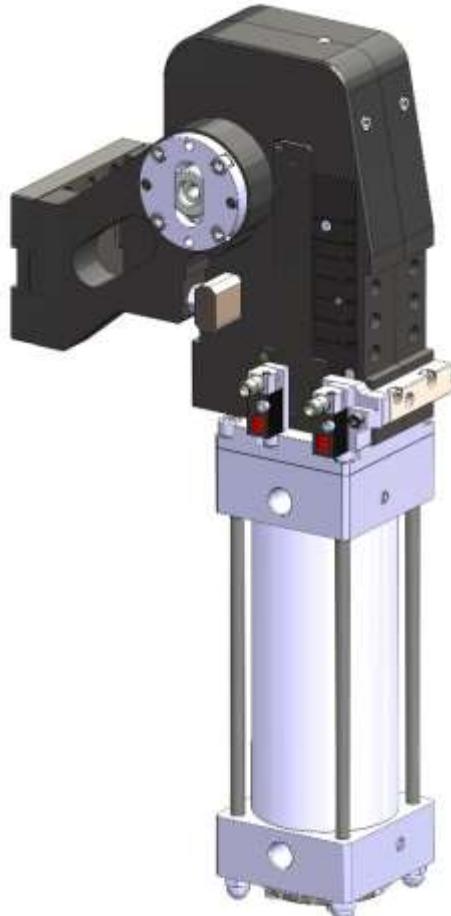


RFM.2/RCM.2 (100-125-160-200)

RFM.2/RCM.2 NEW PIVOT UNITS HYDRAULIC CONTROLLED, WITH OPENING ANGLES
EASILY ADJUSTABLE AND SBI LOCK SYSTEM INTEGRATED INTO THE HEADS

New RFM.2/RCM.2 Mains Features



New RFM.2/RCM.2 Mains Features:

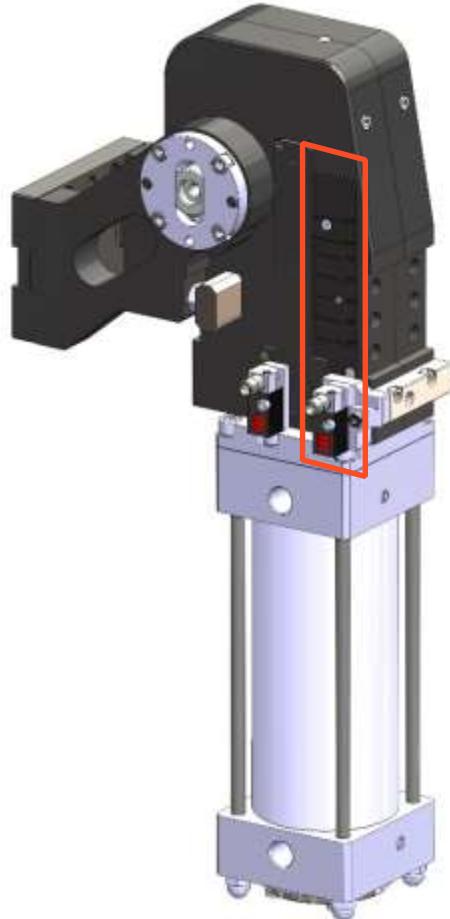
1. SBI Lock System integrated into the head (RFM-RF series) – (Patented)
2. Opening angles easily adjustable (RFM/RCM)
3. Improved New Sensors kit (Pivot Positioning Lock System)
4. New Mechanical head layout

Others main features on previous GR.1/RC.1:

5. Pneumo-Hydraulic motion control
6. External Arms Hard Stop
7. Ordination Codes (RFM/RF – RCM/RC)

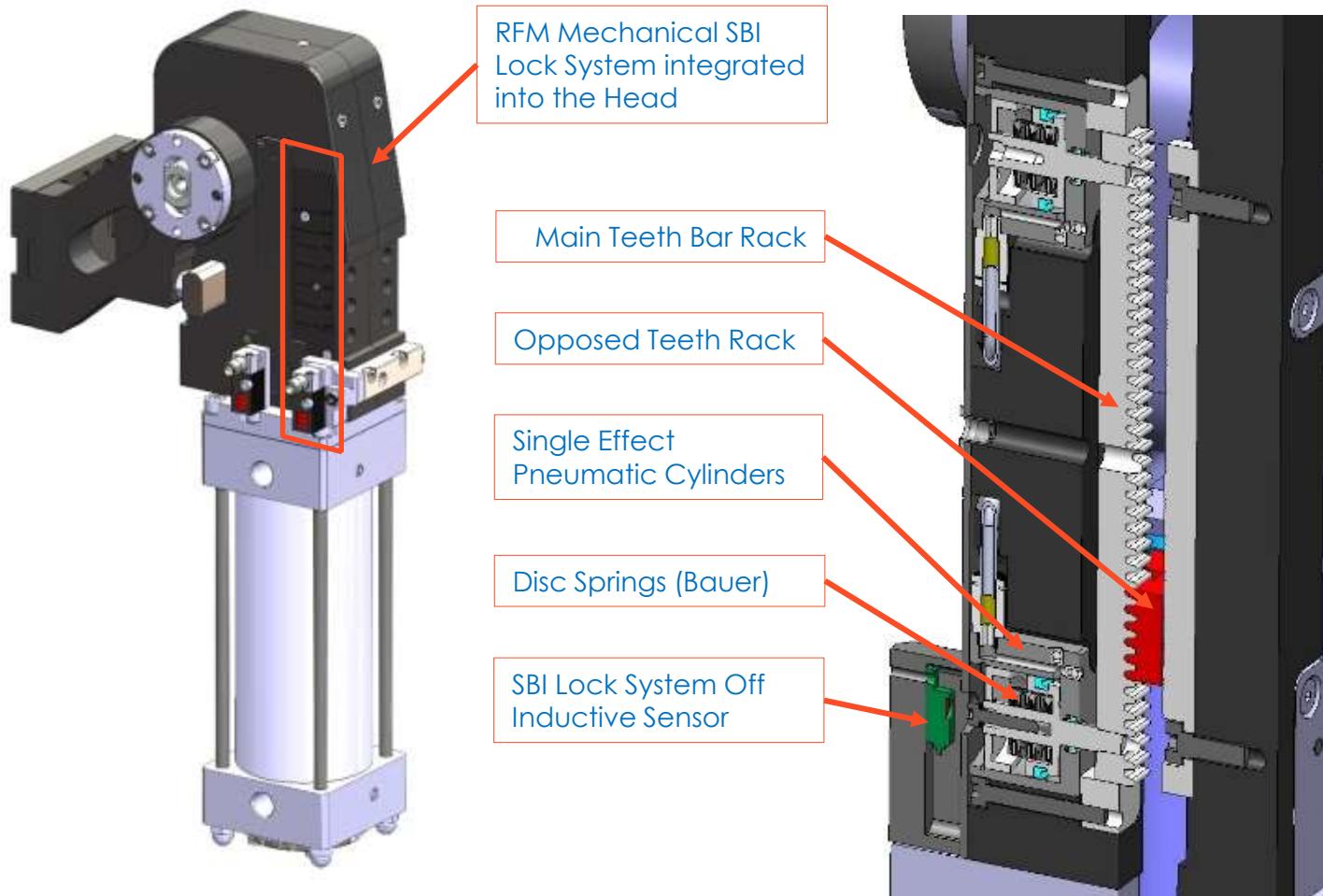
Comparison between RFM.2/RCM.2 and GR.1/RC.1

