HANSA · TMP srl

HYDRAULIC COMPONENTS
HYDROSTATIC TRANSMISSIONS
GEARBOXES - ACCESSORIES

Certified Company ISO 9001 - 14001

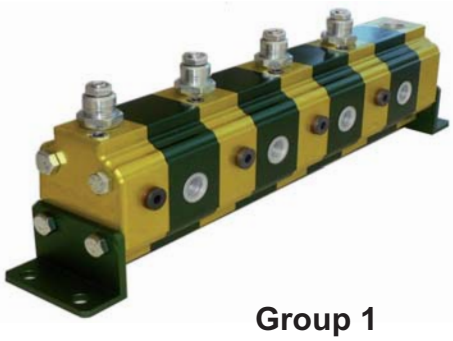
ISO 9001 Certificate N° 12-Q-0200545-TIC
ISO 14001 Certificate N° 12-E-0200545-TIC

Via M. L. King, 6 - 41122 MODENA (ITALY)
Tel: +39 059 415 711
Fax: +39 059 415 729 / 059 415 730
INTERNET: http://www.hansatmp.it
E-MAIL: hansatmp@hansatmp.it

HT 22 / A / 207 / 0116 / E

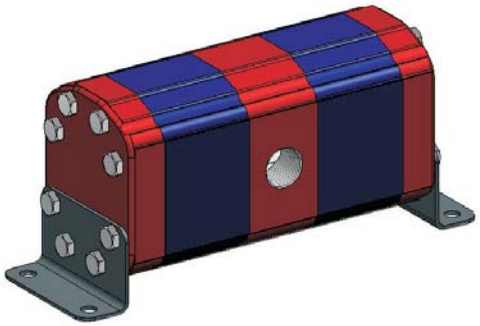
Gear Flow Dividers

Group 0



Group 1

Group 2



Group 3

CONTENTS

FLOW DIVIDERS - General Information

Summary description of flow dividers

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).

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

Sizes of flow dividers

The first classification of flow dividers is made according to size; they may be divided into three groups:

- Group 0: comprises dividers with small powers and dimensions,
  displacements ranging from 0,17 to 2,30 cm^3 / revolution.
- Group 1: comprises dividers with medium powers and dimensions,
  displacements ranging from 0,91 to 9,88 cm^3 / revolution.
- Group 2: is characterized by higher powers and dimensions and
  displacements ranging from 4.2 to 39,6 cm^3 / revolution.
- Group 3: is characterized by higher powers and dimensions and
  displacements ranging from 15 to 90 cm^3 / revolution.

Flow dividers with and without valves

The flow dividers may be supplied with or without phase correction valves that correct any small phase errors occurring in each cycle between two or more hydraulic cylinders.

Constructive features

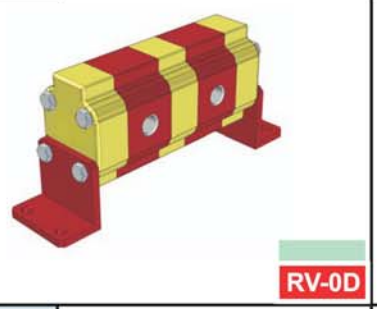
FLOW DIVIDER BODY FLANGE AND COVER	Extruded alloy Serie 7000, heat treated and anodised	Rp=345 N/mm2 (Yield Strength) Rm=382 N/mm2 (Breaking Strength)
GEAR BUSH BEARINGS	Special Heat Treated tin alloy with excellent mechanical features and high anti-friction capacity. Self-lubricating bushes DU	Rp=350 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, max.temperature 120°C 80 Shore, max.temperature 200°C

FLOW DIVIDERS - RV Series
(Basic Model)

RV-0 | RV-1

GROUP "0"

RIF. RD001

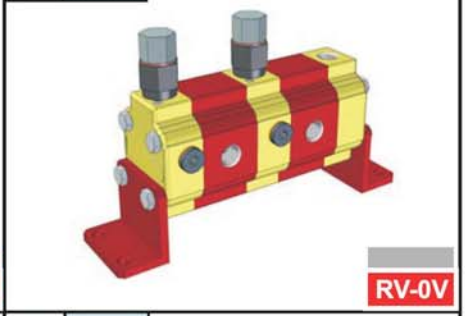


RV-0D

RIF. RS001

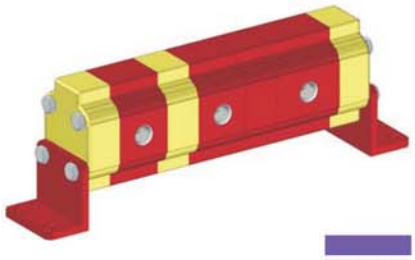
RV-0S

RIF. RV001



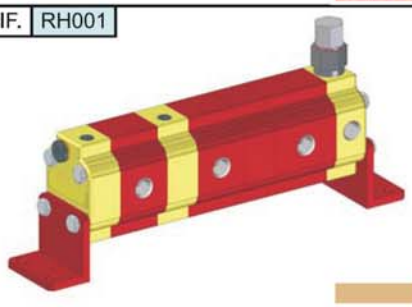
RV-0V

RIF. RG001



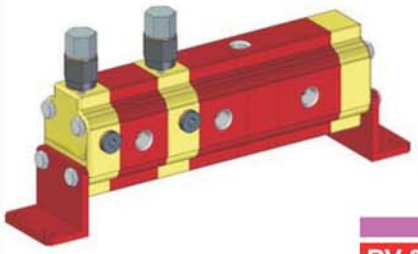
RV-0G

RIF. RH001



RV-0H

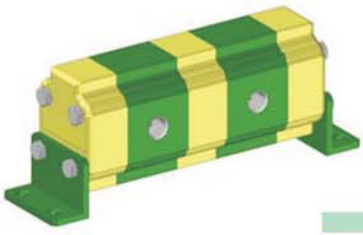
RIF. RN001



RV-0N

GROUP "1"

RIF. RD101



RV-1D

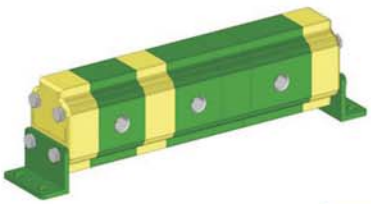
RIF. RS101

RV-1S

RIF. RV101

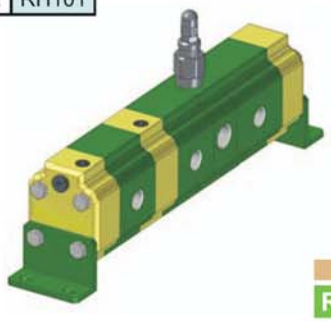
RV-1V

RIF. RG101



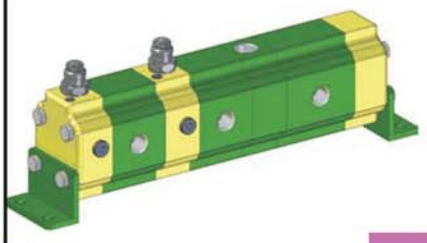
RV-1G

RIF. RH101



RV-1H

RIF. RN101



RV-1N

FLOW DIVIDERS - RV Series
(Version Description)

RV-0 | RV-1 | RV-2 | XV-3

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.

XV-D FLOW DIVIDER

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

XV-G FLOW DIVIDER + MOTOR

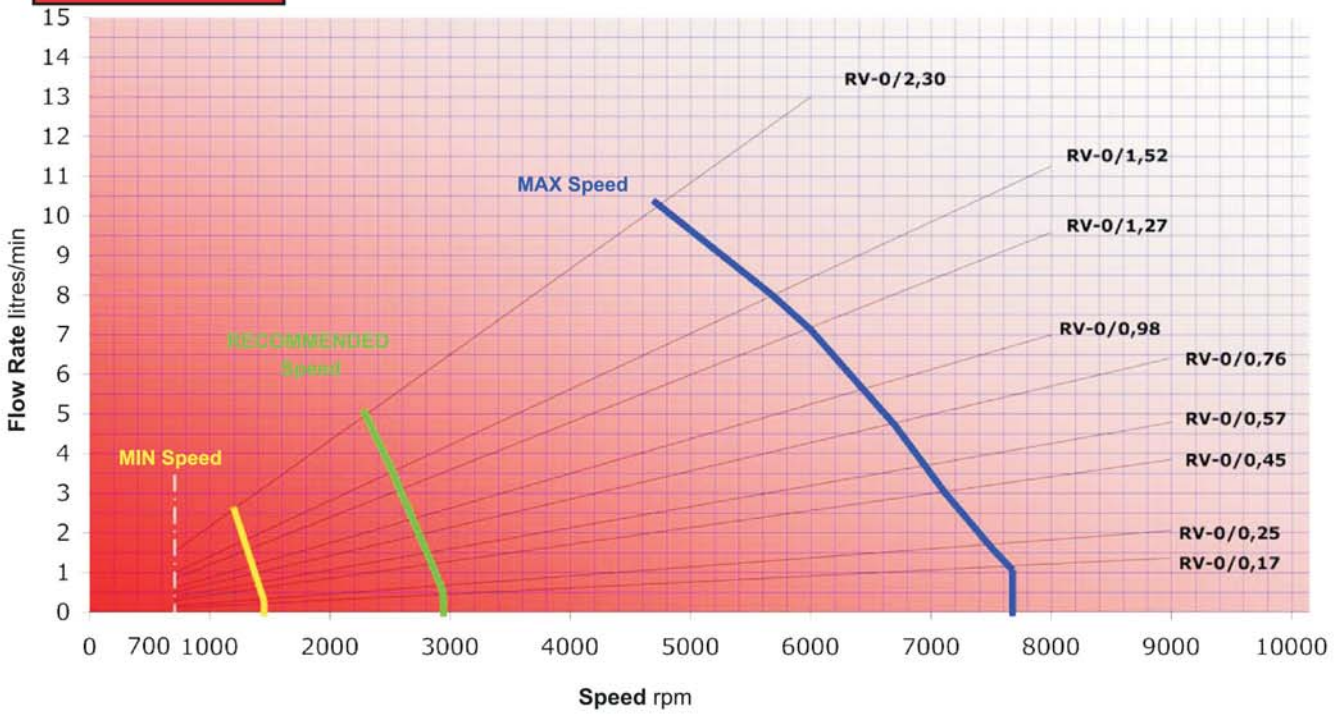
The XV-G typology is the motorized version of the XV-D divider.
It has a motor conneted to the flow divider elements. This solution is important when the incoming and/or outgoing pressure is below the minimum pressure required to start. Giving flow to the motor, help the flow divider rotation start.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

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.

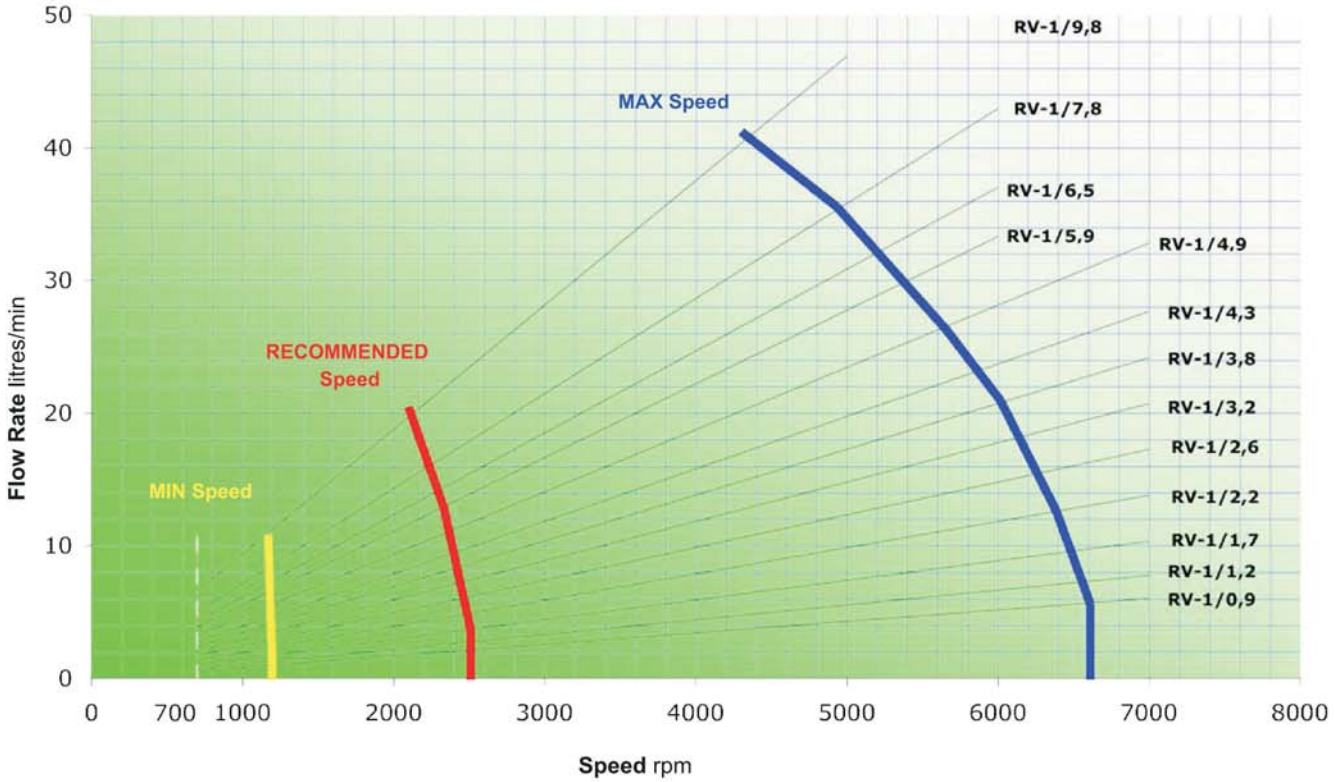
FLOW DIVIDERS - RV Series
(Curves)

RV-0 | RV-1

RV-0



RV-1



FLOW DIVIDERS - RV-0D
(Basic Version)

