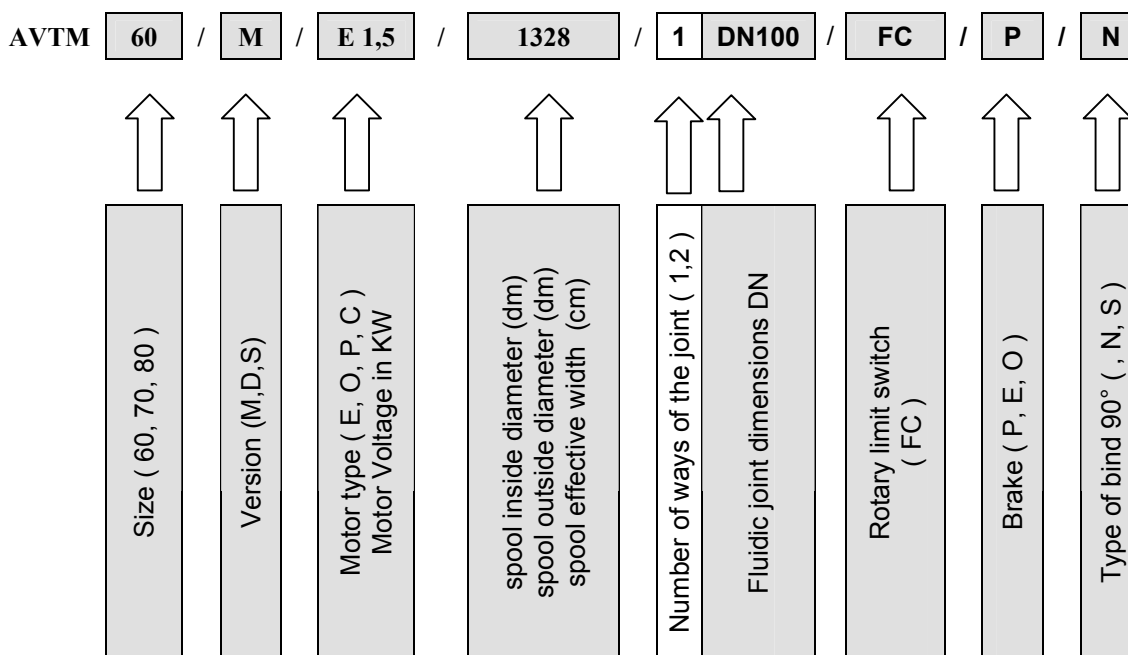
BRAKE TABLE		
Hose reel type	L (mm)	Weight (kg)
AVTM 30	117	12
AVTM 40		
AVTM 50		
AVTM 60		16
AVTM 70		
AVTM 80		



## AVAILABLE VERSIONS

SIZES	AVTM 30	AVTM 40	AVTM 50	AVTM 60	AVTM 70	AVTM 80	
VERSIONS	1 WAY "M" MONOSPIRAL		2 WAYS "D" MONOSPIRAL		1 WAY SEMI WIDE "S"		
JOINTS	2"	2" 1/2	3"	4"	5"	6"	8"
	DN50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200
MATERIALS		STANDARD		OPTIONALS			
Motor		"E" electric motor		"O" hydraulic motor "P" pneumatic motor			
Rotary limit switch		x		"FC"			
Brake		x		"P" pneumatic brake "E" electromagnetic brake "O" hydraulic brake			
Fixed point bind 90°		x		"N" standard bind "S" special bind			