1. SBI Lock System integrated into the mechanical head (RFM)



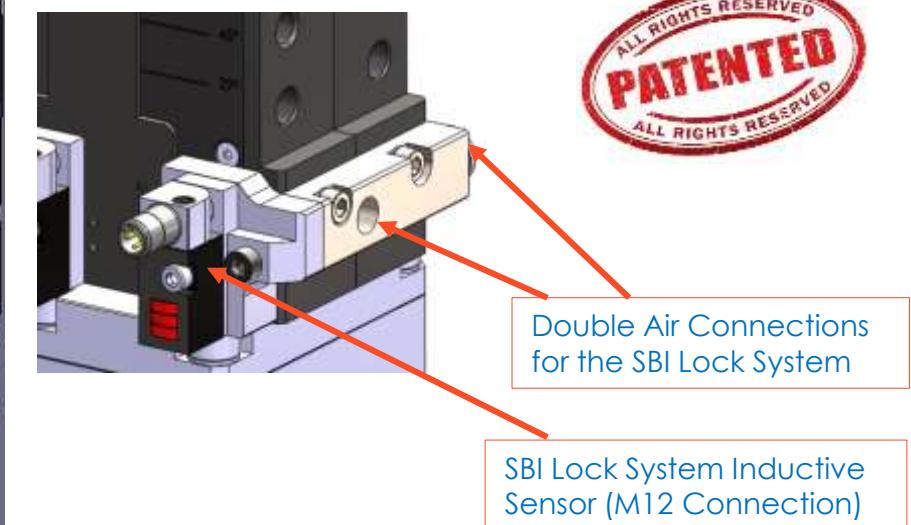
1) SBI Lock System integrated into the mechanical head (RFM-RF)

1. SBI Lock System integrated into the mechanical head (RFM)



Advantages:

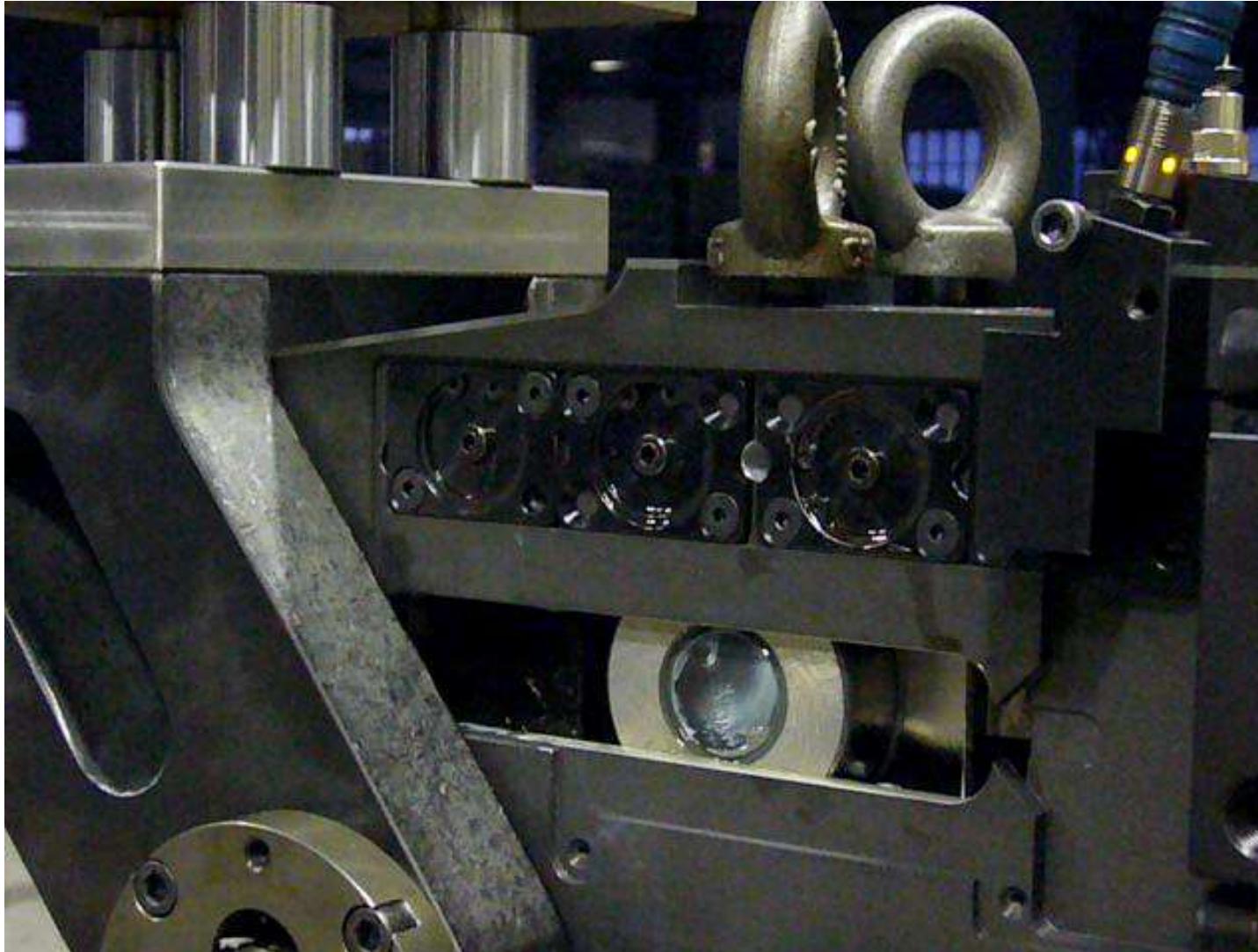
- Secure and reliable braking (no piston rod lock system)
- Mechanical Teeth Bar Rack locker concept (no Hydraulic oil)
- No arms gap in back position
- Integrated into the head (reduced external unit dimension.)