RV-0D

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

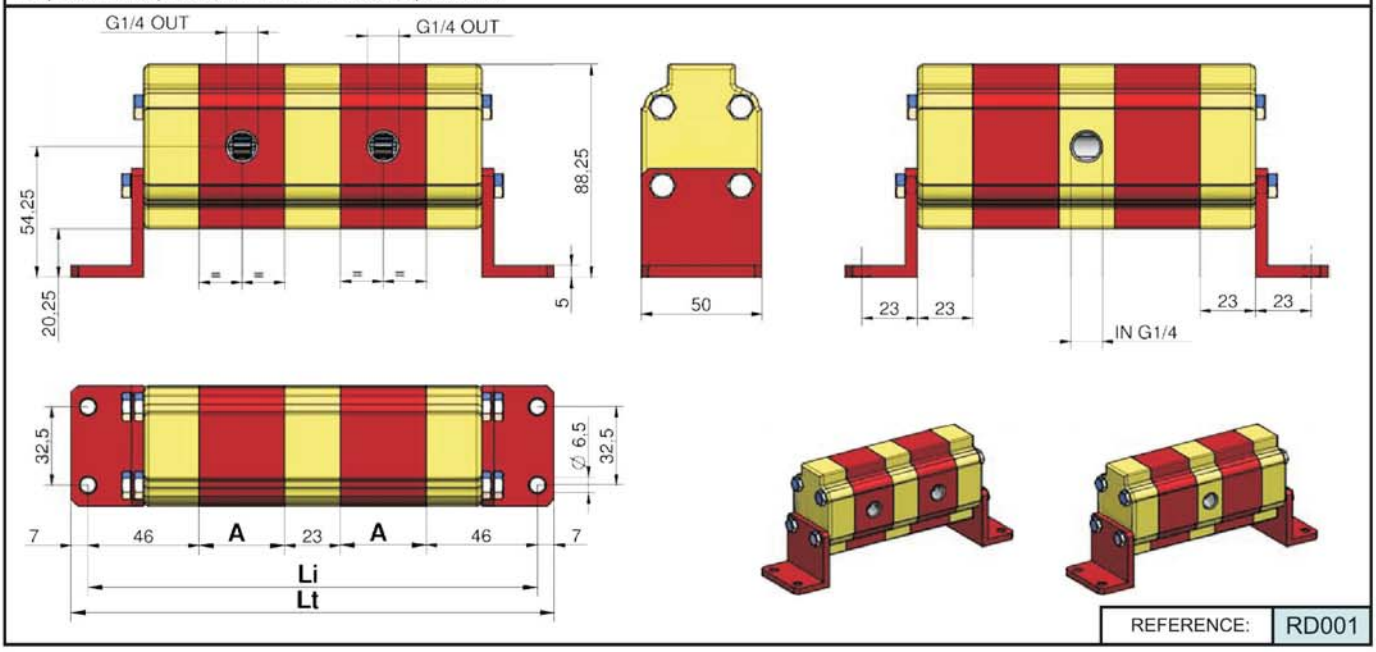


Table: 2

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

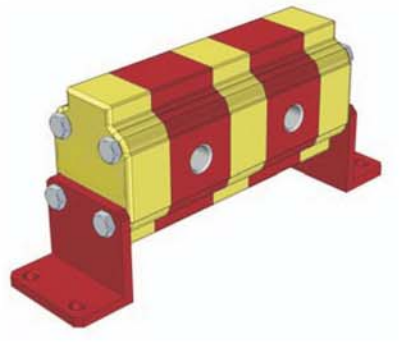
Table: 3 in this table the number of inlets in function of the number of elements are indicated.

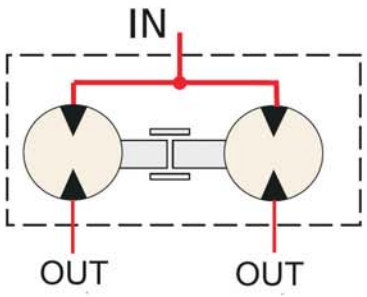
Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

FLOW DIVIDERS - RV-0D
(Basic Version)

RV-0D

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 DIVIDERS - RV-0S
(With Single Phase Correction Valve)

RV-0S

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

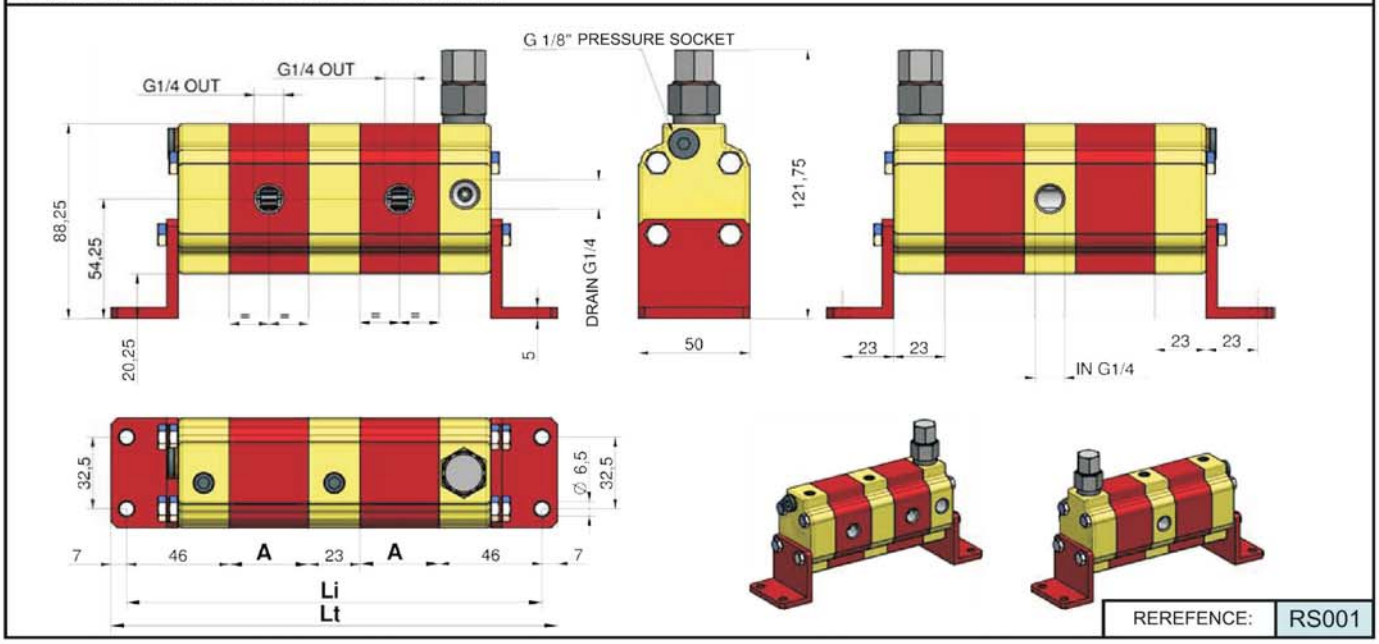


Table: 2

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

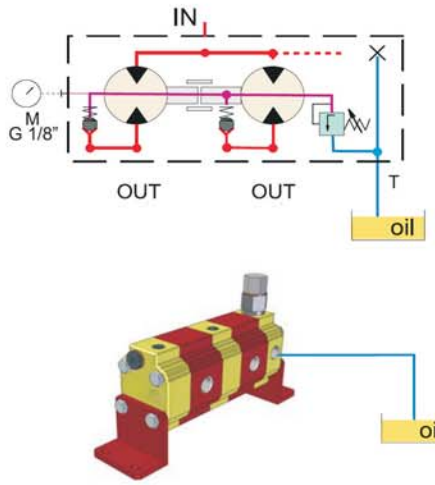
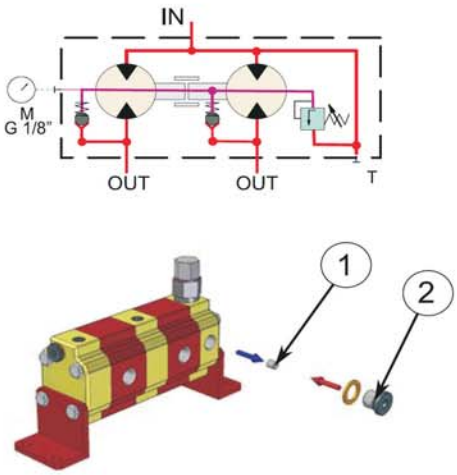
Cm³/rev	A	Number of elements														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,17	**29,3**	174,8	227,7	280,6	333,5	386,4	439,3	492,5	545,1	598	650,9	703,8	756,7	809,6	862,5	915,4
0,25	**29,9**	178	232,5	287	341,5	396	450,5	505	559,5	614	668,5	723	777,5	832	886,5	941
0,45	**31,5**	180	235,5	291	346,5	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

FLOW DIVIDERS - RV-0S
(With Single Phase Correction Valve)

RV-0S

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 DIVIDERS - RV-0V
(With Indipendent Phase Correction and Antivoid Valves)

RV-0V

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		
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

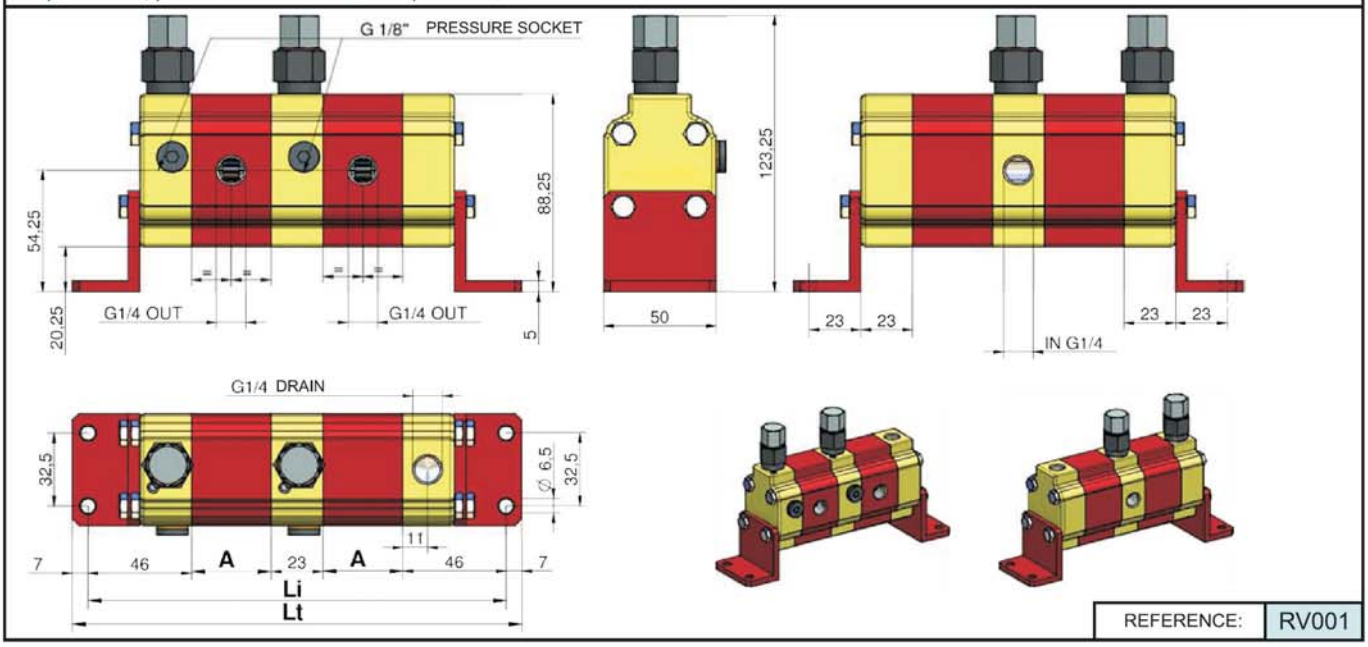


Table: 2

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

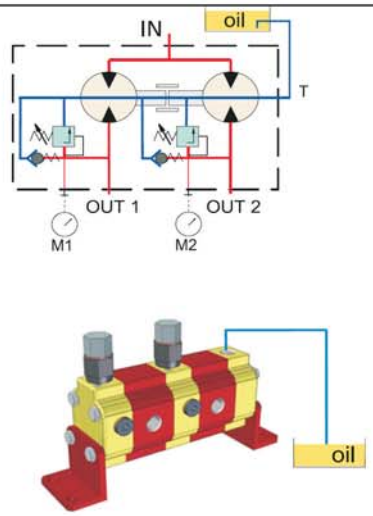
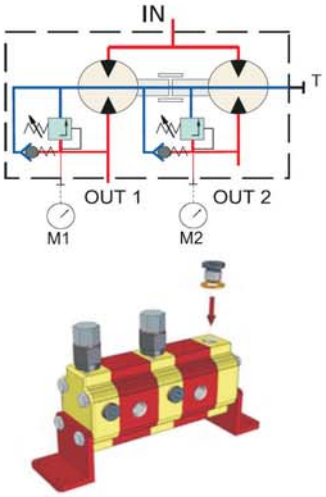
Cm³/rev	A	Number of elements														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,17	**29,3**	174,8	227,7	280,6	333,5	386,4	439,3	492,5	545,1	598	650,9	703,8	756,7	809,6	862,5	915,4
0,25	**29,9**	178	232,5	287	341,5	396	450,5	505	559,5	614	668,5	723	777,5	832	886,5	941
0,45	**31,5**	180	235,5	291	346,5	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

FLOW DIVIDERS - RV-0V
(With Indipendent Phase Correction and Antivoid Valves)

RV-0V

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 DIVIDERS - RV-0G
(With Motor)

RV-0G

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. 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

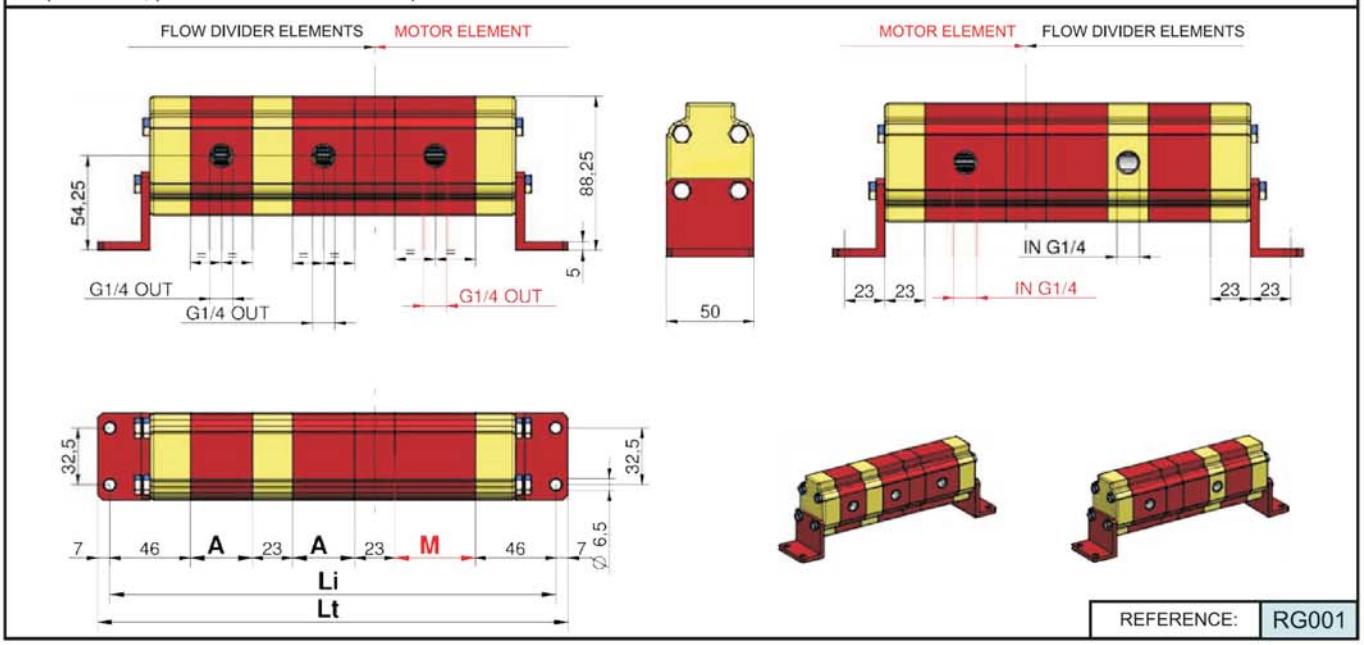


Table: 2

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

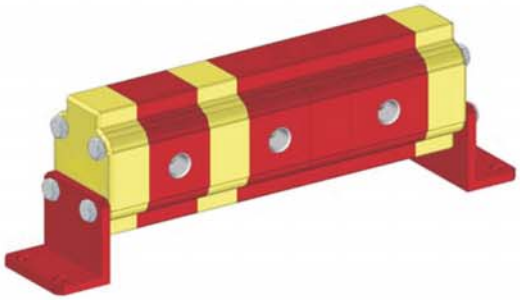
Table: 3 in this table the number of inlets in function of the number of elements are indicated.