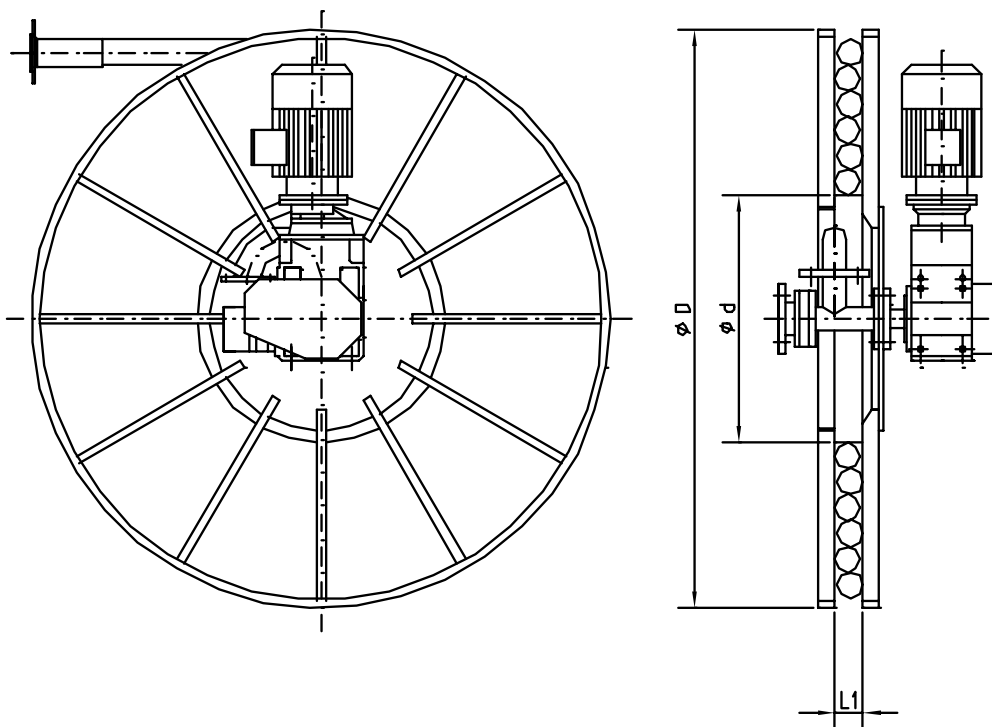
## HOSE REEL TYPE



In the example, we have:

AVTM type:           Size 60  
                          1 way monospiral  
                          1,5 Kw electric motor  
                          Inside diameter spool 1300 mm and outside diameter 2800 mm  
                          1 way joint  
                          Fluidic joint dimensions DN 100 ( 4" )  
                          With rotary limit switch  
                          With pneumatic brake  
                          With standard bind on fixed point