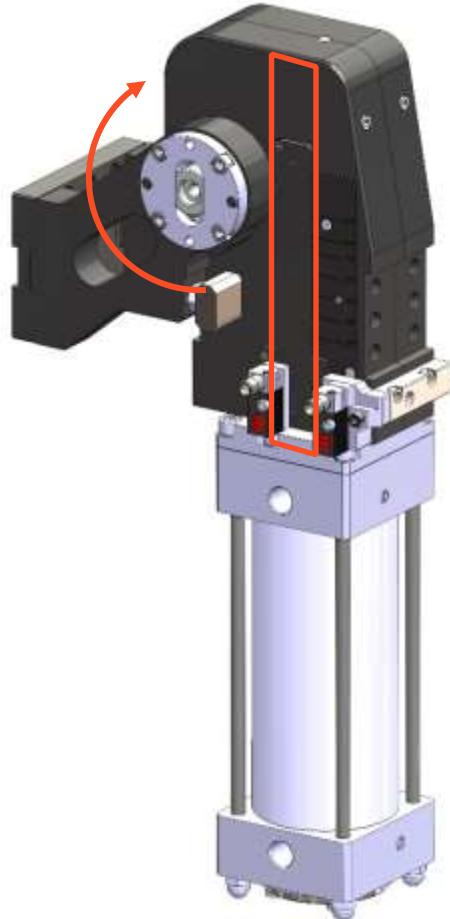
1. SBI Lock System integrated into the mechanical head (RFM)



1. SBI Lock System integrated into the mechanical head (RFM)

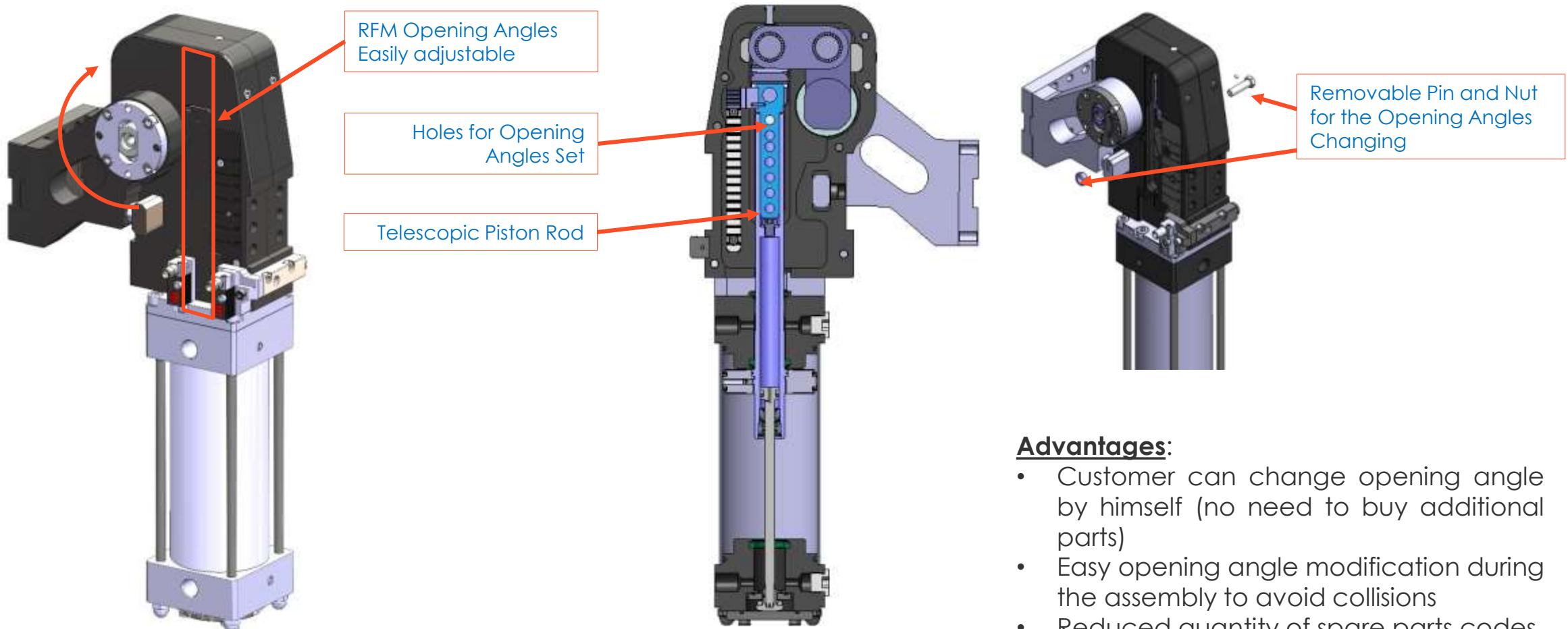


2. Opening angles easily adjustable



2) Opening angles easily adjustable (RFM/RCM)