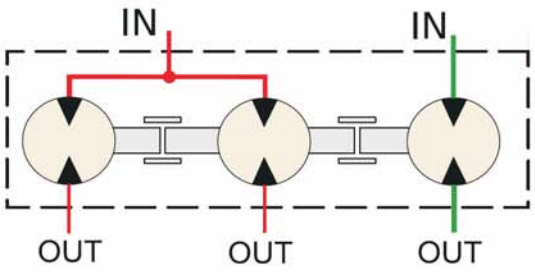
Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

FLOW DIVIDERS - RV-0G
(With Motor)

RV-0G

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 DIVIDERS - RV-0H
(With Single Phase Correction Valve + Motor)

RV-0H

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

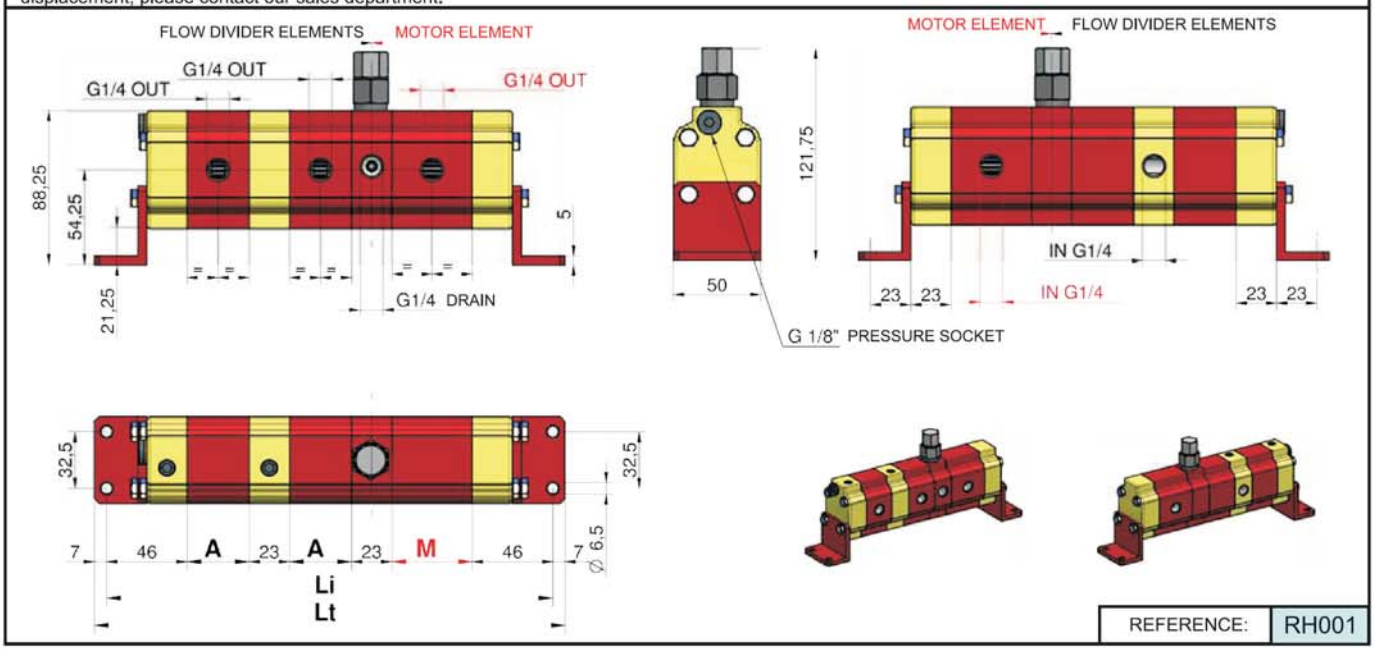


Table: 2

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

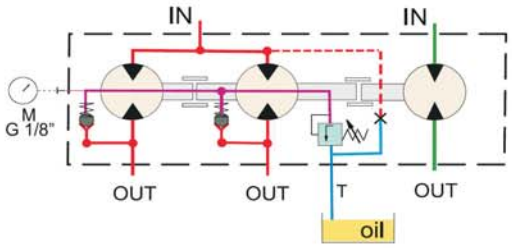
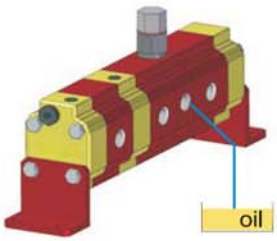
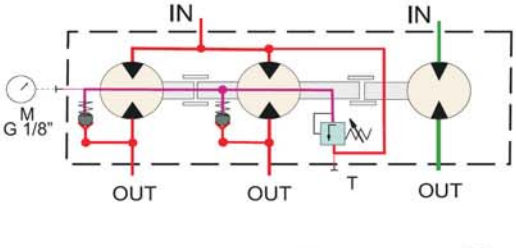
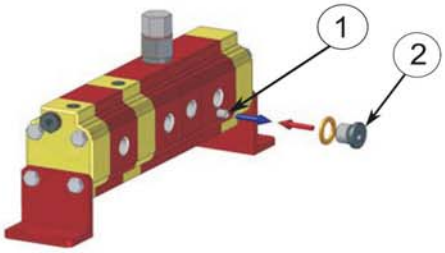
Cm³/rev	A-M	Number of elements 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,17	**29,3**	174,8	227,7	280,6	333,5	386,4	439,3	492,5	545,1	598	650,9	703,8	756,7	809,6	862,5	915,4
0,25	**29,9**	178	232,5	287	341,5	396	450,5	505	559,5	614	668,5	723	777,5	832	886,5	941
0,45	**31,5**	180	235,5	291	346,5	402	457,5	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

FLOW DIVIDERS - RV-0H
(With Single Phase Correction Valve + Motor)

RV-0H

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 DIVIDERS - RV-0N

(With Indipendent Phase Correction and Antivoid Valves + Motor)

RV-0N

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

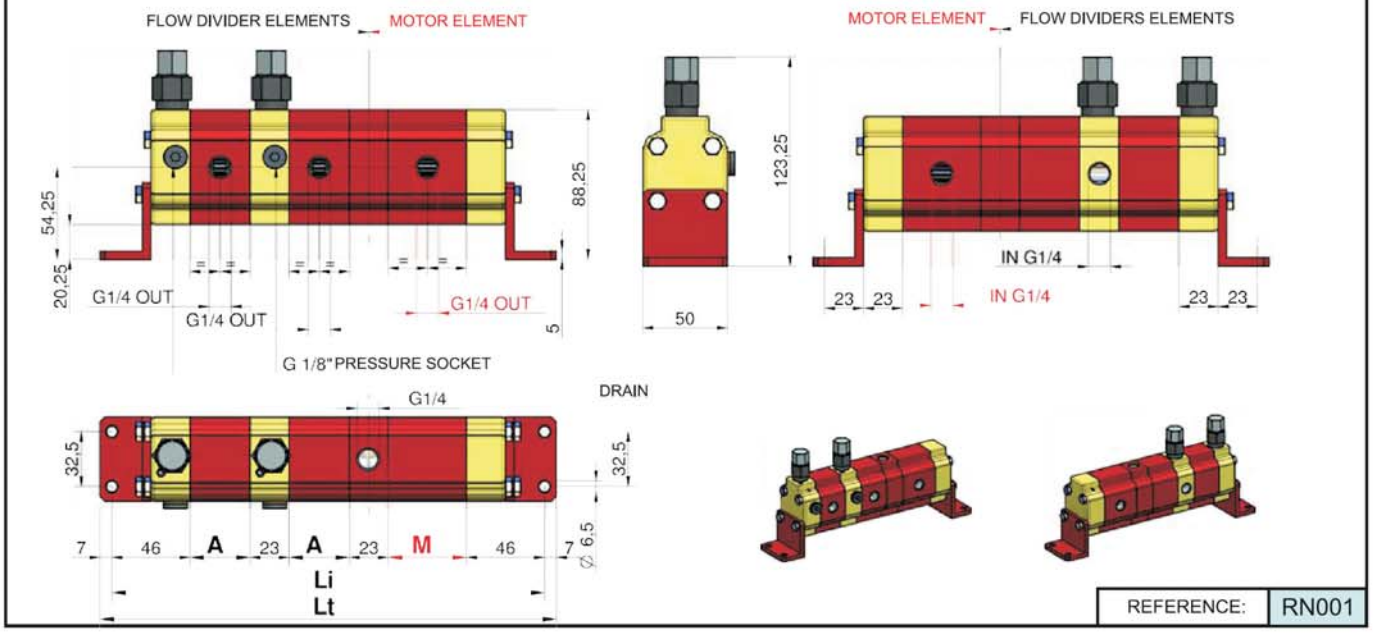
Example: Flow Divider 4 elements (different displacement - max 6) and Motor: RV-0N / 2.30+0,57+0,76+1,27 with valve 35 ÷ 175 bar + 1 Motor 2.30

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)

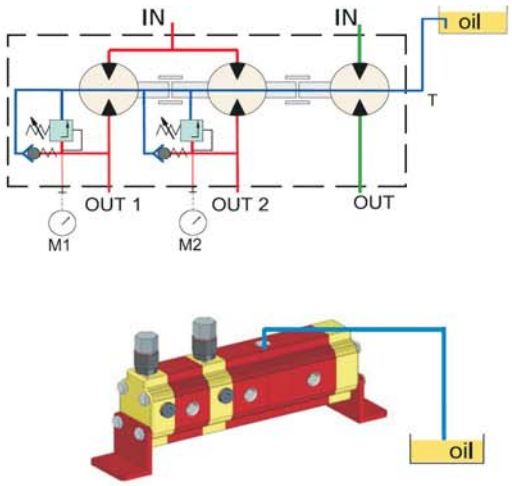
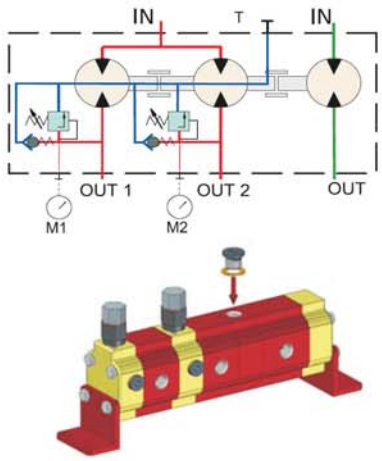
Cm³/rev	A-M	Number of elements														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,17	29,3	174,8	227,7	280,6	333,5	386,4	439,3	492,5	545,1	598	650,9	703,8	756,7	809,6	862,5	915,4
0,25	29,9	178	232,5	287	341,5	396	450,5	505	559,5	614	668,5	723	777,5	832	886,5	941
0,45	31,5	180	235,5	291	346,5	402	457,5	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

FLOW DIVIDERS - RV-0N
(With Indipendent Phase Correction and Antivoid Valves + Motor)

RV-0N

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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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 DIVIDERS - RV-1D
(Technical Information)

RV-1D

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

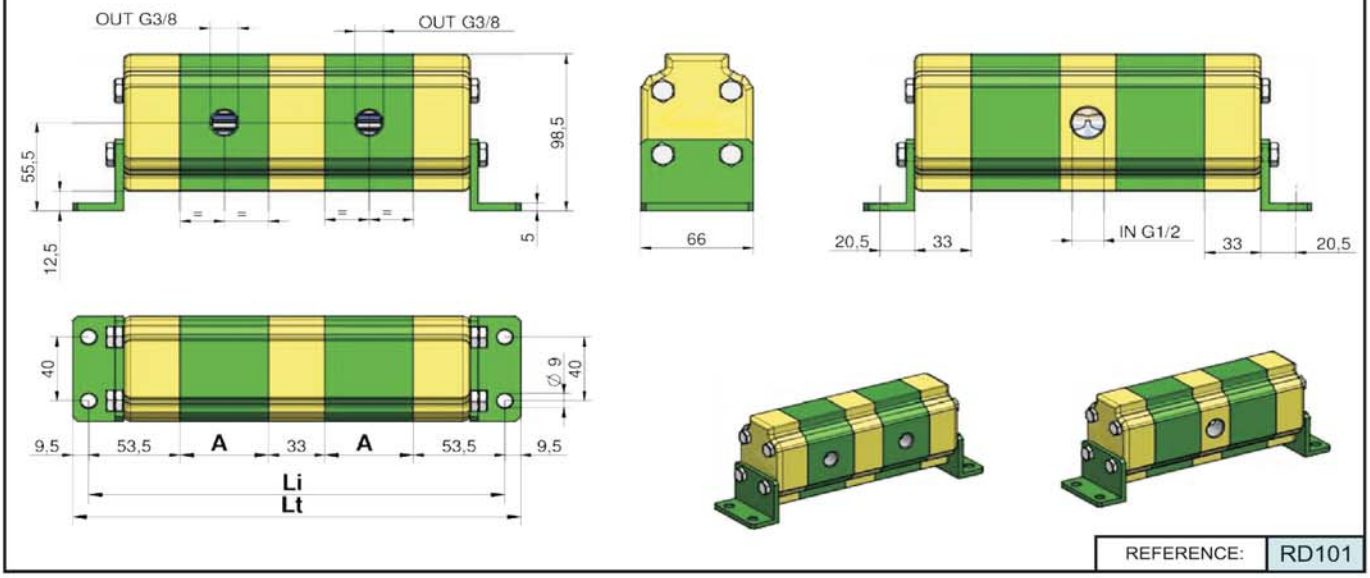
Example: Flow Divider with 4 elements (with different displacement - max 7):
RV-1D / 3,8+4,9+4,9+6,5

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	One element flow rate l/min		
Cm³/rev	Code	bar	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

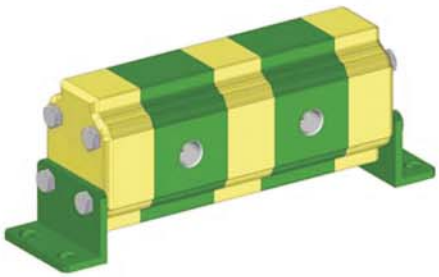
Table: 3 in this table the number of inlets in function of the number of elements are indicated.