**TABELES FOR THE SELECTION OF 1 WAY MONOSPIRAL AVTM HOSE REEL**

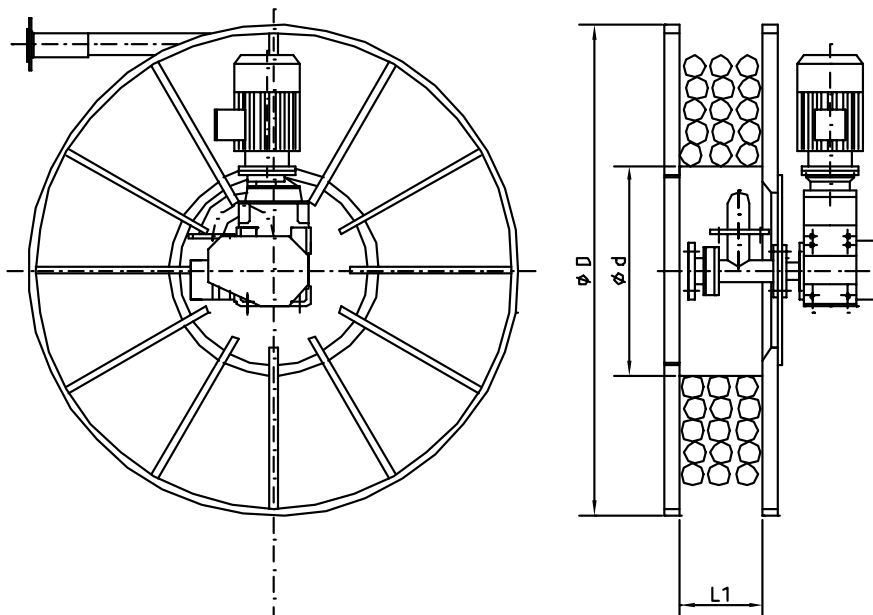


**SELECTION OF 1 WAY MONOSPIRAL AVTM AS FOR THE WOUND LENGTH METRES**

Hose		Hose reel	Max Traction	dxL1	Outside diameter (mm) "D"																		
DN	inch	type	(N)	(mm)	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3300	3600	3900	4200	4600	4800		
50	2"	AVTM 30	1300	600x75	8	11	19	24	34														
		AVTM 40	1800	900x75		7	11	20	25	36	48	56	71	80									
		AVTM 50	2200	1300x75					14	25	32	46	54	70	86	107							
		AVTM 60	4200	1300x75					14	25	32	46	54	70	86	107	125						
65	2"1/2	AVTM 40	1800	900x90			11	16	21	26	39	46	54										
		AVTM 50	2200	1300x90					15	20	26	33	41	56	65								
		AVTM 60	4200	1300x90					15	20	26	33	41	56	65	85	105	125					
80	3"	AVTM 40	1800	900x100			7	11	16	21	34												
		AVTM 50	3300	900x100			7	11	16	21	34	41	48										
		AVTM 60	4200	1300x100					9	15	21	27	40	51	60	69	90	113	125				
100	4"	AVTM 50	2200	1300x135					10		16	22	30										
		AVTM 60	4200	1300x135					10		16	22	30	38	47	57	67						
		AVTM 70	6000	1600x135							12	18	26		42	53	64	75	87	114	120		
125	5"	AVTM 60	3500	1600x165							12		19	28		37							
		AVTM 70	6000	1600x165							12		19	28		37	47	58	61				
150	6"	AVTM 60	3000	1800x200									14		22								
		AVTM 70	5500	1800x200									14		22	31	42						
		AVTM 80	8500	1800x200									14		22	31	42		54	61			
200	8"	AVTM 70	4500	2200x260											8	16	21						
		AVTM 80	7200	2200x260											8	16	27		35				