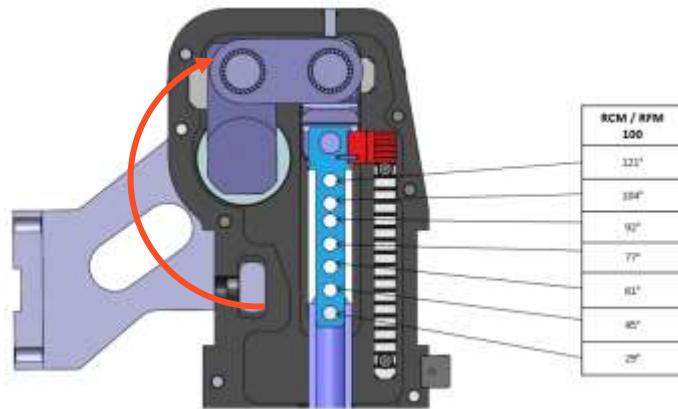
2. Opening angles easily adjustable



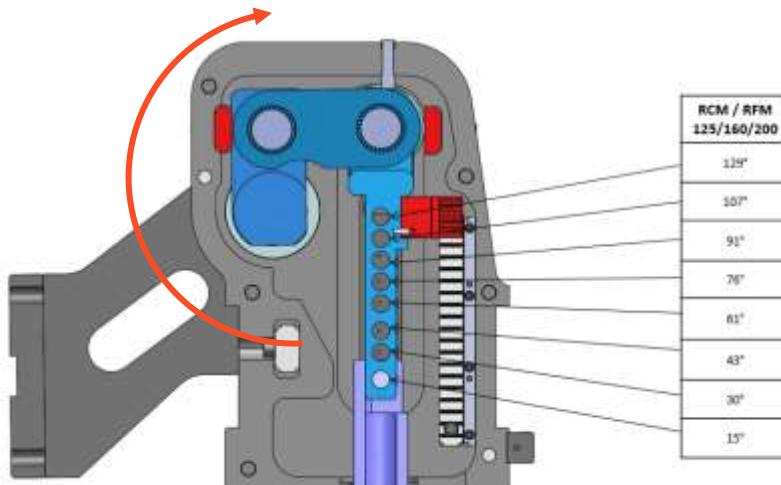
Advantages:

- Customer can change opening angle by himself (no need to buy additional parts)
- Easy opening angle modification during the assembly to avoid collisions
- Reduced quantity of spare parts codes

2. Opening angles easily adjustable



RFM100.2 OPENING ANGLES							
Arms \ Angles	29°	45°	61°	77°	92°	104°	121°
V	●	●	●	●	●	●	●
V/LS	●	●	●	●	●	●	●
O	●	●	●	●	●	●	●
O/LS	●	●	●	●			



RFM125-160-200.2 OPENING ANGLES								
Arms \ Angles	15°	30°	43°	61°	76°	91°	107°	129°
V	●	●	●	●	●	●	●	●
V/LS	●	●	●	●	●	●	●	●
O	●	●	●	●	●	●	●	●
O/LS	●	●	●	●	●			

2. RF Unit additional Opening angles (Fix, Not Adjustable)

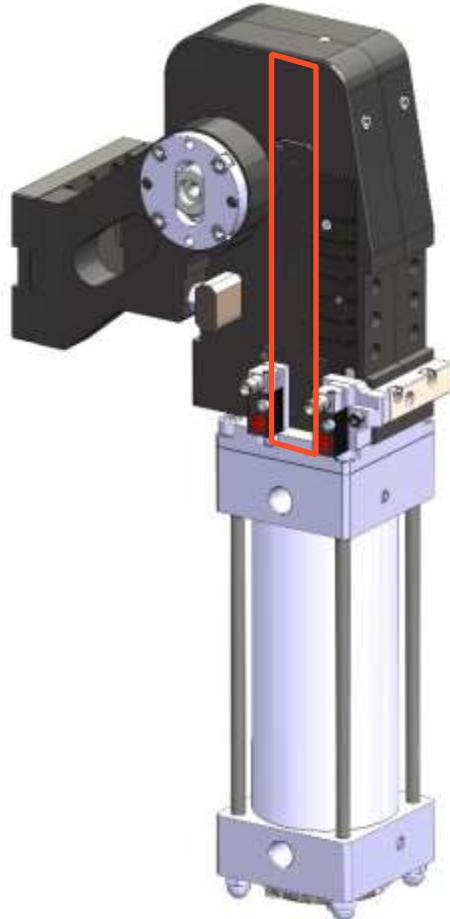
In case of the RFM units available angles are not in according to the application designed by the customer, on request, we can provide the RF unit which allows to have a larger number of available opening angles. Herewith below the complete list of the RF opening angles.

Note: The RF unit doesn't have the opening angle easily adjustable. It's fixed as the old GR/RC. The cylinder length of the RF unit is in according to the opening angle as the unit GR/RC.

		RF100.2 OPENING ANGLES (Option on request)																													
Arms \ Angles		15°	18°	22°	25°	29°	33°	37°	41°	45°	49°	53°	57°	61°	65°	69°	73°	77°	81°	85°	89°	92°	96°	100°	104°	108°	113°	117°	121°	127°	133°
V		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
V/LS		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
O		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
O/LS		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		

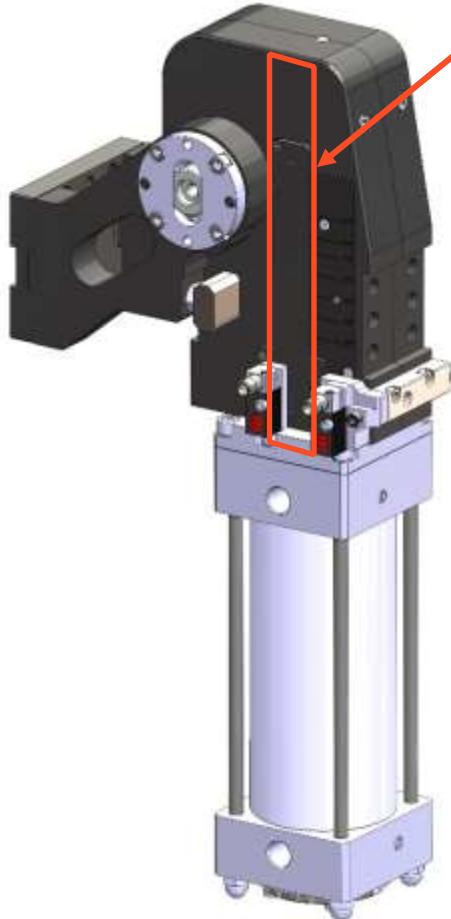
		RF125-160-200.2 OPENING ANGLES (Options on request)																														
Arms \ Angles		15°	18°	21°	24°	27°	30°	33°	36°	40°	43°	47°	50°	54°	58°	61°	65°	69°	72°	76°	80°	83°	87°	91°	95°	99°	103°	107°	112°	116°	122°	129°
V		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
V/LS		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
O		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
O/LS		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			