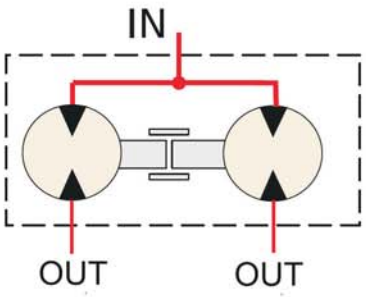
Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

FLOW DIVIDERS - RV-1D
(Basic Model)

RV-1D

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 DIVIDERS - RV-1S
(With Single Phase Correction Valve)

RV-1S

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

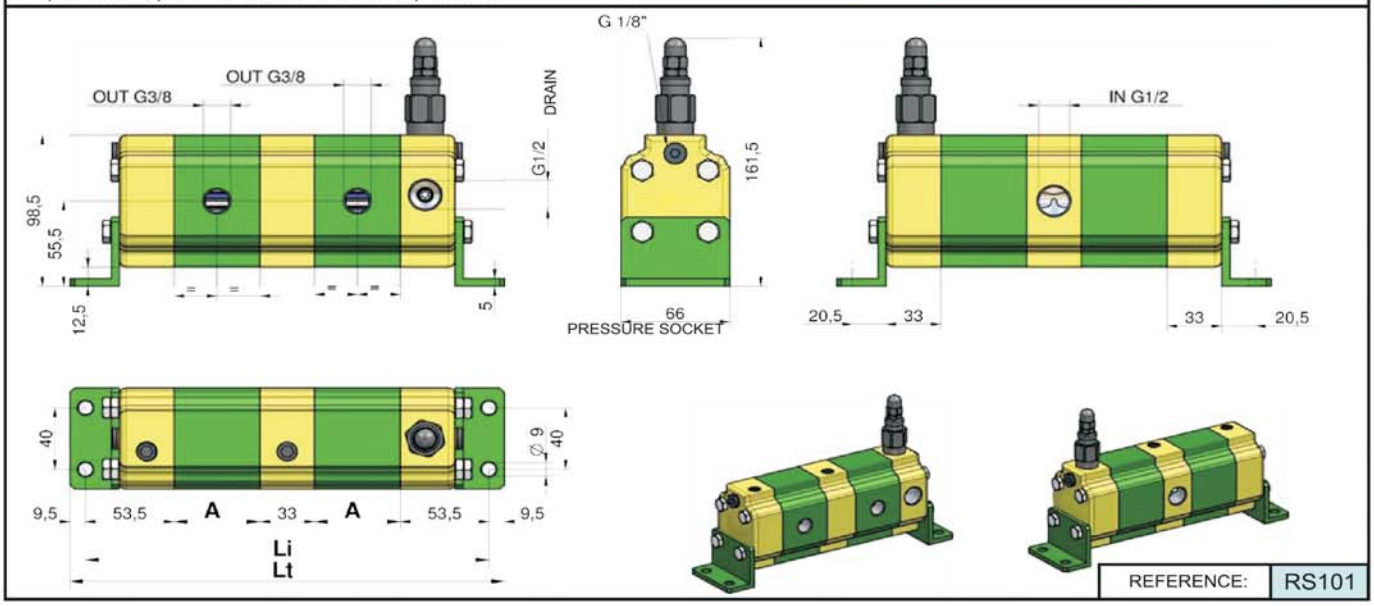


Table: 2

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

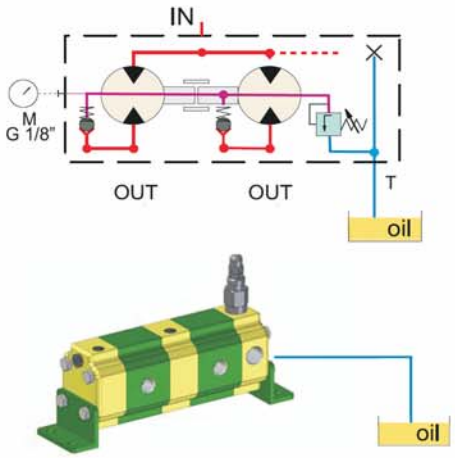
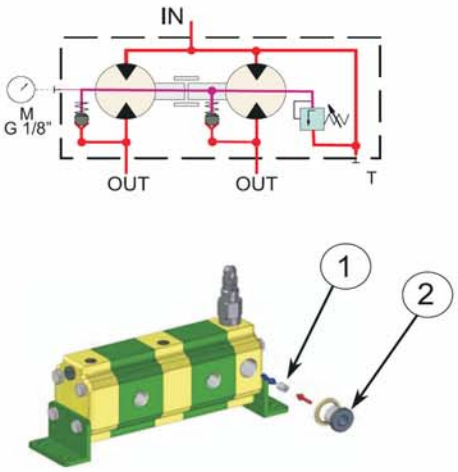
Cm³/rev	A	Number of elements														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,9	**41,5**	223	297,5	372	446,5	521	595,5	670	744,5	819	893,5	968	1042,5	1117	1191,5	1266
1,2	**42,5**	225	300,5	376	451,5	527	602,5	678	753,5	829	904,5	980	1055,5	1131	1206,5	1282
1,7	**44**	228	305	382	459	536	613	690	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

FLOW DIVIDERS - RV-1S
(With Single Phase Correction Valve)

RV-1S

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 DIVIDERS - RV-1V
(With Indipendent Phase Correction + Antivoid Valves)

RV-1V

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

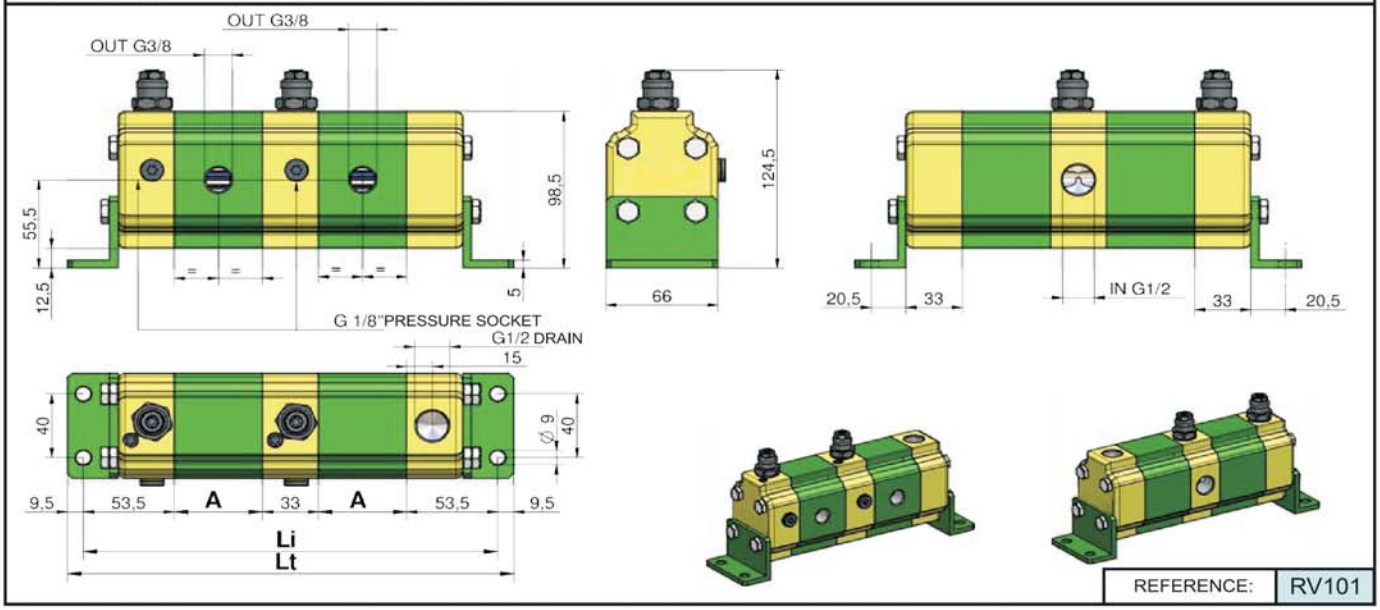


Table: 2

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

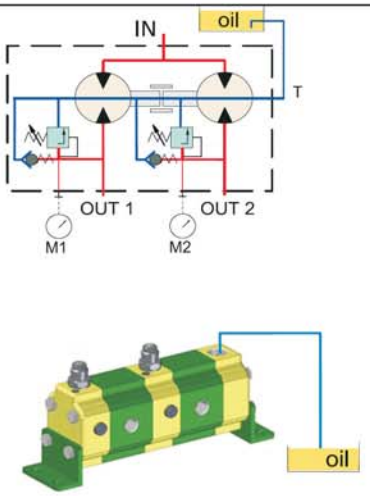
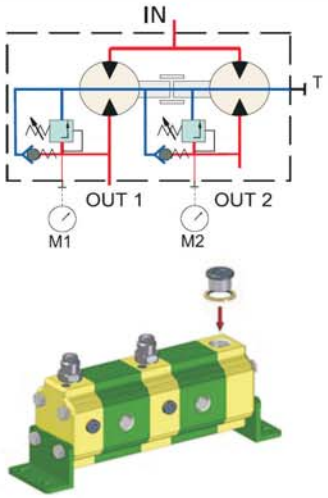
Cm³/rev	A	Number of elements														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,9	41,5	223	297,5	372	446,5	521	595,5	670	744,5	819	893,5	968	1042,5	1117	1191,5	1266
1,2	42,5	225	300,5	376	451,5	527	602,5	678	753,5	829	904,5	980	1055,5	1131	1206,5	1282
1,7	44	228	305	382	459	536	613	690	767	844	921	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

FLOW DIVIDERS - RV-1V
(With Indipendent Phase Correction + Antivoid Valves)

RV-1V

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.
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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:

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 DIVIDERS - RV-1G
(With Group 1 Motor)

RV-1G

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. 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

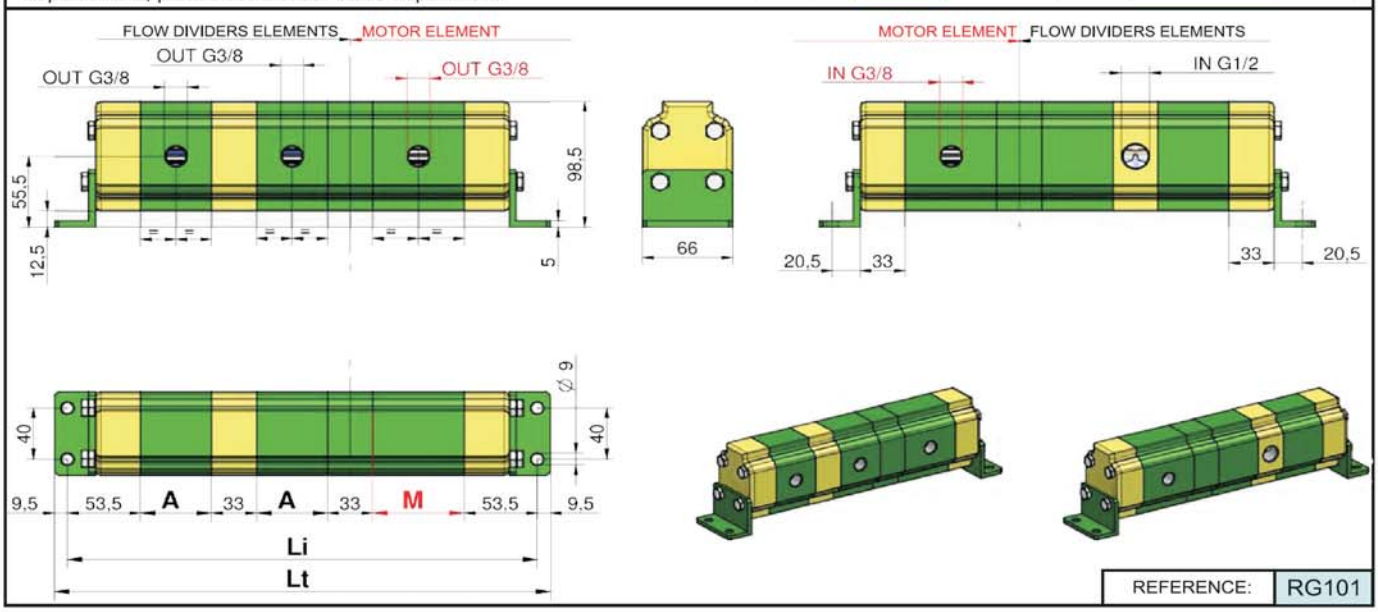


Table: 2

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

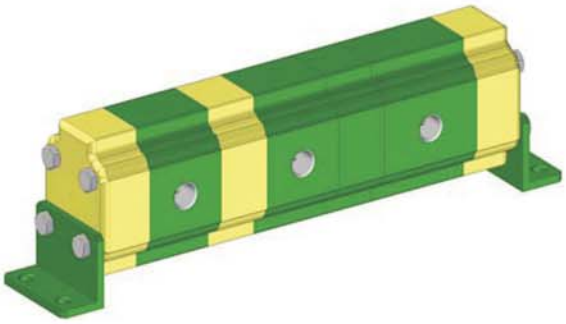
Table: 3 in this table the number of inlets in function of the number of elements are indicated.