■ Sizes to be preferred

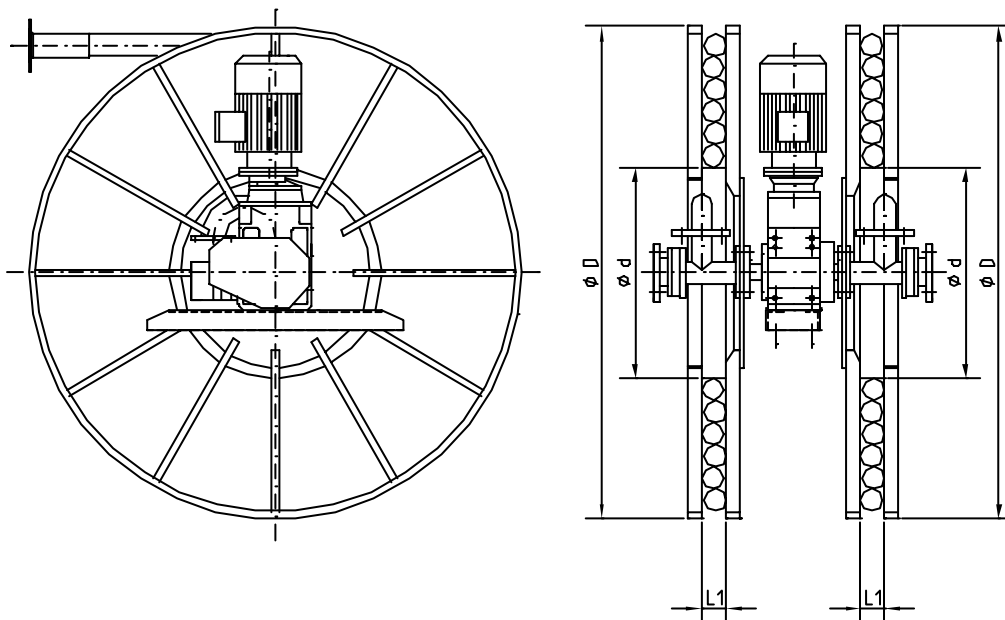
**TABELES FOR THE SELECTION OF 1 WAY SEMI WIDE AVTM HOSE REEL**



SELECTION OF 1 WAY SEMI WIDE AVTM AS FOR THE WOUND LENGTH METRES																		
Hose		Hose reel	Max Traction	dxL1	Outside diameter (mm) "D"													
DN	inch	type	(N)	(mm)	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3300	3600
50	2"	AVTM 30	1300	600x250	6	22	32											
		AVTM 40	1800	900x250			19	31	58	73								
		AVTM 50	2200	1300x300					26	42	76	96						
		AVTM 60	4200	1300x300					26	42	76	96	120					
65	2"1/2	AVTM 40	1800	900x300			9	32	46									
		AVTM 50	2200	1300x300					13	44	61	70						
		AVTM 60	4200	1300x300					13	44	61	80	100	120				
80	3"	AVTM 40	1800	900x400			9	20	33									
		AVTM 50	3300	900x400			9	20	33	48	64							
		AVTM 60	4200	1300x400					13	28	45	63	83	120				
100	4"	AVTM 50	2200	1300x400					9	20		32						
		AVTM 60	4200	1300x400					9	20		32	45	60				
		AVTM 70	6000	1600x400								24	37	52		69	88	108
125	5"	AVTM 60	3500	1600x500							11		24	38				
		AVTM 70	6000	1600x500							11		24	38	54		61	
150	6"	AVTM 60	3000	1800x500									12	25				
		AVTM 70	5500	1800x500									12	27		44		
		AVTM 80	8500	1800x500									12	27		44	61	
200	8"	AVTM 70	4500	2200x550											16			
		AVTM 80	7200	2200x550											16		34	