3. Detail of New Sensor Kit (Pivot Positioning)



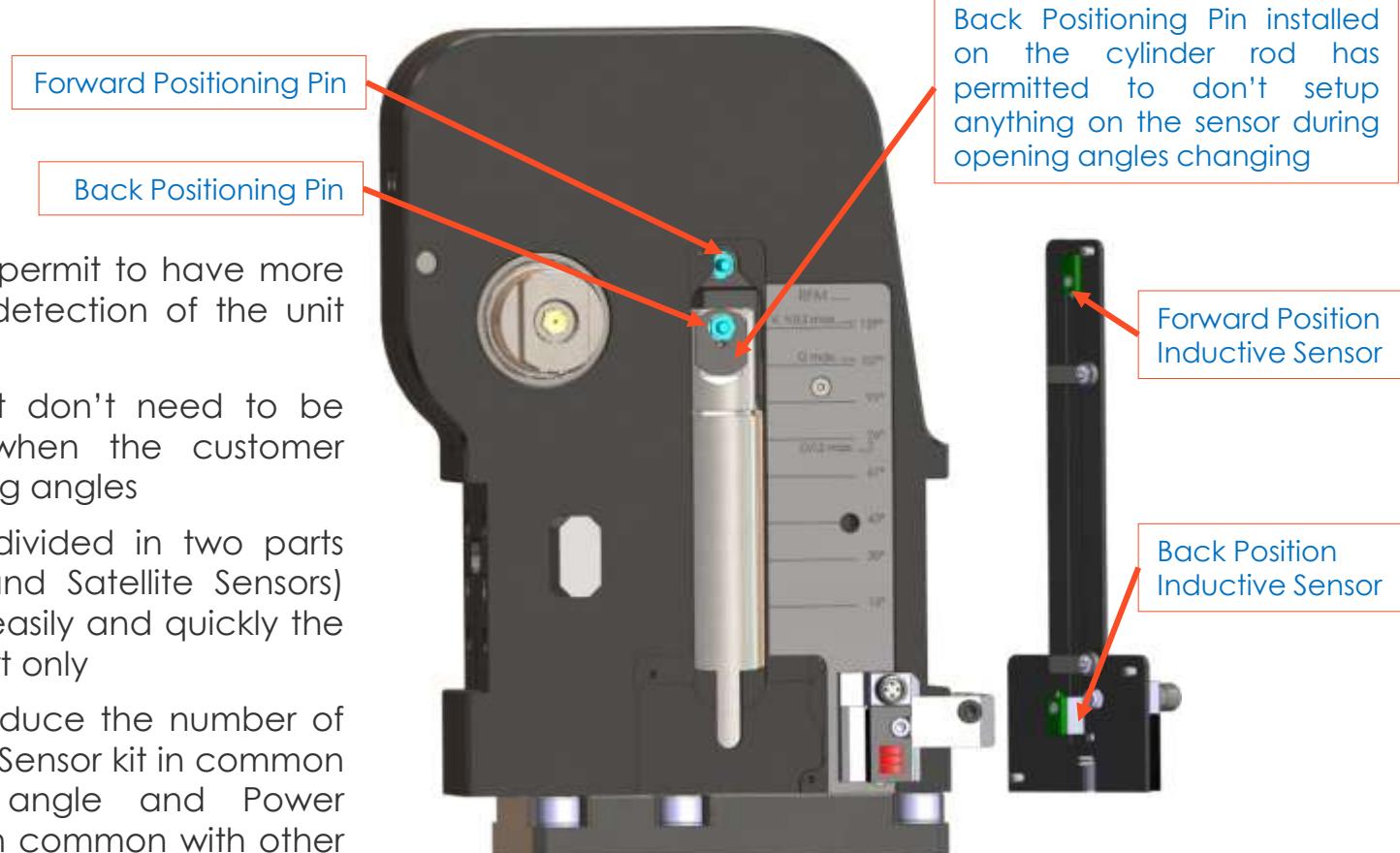
**3) Improved Sensor kit (Pivot Positioning) and
New Separable P&F Sensor**

3. Detail of New Sensor Kit (Pivot Positioning)

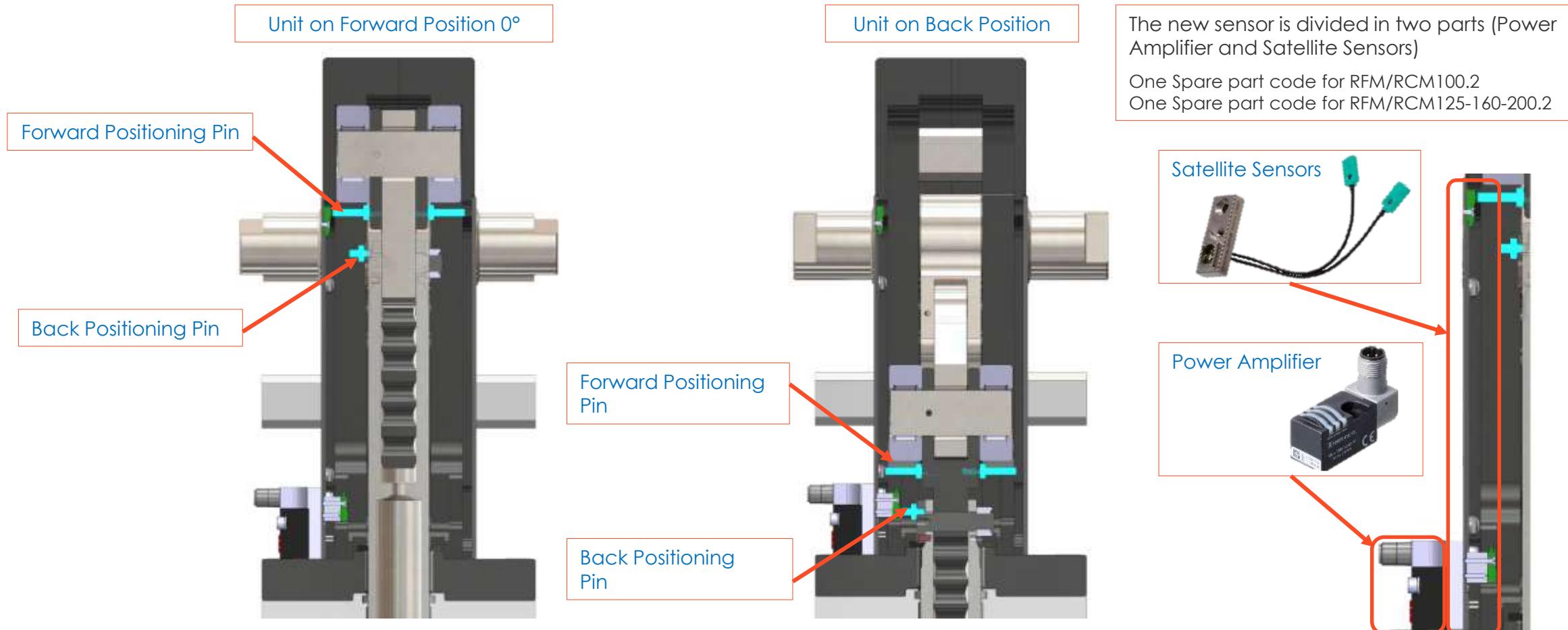


Advantages:

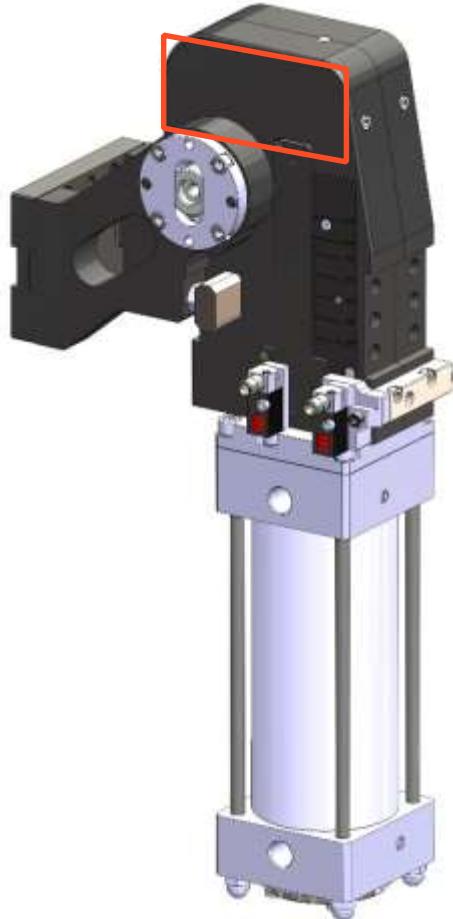
- The new sensor kit permit to have more accuracy on the detection of the unit position
- The new sensor kit don't need to be setup or adjust when the customer change the opening angles
- The new sensors, divided in two parts (Power Amplifier and Satellite Sensors) permit to replace easily and quickly the Power Amplifier part only
- The new sensors reduce the number of spare parts codes (Sensor kit in common for all opening angle and Power Amplifier may be in common with other products).



3. Detail of New Sensor Kit (Unit Position)



4. New Head layout



4) New Layout Mechanical head

4. New Head layout

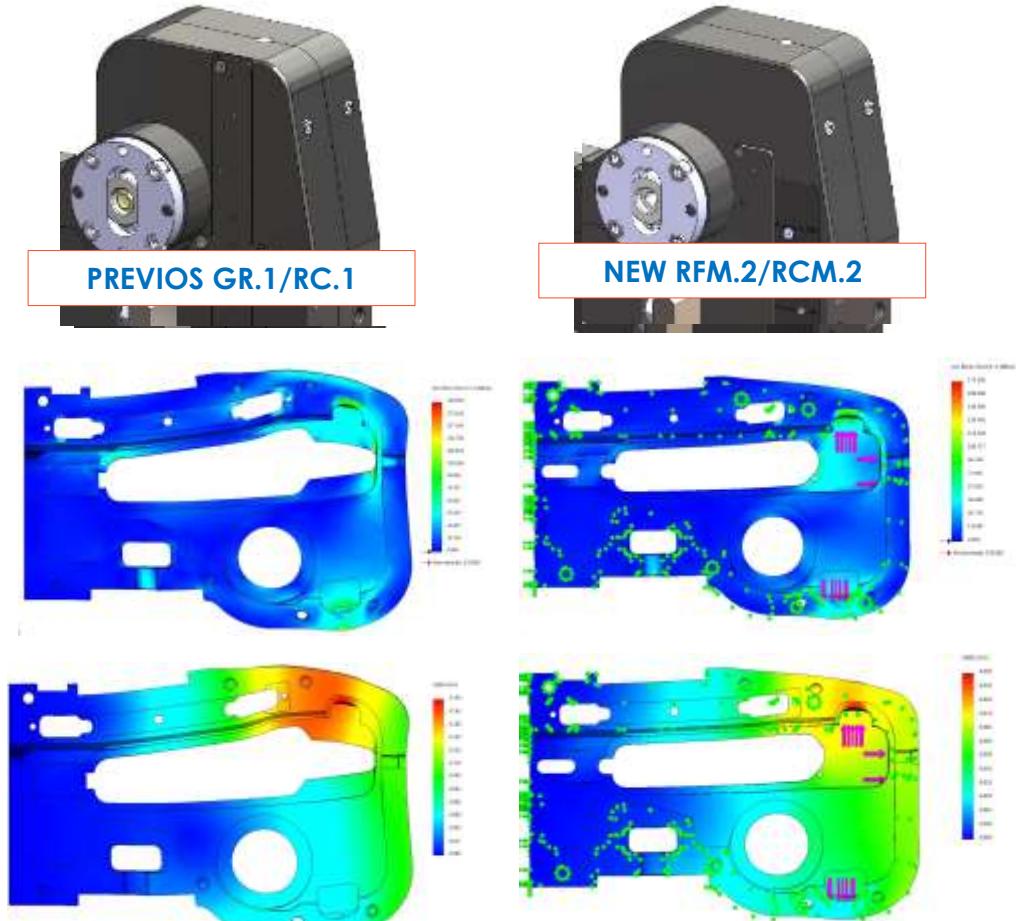


Advantages:

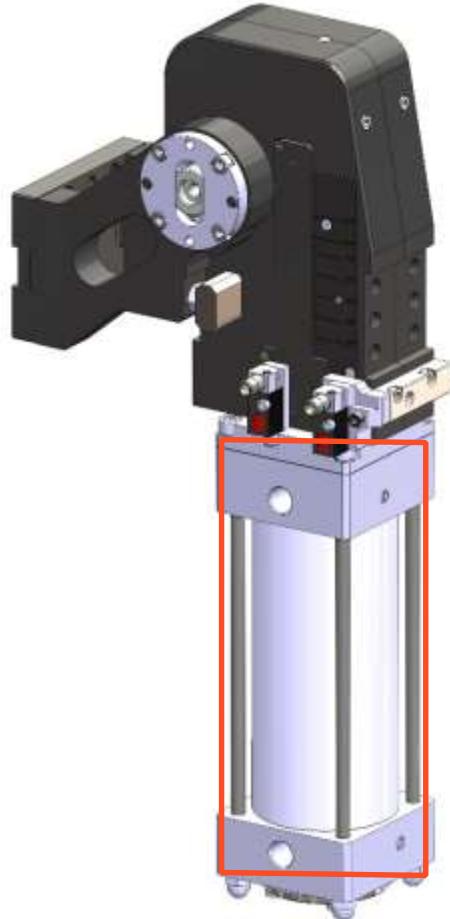
- The new Head layout, due to the relocating of the new sensor kit, has increased the resistance against the overload or the wrong use as a clamping.
- The finished elements method analysis (FEM) shows an additional improving of 100% for the moving and an improving of 20% for the forces compared to the GR.1/RC.1