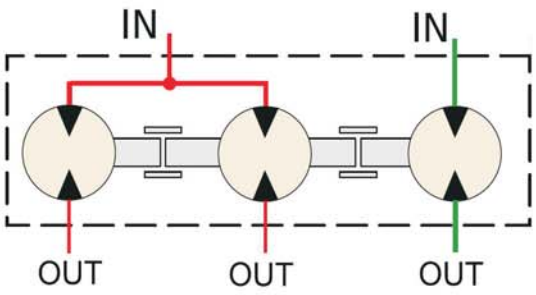
Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

FLOW DIVIDERS - RV-1G
(With Group 1 Motor)

RV-1G

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 DIVIDERS - RV-1G
(With Group 2 Motor)

RV-1G

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

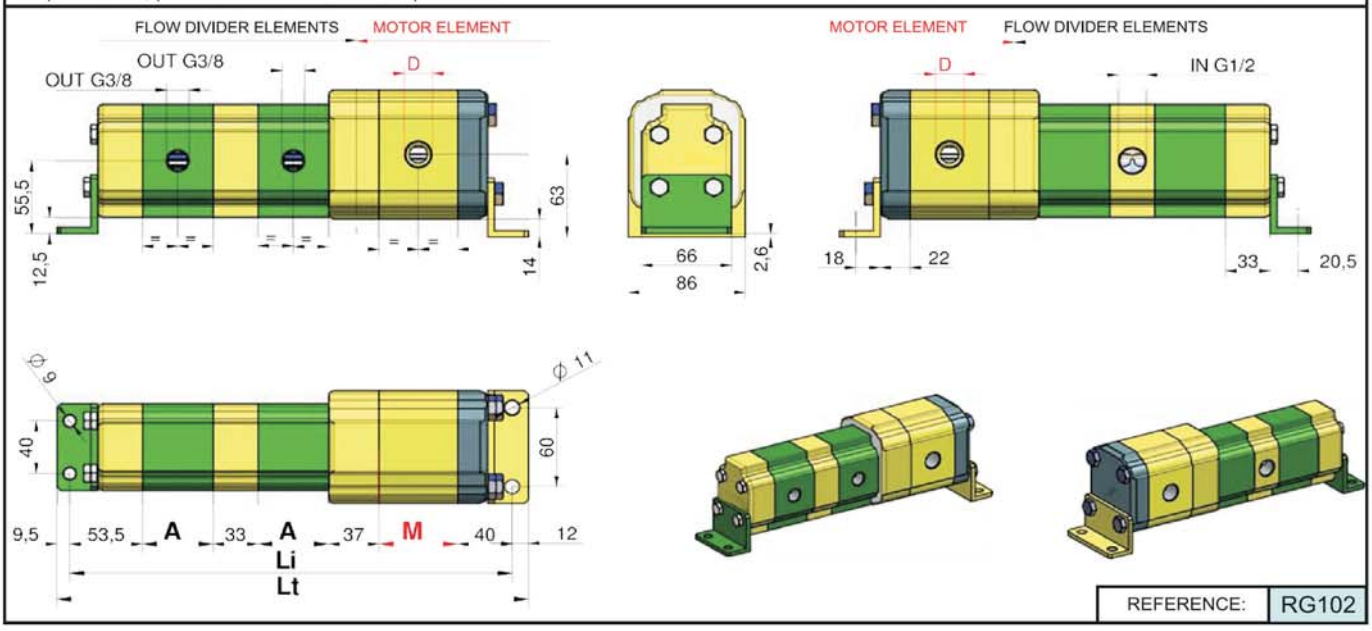
Example: Flow Divider 4 elements (different displacement max 6) and Motor RV-1G / 3,8+4,9+4,9+6,5+1 Motor 22 cc

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	One element flow rate l/min		
Cm³/rev	Code	bar	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



Cm³/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

Cm³/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

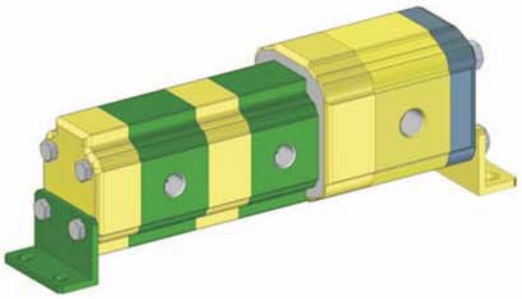
Table: 3 in this table the number of inlets in function of the number of elements are indicated.

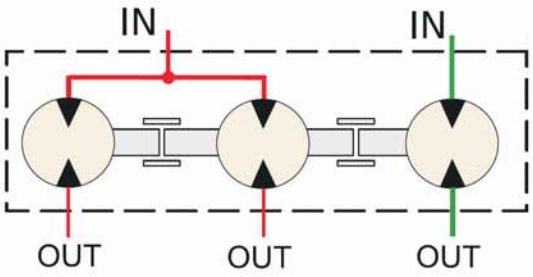
Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

FLOW DIVIDERS - RV-1G
(With Group 2 Motor)

RV-1G

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 DIVIDERS - RV-1H

(With Single Phase Correction Valve + Group 1 Motor)

RV-1H

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

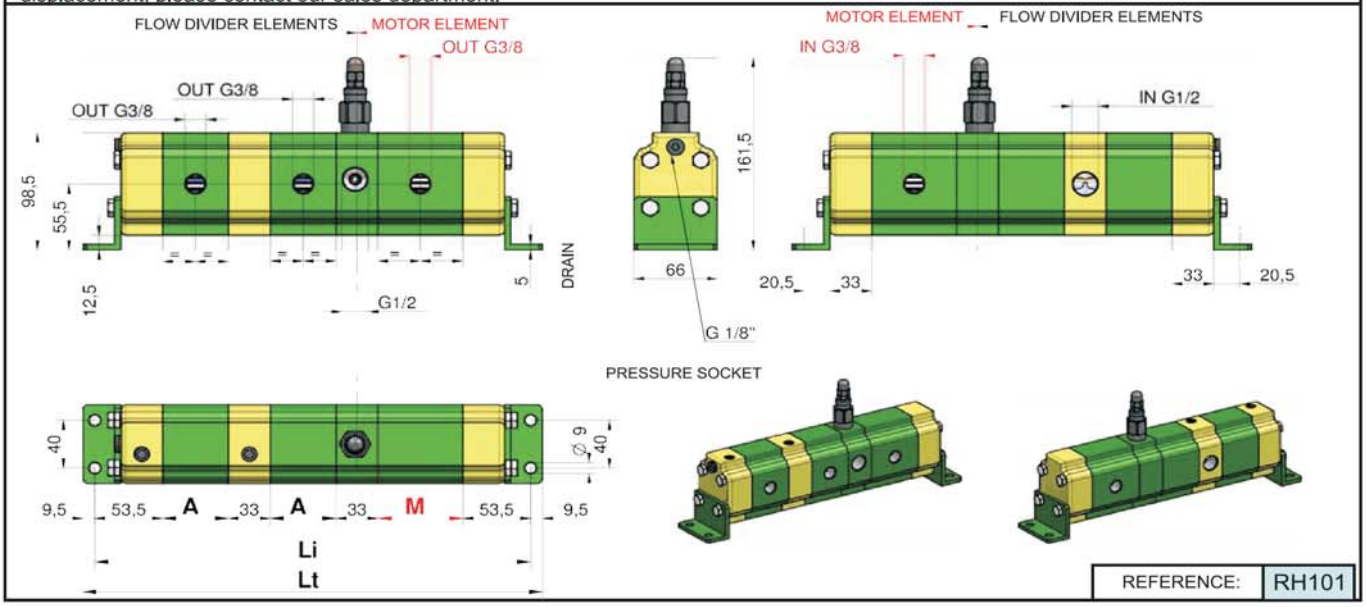


Table: 2

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

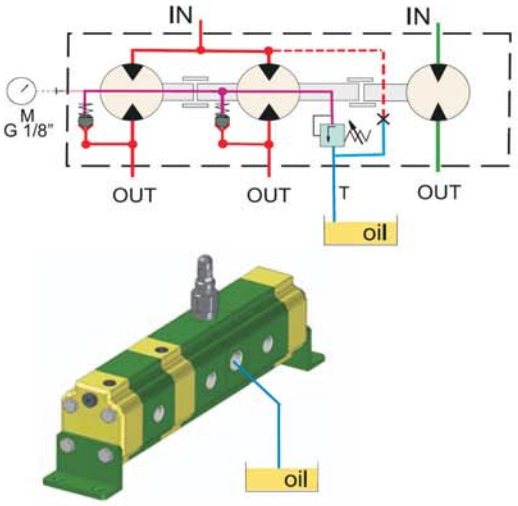
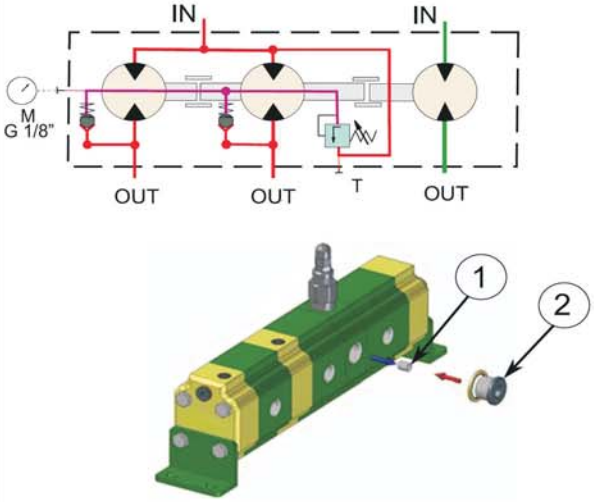
Cm³/rev	A-M	Number of elements 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,9	41,5	223	297,5	372	446,5	521	595,5	670	744,5	819	893,5	968	1042,5	1117	1191,5	1266
1,2	42,5	225	300,5	376	451,5	527	602,5	678	753,5	829	904,5	980	1055,5	1131	1206,5	1282
1,7	44	228	305	382	459	536	613	690	767	844	921	998	1075	1152	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

FLOW DIVIDERS - RV-1H
(With Single Phase Correction Valve + Group 1 Motor)

RV-1H

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 DIVIDERS - RV-1H
(With Single Phase Correction Valve + Group 2 Motor)

RV-1H

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

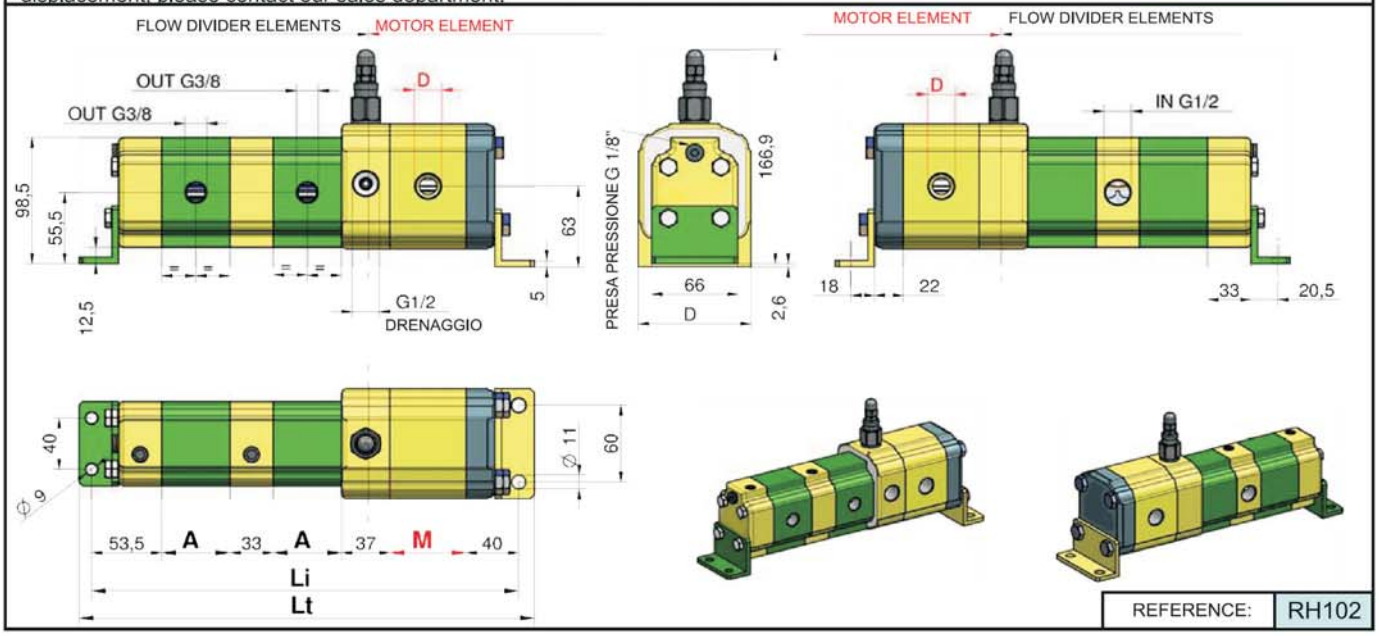
Example: Flow Divider 3 elements (different displacement - max 6) and Motor: RV-1H / 3,8+4,9+4,9 with valve 70 ÷ 210 bar + 1 motor 14

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



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

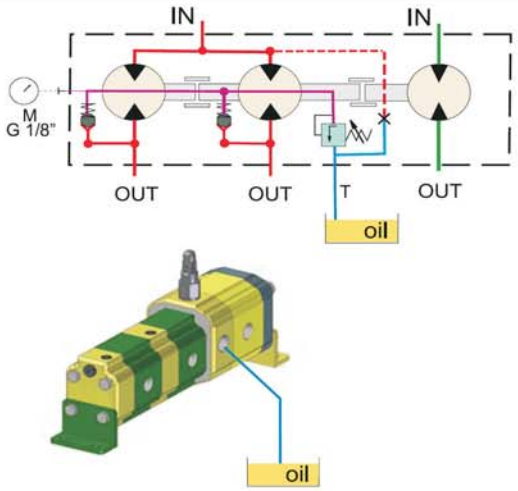
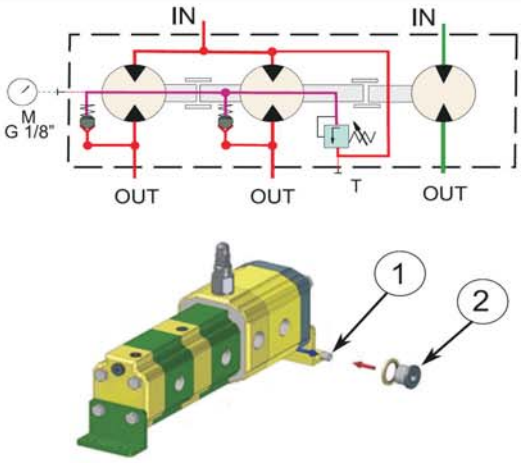
Cm³/rev	CM	M	D
4	41	47	1/2" BSP
6	43	50	1/2" BSP
9	45	54	1/2" BSP
11	47	58	1/2" BSP
14	49	64	3/4" BSP
17	51	68	3/4" BSP
19	53	72	3/4" BSP
22	55	78	3/4" BSP
26	57	82	1" BSP
30	59	90	1" BSP
34	61	97	1" BSP
40	63	106	1" BSP

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 DIVIDERS - RV-1H
(With Single Phase Correction Valve + Group 2 Motor)

RV-1H

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 DIVIDERS - RV-1N

(With Indipendent Phase Correction + Antivoid Valve + Group 1 Motor)