■ Sizes to be preferred

**TABELES FOR THE SELECTION OF 2 WAYS MONOSPIRAL AVTM HOSE REEL**



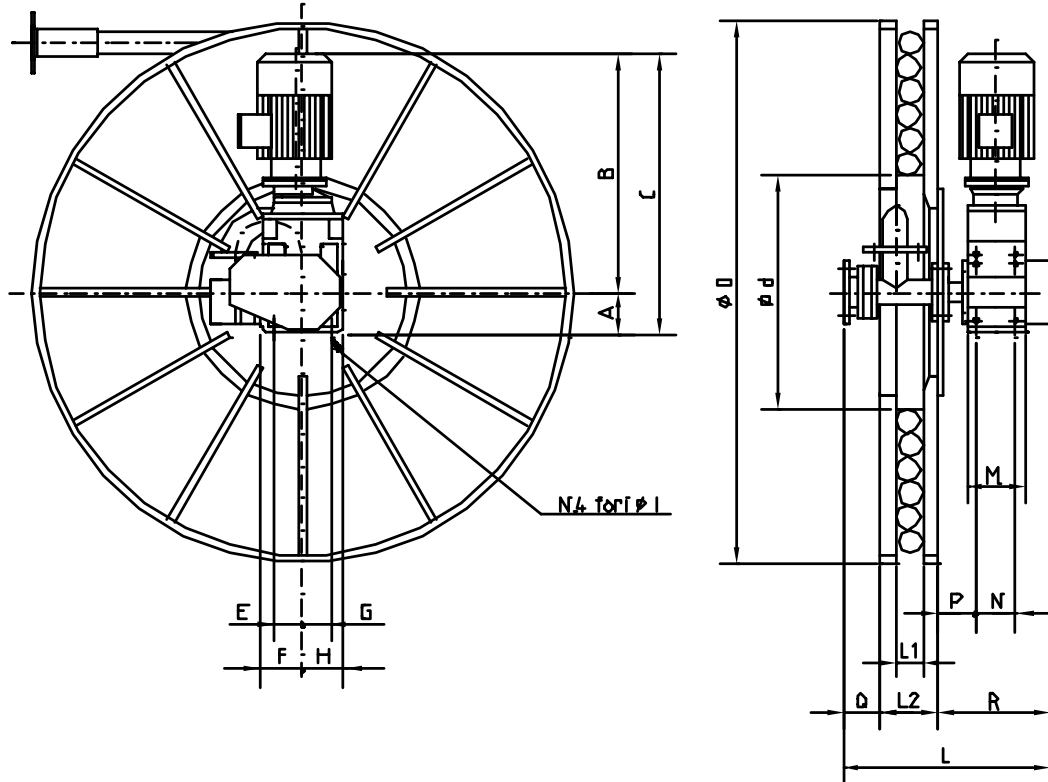
**SELECTION OF 2 WAYS MONOSPRAL AVTM AS FOR THE WOUND LENGTH METRES**

Hose		Hose reel	Max Traction	dxL1	Outside diameter (mm) "D"																
DN	inch	type	(N)	(mm)	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3300	3600	3900	4200		
50	2"	AVTM 30	1300	600x75	8	11	19	24	28												
		AVTM 40	1800	900x75		7	11	20	25	36											
		AVTM 50	2200	900x75		7	11	20	25	36	48	56									
		AVTM 60	4200	1300x75					14	25	32	46	54	70	86	95					
65	2"1/2	AVTM 40	1800	900x90			11	16	21	26											
		AVTM 50	2200	1300x90					15	20	26	33									
		AVTM 60	4200	1300x90					15	20	26	33	41	56	65						
80	3"	AVTM 40	1800	900x100			7	11	16	21	26										
		AVTM 50	3300	900x100			7	11	16	21	34										
		AVTM 60	4200	1300x100						9	15	21	27	40	51	60					
100	4"	AVTM 50	2200	1300x135					10		16	22									
		AVTM 60	4200	1300x135					10		16	22	30	38	43						
		AVTM 70	6000	1600x135							12	18	26		42	53	62				
		AVTM 80	10000	1600x135							12	18	26		42	53	64	75			
125	5"	AVTM 60	3500	1600x165							12		19	21							
		AVTM 70	6000	1600x165							12		19	28		36					
		AVTM 80	10000	1600x165							12		19	28		37	47	58	60		
150	6"	AVTM 60	3000	1800x200									12								
		AVTM 70	5500	1800x200										14		22					
		AVTM 80	8500	1800x200										14		22	31	35			
200	8"	AVTM 70	4500	2200x260											8	11					
		AVTM 80	7200	2200x260											8	16					