Note:

- The fixings are perfectly interchangeable to the GR.1/RC.1. The external dimensions are approx. 99% interchangeable (there's only a little difference on the sensors dimensions and for the brake RFM connection block). See the comparisons sheets

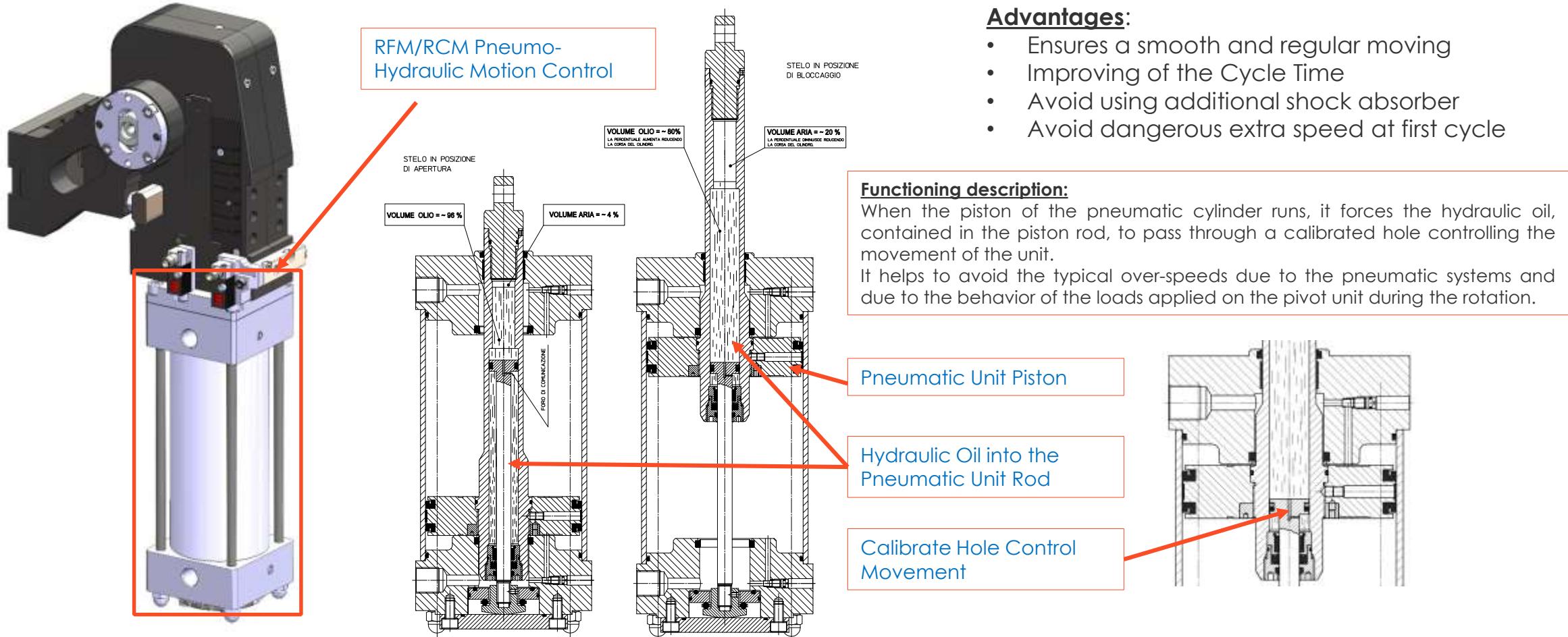


5. Pneumo-Hydraulic Motion Control



5) Pneumo-Hydraulic Motion Control

5. Pneumo-Hydraulic Motion Control



5. Pneumo-Hydraulic Motion Control

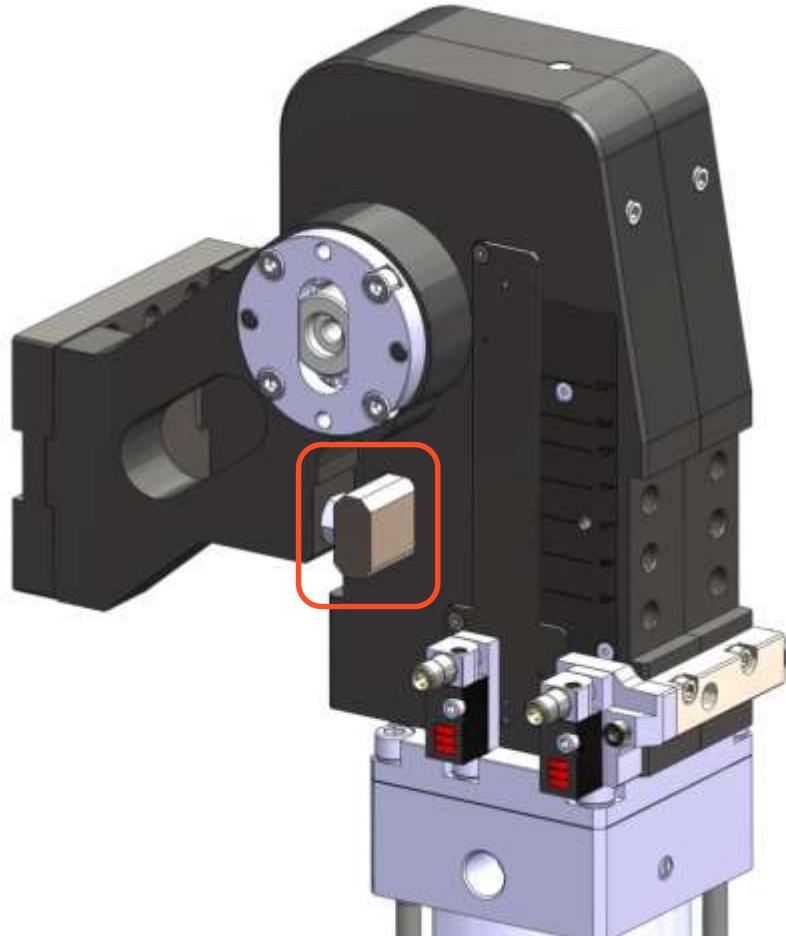
RFM/RCM **WITHOUT** Pneumo-Hydraulic motion control