RV-1N

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

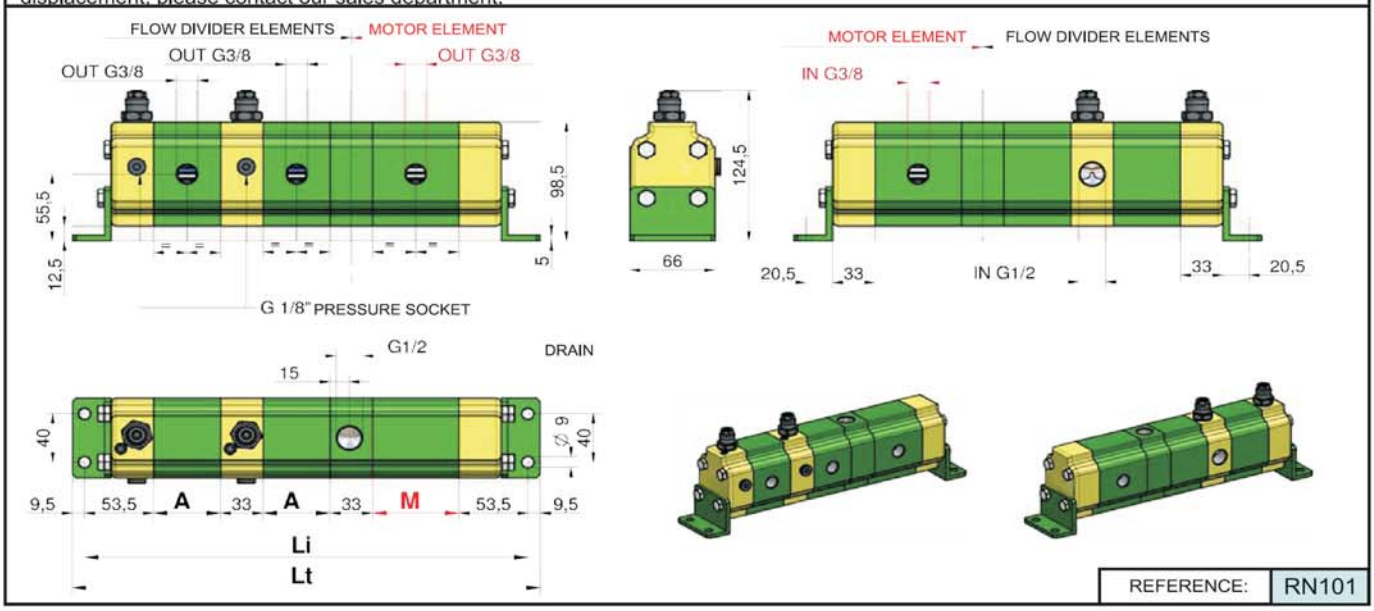
Example: Flow Divider 3 elements (different displacement - max 6) and Motor: RV-1N / 3,8+4,9+4,9 with valve 105 ÷ 420 bar + 1 Motor 6.5

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.	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: RN101

Table: 2

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

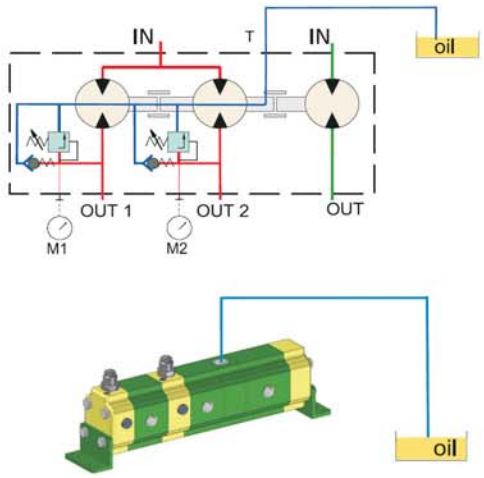
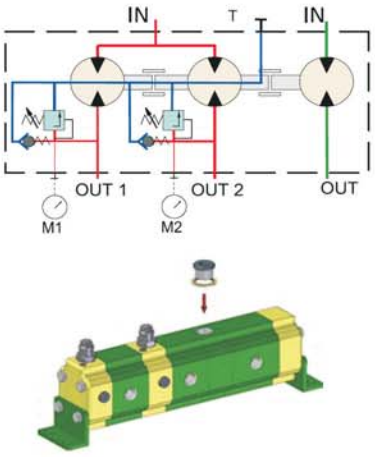
Cm³/rev	A-M	Number of elements														
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
0,9	41,5	223	297,5	372	446,5	521	595,5	670	744,5	819	893,5	968	1042,5	1117	1191,5	1266
1,2	42,5	225	300,5	376	451,5	527	602,5	678	753,5	829	904,5	980	1055,5	1131	1206,5	1282
1,7	44	228	305	382	459	536	613	690	767	844	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

FLOW DIVIDERS - RV-1N
(With Indipendent Phase Correction + Antivoid Valve + Group 1 Motor)

RV-1N

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 DIVIDERS - RV-1N

(With Indipendent Phase Correction + Antivoid Valve + Group 2 Motor)

RV-1N

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

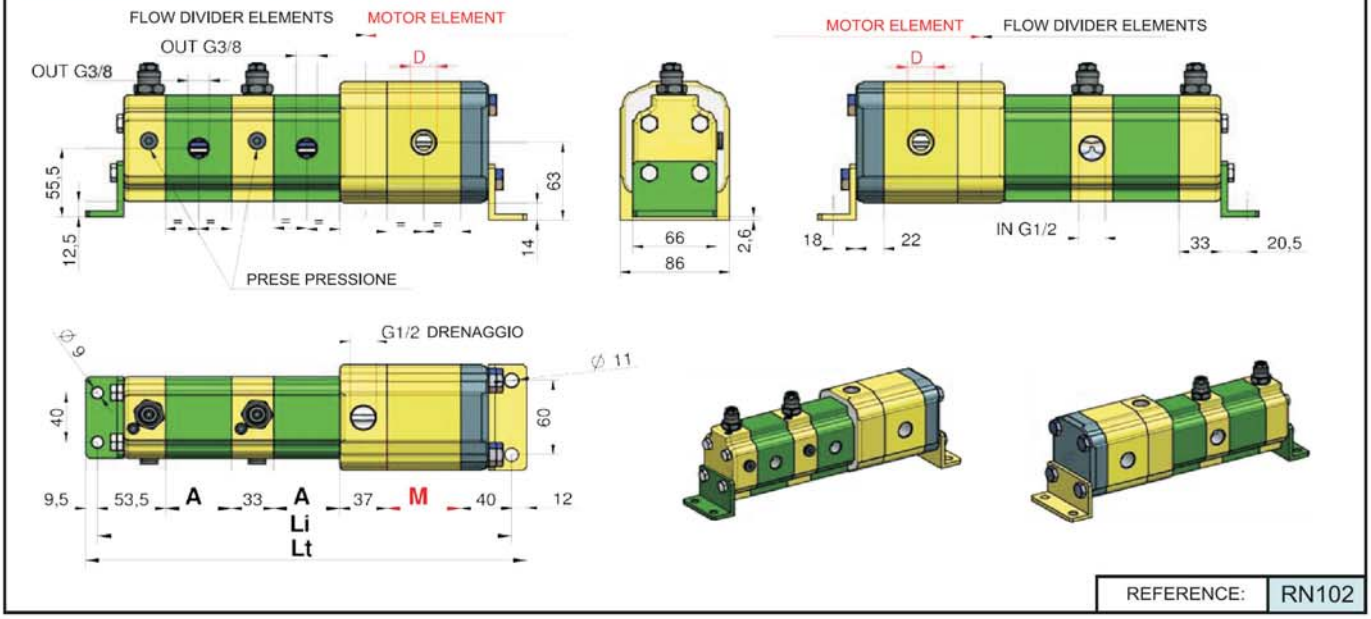
Example: Flow divider 4 elements (different displacement - max 6) and motor:
RV-1N / 3,8+4,9+4,9 with valve 105 ÷ 420 bar + 1 motor 14 cc

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.	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: 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

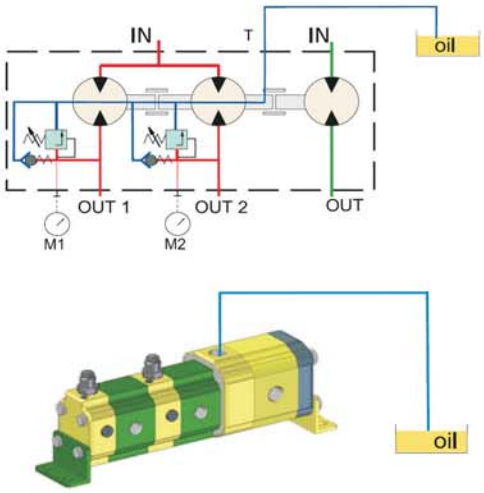
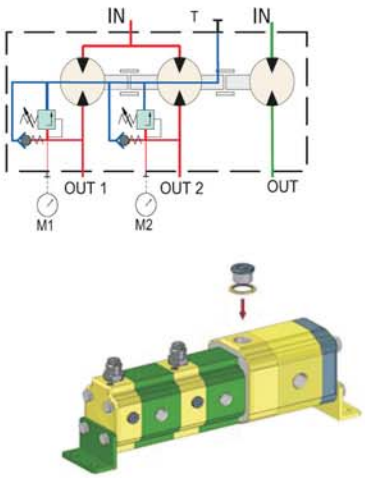
Cm³/rev	CM	M	D
4	41	47	1/2" BSP
6	43	50	1/2" BSP
9	45	54	1/2" BSP
11	47	58	1/2" BSP
14	49	64	3/4" BSP
17	51	68	3/4" BSP
19	53	72	3/4" BSP
22	55	78	3/4" BSP
26	57	82	1" BSP
30	59	90	1" BSP
34	61	97	1" BSP
40	63	106	1" BSP

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

FLOW DIVIDERS - RV-1N
(With Indipendent Phase Correction + Antivoid Valve + Group 2 Motor)

RV-1N

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:

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
- Hydraulic oil based on hlp, hv (din 51524) minerals — Oil Viscosity 20 ÷ 40 cSt
- Oil filtering 10 ÷ 25 µ

FLOW DIVIDERS - RV-2D
(Basic Model)

RV-2D

Code:

9RD	NN	CC

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

Example: Flow divider with two elements (same displacement):
RV-2D / 11 x 2

9RD	02	47

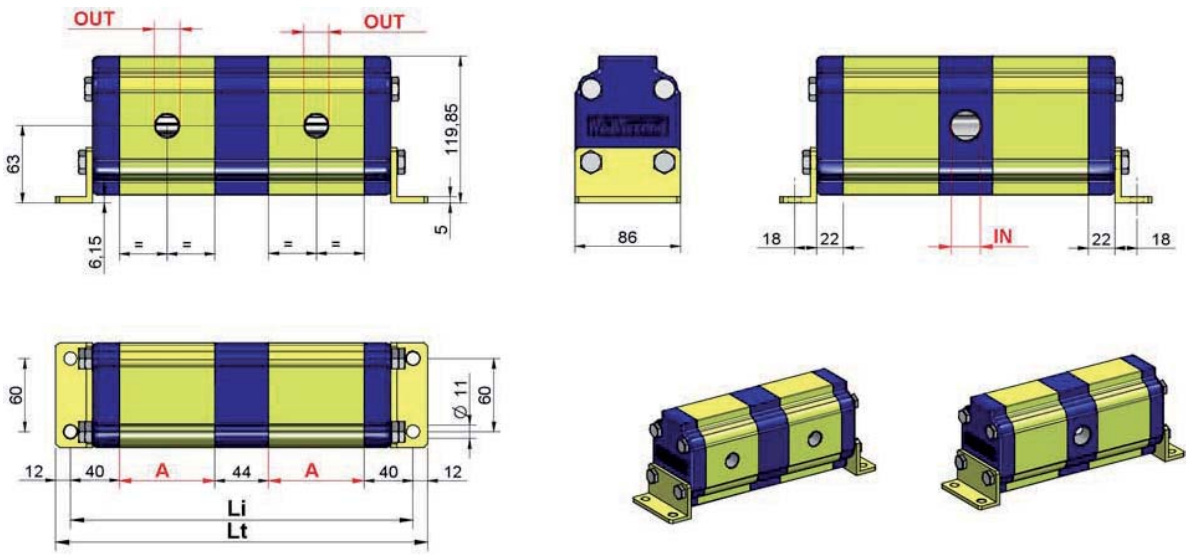
Example: Flow Divider with 4 elements with different displacement (max 7):
RV-2D / 9+14+14+22

9RD	04	45	49	49	55

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
4	41	210	4,8	7,6	10
6	43	210	7,2	10,8	15
9	45	210	10,8	15,1	22,5
11	47	210	13,2	19,4	27,5
14	49	200	16,8	25,9	35
17	51	200	20,4	30,2	42,5
19	53	190	22,8	34,6	47,5
22	55	180	26,4	41	55
26	57	160	31,2	45,4	65
30	59	160	36	54	75
34	61	140	40,8	61,6	85
40	63	130	48	71,3	100



REFERENCES: RD201

Table: 2

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

Cm³/rev	A	IN	OUT	Number of elements														
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4	47	3/4 BSP	1/2 BSP	218	309	400	491	582	673	764	855	946	1037	1128	1219	1310	1401	1492
6	50	3/4 BSP	1/2 BSP	224	318	412	506	600	694	788	882	976	1070	1164	1258	1352	1446	1540
9	54	3/4 BSP	1/2 BSP	232	330	428	526	624	722	820	918	1016	1114	1212	1310	1408	1506	1604
11	58	3/4 BSP	1/2 BSP	240	342	444	546	648	750	852	954	1056	1158	1260	1362	1464	1566	1668
14	64	3/4 BSP	1/2 BSP	252	360	468	576	684	792	900	1008	1116	1224	1332	1440	1548	1656	1764
17	68	3/4 BSP	1/2 BSP	260	372	484	596	708	820	932	1044	1156	1268	1380	1492	1604	1716	1828
19	72	3/4 BSP	1/2 BSP	268	384	500	616	732	848	964	1080	1196	1312	1428	1544	1660	1776	1892
22	78	3/4 BSP	1/2 BSP	280	402	524	646	768	890	1012	1134	1256	1378	1500	1622	1744	1866	1988
26	82	1 BSP	3/4 BSP	288	414	540	666	792	918	1044	1170	1296	1422	1548	1674	1800	1926	2052
30	90	1 BSP	3/4 BSP	304	438	572	706	840	974	1108	1242	1376	1510	1644	1778	1912	2046	2180
34	97	1 BSP	3/4 BSP	318	459	600	741	882	1023	1164	1305	1446	1587	1728	1869	2010	2151	2292
40	106	1 BSP	3/4 BSP	336	486	636	786	936	1086	1236	1386	1536	1686	1836	1986	2136	2286	2436

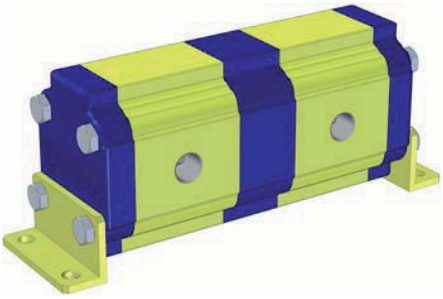
Table: 3 in this table the number of inlets in function of the number of elements are indicated.