■ Dimensions to be preferred

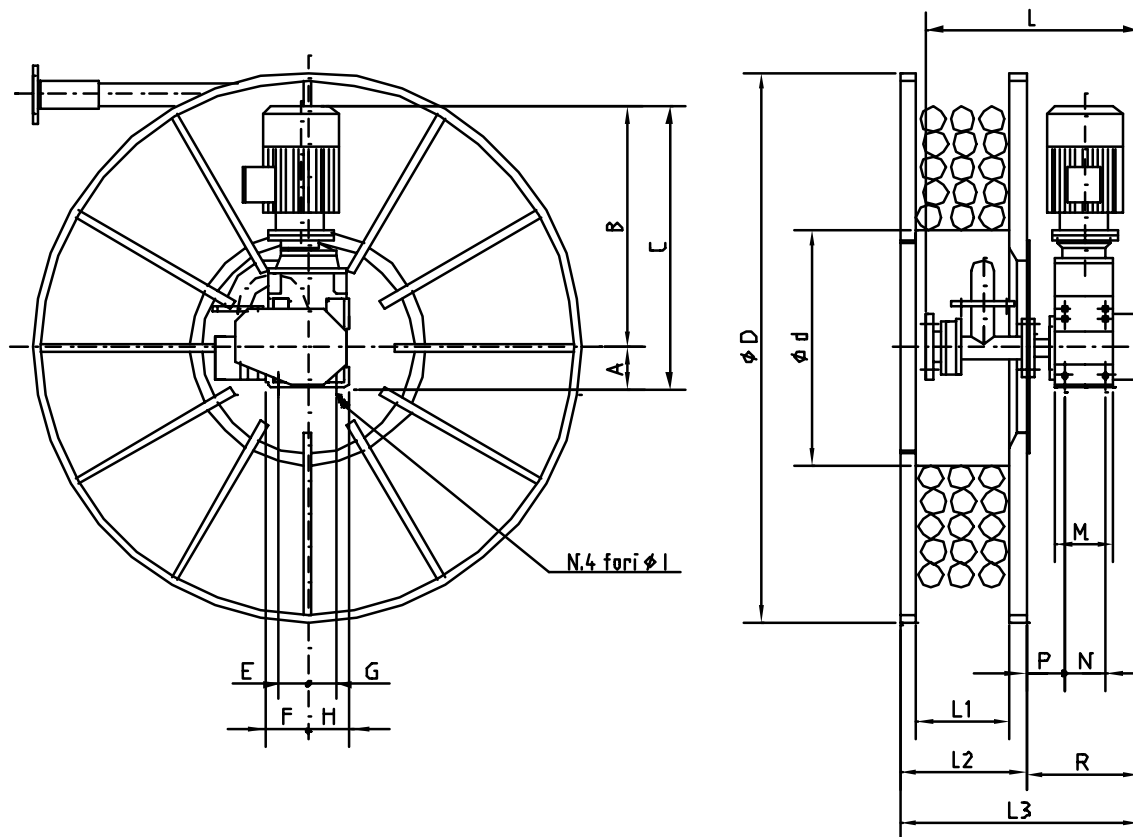


**1 WAY MONOSPIRAL AVTM DIMENSIONS**



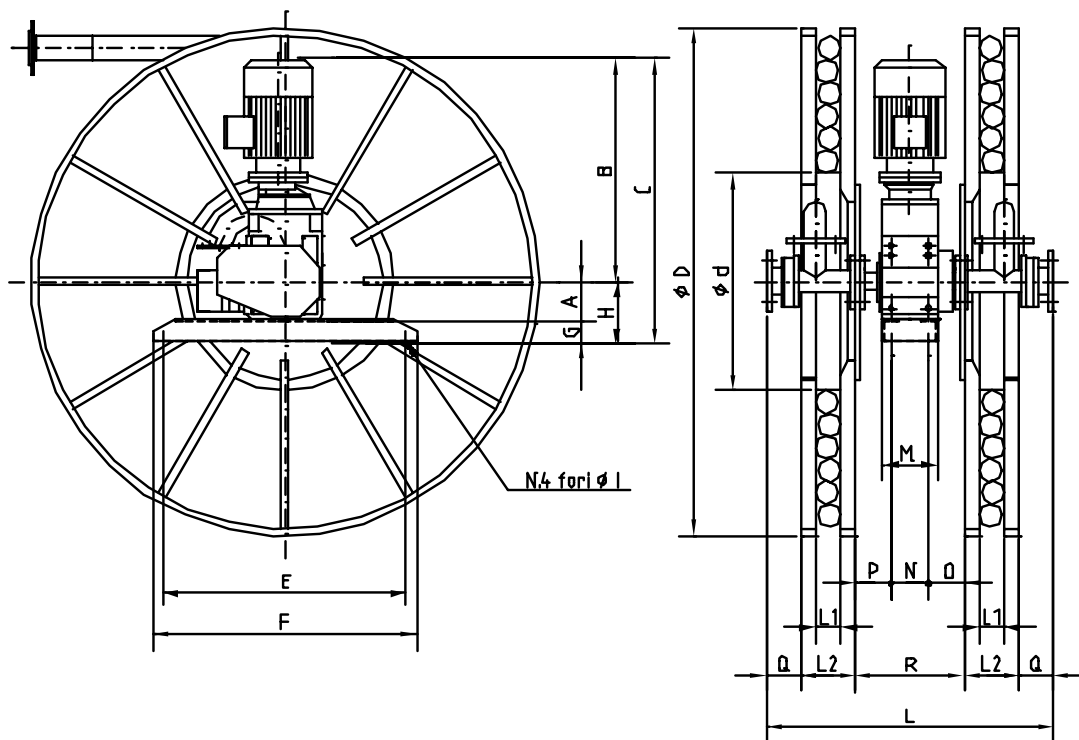
Hose-reel dimensions	Hose Inch.	L	L1	L2	Q	A	B	C	E	F	G	H	I	M	N	P	R
AVTM 30	2"	526	75	175	71	102	560	662	100	115	100	115	18	220	170	55	280
AVTM 40	2"	540	75	175	120	112	743	855	80	112	80	112	14	155	120	60	245
	3"	595	100	200	140												
AVTM 50	2"	615	75	175	120	140	855	995	102.5	140	102.5	140	16	185	150	70	320
	2 1/2"	670	90	190	140												
	3"	670	100	200	140												
AVTM 60	4"	750	135	235	195	165	1000	1165	122.5	165	122.5	165	18.5	235	195	60	340
	2"	635	75	175	120												
	2 1/2"	690	90	190	140												
	3"	690	100	200	140												
	4"	770	135	235	195												
AVTM 70	5"	780	165	265	175	155	980	1135	110	155	184	229	22	280	230	70	390
	6"	791	200	300	151												
	4"	820	135	235	195												
	5"	830	165	265	175												
AVTM 80	6"	860	200	300	170	185	1200	1385	122	185	209	272	26	330	275	80	420
	8"	930	260	360	180												
	6"	871	200	300	151												
	8"	960	260	360	180												

