EUROPA

ViVoilViVolo
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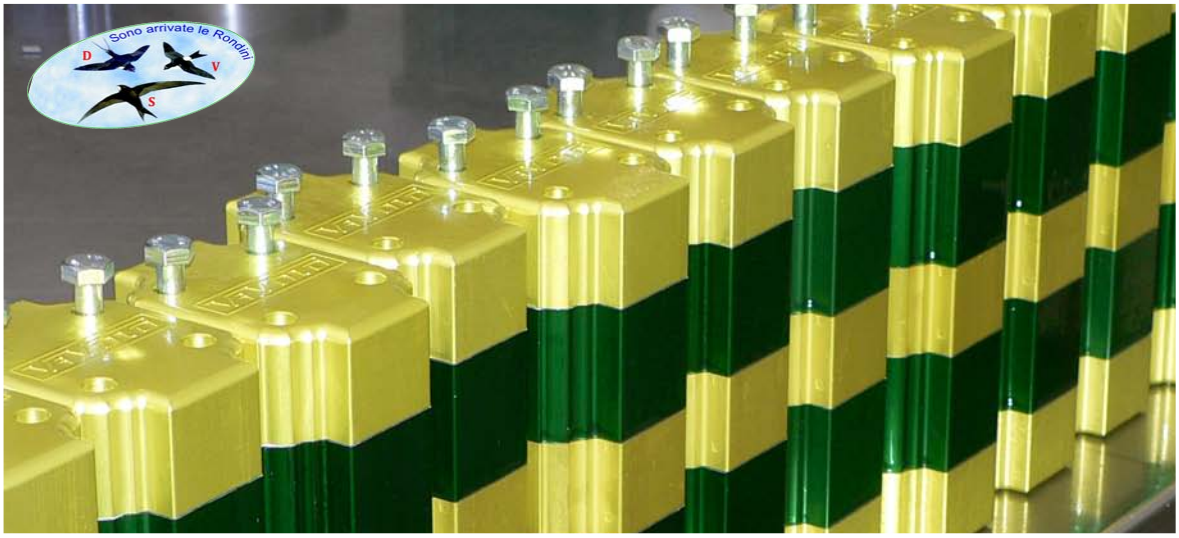
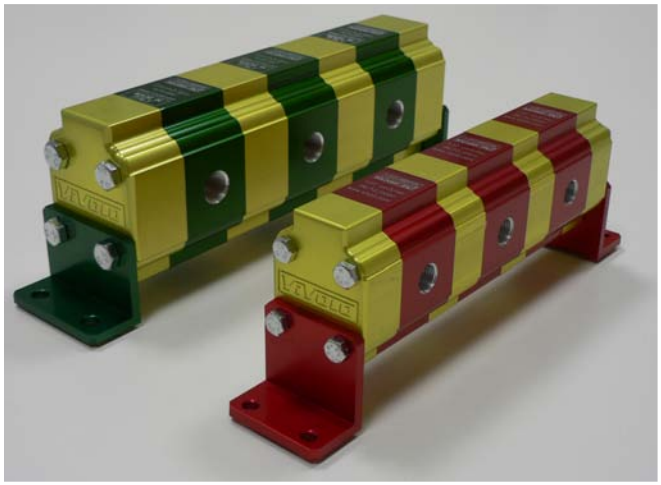
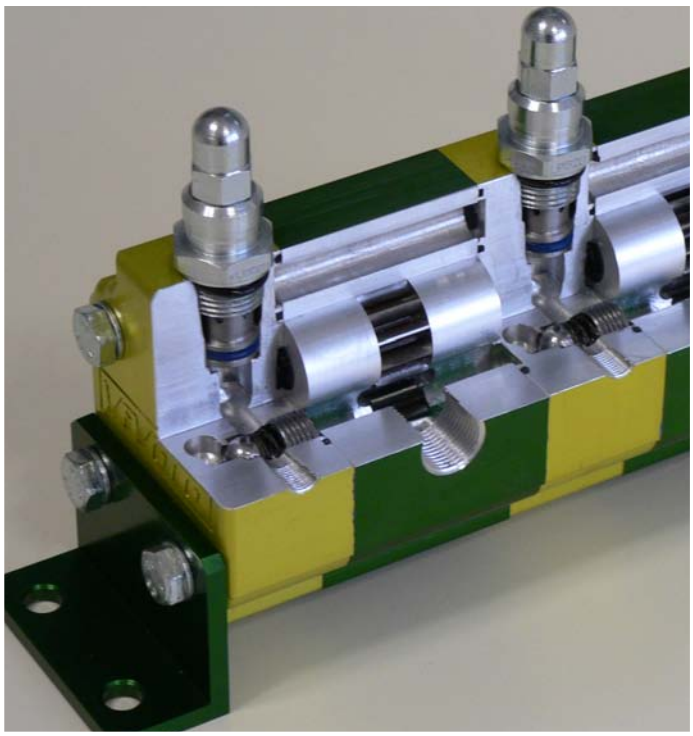
1985

FLOW DIVIDERS " RV Series "





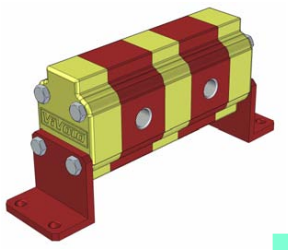


ENGLISH

VERS:28-03-2008

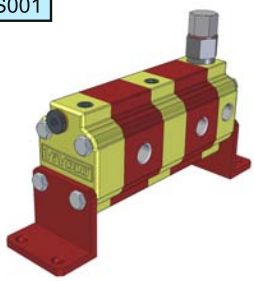
GROUP "0"

RIF. RD001



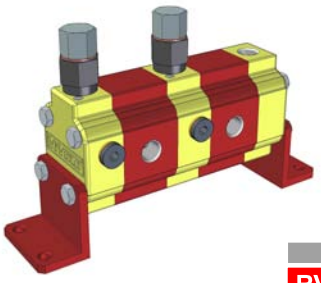
RV-0D

RIF. RS001



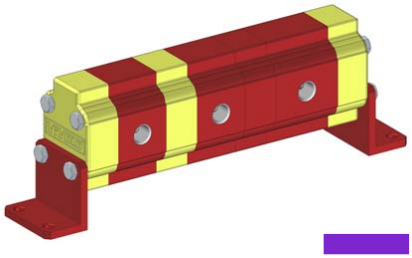
RV-0S

RIF. RV001



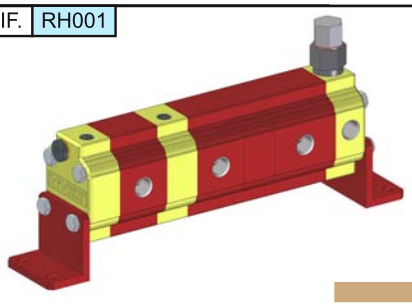
RV-0V

RIF. RG001



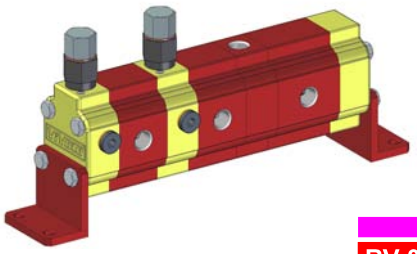
RV-0G

RIF. RH001



RV-0H

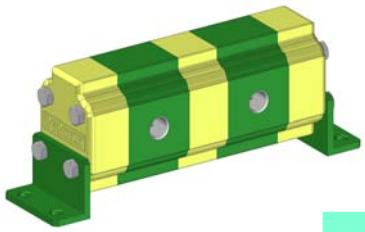
RIF. RN001



RV-0N

GROUP "1"

RIF. RD101

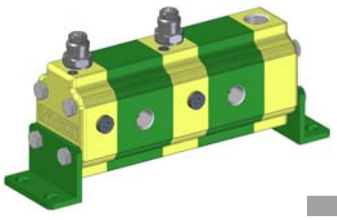


RV-1D

RIF. RS101

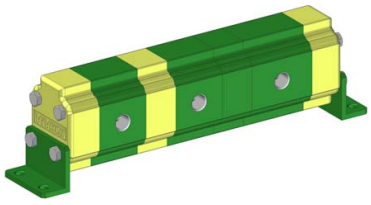
RV-1S

RIF. RV101



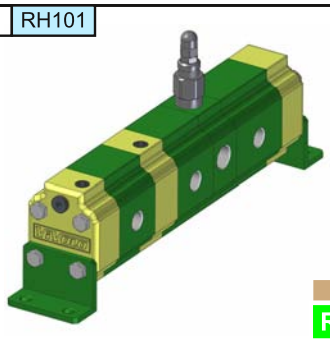
RV-1V

RIF. RG101



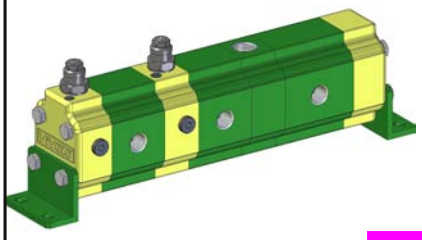
RV-1G

RIF. RH101



RV-1H

RIF. RN101



RV-1N

Vivoil Oleodinamica Vivolo s.r.l. - Società a Socio Unico - via Leone Gingburg 2-4 40054 Budrio (BO) Italy tel: +39 051 803689 fax: +39 051 800061

A flow divider is made up of two or more modular elements (sections) with gears mechanically linked by an internal shaft that causes them to turn at the same speed.
Unlike multiple pumps, in which the input power is mechanical (shaft connected to a motor), in a flow divider the input power is of a fluid-mechanical nature, i.e. a flow of oil under pressure parallelly supplies the modular elements, which are in turn connected to the hydraulic circuits serving the users.

The portion of flow utilized by each element is solely determined by its nominal flow rate. Therefore, unlike standard static dividers with variable ports, the flow dividers do not cause dissipation and are also much more precise.
The use of flow dividers in a system reduces the number of pumps necessary as well as the associated individual mechanical power takeoffs and complex mechanical couplers (with greater losses).
Leaving aside small losses for the time being, at any given moment the total input power is equal to the sum of the powers supplied by all elements making up the flow divider.

Therefore, if in an interval of time the power required by a hydraulic circuit is equal to zero (inactive drained circuit), the power supplied by the element feeding that circuit becomes available for the other elements, which may use it in their own circuits, also operating at higher pressures than the intake pressure.

Most frequent applications of flow dividers

Supply of two or more independent hydraulic circuits by means of a single pump, with an overall flow rate equal to the sum of the flow rates.

Examples of this kind of application:
- lifting platforms and bridges;
- hydraulic bending presses and shearing machines;
- hoisting of freight containers;
- lubrication systems;
- hydraulic opening / closing of gates;
- automatic hydraulically-driven machines;
- actuation of formwork for construction;
- wood processing machinery;
- conveyance of trolleys driven by hydraulic cylinders or motors;
- equipment for the food industry;
- military installations.

Pressure amplifiers.
When in a hydraulic system one user requires a much higher operating or peak pressure than all the others, it is more convenient to supply it by means of a flow divider than to upgrade the whole system to work with higher pressure.
With a two-element flow divider flow may be discharged from the outlet of one element so that the pressure in the other will become much higher than that of the pump supplying the system.

Examples of this kind of application:
- presses with rapid approach
- machine tools

Constructive features

FLOW DIVIDER BODY FLANGE AND COVER	Extruded alloy Serie 7000, heat treated and anodised	Rp=345 N/mm2 (Yield Strength) Rm=382 N/mm2 (Breaking Strength)
GEAR BUSH BEARINGS	Special Heat Treated tin alloy with excellent mechanical features and high anti-friction capacity. Self-lubricating bushes DU	Rp=350 N/mm2 (Yield Strength) Rm=390 N/mm2 (Breaking Strength)
GEARS	Steel UNI 7846	Rs=980 N/mm2 (Yield Strength) Rm=1270÷1570 N/mm2 (Breaking Strength)
SEALS	A 727 Acrolonitrile Standard F 975 Viton FKM	90 Shore, resistenza termica 120°C 80 Shore, resistenza termica 200°C

VERSION DESCRIPTION

RV-D FLOW DIVIDER

This is the flow divider standard version, it simply divide the incoming flow without allowing the phase correction

RV-S FLOW DIVIDER with single phase correction valve

This version has just one phase correction valve for all the elements, it can obviously divide the flow and allow the phase correction, but only in the direction of flow division.

RV-V FLOW DIVIDER with phase correction and anticavitation valves

In this version the flow divider has one phase correction and anticavitation valve for each element, this allow a flow correction in both direction (flow division and flow unification). In addition it can adjust the relief pressure to a different value for each element.

RV-G FLOW DIVIDER + MOTOR

The RV-G typology is the motorized version of the RV-D divider.
It has a motor conneted to the flow divider elements. This solution is important when the incoming and/or outgoing pressure is below the minimum pressure required to start. Giving flow to the motor, help the flow divider rotation start. Typical use: plants with single effects hydraulic jack.

RV-H FLOW DIVIDER with single phase correction valve + MOTOR

This is the motorized version of the RV-S divider.
The motor has the same funcion that is described for the RV-G divider.

RV-N FLOW DIVIDER with phase correction and anticavitation valve + MOTOR

This is the motorized version of the RV-V divider.
The motor has the same funcion that is described for the RV-G divider.

The flow division error is lower than ± 1.5% with a pressure difference between one element and another until 30 Bars. For bigger differences we can approximate an error increase of 1 % for each 10 additional bars.

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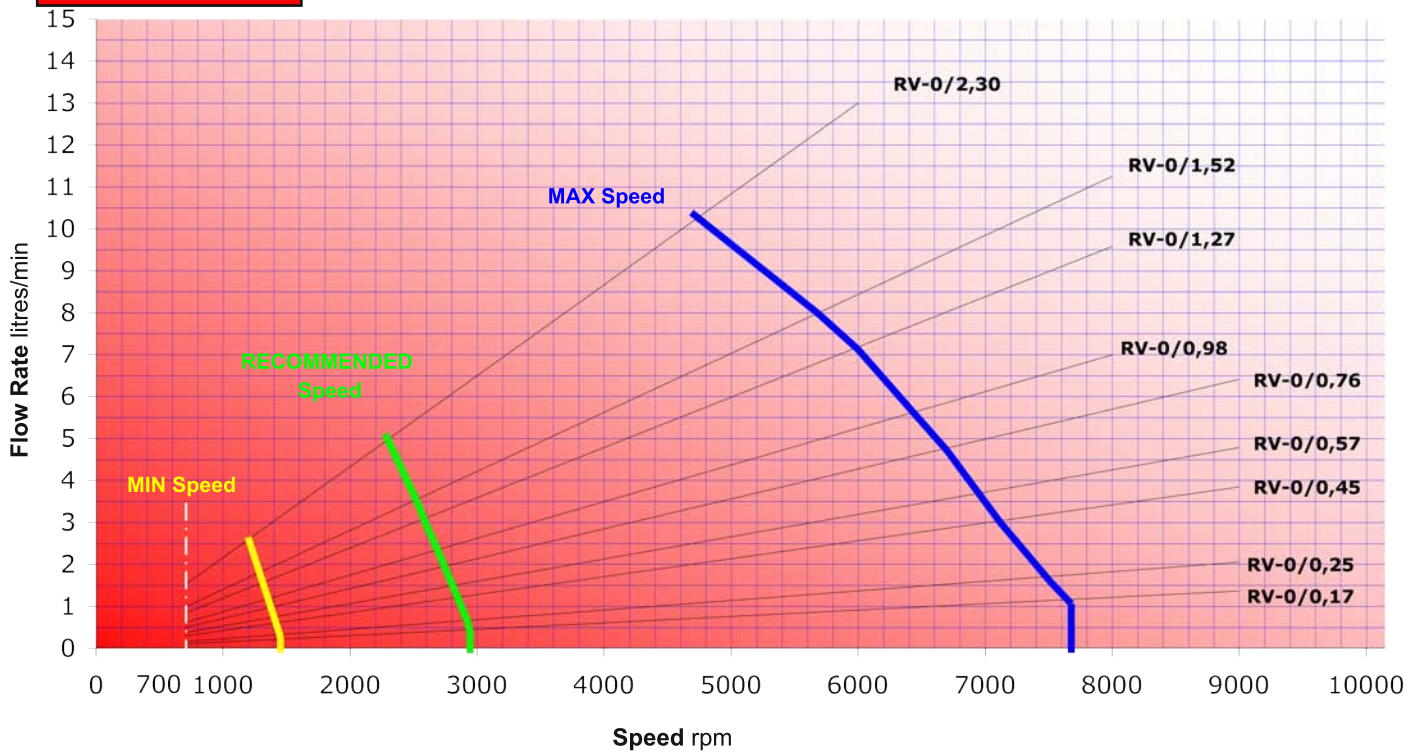
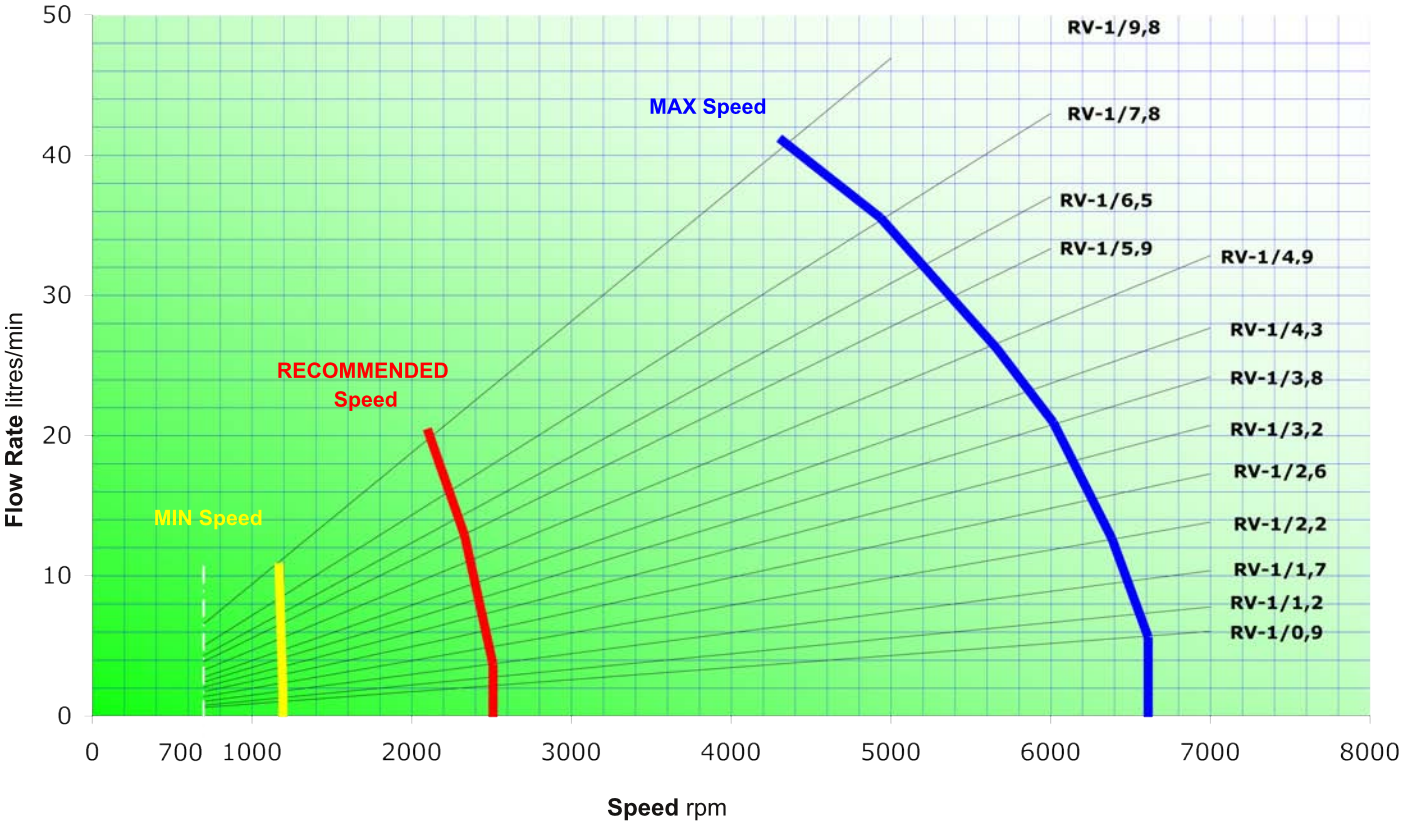
RV-0