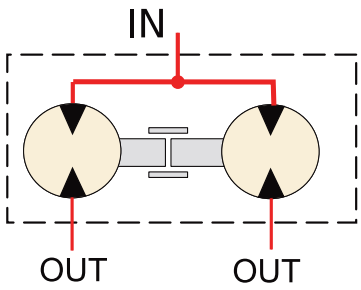
Number of elements	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
"IN" Number of inlets	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8

FLOW DIVIDERS - RV-2D
(Basic Model)

RV-2D

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**".
It's important 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 44] + 80 + (A1 + A2 + A3 +.....)

80 = 40 + 40
n = Number of elements of flow divider
A1... An = heights of elements of flow divider

Lt = Li + 24

24 = 12 + 12

EXAMPLE: To obtain the measures **Li** and **Lt** of a flow divider with three elements (n=3), **RV-2D 19 + 11 +9**

Distance between fixing hole centres	**Li** = [(3-1) x 44] + 80 + 72 + 58 + 54 =352 mm
Total Lenght	**Lt** = 352 + 24 = 376 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 use at least one **3/4" BSP** inlet every **80 l/min** capacity and at least one **1" BSP** inlet every **120 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 DIVIDERS - RV-2V
(Basic Model)

RV-2V

Codice:

9RV	NN	M	CC

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

TABELLA "M"	
A	10÷ 105 bar
B	70÷ 210 bar
C	140÷ 350 bar

Example: Flow divider with two elements (same displacement): :
RV-2V / 11 x 2 with valve 10 ÷ 105 bar

9RV	02	A	47

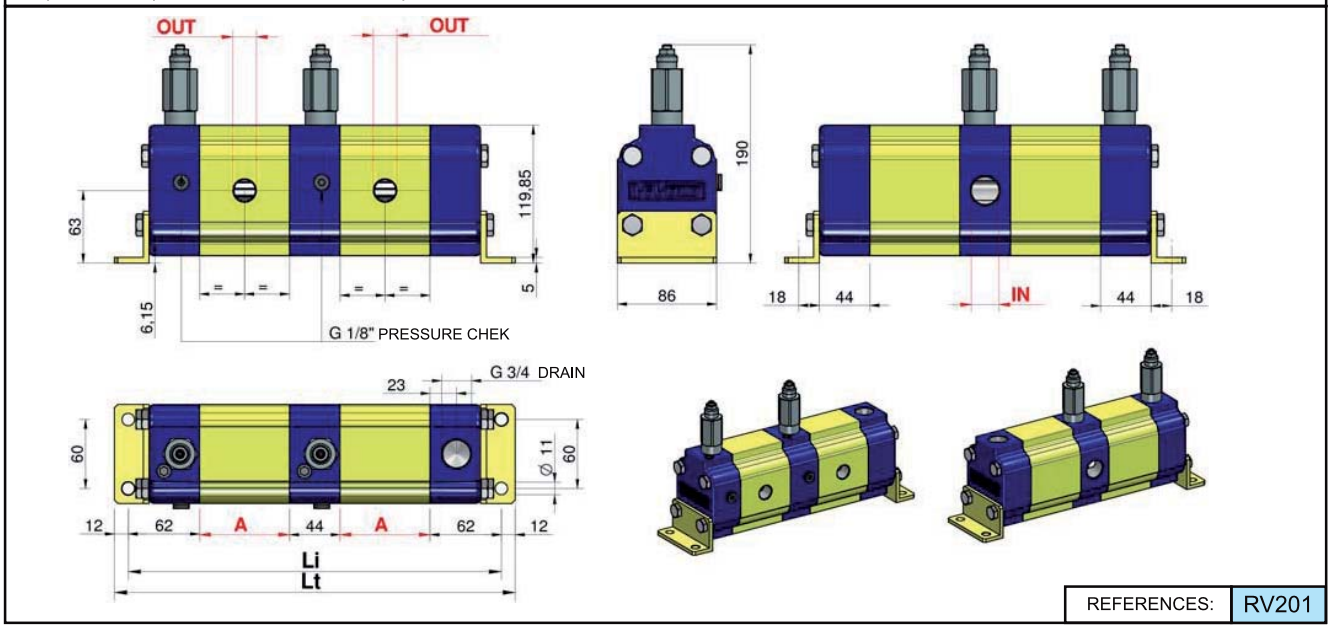
Example: Flow Divider with 4 elements with different displacement (max 7):
RV-2V / 9+14+14+22 with valve 70 ÷ 210 bar

9RV	04	B	45	49	49	55

NOTE: to define codes for flow dividers with more than 7 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
4	41	210	4,8	7,6	10
6	43	210	7,2	10,8	15
9	45	210	10,8	15,1	22,5
11	47	210	13,2	19,4	27,5
14	49	200	16,8	25,9	35
17	51	200	20,4	30,2	42,5
19	53	190	22,8	34,6	47,5
22	55	180	26,4	41	55
26	57	160	31,2	45,4	65
30	59	160	36	54	75
34	61	140	40,8	61,6	85
40	63	130	48	71,3	100



REFERENCES: RV201

Table: 2

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

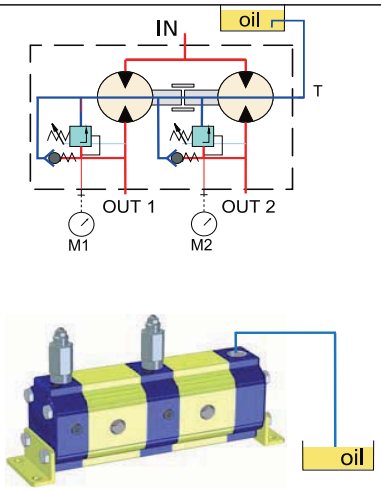
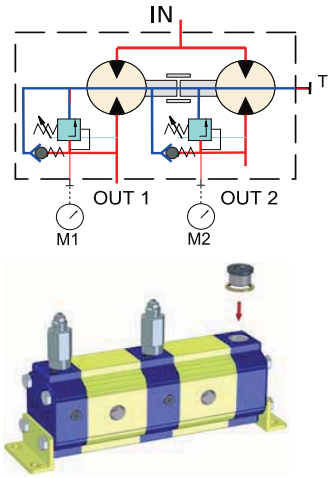
Cm³/rev	A	IN	OUT	Number of elements 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4	47	3/4 BSP	1/2 BSP	262	353	444	535	626	717	808	899	990	1081	1172	1263	1354	1445	1536
6	50	3/4 BSP	1/2 BSP	268	362	456	550	644	738	832	926	1020	1114	1208	1302	1396	1490	1584
9	54	3/4 BSP	1/2 BSP	276	374	472	570	668	766	864	962	1060	1158	1256	1354	1452	1550	1648
11	58	3/4 BSP	1/2 BSP	284	386	488	590	692	794	896	998	1100	1202	1304	1406	1508	1610	1712
14	64	3/4 BSP	1/2 BSP	296	404	512	620	728	836	944	1052	1160	1268	1376	1484	1592	1700	1808
17	68	3/4 BSP	1/2 BSP	304	416	528	640	752	864	976	1088	1200	1312	1424	1536	1648	1760	1872
19	72	3/4 BSP	1/2 BSP	312	428	544	660	776	892	1008	1124	1240	1356	1472	1588	1704	1820	1936
22	78	3/4 BSP	1/2 BSP	324	446	568	690	812	934	1056	1178	1300	1422	1544	1666	1788	1910	2032
26	82	1 BSP	3/4 BSP	332	458	584	710	836	962	1088	1214	1340	1466	1592	1718	1844	1970	2096
30	90	1 BSP	3/4 BSP	348	482	616	750	884	1018	1152	1286	1420	1554	1688	1822	1956	2090	2224
34	97	1 BSP	3/4 BSP	362	503	644	785	926	1067	1208	1349	1490	1631	1772	1913	2054	2195	2336
40	106	1 BSP	3/4 BSP	380	530	680	830	980	1130	1280	1430	1580	1730	1880	2030	2180	2330	2480

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 DIVIDERS - RV-2V
(Basic Model)

RV-2V

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 3/4" G drain port (T) **Note**: with this configuration the function of anticavitation valves is annulled
	

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**".
It's important 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 44] + 124 + (A1 + A2 + A3 +…….)

124 = 62 + 62
n = Number of elements of flow divider
A1... An = heights of elements of flow divider

Lt = Li + 24

24 = 12 + 12

EXAMPLE: To obtain the measures **Li** and **Lt** of a flow divider with three elements (n=3), **RV-2V 19 + 11 +9**

Distance between fixing hole centres — **Li** = [(3-1) x 44] + 124 + 72 + 58 + 54 =396 mm

Total Lenght — **Lt** = 396 + 24 = 420 mm

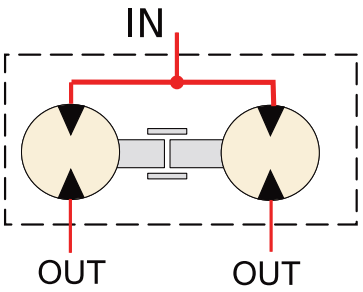
In **table 3** the number of inlets in fuction of the number of elements are indicated.
For flow dividers with many inlets, as they are all communicating it is even possible to use only one of them, by plugging the other ones. We suggest to use at least one **3/4" BSP** inlet every **80 l/min** capacity and at least one **1" BSP** inlet every **120 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 DIVIDERS - XV-3D
(Basic Model)

INTERNAL DRAIN



In **table 1** the functioning range of single flow divider element 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 **"RECCOMMENDED".**

It's important 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 the flow dividers:

From **table 2** it is possible to obtain the "Li" measure for flow dividers up to 16 elements with equal displacement; 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 60] + 110 + (A1 + A2 + A3 + ...)

110 = 55 + 55
n = Number of elements of flow divider
A1... An = heights of elements of flow divider

Lt = Li + 30

30 = 15 + 15

EXAMPLE: To obtain the measures **Li** and **Lt** of a flow divider with three elements (n=3), **XV-3D 27 + 38 + 54**

Distance between fixing hole centres — **Li** = [(3-1) x 60] + 110 + 75 + 85 + 98 = 488 mm

Total Lenght — **Lt** = 488 + 30 = 518 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 use at least one **1" BSP** inlet every 200 l/min capacity and at least one **1-1/4" BSP** inlet every **360 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 parameters is also important:

- Environment temperature: -10°C ÷ +60°C
- Hidraulic mineral oils hlp, hv based (DIN 51524)
- Oil filtering: 10 ÷ 25 micron
- Oil temperature: +30°C ÷ +60°C
- Oil viscosity: 20 ÷ 40 cSt

FLOW DIVIDERS - XV-3D
(Basic Model)

Code:

9D	NN	CC

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

Example: Flow divider with two elements (same displacement):
XV-3D / 38 x 2

9D	02	78

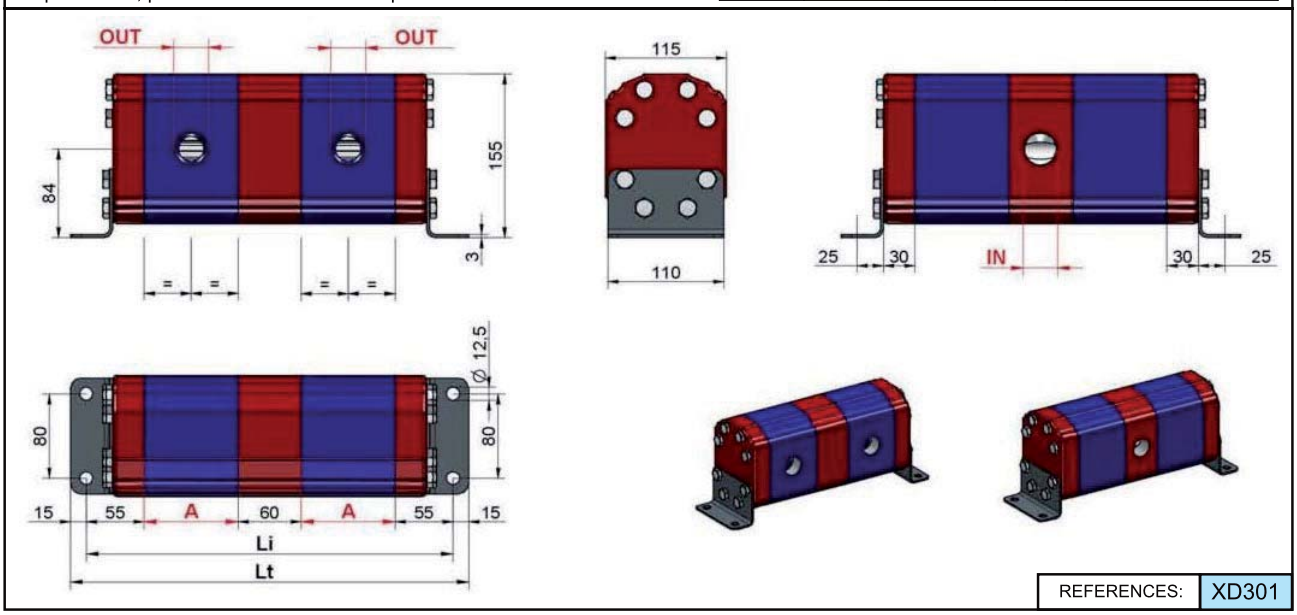
Example: Flow Divider with 4 elements with different displacement (max 7):
XV-3D / 21+51+51+70

9D	04	70	81	81	86

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
15	66	300	18	27	37,5
18	68	300	21,5	32,5	45
21	70	280	25	38	52,5
27	72	250	32,5	48	67,5
32	74	250	38	57	80
38	78	250	41	60	91
43	79	250	43	64,5	99
47	80	230	47	70,5	108
51	81	230	51	76,5	117
54	82	230	54	81	124
61	83	230	56	82	126
64	85	210	57	83	128
70	86	200	63	91	140
74	87	180	66,5	96	148
90	89	150	81	117	180