### 1 WAY SEMIWIDE AVTM DIMENSIONS



Hose-reel dimensions	Hose Inch.	L	L1	L2	L3	A	B	C	E	F	G	H	I	M	N	P	R
AVTM 30	2"	526	250	350	630	102	560	662	100	115	100	115	18	220	170	55	280
AVTM 40	2"	540	250	350	595	112	743	855	80	112	80	112	14	155	120	60	245
	2 1/2"	595	300	400	645												
AVTM 50	3"	595	400	500	745	140	855	995	102.5	140	102.5	140	16	185	150	70	320
	2"	615	250	350	670												
	2 1/2"	670	300	400	720												
AVTM 60	3"	670	400	500	820	165	1000	1165	122.5	165	122.5	165	18.5	235	195	60	340
	4"	750	400	500	820												
	2"	635	250	350	690												
	2 1/2"	690	300	400	740												
	3"	690	400	500	840												
AVTM 70	4"	770	400	500	840	155	980	1135	110	155	184	229	22	280	230	70	365
	5"	780	500	600	940												
	6"	791	500	600	940												
	4"	820	400	500	865												
AVTM 80	5"	830	500	600	965	185	1200	1385	122	185	209	272	26	330	275	80	420
	6"	860	500	600	965												
	8"	930	550	650	1015												
AVTM 80	6"	871	500	600	1020	185	1200	1385	122	185	209	272	26	330	275	80	420
	8"	960	550	650	1070												

## 2 WAYS MONOSPIRAL AVTM DIMENSIONS



Hose-reel dimensions	Hose Inch.	L	L1	L2	Q	A	B	C	E	F	G	H	I	M	N	P	O	R
AVTM 30	2"	787	75	175	71	102	560	662	560	600	0	102	18	220	170	55	70	295
AVTM 40	2"	860	75	175	120	112	743	975	950	1000	120	232	14	190	120	75	75	270
	2 1/2"	930	90	190	140													
	3"	950	100	200	140													
AVTM 50	2"	900	75	175	120	140	855	1115	1150	1200	120	260	16	220	150	70	90	310
	2 1/2"	970	90	190	140													
	3"	990	100	200	140													
	4"	1170	135	235	195													
AVTM 60	2"	920	75	175	120	165	1000	1285	1250	1300	120	285	18.5	270	195	60	75	330
	2 1/2"	990	90	190	140													
	3"	1010	100	200	140													
	4"	1190	135	235	195													
	5"	1210	165	265	175													
	6"	1232	200	300	151													
AVTM 70	4"	1260	135	235	195	155	980	1255	1250	1300	120	275	22	320	230	77	94	400
	5"	1280	165	265	175													
	6"	1340	200	300	170													
	8"	1480	260	360	180													
AVTM 80	4"	1310	135	235	195	185	940	1245	1250	1320	120	305	26	370	275	75	100	450
	5"	1330	165	265	175													
	6"	1390	200	300	170													
	8"	1530	260	360	180													