RV-1



NOTE: the flow divider can work even below the minimum speed, but it's efficiency will be lower
the flow divider can work even over the maximum speed, but it will increase the noise and loss of load

FLOW DIVIDER "RV" Series Swallow Line

RV-0D

Flow divider (Standard Version)

Code:

9RD	NN	CC

9RD	Flow Divider Typology
NN	Number of elements
CC	Displacement Code

Example: Flow divider with two elements (same displacement):
RV-0D / 0,57 x 2

9RD	02	05

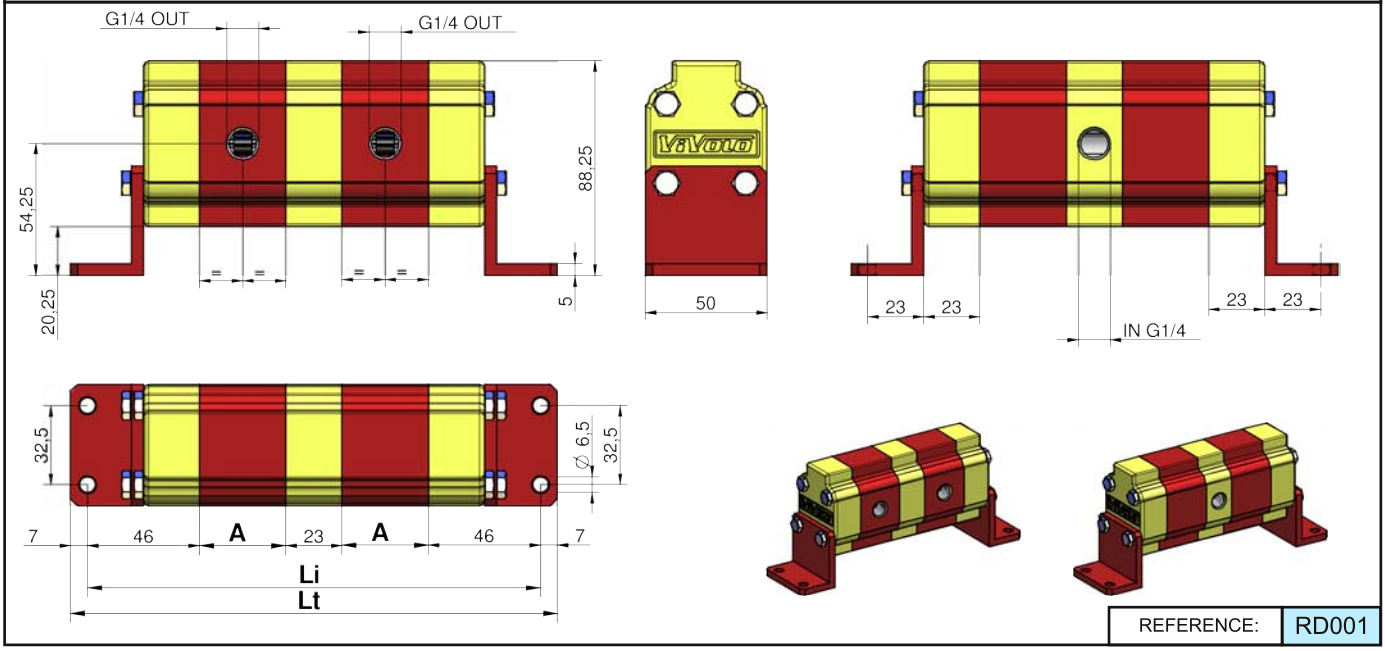
Example: Flow Divider with 4 elements (with different displacement - max 7):
RV-0D / 0,57+0,76+0,98+1,52

9RD	04	05	06	07	11

NOTE: to define codes for flow dividers with more than 7 different displacement, please contact our sales department.

Table: 1

Displacem.	CC	Max Pressure	One element flow rate l/min		
Cm³/rev	Code	bar	MIN	RECOMMENDED	MAX
0,17	01	210	0,2	0,4	1,2
0,25	02	210	0,3	0,7	1,8
0,45	04	210	0,6	1,2	3
0.57	05	210	0,8	1,5	3,8
0,76	06	210	1	2	4,8
0,98	07	210	1,2	2,3	5,6
1,27	09	210	1,5	3	7,2
1,52	11	210	1,9	3,5	8
2,30	13	210	2,6	5	10,3



REFERENCE: RD001

Table: 2

Li = Distance between fixing hole centres (single displacement flow divider)

Cm³/giro	A	Number of elements														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,17	**29,3**	174,8	227,7	280,6	333,5	386,4	439,3	492,5	545,1	598	650,9	703,8	756,7	809,6	862,5	915,4
0,25	**29,9**	178	232,5	287	341,5	396	450,5	505	559,5	614	668,5	723	777,5	832	886,5	941
0,45	**31,5**	180	235,5	291	346,5	402	457,5	513	568,5	624	679,5	735	790,5	846	901,5	957
0,76	**34**	183	240	297	354	411	468	525	582	639	696	753	810	867	924	981
0,98	**35,5**	186	244,5	303	361,5	420	478,5	537	595,5	654	712,5	771	829,5	888	946,5	1005
1,27	**38**	191	252	313	374	435	496	557	618	679	740	801	862	923	984	1045
1,52	**40**	195	258	321	384	447	510	573	636	699	762	825	888	951	1014	1077
2,30	**46**	207	276	345	414	483	552	621	690	759	828	897	966	1035	1104	1173

Table: 3 in this table the number of inlets in function of the number of elements are indicated.

Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

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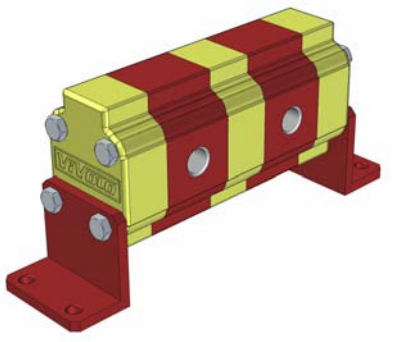
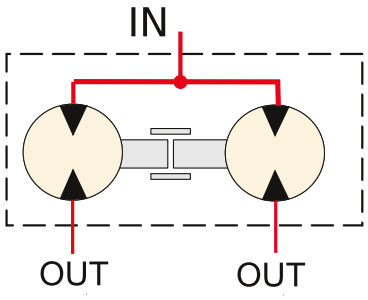
INTERNAL DRAIN





In **table 1** the functioning range of single flow divider elements is indicated.

The higher is the feeding capacity (q), the higher is the precision of flow division, but in opposition there are losses of loading and higher noise. Therefore we suggest to feed the elements with capacities equal or a few superior to the ones indicated in the column "**RECOMMENDED**".

Remember to verify the capacities even in phase of flow reunion.

The pressures indicated are to be considered as maximum of functioning, the flow divider is able to bear peaks of pressure 20% superior.

How to calculate the "Li" and "Lt" measures of flow dividers:

From **table 2** it is possible to obtain the "Li" measure for flow dividers up to 16 elements with equal displacements; for flow dividers with different elements or with more than 16 elements the "Li" and "Lt" measure have to be calculated by the following formula:

Li = [(n-1) x 23] + 92+ (A1 + A2 + A3 +…….)

92 = 46 + 46

n = Number of elements of flow divider

A1... An = heights of elements of flow divider

Lt = Li + 14

14 = 7+ 7

EXAMPLE: To obtain the measures **Li** and **Lt** of a flow divider with three elements (n=3), **RV-0D 0,98 + 0,76 +1,27**

Distance between fixing hole centres — **Li** = [(3-1) x 23] + 92 + 35,5 + 34 + 38 =245,5 mm

Total Lenght — **Lt** = 245,5 + 14 = 259,5

In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to make full us at least of **1** inlet every **15** l/min capacity.

To obtain errors of division **inferior to 3%** there must be no difference of pressure between the elements superior to **30 bar**. To obtain high precisions the respect of the following parametres is also important:

- Enviroment temperature: -10°c ÷ +60°c — Oil temperature: +30°c ÷ +60°c
- Hydraulic oil based on hlp, hv (din 51524) minerals — Oil Viscosity 20 ÷ 40 cSt
- Oil filtering 10 ÷ 25 µ

FLOW DIVIDER "RV" Series Swallow Line

RV-0S

Flow divider with **single phase correction valve** common to all the elements

Code:

9RS	NN	M	CC

9RD	Flow Divider Typology
NN	Number of elements
M	Code of setting range of the valves
CC	Displacement Code

TABLE "M"	
D	20 ÷ 140 bar
E	70÷ 315 bar

Example: Flow divider with two elements (same displacement)
RV-0D / 0,57 x 2 with valve 20 ÷ 140 bar

9RS	02	D	05

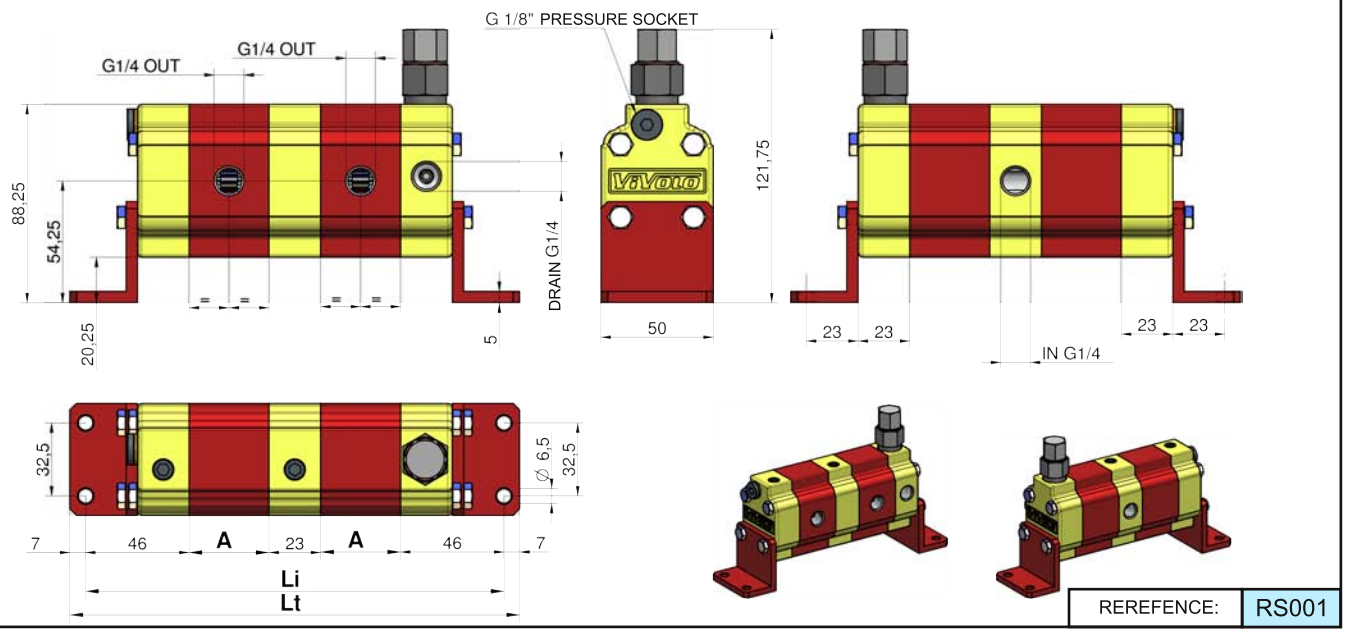
Example: Flow Divider with 4 elements (with different displacement - max 7):
RV-0S / 0,57+0,76+0,98+1,52 with valve 70 ÷ 315 bar

9RS	04	E	05	06	07	11

NOTE: to define codes for flow dividers with more than 7 different displacement, please contact our sales department.

Table: 1

Displacem.	CC	Max Pressure bar	One element flow rate l/min		
Cm³/rev	Code		MIN	RECOMMENDED	MAX
0,17	01	210	0,2	0,4	1,2
0,25	02	210	0,3	0,7	1,8
0,45	04	210	0,6	1,2	3
0.57	05	210	0,8	1,5	3,8
0,76	06	210	1	2	4,8
0,98	07	210	1,2	2,3	5,6
1,27	09	210	1,5	3	7,2
1,52	11	210	1,9	3,5	8
2,30	13	210	2,6	5	10,3



REREFENCE: RS001

Table: 2

Li = Distance between fixing hole centres (single displacement flow divider)

Cm³/rev	A	Number of elements														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,17	**29,3**	174,8	227,7	280,6	333,5	386,4	439,3	492,5	545,1	598	650,9	703,8	756,7	809,6	862,5	915,4
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0,45	**31,5**	180	235,5	291	346,5	402	457,5	513	568,5	624	679,5	735	790,5	846	901,5	957
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1,27	**38**	191	252	313	374	435	496	557	618	679	740	801	862	923	984	1045
1,52	**40**	195	258	321	384	447	510	573	636	699	762	825	888	951	1014	1077
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Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

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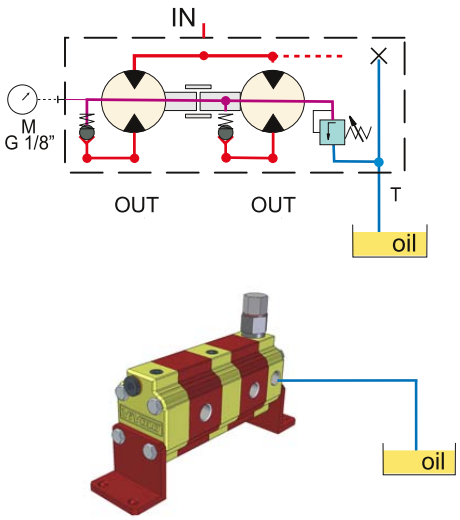
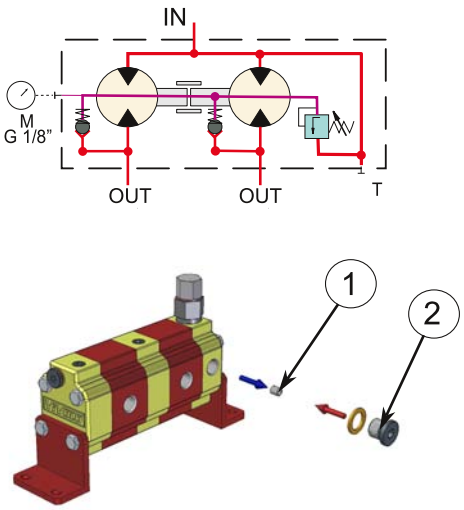
Flow divider with **single phase correction valve** common to all the elements

EXTERNAL DRAIN *STANDARD SETUP*	INTERNAL DRAIN
Connect the drain port (T) to the tank	To predispose the divider to the internal drain, execute following operations: 1. remove the M6 dowel inside the drain port 2. with a 1/4 G plug, plug the drain port (T)
	

In **table 1** the functining range of single flow divider elements is indicated.
The higher is the feeding capacity (q), the higher is the precision of the flow division, but in opposition there are losses of loading and higher noise. Therefore we suggest to feed the elements with capacities equal or a few superior to the ones indicated in the column **"RECOMMENDED"**.
Remember to verify the capacities even in phase of flow reunion.
The pressure indicated are to be considered as maximum of functioning, the flow divider is able to bear peaks of pressure 20 % superior.

How to calculate the "Li" and "Lt" measures of flow dividers:

From **table 2** it is possible to obtain the "Li" measure for flow dividers up to 16 elements with equal displacements; for flow dividers with different elements or with more than 16 elements the "Li" and "Lt" measure have to be calculated by the following formula:

Li = [(n-1) x 23] + 92+ (A1 + A2 + A3 +…….)

92 = 46 + 46

n = Number of elements of flow divider

A1... An = heights of elements of flow divider

Lt = Li + 14

14 = 7+ 7

EXAMPLE: To obtain the measures **Li** and **Lt** of a flow divider with three elements (n=3), **RV-0S 0,98 + 0,76 +1,27**

Distance between fixing hole centres — **Li** = [(3-1) x 23] + 92 + 35,5 + 34 + 38 =245,5 mm

Total Lenght — **Lt** = 245,5 + 14 = 259,5

In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to make full us at least of **1** inlet every **15** l/min capacity.