REFERENCES: XD301

Table: 2

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

Cm³/rev	A	IN	OUT	Number of elements														
				2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
15	66	1" BSP	1/2 BSP	302	428	554	680	806	932	1058	1184	1310	1436	1562	1688	1814	1940	2066
18	68	1" BSP	1/2 BSP	306	434	562	690	818	946	1074	1202	1330	1458	1586	1714	1842	1970	2098
21	71	1" BSP	1/2 BSP	312	443	574	705	836	967	1098	1229	1360	1491	1622	1753	1884	2015	2146
27	75	1" BSP	3/4 BSP	320	455	590	725	860	995	1130	1265	1400	1535	1670	1805	1940	2075	2210
32	80	1" BSP	3/4 BSP	330	470	610	750	890	1030	1170	1310	1450	1590	1730	1870	2010	2150	2290
38	85	1" BSP	3/4 BSP	340	485	630	775	920	1065	1210	1355	1500	1645	1790	1935	2080	2225	2370
43	89	1" BSP	1" BSP	348	497	646	795	944	1093	1242	1391	1540	1689	1838	1987	2136	2285	2434
47	92	1-1/4 BSP	1" BSP	354	506	658	810	962	1114	1266	1418	1570	1722	1874	2026	2178	2330	2482
51	95	1-1/4 BSP	1" BSP	360	515	670	825	980	1135	1290	1445	1600	1755	1910	2065	2220	2375	2530
54	98	1-1/4 BSP	1" BSP	366	524	682	840	998	1156	1314	1472	1630	1788	1946	2104	2262	2420	2578
61	103	1-1/4 BSP	1" BSP	376	539	702	865	1028	1191	1354	1517	1680	1843	2006	2169	2332	2495	2658
64	106	1-1/4 BSP	1" BSP	382	548	714	880	1046	1212	1378	1544	1710	1876	2042	2208	2374	2540	2706
70	111	1-1/4 BSP	1" BSP	392	563	734	905	1076	1247	1418	1589	1760	1931	2102	2273	2444	2615	2786
74	114	1-1/4 BSP	1" BSP	398	572	746	920	1094	1268	1442	1616	1790	1964	2138	2312	2486	2660	2834
90	124	1-1/4 BSP	1-1/4 BSP	418	602	786	970	1154	1338	1522	1706	1890	2074	2258	2442	2626	2810	2994

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	2	2	3	3	4	4	5	5	6	6	7	7	8	8

DIAGRAMS

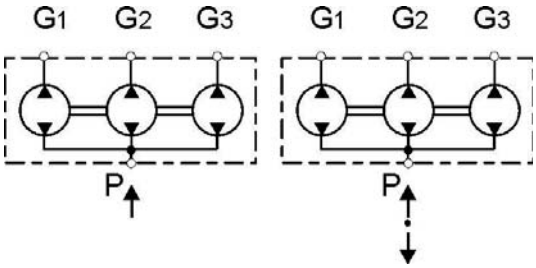
Hydraulic diagrams of flow dividers

We shall examine the path of fluid inside the flow divider by means of diagrams.
The following symbols are used:

P = conduit for incoming flow from the pump
T = conduit for flow conveyed to the tank
Gi = conduits for delivery of fluid to users
A e B = delivery and discharge of motor element

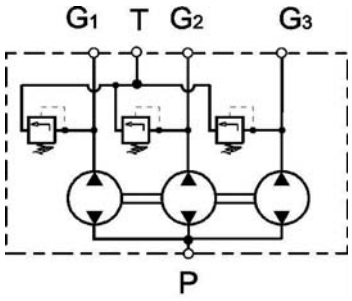
Diagram of divider comprising three elements

In this example we consider a divider made up of three elements, but the same considerations also apply for a divider with Ne elements.
The incoming flow from the P supplies the three sections, whose gears, fitted onto the same shaft, start turning at equal speeds.
From the elements, three branches carry flow to the users. The flow rates are solely determined by the displacements of the respective elements.
Depending on the external circuit, the divider may work in either one or both directions.



Diagrams of three-element divider with valve

This case differs from the previous one only in that there are three phase correction valves, which are connected to the Gi branches and discharge flow into manifold T.
This example shows the configuration with external drainage of the valves, given that this is the most frequent case.
For the sake of simplicity, the diagram does not show the service conduits for the pressure gauges.



Diagrams of two-element divider with motor

The motor element is mechanically linked to the other elements by means of the shaft. However, it is wholly independent from a hydraulic standpoint.
In fact the delivery and discharge outlets A and B are separate from intake P and the Gi branches serving the users.

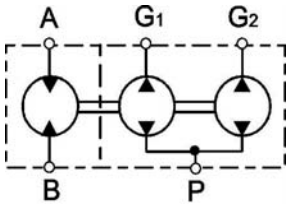
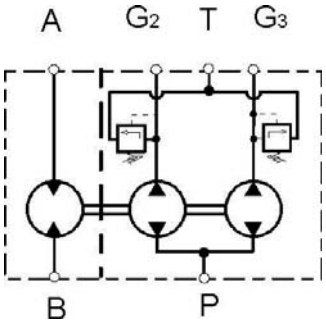


Diagram of divider with valves and motor

In this diagram of a two-element divider with motor, two phase correction valves have been added on the branches delivering flow to the users.
For the sake of simplicity, the diagram does not show the service taps for the pressure gauges.



Diagrams of systems with flow dividers

For the purpose of illustration, below we shall describe some examples of systems using flow dividers.

Diagram with four element divider with valves

The divider, comprising 4 sections, feeds 4 double- acting cylinders from the extension side, whereas from the return side, flow is delivered directly from the pump: (one-way divider).
To keep the cylinders synchronized in phase, the divider is equipped with 4 phase correction valves (one for each cylinder from the extension side and therefore with alignement of the cylinders only from the thrusting side). The flow discharged from the valves is directly conveyed to the fluid tank.
The divider is also provided with auxiliary 1/8" outlets, here shown plugged up; these outlets are for applying the pressure gauges that are necessary for setting the valves.
To prevent the cylinders from spontaneously reentering as a result of loading, 4 piloted check valves are provided on the branches feeding the thrust chambers of the cylinders. These valves allow the flow of fluid only when the reentry command is activated, which puts the reentry conduit under pressure. This pressure opens the limit valves and allows fluid to circulate.

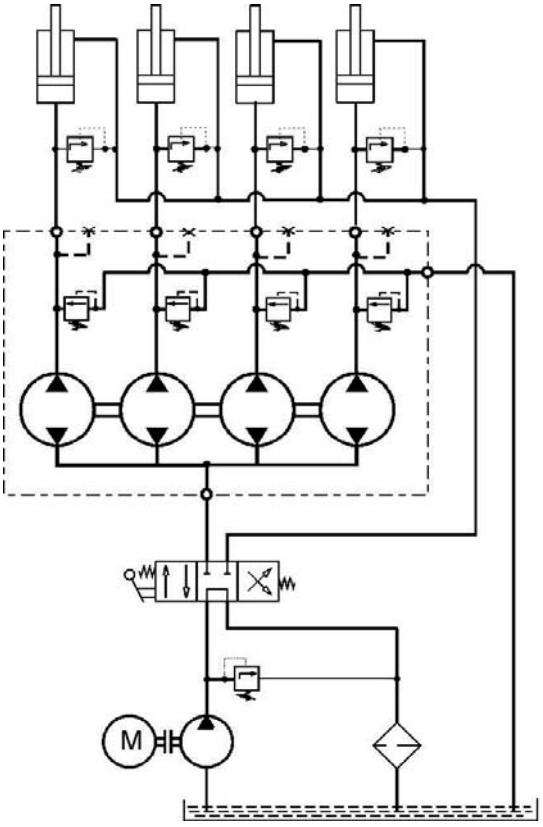


Diagram with three-elements divider with three valves and motor

The divider has 3 sections that supply 3 single- acting cylinders with 3 phase correction valves and a section that acts as a motor. The divider has three 1/8" outlets (plugged) for pressure gauges.
In the cylinders reentry phase, the motor receives flow from the pump and discharges it into the tank through a filter. To prevent the motor from gaining too much speed, there is an adjustable flow- limiting valve that drains part of the flow coming from the pump. As it turns, the motor draws with it the gears of the divider, thereby allowing the cylinders to reenter and to discharge the fluid through the divider into the tank after its filtering.

In the cylinders extension phase, the motor is instead drawn by the shaft of the divider and aspirates from the tank, bypassing the filter, to prevent cavitation.

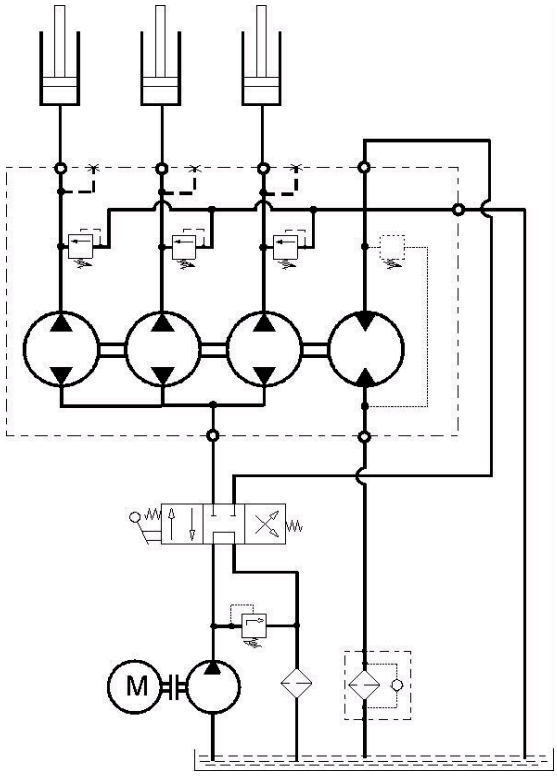


Diagram with four element divider

The divider shown here in the diagram is capable of supplying four circuits in a wholly independent manner, three being connected to three hydraulic cylinders and one to a hydraulic motor.
The layout of the connections provides for the divider to work with flow moving through it in both directions.
A double pressure-relief valve protects the motor against overloads.
All the cylinders are provided with unidirectional piloted check valves (flow is blocked in one direction and free in the other), which maintain the load until their reentry is actuated.
The phase correction of the cylinders is not provided here, being presumed unnecessary in the presence of independent circuits.
It should be noted that the fluid returning to the tank is completely filtered. In fact, to prolong the life of the flow divider, it is recommended not to use filters with a bypass designed to prevent dirt from clogging the filter.
If you wish to monitor the degree of clogging in the cartridge, equip the filter with a suitable pressure gauge.

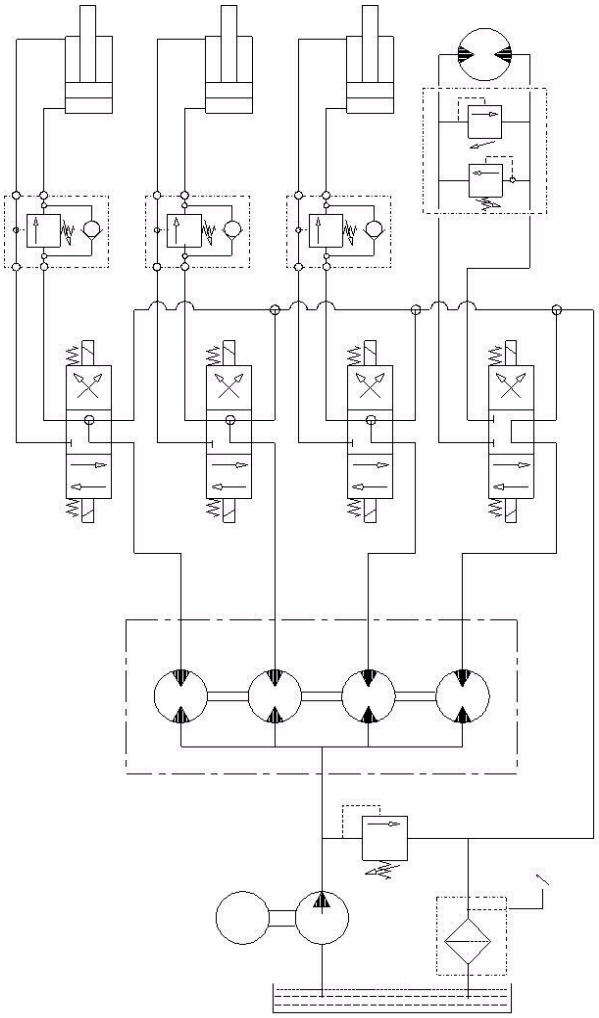


Diagram of pressure amplifying circuit

The circuit shown is a simplified example of the use of a two-element flow divider as a pressure amplifier in a hydraulic press where the approach to the piece to be pressed must be fast even at low pressures, whereas the pressing must be at high pressure even if slow.
In the example, the flow for the approach is the sum of the flow rates of the two elements comprising the divider. Since the two pressure-relief valves on the branches of the hydraulic cylinder are set at two different pressures (one at low pressure and the other at high pressure), when the rod begins to press the piece, the pressure rises and causes the valve set at a low pressure to open and the flow in the corresponding branch goes to be discharged.
As the rotation of the divider gears and the power of the pump do not change, all the power converges in the active element of the divider, which may consequently supply a pressure exceeding even that of the pump itself.

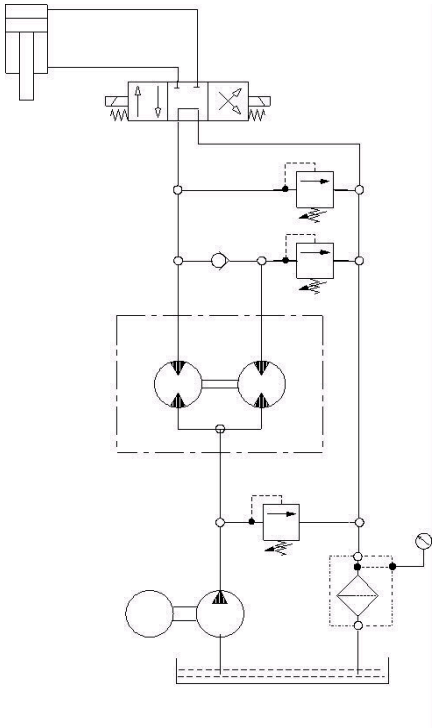
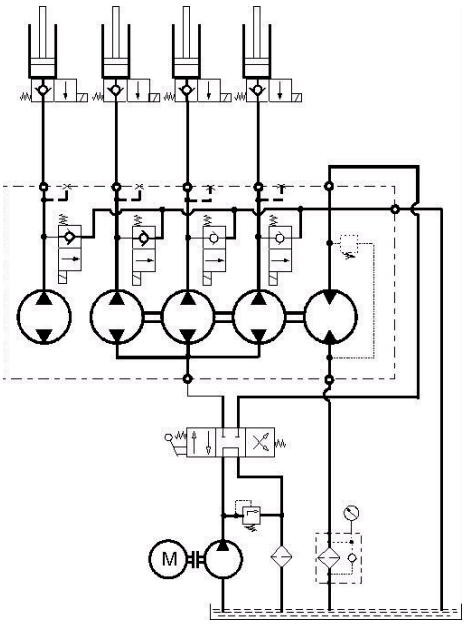


Diagram of 4-element divider with valves + motor

The difference between this circuit and the one with three elements + motor lies in the number
of elements and the type of phase correction valves, which are electrically rather than hydraulcally controlled.
The following operating modes are possible:
-all cylinders in parallel;
-all cylinders independent;
-groups of cylinders independent from others;
-disabling of one or more cylinders, by keeping the corresponding solenoid valves de-energized.
All the hydraulic cylinders (single-acting) are provided with solenoid valves that disable their movement if the coils are not energized.



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Via M. L. King, 6 - **41122 MODENA (ITALY)**
Tel: +39 059 415 711
Fax: +39 059 415 729 / 059 415 730
INTERNET: http://www.hansatmp.it
E-MAIL: hansatmp@hansatmp.it