To obtain errors of division **inferior to 3%** there must be no difference of pressure between the elements superior to **30 bar**. To obtain high precisions the respect of the following parametres is also important:

- Enviroment temperature: -10°c ÷ +60°c — Oil temperature: +30°c ÷ +60°c
- Hydraulic oil based on hlp, hv (din 51524) minerals — Oil Viscosity 20 ÷ 40 cSt
- Oil filtering 10 ÷ 25 µ

FLOW DIVIDER "RV" Series Swallow Line

RV-0V

Flow divider with independent **phase correction and anticavitation** valves for each element

Code:

9RV	NN	M	CC

9RV	Flow Divider Typology
NN	Number of elements
M	Code of setting range of the valves
CC	Displacement Code

TABLE "M"	
A	7÷ 70 bar
B	35÷ 175 bar
C	70÷ 350 bar

Example: Flow divider with two elements (same displacement)
RV-0V / 0,57 x 2 with valve 7 ÷ 70 bar

9RV	02	A	05

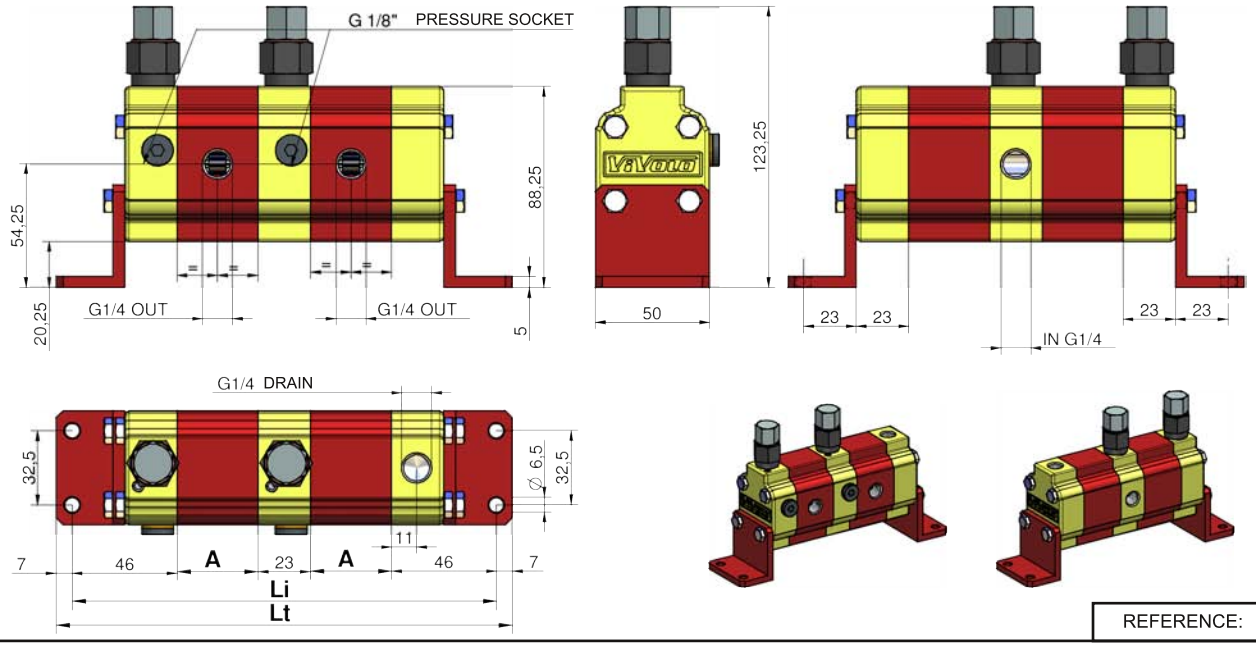
Example: Flow Divider with 4 elements (with different displacement - max 7):
RV-0V / 0,57+0,76+0,98+1,52 with valve 35 ÷ 175 bar

9RV	04	B	05	06	07	11

NOTE: to define codes for flow dividers with more than 7 different displacement, please contact our sales department.

Table: 1

Displacem.	CC	Max Pressure bar	One element flow rate l/min		
Cm^3/rev	Code		MIN	RECOMMENDED	MAX
0,17	01	210	0,2	0,4	1,2
0,25	02	210	0,3	0,7	1,8
0,45	04	210	0,6	1,2	3
0.57	05	210	0,8	1,5	3,8
0,76	06	210	1	2	4,8
0,98	07	210	1,2	2,3	5,6
1,27	09	210	1,5	3	7,2
1,52	11	210	1,9	3,5	8
2,30	13	210	2,6	5	10,3



REFERENCE: RV001

Table: 2

Li = Distance between fixing hole centres (single displacement flow divider)

Cm^3/rev	A	Number of elements														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,17	**29,3**	174,8	227,7	280,6	333,5	386,4	439,3	492,5	545,1	598	650,9	703,8	756,7	809,6	862,5	915,4
0,25	**29,9**	178	232,5	287	341,5	396	450,5	505	559,5	614	668,5	723	777,5	832	886,5	941
0,45	**31,5**	180	235,5	291	346,5	402	457,5	513	568,5	624	679,5	735	790,5	846	901,5	957
0,76	**34**	183	240	297	354	411	468	525	582	639	696	753	810	867	924	981
0,98	**35,5**	186	244,5	303	361,5	420	478,5	537	595,5	654	712,5	771	829,5	888	946,5	1005
1,27	**38**	191	252	313	374	435	496	557	618	679	740	801	862	923	984	1045
1,52	**40**	195	258	321	384	447	510	573	636	699	762	825	888	951	1014	1077
2,30	**46**	207	276	345	414	483	552	621	690	759	828	897	966	1035	1104	1173

Table: 3

in this table the number of inlets in function of the number of elements are indicated.

Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

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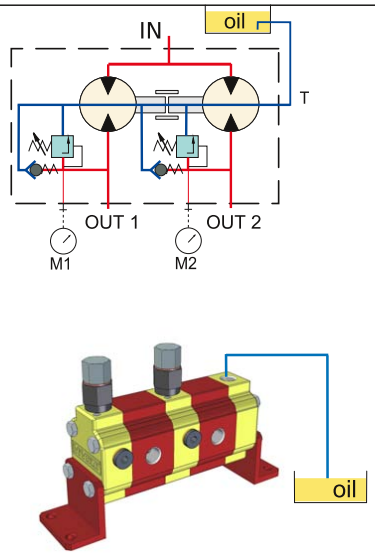
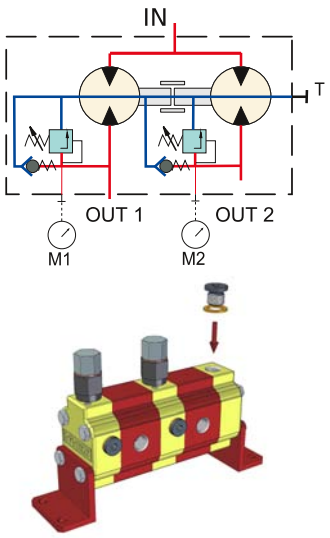
EXTERNAL DRAIN *STANDARD SETUP*	INTERNAL DRAIN
For the correct functioning of the flow divider, it has to be installed *under the oil level*. The drain tube has to pick up under the oil level and it has not to aspire air.	To predispose the divider to the internal drain, plug the 1/4 G drain port (T) **Note**: with this configuration the function of anticavitation valves is annulled
	

In **table 1** the functining range of single flow divider elements is indicated.
The higher is the feeding capacity (q), the higher is the precision of the flow division, but in opposition there are losses of loading and higher noise. Therefore we suggest to feed the elements with capacities equal or a few superior to the ones indicated in the column **"RECOMMENDED"**.
Remember to verify the capacities even in phase of flow reunion.
The pressure indicated are to be considered as maximum of functioning, the flow divider is able to bear peaks of pressure 20 % superior.

How to calculate the "Li" and "Lt" measures of flow dividers:

From **table 2** it is possible to obtain the "Li" measure for flow dividers up to 16 elements with equal displacements; for flow dividers with different elements or with more than 16 elements the "Li" and "Lt" measure have to be calculated by the following formula:

Li = [(n-1) x 23] + 92+ (A1 + A2 + A3 +…….)

92 = 46 + 46

n = Number of elements of flow divider

A1... An = heights of elements of flow divider

Lt = Li + 14

14 = 7+ 7

EXAMPLE: To obtain the measures **Li** and **Lt** of a flow divider with three elements (n=3), **RV-0V 0,98 + 0,76 +1,27**

Distance between fixing hole centres — **Li** = [(3-1) x 23] + 92 + 35,5 + 34 + 38 =245,5 mm

Total Lenght — **Lt** = 245,5 + 14 = 259,5

In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to make full us at least of **1** inlet every **15** l/min capacity.

To obtain errors of division **inferior to 3%** there must be no difference of pressure between the elements superior to **30 bar**. To obtain high precisions the respect of the following parametres is also important:

- Enviroment temperature: -10°c ÷ +60°c — Oil temperature: +30°c ÷ +60°c
- Hydraulic oil based on hlp, hv (din 51524) minerals — Oil Viscosity 20 ÷ 40 cSt
- Oil filtering 10 ÷ 25 µ

FLOW DIVIDER "RV" Series Swallow Line

RV-0G

Flow Divider with MOTOR

Code:

9RG	NN	O	CC	CC

9RG	Flow Divider Typology
NN	Number of flow divider elements
O	Number of motor elements
CC	Motor Displacement Code
CC	Flow Divider Displacement Code

Example: Flow divider with two elements (same displacement) and Motor RV-0G / 0,76 x 2 + 1 Motor 1.52

9RG	02	1	11	06

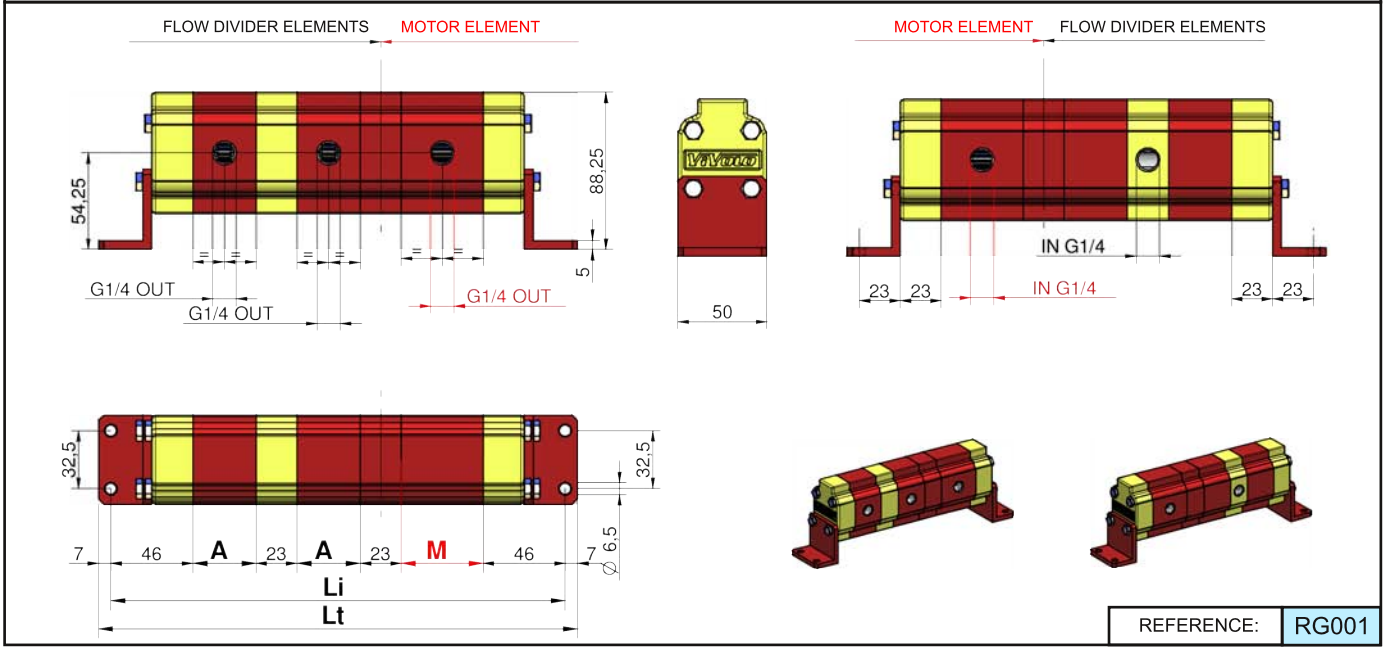
Example: Flow Divider 4 elements (different displacement - max 6) and Motor: RV-0G / 0,57+0,76+1.27+0.45 + 1 Motor 2.30

9RG	04	1	13	05	06	09	04

NOTE: to define codes for flow dividers with more than 6 different displacement, please contact our sales department.

Table: 1

Displacem.	CC	Max Pressure bar	One element flow rate l/min		
Cm³/rev	Code		MIN	RECOMMENDED	MAX
0,17	01	210	0,2	0,4	1,2
0,25	02	210	0,3	0,7	1,8
0,45	04	210	0,6	1,2	3
0.57	05	210	0,8	1,5	3,8
0,76	06	210	1	2	4,8
0,98	07	210	1,2	2,3	5,6
1,27	09	210	1,5	3	7,2
1,52	11	210	1,9	3,5	8
2,30	13	210	2,6	5	10,3



REFERENCE: RG001

Table: 2

Li = Distance between fixing hole centres (single displacement flow divider)

Cm³/rev	A-M	Number of elements														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,17	**29,3**	174,8	227,7	280,6	333,5	386,4	439,3	492,5	545,1	598	650,9	703,8	756,7	809,6	862,5	915,4
0,25	**29,9**	178	232,5	287	341,5	396	450,5	505	559,5	614	668,5	723	777,5	832	886,5	941
0,45	**31,5**	180	235,5	291	346,5	402	457,5	513	568,5	624	679,5	735	790,5	846	901,5	957
0,76	**34**	183	240	297	354	411	468	525	582	639	696	753	810	867	924	981
0,98	**35,5**	186	244,5	303	361,5	420	478,5	537	595,5	654	712,5	771	829,5	888	946,5	1005
1,27	**38**	191	252	313	374	435	496	557	618	679	740	801	862	923	984	1045
1,52	**40**	195	258	321	384	447	510	573	636	699	762	825	888	951	1014	1077
2,30	**46**	207	276	345	414	483	552	621	690	759	828	897	966	1035	1104	1173

Table: 3 in this table the number of inlets in function of the number of elements are indicated.

Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

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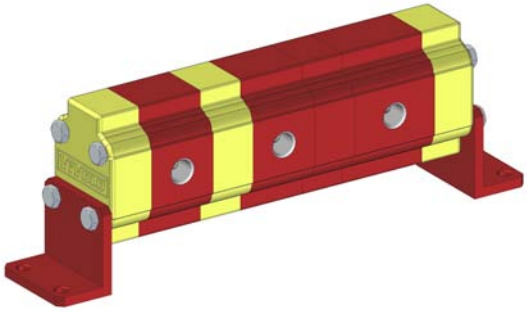
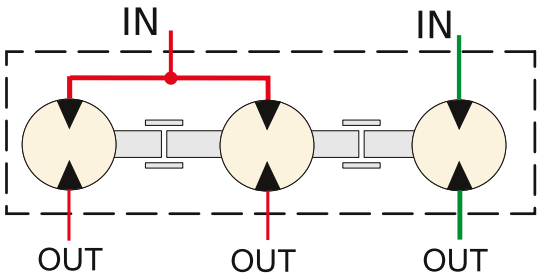
INTERNAL DRAIN





In **table 1** the functining range of single flow divider elements is indicated.
The higher is the feeding capacity (q), the higher is the precision of the flow division, but in opposition there are losses of loading and higher noise. Therefore we suggest to feed the elements with capacities equal or a few superior to the ones indicated in the column **"RECOMMENDED"**.
Remember to verify the capacities even in phase of flow reunion.
The pressure indicated are to be considered as maximum of functioning, the flow divider is able to bear peaks of pressure 20 % superior.

How to calculate the "Li" and "Lt" measures of flow dividers:

From **table 2** it is possible to obtain the "Li" measure for flow dividers up to 16 elements with equal displacements; for flow dividers with different elements or with more than 16 elements the "Li" and "Lt" measure have to be calculated by the following formula:

Li = [(n-1) x 23] + 92+ (A1 + A2 + A3 +…….)

92 = 46 + 46

n = Number of elements of flow divider

A1... An = heights of elements of flow divider

Lt = Li + 14

14 = 7+ 7

EXAMPLE: To obtain the measures **Li** and **Lt** of a flow divider with three elements (n=3), **RV-0G / 0,98 x 2+ 1 MOTOR 2,30**

Distance between fixing hole centres — **Li** = [(3-1) x 23] + 92 + 35,5 + 35,5 + 46 =255 mm

Total Lenght — **Lt** = 245,5 + 14 = 269

In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to make full us at least of **1** inlet every **15** l/min capacity.

To obtain errors of division **inferior to 3%** there must be no difference of pressure between the elements superior to **30 bar**. To obtain high precisions the respect of the following parametres is also important:

- Enviroment temperature: -10°c ÷ +60°c — Oil temperature: +30°c ÷ +60°c
- Hydraulic oil based on hlp, hv (din 51524) minerals — Oil Viscosity 20 ÷ 40 cSt
- Oil filtering 10 ÷ 25 µ

FLOW DIVIDER "RV" Series Swallow Line

RV-0H

Flow divider with **single phase correction valve** common to all the elements and MOTOR

Code:

9RN	NN	M	O	CC	CC

9RN	Flow Divider Typology
NN	Number of flow divider elements
M	Code of setting range of the valves
O	Number of motor elements
CC	Motor Displacement Code
CC	Flow Divider Displacement Code

TABLE "M"	
D	20 ÷ 140 bar
E	70÷ 315 bar

Example: Flow divider with two elements (same displacement) and Motor RV-0H / 0,76 x 2 with valve 20 ÷ 140 bar + 1 Motor 1.52

9RH	02	D	1	11	06

Example: Flow Divider 4 elements (different displacement - max 6) and Motor: RV-0H / 2.30+0,57+0,76+0,45 with valve 70 ÷ 315 bar + 1 Motor 2.30

9RH	03	E	1	13	05	06	04

NOTE: to define codes for flow dividers with more than 6 different displacement, please contact our sales department.

Table: 1

Displacem. Cm³/rev	CC Code	Max Pressure bar	One element flow rate l/min MIN	RECOMMENDED	MAX
0,17	01	210	0,2	0,4	1,2
0,25	02	210	0,3	0,7	1,8
0,45	04	210	0,6	1,2	3
0.57	05	210	0,8	1,5	3,8
0,76	06	210	1	2	4,8
0,98	07	210	1,2	2,3	5,6
1,27	09	210	1,5	3	7,2
1,52	11	210	1,9	3,5	8
2,30	13	210	2,6	5	10,3

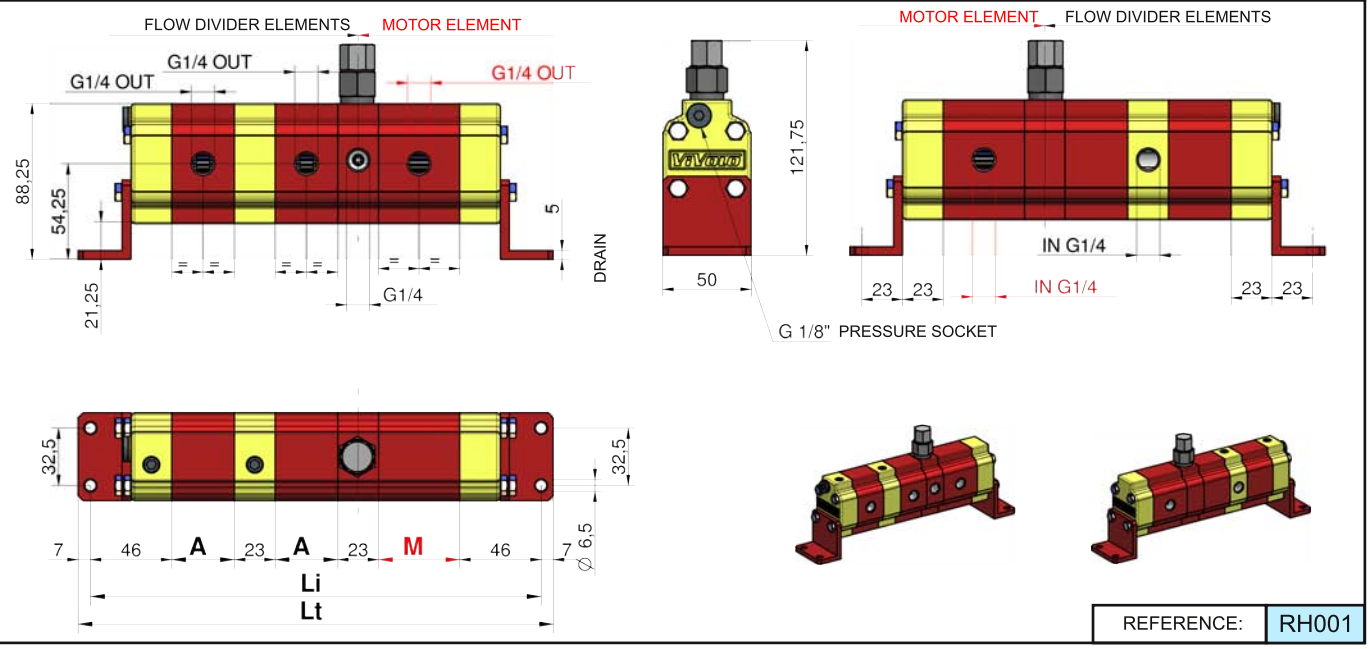


Table: 2

Li = Distance between fixing hole centres (single displacement flow divider)

Cm³/rev	A-M	Number of elements 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,17	**29,3**	174,8	227,7	280,6	333,5	386,4	439,3	492,5	545,1	598	650,9	703,8	756,7	809,6	862,5	915,4
0,25	**29,9**	178	232,5	287	341,5	396	450,5	505	559,5	614	668,5	723	777,5	832	886,5	941
0,45	**31,5**	180	235,5	291	346,5	402	457,5	513	568,5	624	679,5	735	790,5	846	901,5	957
0,76	**34**	183	240	297	354	411	468	525	582	639	696	753	810	867	924	981
0,98	**35,5**	186	244,5	303	361,5	420	478,5	537	595,5	654	712,5	771	829,5	888	946,5	1005
1,27	**38**	191	252	313	374	435	496	557	618	679	740	801	862	923	984	1045
1,52	**40**	195	258	321	384	447	510	573	636	699	762	825	888	951	1014	1077
2,30	**46**	207	276	345	414	483	552	621	690	759	828	897	966	1035	1104	1173

Table: 3

in this table the number of inlets in function of the number of elements are indicated.

Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

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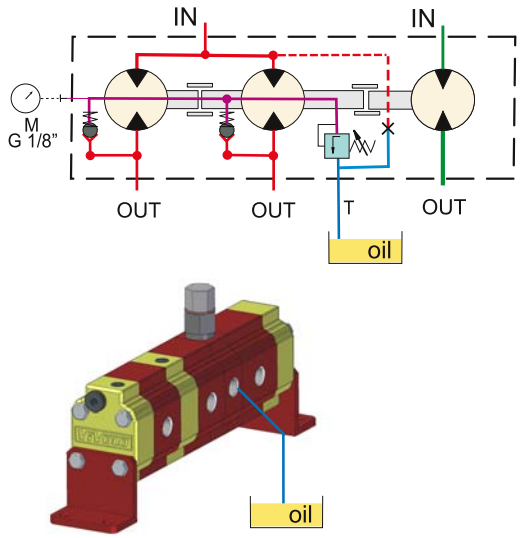
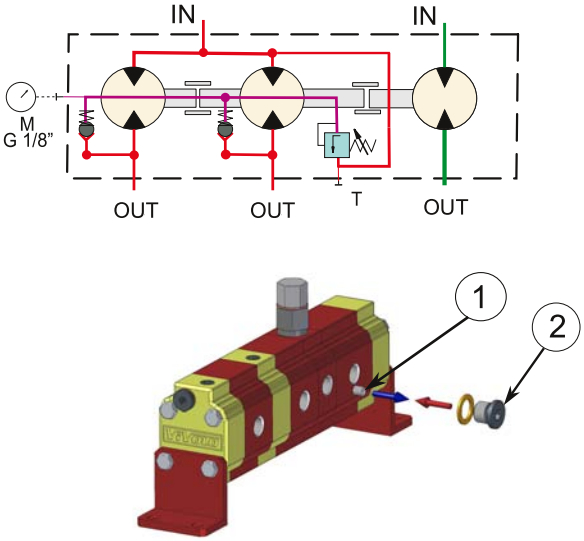
Flow divider with **single phase correction valve** common to all the elements

EXTERNAL DRAIN *STANDARD SETUP*	INTERNAL DRAIN
Connect the drain port (T) to the tank	To predispose the divider to the internal drain, execute following operations: 1. remove the M6 dowel inside the drain port 2. with a 1/4 G plug, plug the drain port (T)
	

In **table 1** the functining range of single flow divider elements is indicated.
The higher is the feeding capacity (q), the higher is the precision of the flow division, but in opposition there are losses of loading and higher noise. Therefore we suggest to feed the elements with capacities equal or a few superior to the ones indicated in the column **"RECOMMENDED"**.
Remember to verify the capacities even in phase of flow reunion.
The pressure indicated are to be considered as maximum of functioning, the flow divider is able to bear peaks of pressure 20 % superior.

How to calculate the "Li" and "Lt" measures of flow dividers:

From **table 2** it is possible to obtain the "Li" measure for flow dividers up to 16 elements with equal displacements; for flow dividers with different elements or with more than 16 elements the "Li" and "Lt" measure have to be calculated by the following formula:

Li = [(n-1) x 23] + 92+ (A1 + A2 + A3 +.....)

92 = 46 + 46

n = Number of elements of flow divider

A1... An = heights of elements of flow divider

Lt = Li + 14

14 = 7+ 7

EXAMPLE: To obtain the measures **Li** and **Lt** of a flow divider with three elements (n=3), **RV-0H 0,98 x 2 + 1 Motor 2.30**

Distance between fixing hole centres — **Li** = [(3-1) x 23] + 92 + 35,5 + 35,5 + 46 =255 mm

Total Lenght — **Lt** = 255 + 14 = 269 mm

In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to make full us at least of **1** inlet every **15** l/min capacity.

To obtain errors of division **inferior to 3%** there must be no difference of pressure between the elements superior to **30 bar**. To obtain high precisions the respect of the following parametres is also important:

- Enviroment temperature: -10°c ÷ +60°c — Oil temperature: +30°c ÷ +60°c
- Hydraulic oil based on hlp, hv (din 51524) minerals — Oil Viscosity 20 ÷ 40 cSt
- Oil filtering 10 ÷ 25 µ

FLOW DIVIDER "RV" Series Swallow Line

RV-0N

Flow divider with independent **phase correction and anticavitation** valves for each element with MOTOR

Code:

9RN	NN	M	O	CC	CC

9RN	Flow Divider Typology
NN	Number of flow divider elements
M	Code of setting range of the valves
O	Number of motor elements
CC	Motor Displacement Code
CC	Flow Divider Displacement Code

TABLE "M"	
A	7 ÷ 70 bar
B	35÷ 175 bar
C	70÷ 350 bar

Example: Flow divider with two elements (same displacement) and Motor RV-0N / 0,76 x 2 with valve 7 ÷ 70 bar + 1 Motor 1.52

9RN	02	A	1	11	06

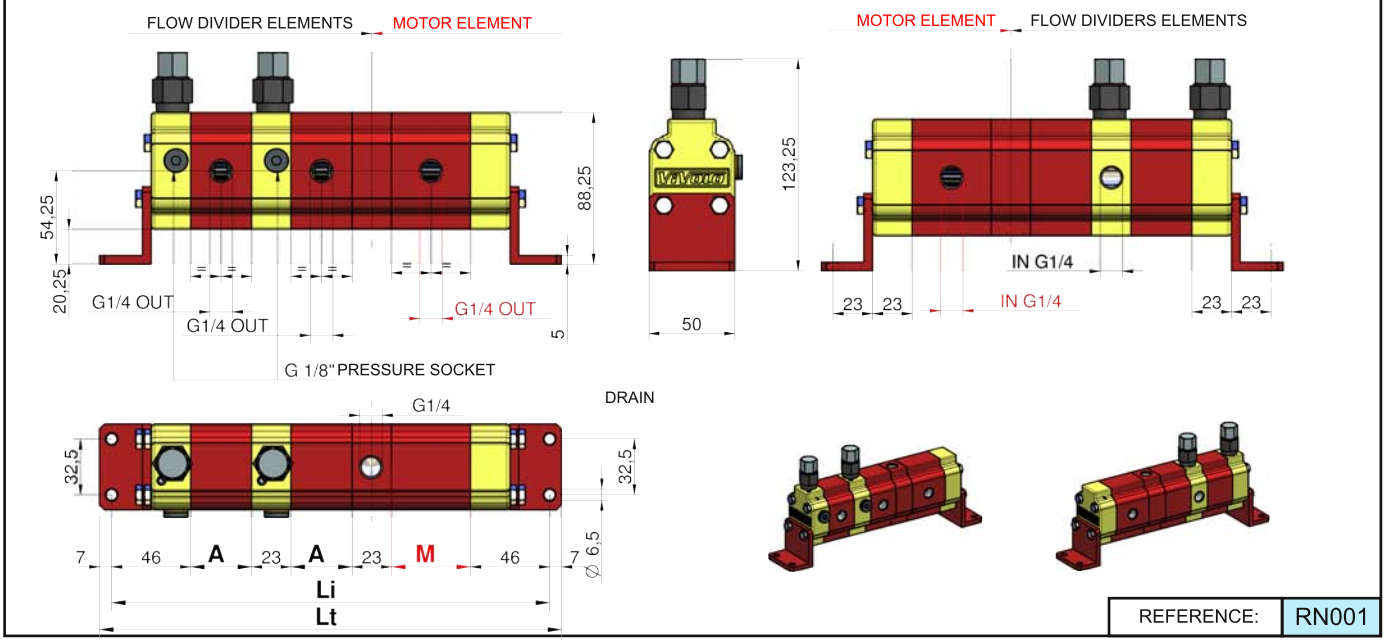
Example: Flow Divider 4 elements (different displacement - max 6) and Motor: RV-0N / 2.30+0,57+0,76+1,27 with valve 35 ÷ 175 bar + 1 Motor 2.30

9RN	03	B	1	13	05	06	09

NOTE: to define codes for flow dividers with more than 6 different displacement, please contact our sales department.

Table: 1

Displacem.	CC	Max Pressure bar	One element flow rate l/min		
Cm³/rev	Code		MIN	RECOMMENDED	MAX
0,17	01	210	0,2	0,4	1,2
0,25	02	210	0,3	0,7	1,8
0,45	04	210	0,6	1,2	3
0.57	05	210	0,8	1,5	3,8
0,76	06	210	1	2	4,8
0,98	07	210	1,2	2,3	5,6
1,27	09	210	1,5	3	7,2
1,52	11	210	1,9	3,5	8
2,30	13	210	2,6	5	10,3



REFERENCE: RN001

Table: 2

Li = Distance between fixing hole centres (single displacement flow divider)

Cm³/rev	A-M	Number of elements														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,17	29,3	174,8	227,7	280,6	333,5	386,4	439,3	492,5	545,1	598	650,9	703,8	756,7	809,6	862,5	915,4
0,25	29,9	178	232,5	287	341,5	396	450,5	505	559,5	614	668,5	723	777,5	832	886,5	941
0,45	31,5	180	235,5	291	346,5	402	457,5	513	568,5	624	679,5	735	790,5	846	901,5	957
0,76	34	183	240	297	354	411	468	525	582	639	696	753	810	867	924	981
0,98	35,5	186	244,5	303	361,5	420	478,5	537	595,5	654	712,5	771	829,5	888	946,5	1005
1,27	38	191	252	313	374	435	496	557	618	679	740	801	862	923	984	1045
1,52	40	195	258	321	384	447	510	573	636	699	762	825	888	951	1014	1077
2,30	46	207	276	345	414	483	552	621	690	759	828	897	966	1035	1104	1173

Table: 3

in this table the number of inlets in function of the number of elements are indicated.

Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

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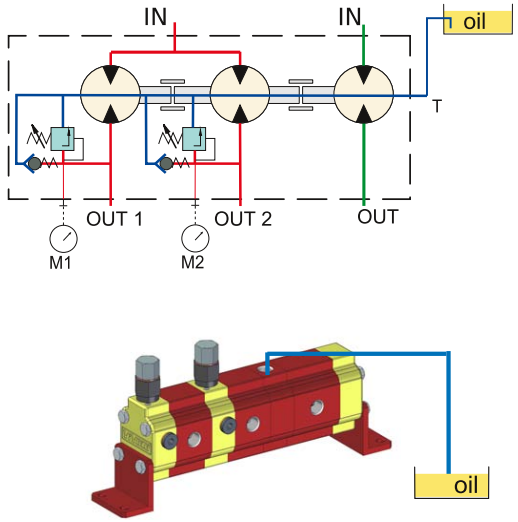
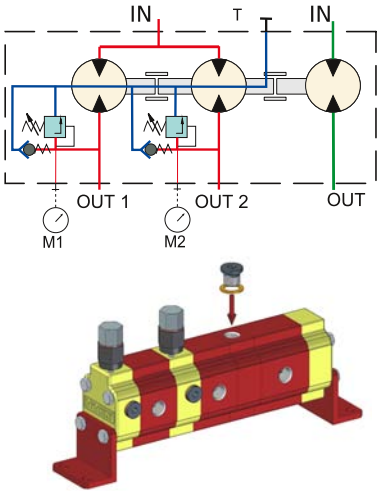
EXTERNAL DRAIN *STANDARD SETUP*	INTERNAL DRAIN
For the correct functioning of the flow divider, it has to be installed *under the oil level*. The drain tube has to pick up under the oil level and it has not to aspire air.	To predispose the divider to the internal drain, plug the 1/4 G drain port (T) **Note**: with this configuration the function of anticavitation valves is annulled
	

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The higher is the feeding capacity (q), the higher is the precision of the flow division, but in opposition there are losses of loading and higher noise. Therefore we suggest to feed the elements with capacities equal or a few superior to the ones indicated in the column **"RECOMMENDED"**.
Remember to verify the capacities even in phase of flow reunion.
The pressure indicated are to be considered as maximum of functioning, the flow divider is able to bear peaks of pressure 20 % superior.

How to calculate the "Li" and "Lt" measures of flow dividers:

From **table 2** it is possible to obtain the "Li" measure for flow dividers up to 16 elements with equal displacements; for flow dividers with different elements or with more than 16 elements the "Li" and "Lt" measure have to be calculated by the following formula:

Li = [(n-1) x 23] + 92+ (A1 + A2 + A3 +…….)

92 = 46 + 46

n = Number of elements of flow divider

A1... An = heights of elements of flow divider

Lt = Li + 14

14 = 7+ 7

EXAMPLE: To obtain the measures **Li** and **Lt** of a flow divider with three elements (n=3), **RV-NG / 0,98 x 2+ 1 MOTOR 2,30**

Distance between fixing hole centres — **Li** = [(3-1) x 23] + 92 + 35,5 + 35,5 + 46 =255 mm

Total Lenght — **Lt** = 255 + 14 = 269 mm

In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to make full us at least of **1** inlet every **15** l/min capacity.

To obtain errors of division **inferior to 3%** there must be no difference of pressure between the elements superior to **30 bar.** To obtain high precisions the respect of the following parametres is also important:

- Enviroment temperature: -10°c ÷ +60°c — Oil temperature: +30°c ÷ +60°c
- Hydraulic oil based on hlp, hv (din 51524) minerals — Oil Viscosity 20 ÷ 40 cSt
- Oil filtering 10 ÷ 25 µ

FLOW DIVIDER "RV" Series Swallow Line

RV-1D

Flow divider (Standard Version)

Code:

9RD	NN	CC

9RD	Flow Divider Typology
NN	Number of elements
CC	Displacement Code

Example: Flow divider with two elements (same displacement)
RV-1D / 3.8 x 2

9RD	02	25

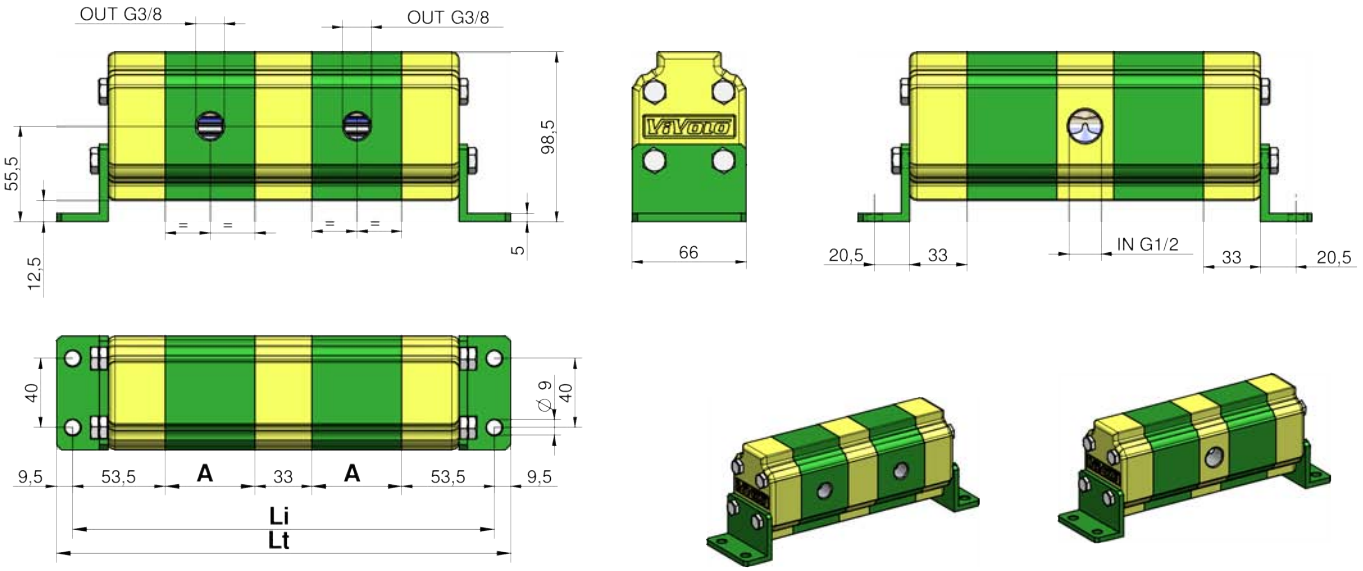
Example: Flow Divider with 4 elements (with different displacement - max 7):
RV-1D / 3,8+4,9+4,9+6,5

9RD	04	25	29	29	32

NOTE: to define codes for flow dividers with more than 7 different displacement, please contact our sales department.

Table: 1

Displacem.	CC	Max Pressure bar	One element flow rate l/min		
Cm³/rev	Code		MIN	RECOMMENDED	MAX
0,9	16	220	1	2	6
1,2	17	220	1,5	3	7
1,7	18	220	2	4	9
2,2	20	220	2,5	5	13
2,6	21	220	3	6	15,5
3,2	23	220	3,5	7,5	18
3,8	25	220	4	8,5	21
4,3	27	220	4,5	9,5	23
4,9	29	220	5,5	11	27
5,9	31	220	6,5	13	30
6,5	32	220	7,5	14	32
7,8	34	210	8,5	16	35,5
9,8	36	200	11	20	41



REFERENCE: RD101

Table: 2

Li = Distance between fixing hole centres (single displacement flow divider)

Cm³/rev	A	Number of elements														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,9	**41,5**	223	297,5	372	446,5	521	595,5	670	744,5	819	893,5	968	1042,5	1117	1191,5	1266
1,2	**42,5**	225	300,5	376	451,5	527	602,5	678	753,5	829	904,5	980	1055,5	1131	1206,5	1282
1,7	**44**	228	305	382	459	536	613	690	767	844	921	998	1075	1152	1229	1306
2,2	**46**	232	311	390	469	548	627	706	785	864	943	1022	1101	1180	1259	1338
2,6	**48**	236	317	398	479	560	641	722	803	884	965	1046	1127	1208	1289	1370
3,2	**50**	240	323	406	489	572	655	738	821	904	987	1070	1153	1236	1319	1402
3,8	**52**	244	329	414	499	584	669	754	839	924	1009	1094	1179	1264	1349	1434
4,3	**54**	248	335	422	509	596	683	770	857	944	1031	1118	1205	1292	1379	1466
4,9	**57**	254	344	434	524	614	704	794	884	974	1064	1154	1244	1334	1424	1514
5,9	**60,5**	261	354,5	448	541,5	635	728,5	822	915,5	1009	1103	1196	1289,5	1383	1476,5	1570
6,5	**63**	266	362	458	554	650	746	842	938	1034	1130	1226	1322	1418	1514	1610
7,8	**67**	274	374	474	574	674	774	874	974	1074	1174	1274	1374	1474	1574	1674
9,8	**76**	292	401	510	619	728	837	946	1055	1164	1273	1382	1491	1600	1709	1818

Table: 3 in this table the number of inlets in function of the number of elements are indicated.

Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

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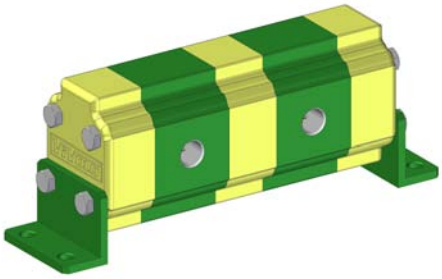
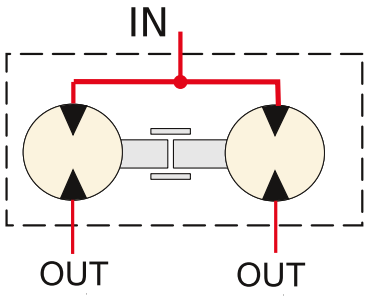
INTERNAL DRAIN





In **table 1** the functining range of single flow divider elements is indicated.
The higher is the feeding capacity (q), the higher is the precision of the flow division, but in opposition there are losses of loading and higher noise. Therefore we suggest to feed the elements with capacities equal or a few superior to the ones indicated in the column **"RECOMMENDED"**.
Remember to verify the capacities even in phase of flow reunion.
The pressure indicated are to be considered as maximum of functioning, the flow divider is able to bear peaks of pressure 20 % superior.

How to calculate the "Li" and "Lt" measures of flow dividers:

From **table 2** it is possible to obtain the "Li" measure for flow dividers up to 16 elements with equal displacements; for flow dividers with different elements or with more than 16 elements the "Li" and "Lt" measure have to be calculated by the following formula:

Li = [(n-1) x 33] + 107 + (A1 + A2 + A3 +…….)

107 = 53,5 + 53,5

n = Number of elements of flow divider

A1... An = heights of elements of flow divider

Lt = Li + 19

19 = 9,5 + 9,5

EXAMPLE: To obtain the measures **Li** and **Lt** of a flow divider with three elements (n=3), **RV-1D 4.3 + 2,2 +0,9**

Distance between fixing hole centres	**Li** = [(3-1) x 33] + 107 + 54 + 46 + 41,5 =314,5 mm
Total Lenght	**Lt** = 314,5 + 19 = 333,5

In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to make full us at least of **1** inlet every **40** l/min capacity.

To obtain errors of division **inferior to 3%** there must be no difference of pressure between the elements superior to **30 bar**. To obtain high precisions the respect of the following parametres is also important:

- Enviroment temperature: -10°c ÷ +60°c — Oil temperature: +30°c ÷ +60°c
- Hydraulic oil based on hlp, hv (din 51524) minerals — Oil Viscosity 20 ÷ 40 cSt
- Oil filtering 10 ÷ 25 µ

FLOW DIVIDER "RV" Series Swallow Line

RV-1S

Flow divider with **single phase correction valve** common to all the elements

Code:

9RS	NN	M	CC

9RD	Flow Divider Typology
NN	Number of elements
M	Code of setting range of the valves
CC	Displacement Code

TABLE "M"	
C	10 ÷ 105 bar
D	70÷ 210 bar
E	140 ÷ 350 bar

Example: Flow divider with two elements (same displacement)
RV-1S / 3,8 x 2 with valve 10 ÷ 105 bar

9RS	02	C	25

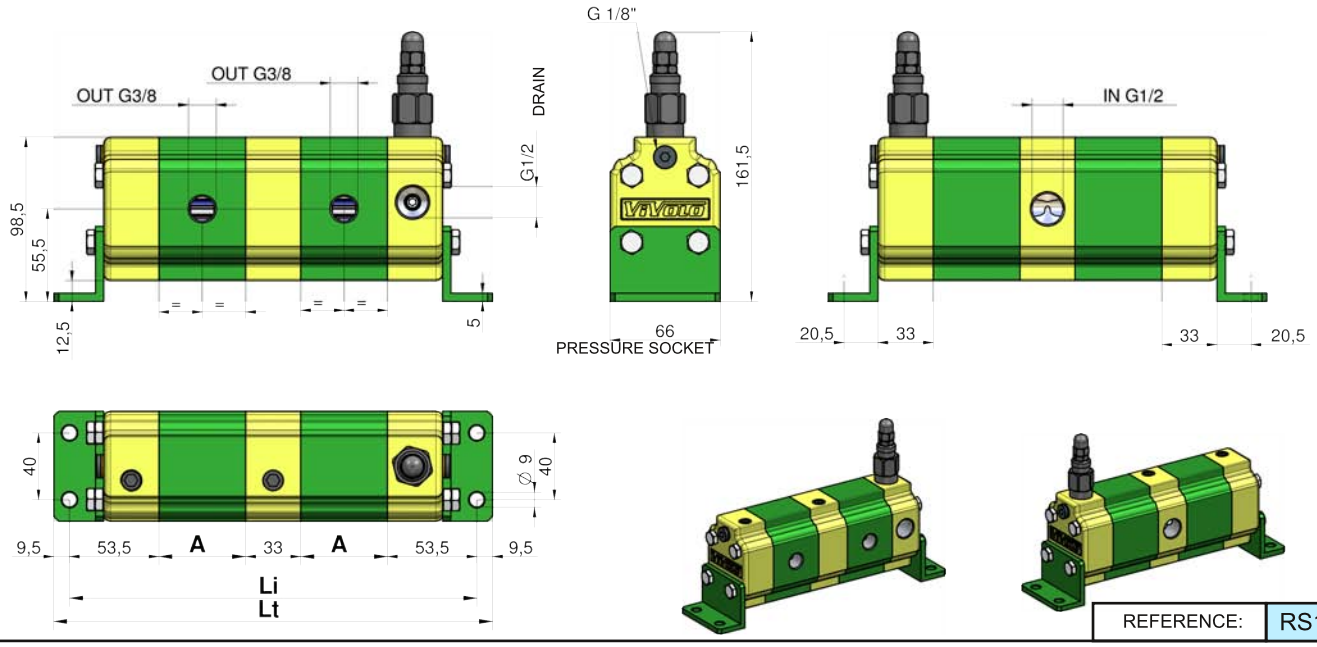
Example: Flow Divider with 4 elements (with different displacement - max 7):
RV-1S / 3,8+4,9+4,9+6,5 with valve 70 ÷ 210 bar

9RS	04	D	25	29	29	32

NOTE: to define codes for flow dividers with more than 7 different displacement, please contact our sales department.

Table: 1

Displacem.	CC	Max Pressure bar	One element flow rate l/min		
Cm³/rev	Code		MIN	RECOMMENDED	MAX
0,9	16	220	1	2	6
1,2	17	220	1,5	3	7
1,7	18	220	2	4	9
2,2	20	220	2,5	5	13
2,6	21	220	3	6	15,5
3,2	23	220	3,5	7,5	18
3,8	25	220	4	8,5	21
4,3	27	220	4,5	9,5	23
4,9	29	220	5,5	11	27
5,9	31	220	6,5	13	30
6,5	32	220	7,5	14	32
7,8	34	210	8,5	16	35,5
9,8	36	200	11	20	41



REFERENCE: RS101

Table: 2

Li = Distance between fixing hole centres (single displacement flow divider)

Cm³/rev	A	Number of elements														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,9	**41,5**	223	297,5	372	446,5	521	595,5	670	744,5	819	893,5	968	1042,5	1117	1191,5	1266
1,2	**42,5**	225	300,5	376	451,5	527	602,5	678	753,5	829	904,5	980	1055,5	1131	1206,5	1282
1,7	**44**	228	305	382	459	536	613	690	767	844	921	998	1075	1152	1229	1306
2,2	**46**	232	311	390	469	548	627	706	785	864	943	1022	1101	1180	1259	1338
2,6	**48**	236	317	398	479	560	641	722	803	884	965	1046	1127	1208	1289	1370
3,2	**50**	240	323	406	489	572	655	738	821	904	987	1070	1153	1236	1319	1402
3,8	**52**	244	329	414	499	584	669	754	839	924	1009	1094	1179	1264	1349	1434
4,3	**54**	248	335	422	509	596	683	770	857	944	1031	1118	1205	1292	1379	1466
4,9	**57**	254	344	434	524	614	704	794	884	974	1064	1154	1244	1334	1424	1514
5,9	**60,5**	261	354,5	448	541,5	635	728,5	822	915,5	1009	1103	1196	1289,5	1383	1476,5	1570
6,5	**63**	266	362	458	554	650	746	842	938	1034	1130	1226	1322	1418	1514	1610
7,8	**67**	274	374	474	574	674	774	874	974	1074	1174	1274	1374	1474	1574	1674
9,8	**76**	292	401	510	619	728	837	946	1055	1164	1273	1382	1491	1600	1709	1818

Table: 3

in this table the number of inlets in function of the number of elements are indicated.

Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

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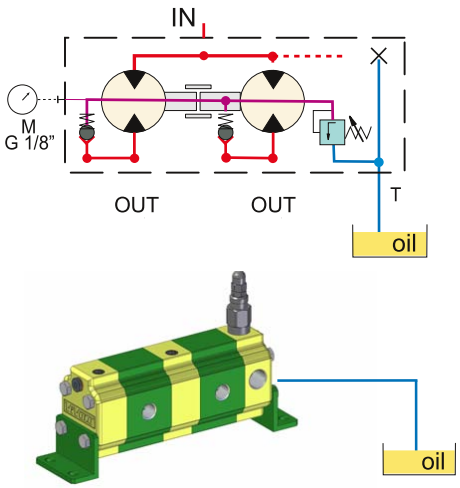
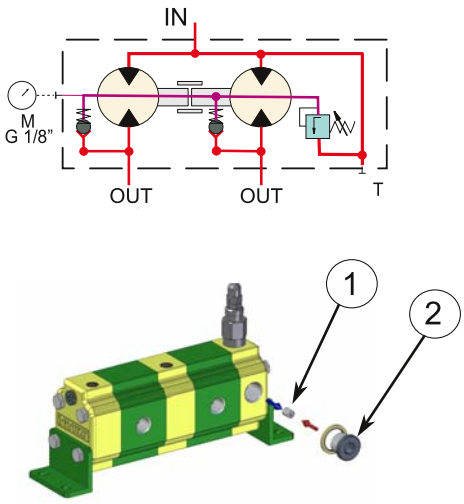
Flow divider with **single phase correction valve** common to all the elements

EXTERNAL DRAIN *STANDARD SETUP*	INTERNAL DRAIN
Connect the drain port (T) to the tank	To predispose the divider to the internal drain, execute following operations: 1. remove the G 1/8 dowel inside the drain port 2. with a 1/2 G plug, plug the drain port (T)
	

In **table 1** the functining range of single flow divider elements is indicated.
The higher is the feeding capacity (q), the higher is the precision of the flow division, but in opposition there are losses of loading and higher noise. Therefore we suggest to feed the elements with capacities equal or a few superior to the ones indicated in the column **"RECOMMENDED"**.
Remember to verify the capacities even in phase of flow reunion.
The pressure indicated are to be considered as maximum of functioning, the flow divider is able to bear peaks of pressure 20 % superior.

How to calculate the "Li" and "Lt" measures of flow dividers:

From **table 2** it is possible to obtain the "Li" measure for flow dividers up to 16 elements with equal displacements; for flow dividers with different elements or with more than 16 elements the "Li" and "Lt" measure have to be calculated by the following formula:

Li = [(n-1) x 33] + 107 + (A1 + A2 + A3 +…….)

107 = 53,5 + 53,5
n = Number of elements of flow divider
A1... An = heights of elements of flow divider

Lt = Li + 19

19 = 9,5 + 9,5

EXAMPLE: To obtain the measures **Li** and **Lt** of a flow divider with three elements (n=3), **RV-1S 4.3 + 2,2 +0,9**

Distance between fixing hole centres — **Li** = [(3-1) x 33] + 107 + 54 + 46 + 41,5 =314,5 mm

Total Lenght — **Lt** = 314,5 + 19 = 333,5

In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to make full us at least of **1** inlet every **40** l/min capacity.

To obtain errors of division **inferior to 3%** there must be no difference of pressure between the elements superior to **30 bar**. To obtain high precisions the respect of the following parametres is also important:

- Enviroment temperature: -10°c ÷ +60°c — Oil temperature: +30°c ÷ +60°c
- Hydraulic oil based on hlp, hv (din 51524) minerals — Oil Viscosity 20 ÷ 40 cSt
- Oil filtering 10 ÷ 25 µ

FLOW DIVIDER "RV" Series Swallow Line

RV-1V

Flow divider with independent **phase correction and anticavitation** valves for each element

Code:

9RV	NN	M	CC

9RV	Flow Divider Typology
NN	Number of elements
M	Code of setting range of the valves
CC	Displacement Code

TABLE "M"	
A	7÷ 210 bar
B	105÷ 420 bar

Example: Flow divider with two elements (same displacement)
RV-1V / 3,8 x 2 with valve 7 ÷ 210 bar

9RV	02	A	25

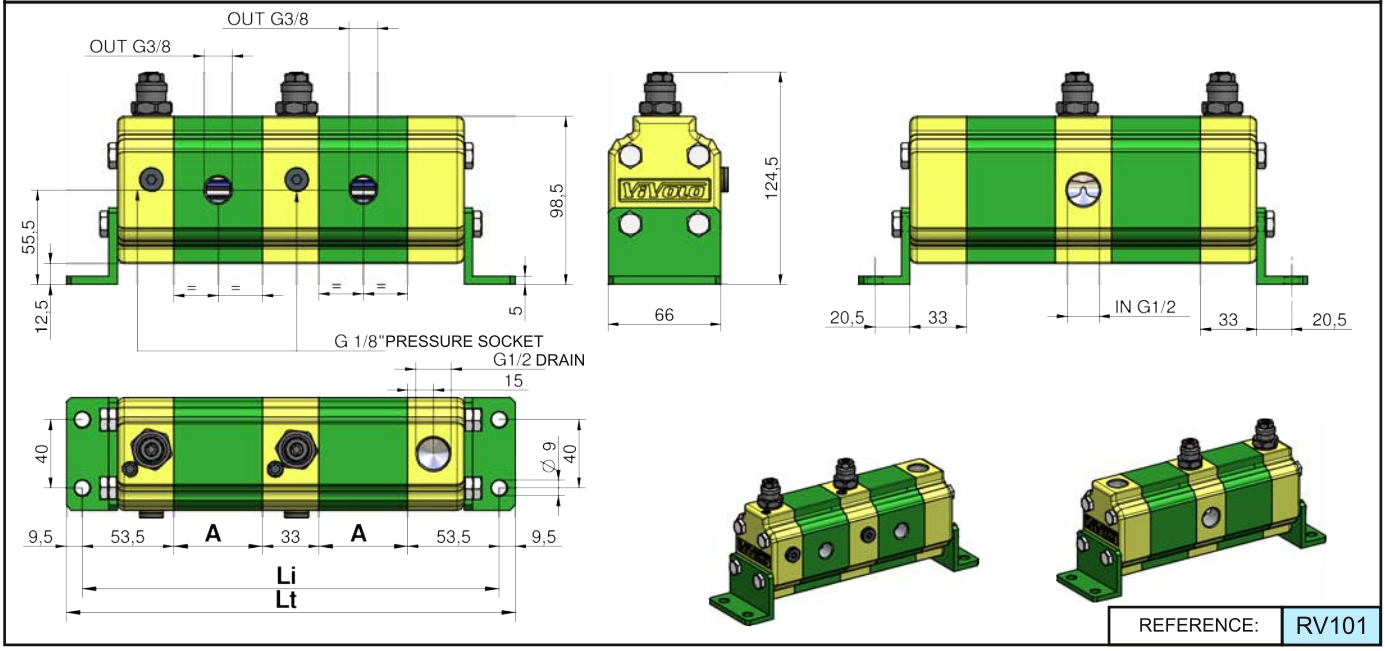
Example: Flow Divider with 4 elements (with different displacement - max 7):
RV-1V /3,8+4,9+4,9+6,5 with valve 105 ÷ 420 bar

9RV	04	B	25	29	29	32

NOTE: to define codes for flow dividers with more than 7 different displacement, please contact our sales department.

Table: 1

Displacem.	CC	Max Pressure bar	One element flow rate l/min		
Cm³/rev	Code		MIN	RECOMMENDED	MAX
0,9	16	220	1	2	6
1,2	17	220	1,5	3	7
1,7	18	220	2	4	9
2,2	20	220	2,5	5	13
2,6	21	220	3	6	15,5
3,2	23	220	3,5	7,5	18
3,8	25	220	4	8,5	21
4,3	27	220	4,5	9,5	23
4,9	29	220	5,5	11	27
5,9	31	220	6,5	13	30
6,5	32	220	7,5	14	32
7,8	34	210	8,5	16	35,5
9,8	36	200	11	20	41



REFERENCE: RV101

Table: 2

Li = Distance between fixing hole centres (single displacement flow divider)

Cm³/rev	A	Number of elements														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,9	**41,5**	223	297,5	372	446,5	521	595,5	670	744,5	819	893,5	968	1042,5	1117	1191,5	1266
1,2	**42,5**	225	300,5	376	451,5	527	602,5	678	753,5	829	904,5	980	1055,5	1131	1206,5	1282
1,7	**44**	228	305	382	459	536	613	690	767	844	921	998	1075	1152	1229	1306
2,2	**46**	232	311	390	469	548	627	706	785	864	943	1022	1101	1180	1259	1338
2,6	**48**	236	317	398	479	560	641	722	803	884	965	1046	1127	1208	1289	1370
3,2	**50**	240	323	406	489	572	655	738	821	904	987	1070	1153	1236	1319	1402
3,8	**52**	244	329	414	499	584	669	754	839	924	1009	1094	1179	1264	1349	1434
4,3	**54**	248	335	422	509	596	683	770	857	944	1031	1118	1205	1292	1379	1466
4,9	**57**	254	344	434	524	614	704	794	884	974	1064	1154	1244	1334	1424	1514
5,9	**60,5**	261	354,5	448	541,5	635	728,5	822	915,5	1009	1103	1196	1289,5	1383	1476,5	1570
6,5	**63**	266	362	458	554	650	746	842	938	1034	1130	1226	1322	1418	1514	1610
7,8	**67**	274	374	474	574	674	774	874	974	1074	1174	1274	1374	1474	1574	1674
9,8	**76**	292	401	510	619	728	837	946	1055	1164	1273	1382	1491	1600	1709	1818

Table: 3

in this table the number of inlets in function of the number of elements are indicated.

Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

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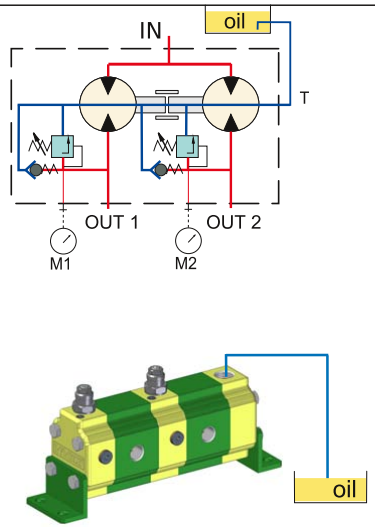
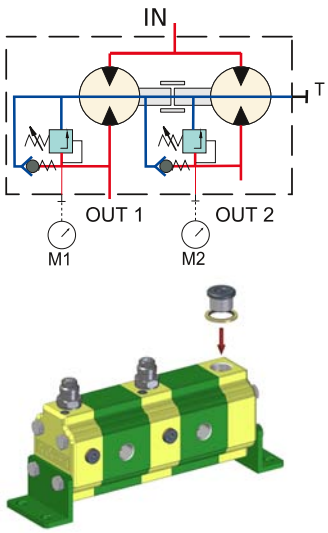
EXTERNAL DRAIN *STANDARD SETUP*	INTERNAL DRAIN
For the correct functioning of the flow divider, it has to be installed *under the oil level*. The drain tube has to pick up under the oil level and it has not to aspire air.	To predispose the divider to the internal drain, plug the 1/2 G drain port (T) **Note**: with this configuration the function of anticavitation valves is annulled
	

In **table 1** the functining range of single flow divider elements is indicated.
The higher is the feeding capacity (q), the higher is the precision of the flow division, but in opposition there are losses of loading and higher noise. Therefore we suggest to feed the elements with capacities equal or a few superior to the ones indicated in the column **"RECOMMENDED"**.
Remember to verify the capacities even in phase of flow reunion.
The pressure indicated are to be considered as maximum of functioning, the flow divider is able to bear peaks of pressure 20 % superior.

How to calculate the "Li" and "Lt" measures of flow dividers:

From **table 2** it is possible to obtain the "Li" measure for flow dividers up to 16 elements with equal displacements; for flow dividers with different elements or with more than 16 elements the "Li" and "Lt" measure have to be calculated by the following formula:

Li = [(n-1) x 33] + 107 + (A1 + A2 + A3 +.....)

107 = 53,5 + 53,5
n = Number of elements of flow divider
A1... An = heights of elements of flow divider

Lt = Li + 19

19 = 9,5 + 9,5

EXAMPLE: To obtain the measures **Li** and **Lt** of a flow divider with three elements (n=3), **RV-1V 4.3 + 2,2 +0,9**

Distance between fixing hole centres — **Li** = [(3-1) x 33] + 107 + 54 + 46 + 41,5 =314,5 mm

Total Lenght — **Lt** = 314,5 + 19 = 333,5

In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to make full us at least of **1** inlet every **40** l/min capacity.

To obtain errors of division **inferior to 3%** there must be no difference of pressure between the elements superior to **30 bar**. To obtain high precisions the respect of the following parametres is also important:

- Enviroment temperature: -10°c ÷ +60°c — Oil temperature: +30°c ÷ +60°c
- Hydraulic oil based on hlp, hv (din 51524) minerals — Oil Viscosity 20 ÷ 40 cSt
- Oil filtering 10 ÷ 25 µ

FLOW DIVIDER "RV" Series Swallow Line

RV-1G

Flow Divider with MOTOR

Code:

9RG	NN	O	CC	CC

9RG	Flow Divider Typology
NN	Number of flow divider elements
O	Number of motor elements
CC	Motor Displacement Code
CC	Flow Divider Displacement Code

Example: Flow divider with two elements (same displacement) and Motor RV-1G / 3,8 x 2 + 1 Motor 7.8

9RG	02	1	34	25

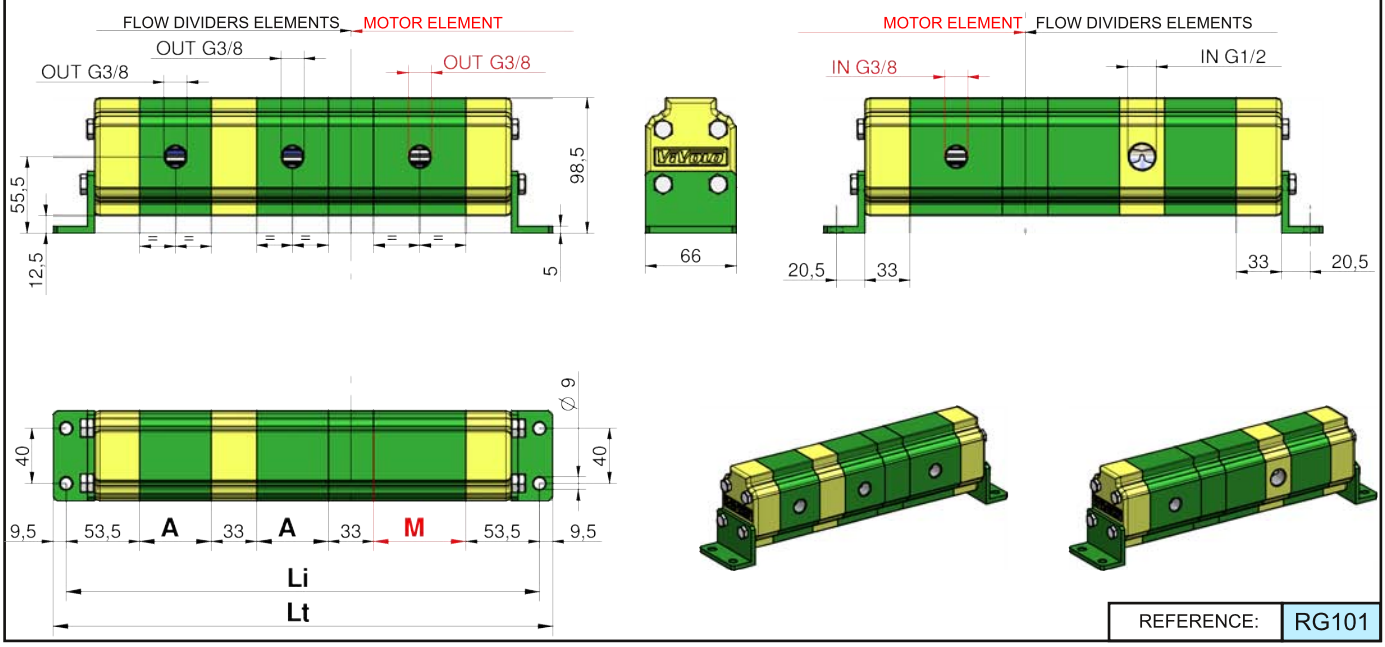
Example: Flow Divider 4 elements (different displacement - max 6) and Motor: RV-1G / 3,8+4,9+4,9+6,5 + 1 Motor 9,8

9RG	04	1	36	25	29	29	32

NOTE: to define codes for flow dividers with more than 6 different displacement, please contact our sales department.

Table: 1

Displacem.	CC	Max Pressure bar	One element flow rate l/min		
Cm³/rev	Code		MIN	RECOMMENDED	MAX
0,9	16	220	1	2	6
1,2	17	220	1,5	3	7
1,7	18	220	2	4	9
2,2	20	220	2,5	5	13
2,6	21	220	3	6	15,5
3,2	23	220	3,5	7,5	18
3,8	25	220	4	8,5	21
4,3	27	220	4,5	9,5	23
4,9	29	220	5,5	11	27
5,9	31	220	6,5	13	30
6,5	32	220	7,5	14	32
7,8	34	210	8,5	16	35,5
9,8	36	200	11	20	41



REFERENCE: RG101

Table: 2

Li = Distance between fixing hole centres (single displacement flow divider)

Cm³/rev	A-M	Number of elements														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,9	41,5	223	297,5	372	446,5	521	595,5	670	744,5	819	893,5	968	1042,5	1117	1191,5	1266
1,2	42,5	225	300,5	376	451,5	527	602,5	678	753,5	829	904,5	980	1055,5	1131	1206,5	1282
1,7	44	228	305	382	459	536	613	690	767	844	921	998	1075	1152	1229	1306
2,2	46	232	311	390	469	548	627	706	785	864	943	1022	1101	1180	1259	1338
2,6	48	236	317	398	479	560	641	722	803	884	965	1046	1127	1208	1289	1370
3,2	50	240	323	406	489	572	655	738	821	904	987	1070	1153	1236	1319	1402
3,8	52	244	329	414	499	584	669	754	839	924	1009	1094	1179	1264	1349	1434
4,3	54	248	335	422	509	596	683	770	857	944	1031	1118	1205	1292	1379	1466
4,9	57	254	344	434	524	614	704	794	884	974	1064	1154	1244	1334	1424	1514
5,9	60,5	261	354,5	448	541,5	635	728,5	822	915,5	1009	1103	1196	1289,5	1383	1476,5	1570
6,5	63	266	362	458	554	650	746	842	938	1034	1130	1226	1322	1418	1514	1610
7,8	67	274	374	474	574	674	774	874	974	1074	1174	1274	1374	1474	1574	1674
9,8	76	292	401	510	619	728	837	946	1055	1164	1273	1382	1491	1600	1709	1818

Table: 3 in this table the number of inlets in function of the number of elements are indicated.

Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

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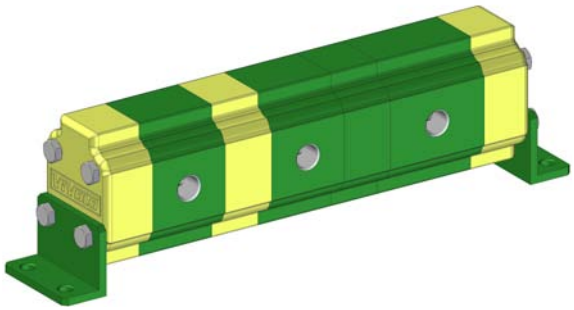
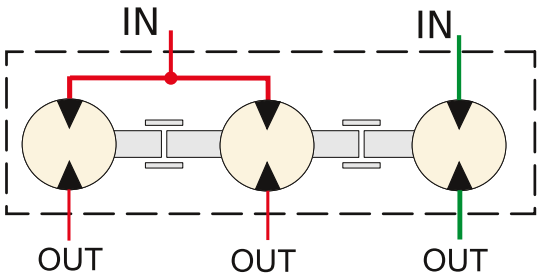
INTERNAL DRAIN





In **table 1** the functining range of single flow divider elements is indicated.
The higher is the feeding capacity (q), the higher is the precision of the flow division, but in opposition there are losses of loading and higher noise. Therefore we suggest to feed the elements with capacities equal or a few superior to the ones indicated in the column **"RECOMMENDED"**.
Remember to verify the capacities even in phase of flow reunion.
The pressure indicated are to be considered as maximum of functioning, the flow divider is able to bear peaks of pressure 20 % superior.

How to calculate the "Li" and "Lt" measures of flow dividers:

From **table 2** it is possible to obtain the "Li" measure for flow dividers up to 16 elements with equal displacements; for flow dividers with different elements or with more than 16 elements the "Li" and "Lt" measure have to be calculated by the following formula:

Li = [(n-1) x 33] + 107 + (A1 + A2 + A3 +.....)

107 = 53,5 + 53,5

n = Number of elements of flow divider

A1... An = heights of elements of flow divider

Lt = Li + 19

19 = 9,5 + 9,5

EXAMPLE: To obtain the measures **Li** and **Lt** of a flow divider with three elements (n=3), **RV-1G / 3,8 x 2+ 1 MOTOR 7,8**

Distance between fixing hole centres	**Li** = [(3-1) x 33] + 107 + 52 + 52 + 67 =344 mm
Total Lenght	**Lt** = 344 + 19 = 363

In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to make full us at least of **1** inlet every **40** l/min capacity.

To obtain errors of division **inferior to 3%** there must be no difference of pressure between the elements superior to **30 bar**. To obtain high precisions the respect of the following parametres is also important:

- Enviroment temperature: -10°c ÷ +60°c — Oil temperature: +30°c ÷ +60°c
- Hydraulic oil based on hlp, hv (din 51524) minerals — Oil Viscosity 20 ÷ 40 cSt
- Oil filtering 10 ÷ 25 µ

FLOW DIVIDER "RV" Series Swallow Line

RV-1G

Flow divider + "Group 2" Motor

Code:

9RG	NN	O	CC	CC

9RG	Flow Divider Typology
NN	Number of flow divider elements
O	Number of motor elements
CM	Motor Displacement Code
CC	Flow Divider Displacement Code

Example: Flow divider with two elements (same displacement) and Motor RV-1G / 7,8 x 2 + 1 Motor 17 cc

9RG	02	1	51	34

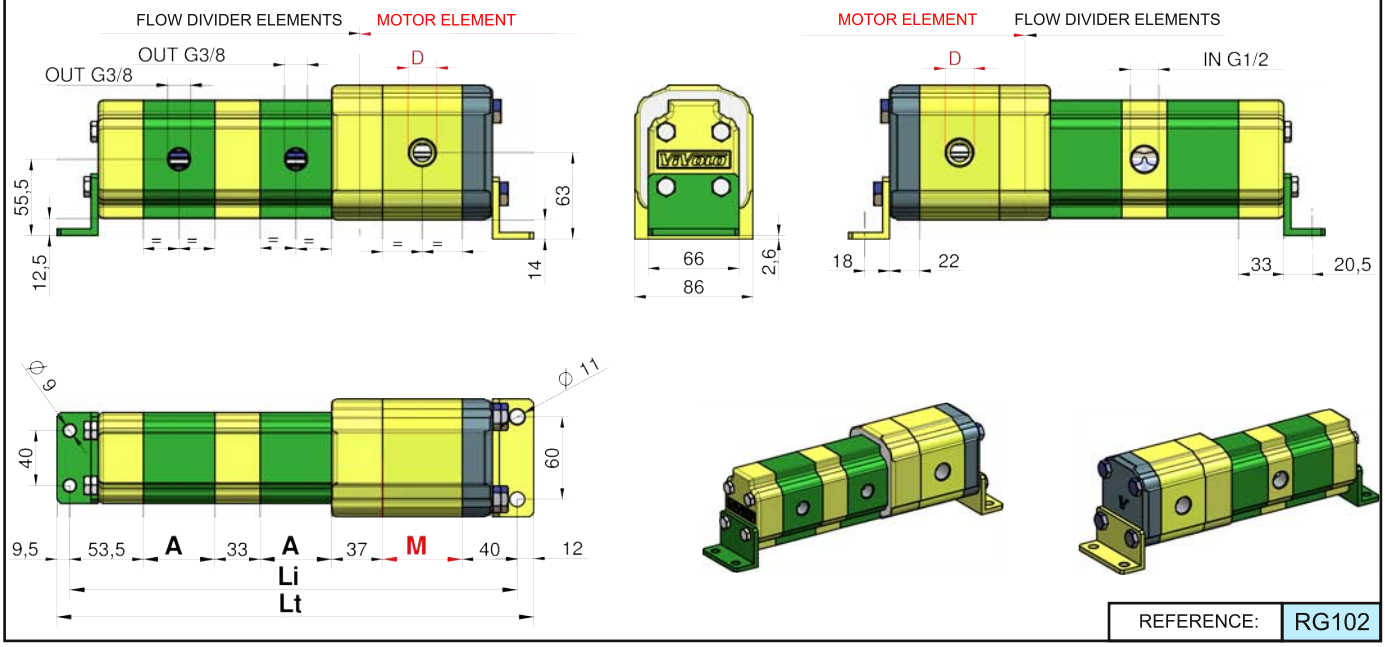
Example: Flow Divider 4 elements (different displacement max 6) and Motor RV-1G / 3,8+4,9+4,9+6,5+1 Motor 22 cc

9RG	04	1	55	25	29	29	32

NOTE: to define codes for flow dividers with more than 6 different displacement, please contact our sales department.

Table: 1

Displacem.	CC	Max Pressure bar	One element flow rate l/min		
Cm^3/rev	Code		MIN	RECOMMENDED	MAX
0,9	16	220	1	2	6
1,2	17	220	1,5	3	7
1,7	18	220	2	4	9
2,2	20	220	2,5	5	13
2,6	21	220	3	6	15,5
3,2	23	220	3,5	7,5	18
3,8	25	220	4	8,5	21
4,3	27	220	4,5	9,5	23
4,9	29	220	5,5	11	27
5,9	31	220	6,5	13	30
6,5	32	220	7,5	14	32
7,8	34	210	8,5	16	35,5
9,8	36	200	11	20	41



REFERENCE: RG102

Cm^3/giro	A
0,9	41,5
1,2	42,5
1,7	44
2,2	46
2,6	48
3,2	50
3,8	52
4,3	54
4,9	57
5,9	60,5
6,5	63
7,8	67
9,8	76

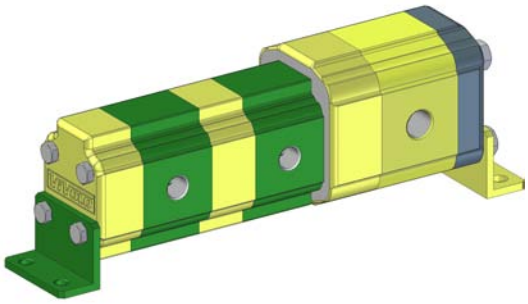
Cm^3/giro	CM	M	D
4	41	47	1/2" BSP
6	43	50	1/2" BSP
9	45	54	1/2" BSP
11	47	58	1/2" BSP
14	49	64	3/4" BSP
17	51	68	3/4" BSP
19	53	72	3/4" BSP
22	55	78	3/4" BSP
26	57	82	1" BSP
30	59	90	1" BSP
34	61	97	1" BSP
40	63	106	1" BSP

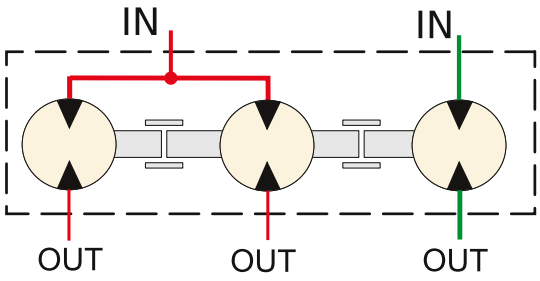
Table: 3

in this table the number of inlets in function of the number of elements are indicated.

Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

INTERNAL DRAIN





In **table 1** the functining range of single flow divider elements is indicated.
The higher is the feeding capacity (q), the higher is the precision of the flow division, but in opposition there are losses of loading and higher noise. Therefore we suggest to feed the elements with capacities equal or a few superior to the ones indicated in the column **"RECOMMENDED"**.
Remember to verify the capacities even in phase of flow reunion.
The pressure indicated are to be considered as maximum of functioning, the flow divider is able to bear peaks of pressure 20 % superior.

How to calculate the "Li" and "Lt" measures of flow dividers:

Li = [(n-1) x 33] + 130,5 +(M1 + M2 + M3 +....) + (A1 + A2 + A3 +….)

130.5 = 53,5 + 37 + 40
n = Numero di elementi del divisore
A1... An = altezze elementi divisore
M1...Mn= altezze elementi motore

Lt = Li + 21,5

21,5 = 9,5 + 12

EXAMPLE: To obtain the measures **Li** and **Lt** of a flow divider with three elements (n=3), **RV-1G / 3,8 x 2+ 1 MOTOR 11**

Distance between fixing hole centres	Li = [(2-1) x 33] + 130,5+ 47 + 52 + 52 =314,5 mm
Total Lenght	Lt = 314,5 + 21,5 = 336

In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to make full us at least of **1** inlet every **40** l/min capacity.

To obtain errors of division **inferior to 3%** there must be no difference of pressure between the elements superior to **30 bar**. To obtain high precisions the respect of the following parametres is also important:

- Enviroment temperature: -10°c ÷ +60°c — Oil temperature: +30°c ÷ +60°c
- Hydraulic oil based on hlp, hv (din 51524) minerals — Oil Viscosity 20 ÷ 40 cSt
- Oil filtering 10 ÷ 25 µ

FLOW DIVIDER "RV" Series Swallow Line

RV-1H

Flow divider with **single phase correction valve** common to all the elements and MOTOR

Code:

9RN	NN	M	O	CC	CC

9RN	Flow Divider Typology
NN	Number of flow divider elements
M	Code of setting range of the valves
O	Number of motor elements
CC	Motor Displacement Code
CC	Flow Divider Displacement Code

TABLE "M"	
C	10 ÷ 105 bar
D	70÷ 210 bar
E	140 ÷ 350 bar

Example: Flow divider with two elements (same displacement) and Motor RV-1H / 3,8 x 2 with valve 10 ÷ 105 bar + 1 motor 7,8

9RH	02	C	1	34	25

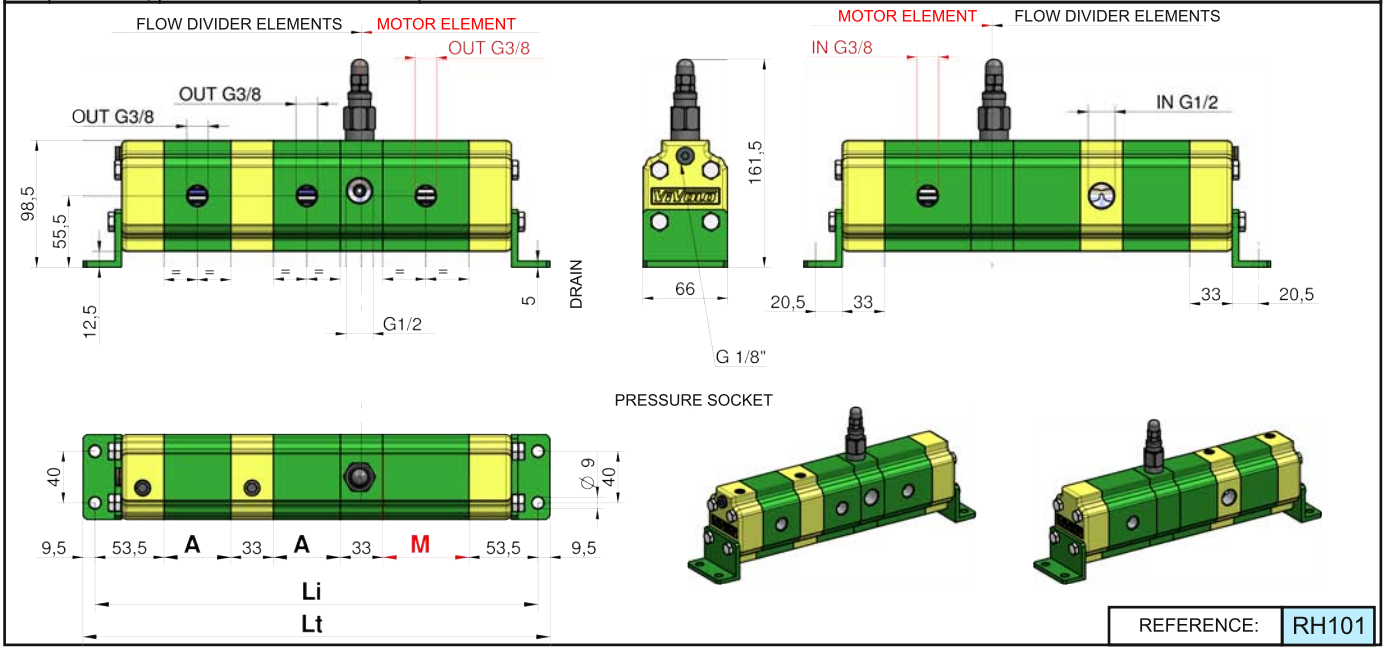
Example: Flow Divider 3 elements (different displacement - max 6) and Motor: RV-1H / 3,8+4,9+4,9 with valve 70 ÷ 210 bar + 1 Motor 6.5

9RH	03	D	1	32	25	29	29

NOTE: to define codes for flow dividers with more than 6 different displacement, please contact our sales department.

Table: 1

Displacem. Cm³/rev	CC Code	Max Pressure bar	One element flow rate l/min MIN	RECOMMENDED	
0,9	16	220	1	2	6
1,2	17	220	1,5	3	7
1,7	18	220	2	4	9
2,2	20	220	2,5	5	13
2,6	21	220	3	6	15,5
3,2	23	220	3,5	7,5	18
3,8	25	220	4	8,5	21
4,3	27	220	4,5	9,5	23
4,9	29	220	5,5	11	27
5,9	31	220	6,5	13	30
6,5	32	220	7,5	14	32
7,8	34	210	8,5	16	35,5
9,8	36	200	11	20	41



REFERENCE: RH101

Table: 2

Li = Distance between fixing hole centres (single displacement flow divider)

Cm³/rev	A-M	Number of elements 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,9	**41,5**	223	297,5	372	446,5	521	595,5	670	744,5	819	893,5	968	1042,5	1117	1191,5	1266
1,2	**42,5**	225	300,5	376	451,5	527	602,5	678	753,5	829	904,5	980	1055,5	1131	1206,5	1282
1,7	**44**	228	305	382	459	536	613	690	767	844	921	998	1075	1152	1229	1306
2,2	**46**	232	311	390	469	548	627	706	785	864	943	1022	1101	1180	1259	1338
2,6	**48**	236	317	398	479	560	641	722	803	884	965	1046	1127	1208	1289	1370
3,2	**50**	240	323	406	489	572	655	738	821	904	987	1070	1153	1236	1319	1402
3,8	**52**	244	329	414	499	584	669	754	839	924	1009	1094	1179	1264	1349	1434
4,3	**54**	248	335	422	509	596	683	770	857	944	1031	1118	1205	1292	1379	1466
4,9	**57**	254	344	434	524	614	704	794	884	974	1064	1154	1244	1334	1424	1514
5,9	**60,5**	261	354,5	448	541,5	635	728,5	822	915,5	1009	1103	1196	1289,5	1383	1476,5	1570
6,5	**63**	266	362	458	554	650	746	842	938	1034	1130	1226	1322	1418	1514	1610
7,8	**67**	274	374	474	574	674	774	874	974	1074	1174	1274	1374	1474	1574	1674
9,8	**76**	292	401	510	619	728	837	946	1055	1164	1273	1382	1491	1600	1709	1818

Table: 3

in this table the number of inlets in function of the number of elements are indicated.

Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

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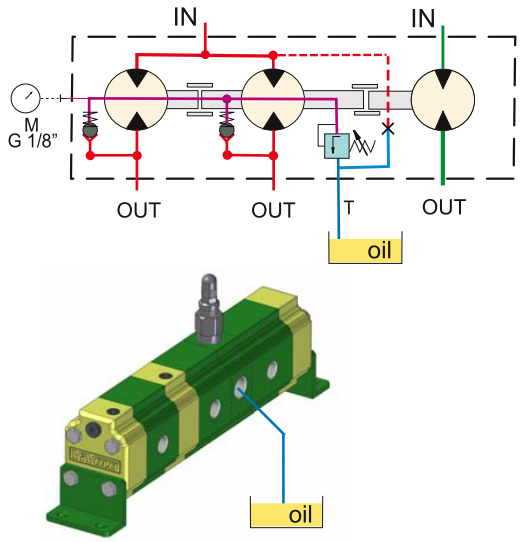
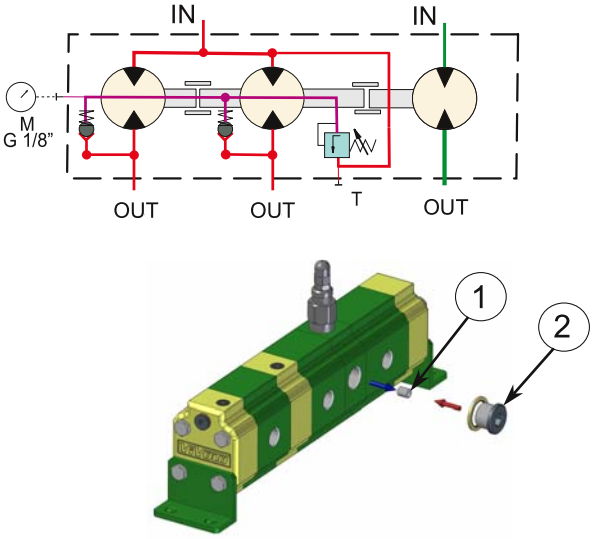
Flow divider with **single phase correction valve** common to all the elements and MOTOR

EXTERNAL DRAIN *STANDARD SETUP*	INTERNAL DRAIN
Connect the drain port (T) to the tank	To predispose the divider to the internal drain, execute following operations: 1. remove the G 1/8 dowel inside the drain port 2. with a 1/2 G plug, plug the drain port (T)
	

In **table 1** the functining range of single flow divider elements is indicated.
The higher is the feeding capacity (q), the higher is the precision of the flow division, but in opposition there are losses of loading and higher noise. Therefore we suggest to feed the elements with capacities equal or a few superior to the ones indicated in the column **"RECOMMENDED"**.
Remember to verify the capacities even in phase of flow reunion.
The pressure indicated are to be considered as maximum of functioning, the flow divider is able to bear peaks of pressure 20 % superior.

How to calculate the "Li" and "Lt" measures of flow dividers:

From **table 2** it is possible to obtain the "Li" measure for flow dividers up to 16 elements with equal displacements; for flow dividers with different elements or with more than 16 elements the "Li" and "Lt" measure have to be calculated by the following formula:

Li = [(n-1) x 33] + 107 + (A1 + A2 + A3 +.....)

107 = 53,5 + 53,5

n = Number of elements of flow divider

A1... An = heights of elements of flow divider

Lt = Li + 19

19 = 9,5 + 9,5

EXAMPLE: To obtain the measures Li and Lt of a flow divider with three elements (n=3), **RV-1H / 3,8 x 2+ 1 Motor 7,8 cc**

Distance between fixing hole centres — Li = [(3-1) x 33] + 107 + 52 + 52 + 67 =344 mm

Total Lenght — Lt = 344 + 19 = 363

In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to make full us at least of **1** inlet every **40** l/min capacity.

To obtain errors of division **inferior to 3%** there must be no difference of pressure between the elements superior to **30 bar**. To obtain high precisions the respect of the following parametres is also important:

- Enviroment temperature: -10°c ÷ +60°c — Oil temperature: +30°c ÷ +60°c
- Hydraulic oil based on hlp, hv (din 51524) minerals — Oil Viscosity 20 ÷ 40 cSt
- Oil filtering 10 ÷ 25 µ

FLOW DIVIDER "RV" Series Swallow Line

RV-1H

Flow divider with **single phase correction valve** common to all the elements and "Group 2" MOTOR

Code:

9RN	NN	M	O	CC	CC

9RN	Flow Divider Typology
NN	Number of Flow Divider Elements
M	Code of setting range of the valves
O	Number of motor elements
CM	Motor displacement code
CC	Flow Divider displacement code

TABLE "M"	
C	10 ÷ 105 bar
D	70÷ 210 bar
E	140 ÷ 350 bar

Example: Flow divider with two elements (same displacement) and Motor RV-1H / 7,8 x 2 with valve 10 ÷ 105 bar + 1 Motor 17

9RH	02	C	1	51	34

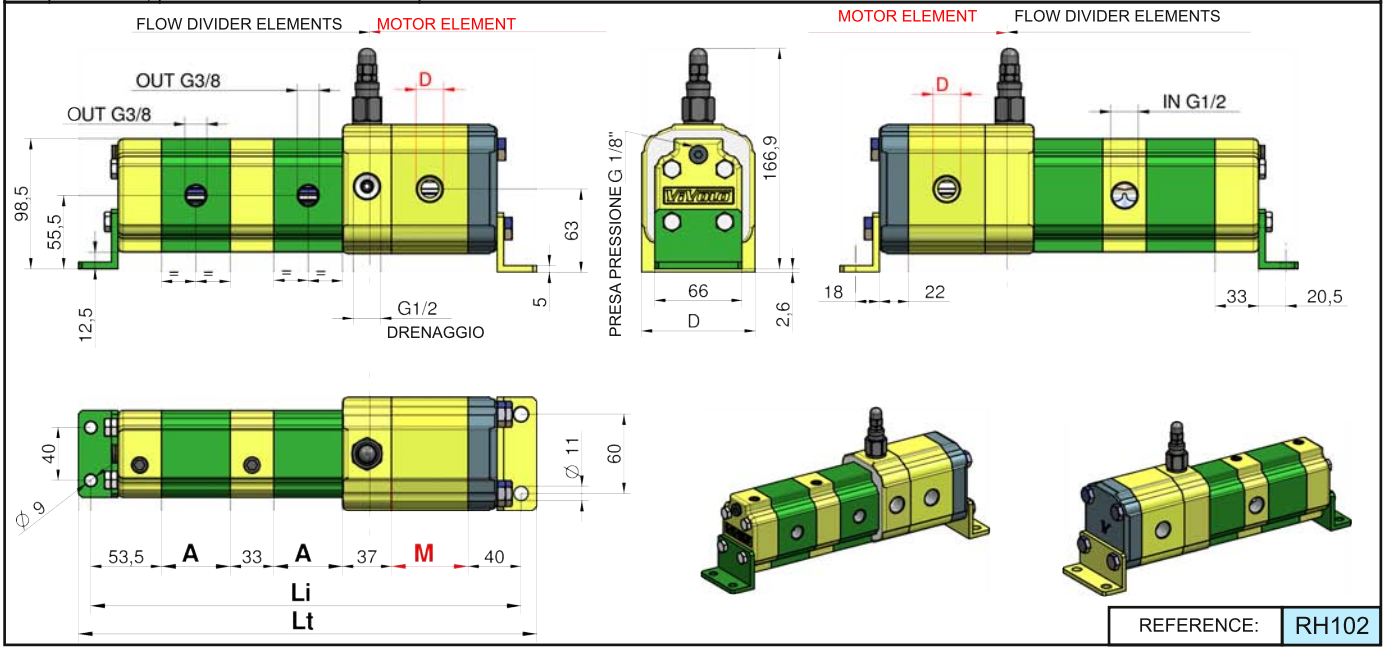
Example: Flow Divider 3 elements (different displacement - max 6) and Motor: RV-1H / 3,8+4,9+4,9 with valve 70 ÷ 210 bar + 1 motor 14

9RH	03	D	1	49	25	29	29

NOTE: to define codes for flow dividers with more than 6 different displacement, please contact our sales department.

Table: 1

Displacem. Cm³/rev	CC Code	Max Pressure bar	One element flow rate l/min MIN	RECOMMENDED	MAX
0,9	16	220	1	2	6
1,2	17	220	1,5	3	7
1,7	18	220	2	4	9
2,2	20	220	2,5	5	13
2,6	21	220	3	6	15,5
3,2	23	220	3,5	7,5	18
3,8	25	220	4	8,5	21
4,3	27	220	4,5	9,5	23
4,9	29	220	5,5	11	27
5,9	31	220	6,5	13	30
6,5	32	220	7,5	14	32
7,8	34	210	8,5	16	35,5
9,8	36	200	11	20	41



REFERENCE: RH102

Cm³/rev	A
0,9	41,5
1,2	42,5
1,7	44
2,2	46
2,6	48
3,2	50
3,8	52
4,3	54
4,9	57
5,9	60,5
6,5	63
7,8	67
9,8	76

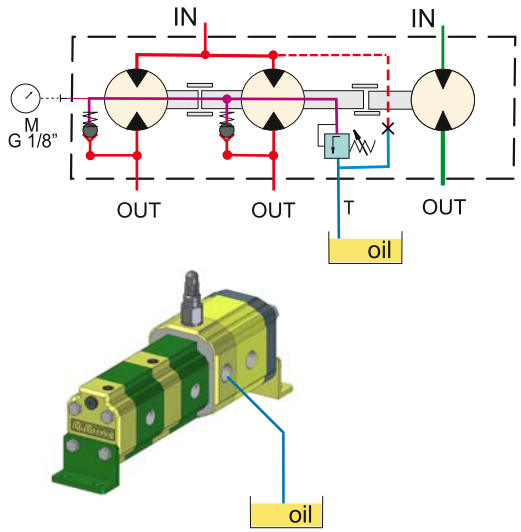
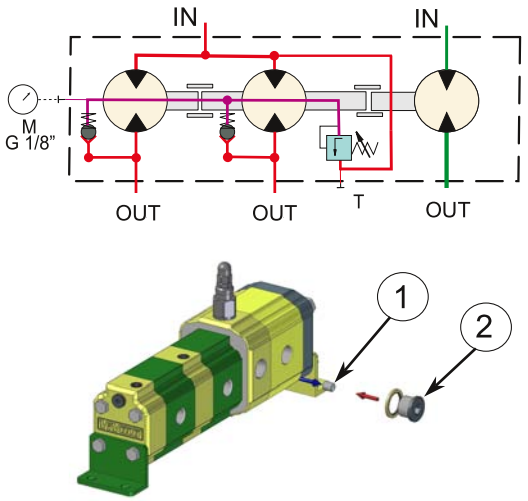
Cm³/rev	CM	M	D
4	41	47	1/2" BSP
6	43	50	1/2" BSP
9	45	54	1/2" BSP
11	47	58	1/2" BSP
14	49	64	3/4" BSP
17	51	68	3/4" BSP
19	53	72	3/4" BSP
22	55	78	3/4" BSP
26	57	82	1" BSP
30	59	90	1" BSP
34	61	97	1" BSP
40	63	106	1" BSP

Table: 3

in this table the number of inlets in function of the number of elements are indicated.

Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

Flow divider with **single phase correction valve** common to all the elements and "Group 2" MOTOR

EXTERNAL DRAIN *STANDARD SETUP*	INTERNAL DRAIN
Connect the drain port (T) to the tank	To predispose the divider to the internal drain, execute following operations: 1. remove the G 1/8 dowel inside the drain port 2. with a 1/2 G plug, plug the drain port (T)
	

In **table 1** the functining range of single flow divider elements is indicated.
The higher is the feeding capacity (q), the higher is the precision of the flow division, but in opposition there are losses of loading and higher noise. Therefore we suggest to feed the elements with capacities equal or a few superior to the ones indicated in the column **"RECOMMENDED"**.
Remember to verify the capacities even in phase of flow reunion.
The pressure indicated are to be considered as maximum of functioning, the flow divider is able to bear peaks of pressure 20 % superior.

How to calculate the "Li" and "Lt" measures of flow dividers:

Li = [(n-1) x 33] + 130,5 +(M1 + M2 + M3 +....) + (A1 + A2 + A3 +….)

130.5 = 53,5 + 37 + 40
n = Number of elements of flow divider
A1... An = heights of elements of flow divider
M1...Mn= heights of motor elements

Lt = Li + 21,5

21,5 = 9,5 + 12

EXAMPLE: To obtain the measures Li and Lt of a flow divider with three elements (n=2) **RV-1H / 3,8 x 2 + 1 Motor 11**

Distance between fixing hole centres	Li = [(2-1) x 33] + 130,5+ 47 + 52 + 52 =314,5 mm
Total Lenght	Lt = 314,5 + 21,5 = 336

In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to make full us at least of **1** inlet every **40** l/min capacity.

To obtain errors of division **inferior to 3%** there must be no difference of pressure between the elements superior to **30 bar**. To obtain high precisions the respect of the following parametres is also important:

- Enviroment temperature: -10°c ÷ +60°c — Oil temperature: +30°c ÷ +60°c
- Hydraulic oil based on hlp, hv (din 51524) minerals — Oil Viscosity 20 ÷ 40 cSt
- Oil filtering 10 ÷ 25 µ

FLOW DIVIDER "RV" Series Swallow Line

RV-1N

Flow divider with independent **phase correction and anticavitation** valves for each element with MOTOR

Code:

9RN	NN	M	O	CC	CC

9RN	Flow Divider Typology
NN	Number of flow divider elements
M	Code of setting range of the valves
O	Number of motor elements
CC	Motor Displacement Code
CC	Flow Divider Displacement Code

TABLE "M"	
A	7 ÷ 210 bar
B	105÷ 420 bar

Example: Flow divider with two elements (same displacement) with motor RV-1N/ 3,8 x 2 with valve 7 ÷ 210 bar + 1 Motor 7,8

9RN	02	A	1	34	25

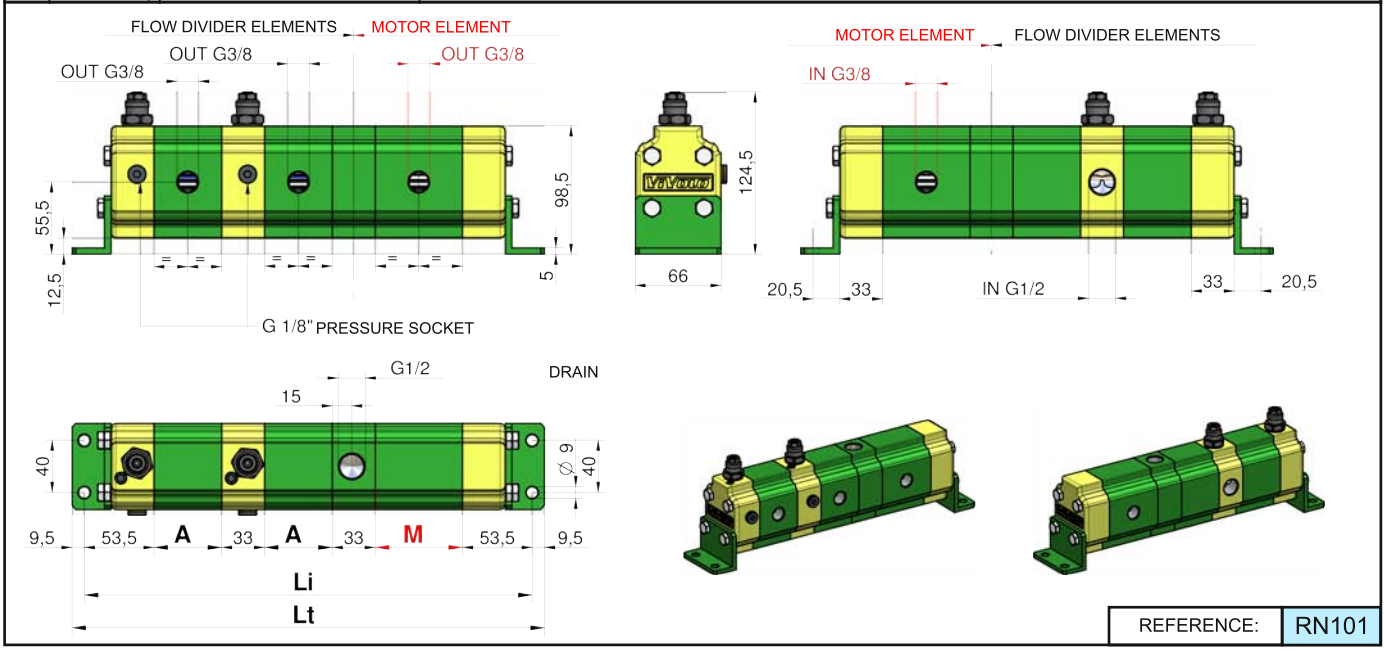
Example: Flow Divider 3 elements (different displacement - max 6) and Motor: RV-1N / 3,8+4,9+4,9 with valve 105 ÷ 420 bar + 1 Motor 6.5

9RN	03	B	1	32	25	29	29

NOTE: to define codes for flow dividers with more than 6 different displacement, please contact our sales department.

Table: 1

Displacem. Cm³/rev	CC Code	Max Pressure bar	One element flow rate l/min MIN	RECOMMENDED	MAX
0,9	16	220	1	2	6
1,2	17	220	1,5	3	7
1,7	18	220	2	4	9
2,2	20	220	2,5	5	13
2,6	21	220	3	6	15,5
3,2	23	220	3,5	7,5	18
3,8	25	220	4	8,5	21
4,3	27	220	4,5	9,5	23
4,9	29	220	5,5	11	27
5,9	31	220	6,5	13	30
6,5	32	220	7,5	14	32
7,8	34	210	8,5	16	35,5
9,8	36	200	11	20	41



REFERENCE: RN101

Table: 2

Li = Distance between fixing hole centres (single displacement flow divider)

Cm³/rev	A-M	Number of elements 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,9	**41,5**	223	297,5	372	446,5	521	595,5	670	744,5	819	893,5	968	1042,5	1117	1191,5	1266
1,2	**42,5**	225	300,5	376	451,5	527	602,5	678	753,5	829	904,5	980	1055,5	1131	1206,5	1282
1,7	**44**	228	305	382	459	536	613	690	767	844	921	998	1075	1152	1229	1306
2,2	**46**	232	311	390	469	548	627	706	785	864	943	1022	1101	1180	1259	1338
2,6	**48**	236	317	398	479	560	641	722	803	884	965	1046	1127	1208	1289	1370
3,2	**50**	240	323	406	489	572	655	738	821	904	987	1070	1153	1236	1319	1402
3,8	**52**	244	329	414	499	584	669	754	839	924	1009	1094	1179	1264	1349	1434
4,3	**54**	248	335	422	509	596	683	770	857	944	1031	1118	1205	1292	1379	1466
4,9	**57**	254	344	434	524	614	704	794	884	974	1064	1154	1244	1334	1424	1514
5,9	**60,5**	261	354,5	448	541,5	635	728,5	822	915,5	1009	1103	1196	1289,5	1383	1476,5	1570
6,5	**63**	266	362	458	554	650	746	842	938	1034	1130	1226	1322	1418	1514	1610
7,8	**67**	274	374	474	574	674	774	874	974	1074	1174	1274	1374	1474	1574	1674
9,8	**76**	292	401	510	619	728	837	946	1055	1164	1273	1382	1491	1600	1709	1818

Table: 3

in this table the number of inlets in function of the number of elements are indicated.

Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

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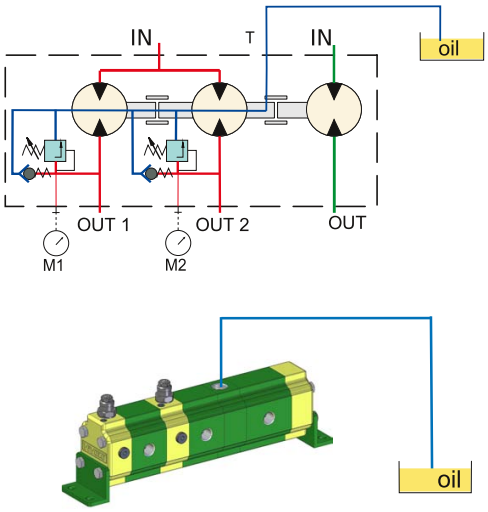
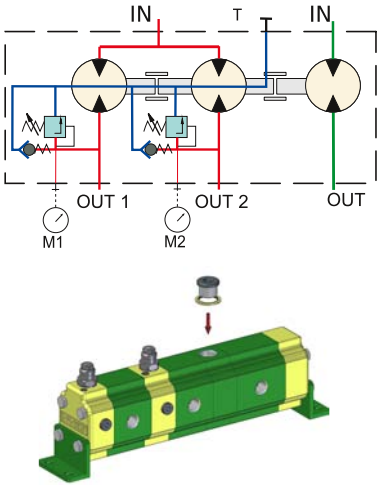
EXTERNAL DRAIN *STANDARD SETUP*	INTERNAL DRAIN
For the correct functioning of the flow divider, it has to be installed *under the oil level*. The drain tube has to pick up under the oil level and it has not to aspire air.	To predispose the divider to the internal drain, plug the 1/2 G drain port (T) **Note**: with this configuration the function of anticavitation valves is annulled
	

In **table 1** the functining range of single flow divider elements is indicated.
The higher is the feeding capacity (q), the higher is the precision of the flow division, but in opposition there are losses of loading and higher noise. Therefore we suggest to feed the elements with capacities equal or a few superior to the ones indicated in the column **"RECOMMENDED"**.
Remember to verify the capacities even in phase of flow reunion.
The pressure indicated are to be considered as maximum of functioning, the flow divider is able to bear peaks of pressure 20 % superior.

How to calculate the "Li" and "Lt" measures of flow dividers:

From **table 2** it is possible to obtain the "Li" measure for flow dividers up to 16 elements with equal displacements; for flow dividers with different elements or with more than 16 elements the "Li" and "Lt" measure have to be calculated by the following formula:

Li = [(n-1) x 33] + 107 + (A1 + A2 + A3 +.....)

107 = 53,5 + 53,5
n = Number of elements of flow divider
A1... An = heights of elements of flow divider

Lt = Li + 19

19 = 9,5 + 9,5

EXAMPLE: To obtain the measures **Li** and **Lt** of a flow divider with three elements (n=3), **RV-1N / 3,8 x 2+ 1 MOTOR 7,8**

Distance between fixing hole centres	Li = [(3-1) x 33] + 107 + 52 + 52 + 67 =344 mm
Total Lenght	Lt = 344 + 19 = 363

In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to make full us at least of **1** inlet every **40** l/min capacity.

To obtain errors of division **inferior to 3%** there must be no difference of pressure between the elements superior to **30 bar**. To obtain high precisions the respect of the following parametres is also important:

- Enviroment temperature: -10°c ÷ +60°c — Oil temperature: +30°c ÷ +60°c
- Hydraulic oil based on hlp, hv (din 51524) minerals — Oil Viscosity 20 ÷ 40 cSt
- Oil filtering 10 ÷ 25 µ

FLOW DIVIDER "RV" Series Swallow Line

RV-1N

Flow divider with independent **phase correction and anticavitation** valves for each element with "Group 2" MOTOR

Code:

9RN	NN	M	O	CC	CC

9RN	Flow Divider Typology
NN	Number of flow divider elements
M	Code of setting range of the valves
O	Number of motor elements
CM	Motor Displacement Code
CC	Flow Divider Displacement Code

TABLE "M"	
A	7 ÷ 210 bar
B	105÷ 420 bar

Example: Flow divider 2 elements (same displacement) and motor:
RV-1N/ 7,8 x 2 with valve 7 ÷ 210 bar + 1 motor 17 cc

9RN	02	A	1	51	34

Example: Flow divider 4 elements (different displacement - max 6) and motor:
RV-1N / 3,8+4,9+4,9 with valve 105 ÷ 420 bar + 1 motor 14 cc

9RN	03	B	1	49	25	29	29

NOTE: to define codes for flow dividers with more than 6 different displacement, please contact our sales department.

Table: 1

Displacem. Cm³/rev	CC Code	Max Pressure bar	One element flow rate l/min MIN	RECOMMENDED	MAX
0,9	16	220	1	2	6
1,2	17	220	1,5	3	7
1,7	18	220	2	4	9
2,2	20	220	2,5	5	13
2,6	21	220	3	6	15,5
3,2	23	220	3,5	7,5	18
3,8	25	220	4	8,5	21
4,3	27	220	4,5	9,5	23
4,9	29	220	5,5	11	27
5,9	31	220	6,5	13	30
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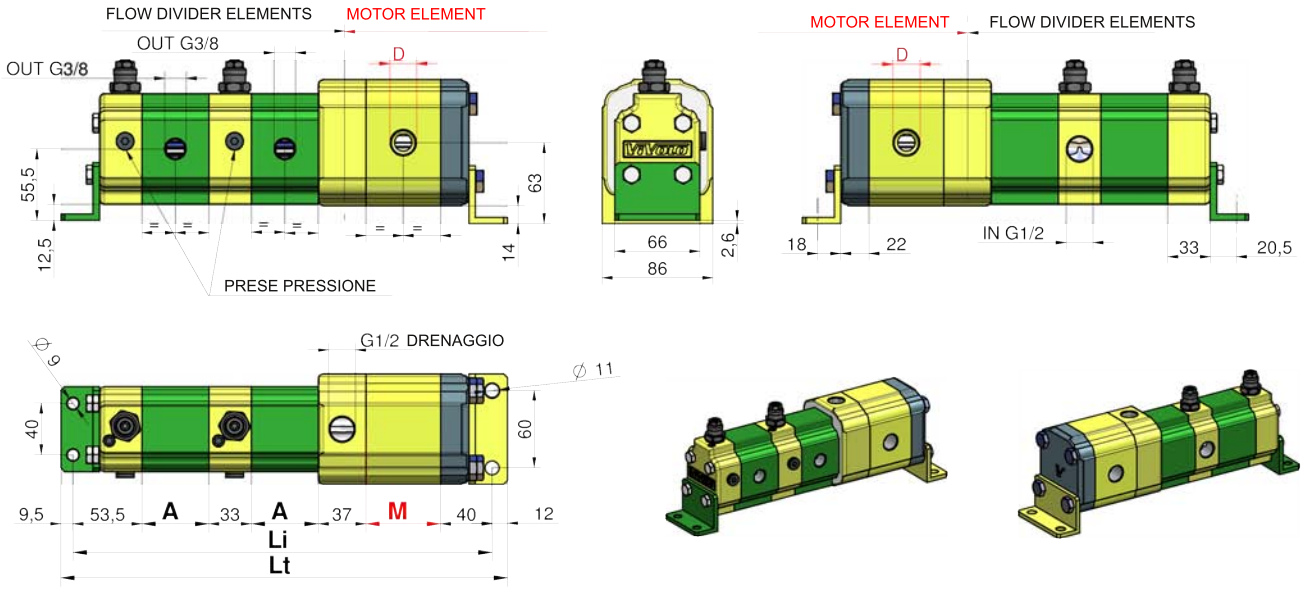

REFERENCE: RN102

Cm³/rev	A
0,9	41,5
1,2	42,5
1,7	44
2,2	46
2,6	48
3,2	50
3,8	52
4,3	54
4,9	57
5,9	60,5
6,5	63
7,8	67
9,8	76

Cm³/rev	CM	M	D
4	41	47	1/2" BSP
6	43	50	1/2" BSP
9	45	54	1/2" BSP
11	47	58	1/2" BSP
14	49	64	3/4" BSP
17	51	68	3/4" BSP
19	53	72	3/4" BSP
22	55	78	3/4" BSP
26	57	82	1" BSP
30	59	90	1" BSP
34	61	97	1" BSP
40	63	106	1" BSP

Table: 3

in this table the number of inlets in function of the number of elements are indicated.

Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

EXTERNAL DRAIN *STANDARD SETUP*	INTERNAL DRAIN
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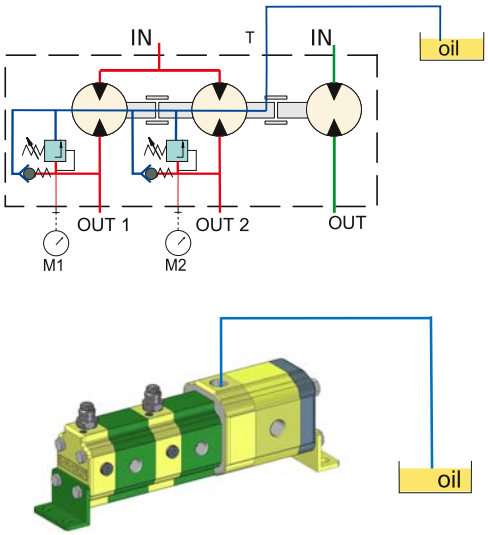	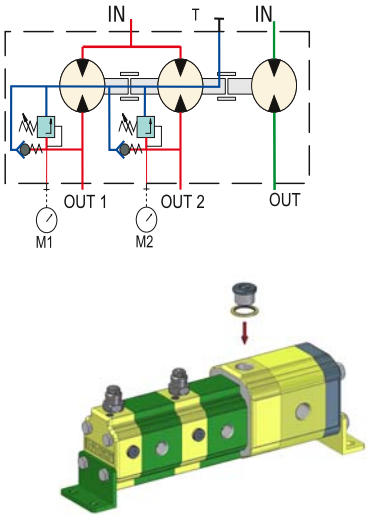

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Remember to verify the capacities even in phase of flow reunion.
The pressure indicated are to be considered as maximum of functioning, the flow divider is able to bear peaks of pressure 20 % superior.

How to calculate the "Li" and "Lt" measures of flow dividers:

Li = [(n-1) x 33] + 130,5 +(M1 + M2 + M3 +....) + (A1 + A2 + A3 +....)

130.5 = 53,5 + 37 + 40
n = Number of elements of flow divider
A1... An = heights of elements of flow divider
M1...Mn= heights of elements of motor

Lt = Li + 21,5

21,5 = 9,5 + 12

EXAMPLE: To obtain the measures Li and Lt of a flow divider with three elements (n=2), **RV-1N / 3,8 x 2+ 1 Motor 11 cc**

Distance between fixing hole centres — Li = [(2-1) x 33] + 130,5+ 47 + 52 + 52 =314,5 mm

Total Lenght — Lt = 314,5 + 21,5 = 336

In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to make full us at least of **1** inlet every **40** l/min capacity.

To obtain errors of division **inferior to 3%** there must be no difference of pressure between the elements superior to **30 bar**. To obtain high precisions the respect of the following parametres is also important:

- Enviroment temperature: -10°c ÷ +60°c — Oil temperature: +30°c ÷ +60°c
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