RFM/RCM **WITH** Pneumo-Hydraulic motion control

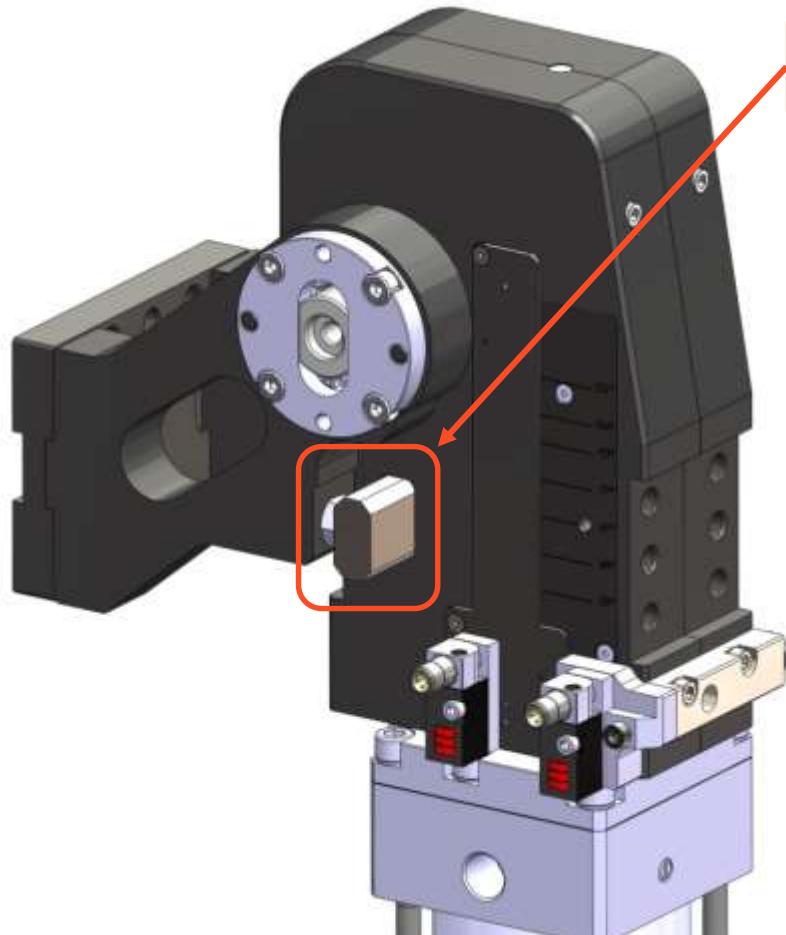


6. External Arms Hard Stop



6) External Arms Hard Stop

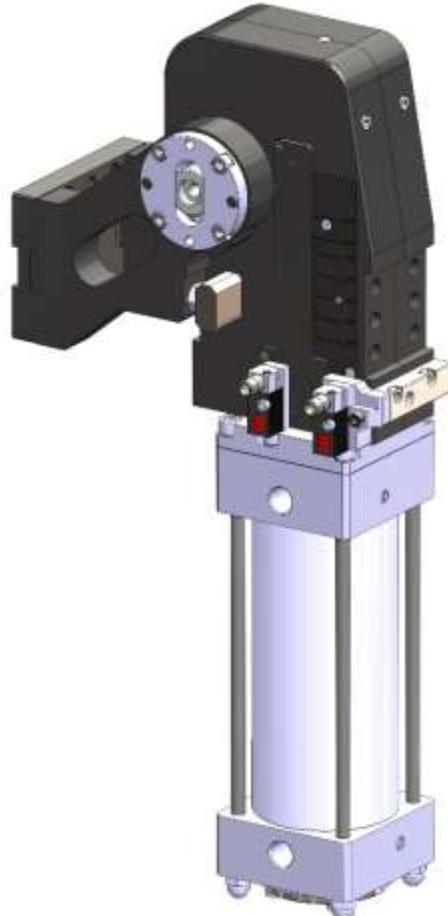
6. External Arm Hard Stop



Advantages:

- With the external arms hard stop is being increased the repeatability and accuracy of the arms position
- With the external arms stop it can be easily verified the reached of forward position 0°
- The external arms hard stop are integrated into the heads (no additional external dimensions)
- The external arms hard stop are included into the basical unit price (no additional costs)
- Available several Arms Options in according to Customers specifications

7. Ordination Codes (RFM/RF – RCM/RC)



7) Ordination Codes RFM/RF e RCM/RC

RFM: With Lock System and Opening Angle Changeable

RF: With Lock System and Opening Angle Fixed

RCM: Without Lock System and Opening Angle Changeable

RC: Without Lock System and Opening Angle Fixed

7. Ordination Codes (RFM/RF – RCM/RC)



Ribaltatore pneumo-idraulico RFM/RF.2 Pneumo-hydraulic swivel unit RFM/RF.2

Caratteristiche principali:

- Blocco (SBI) integrato nella meccanica (brevettato)
- Sistema di cambio angolo facilitato (RFM)
- Versione (RF) con angolo d'apertura fisso
- Flanchetti in alluminio
- Dispositivo a ginocchiera interno
- Bracci leva in acciaio ed arresto bracci leva esterno
- 2 possibilità di staffaggio (fronte e retro)
- 6 fori di connessione (GAS o NPT)
- 2 smorzatori di finecorsa pneumatici regolabili
- Nuovo finecorsa induttivo (connessione M12x1)
- Controllo idraulico della movimentazione integrato nel cilindro pn.

Main characteristics:

- Lock system (SBI) integrated into the head (patented)
- Opening angle easily adjustable (RFM)
- (RF) version with fixed opening angle
- Aluminum flanks
- Toggle action mechanism
- Steel arms and external arms stop
- 2 mounting areas (front and back)
- 6 feeding ports (GAS or NPT)
- 2 end strokes pneumatic cushioning adjustable
- New inductive proximity switch (connection M12x1)
- Hydraulic motion control integrated into pneumatic cylinder

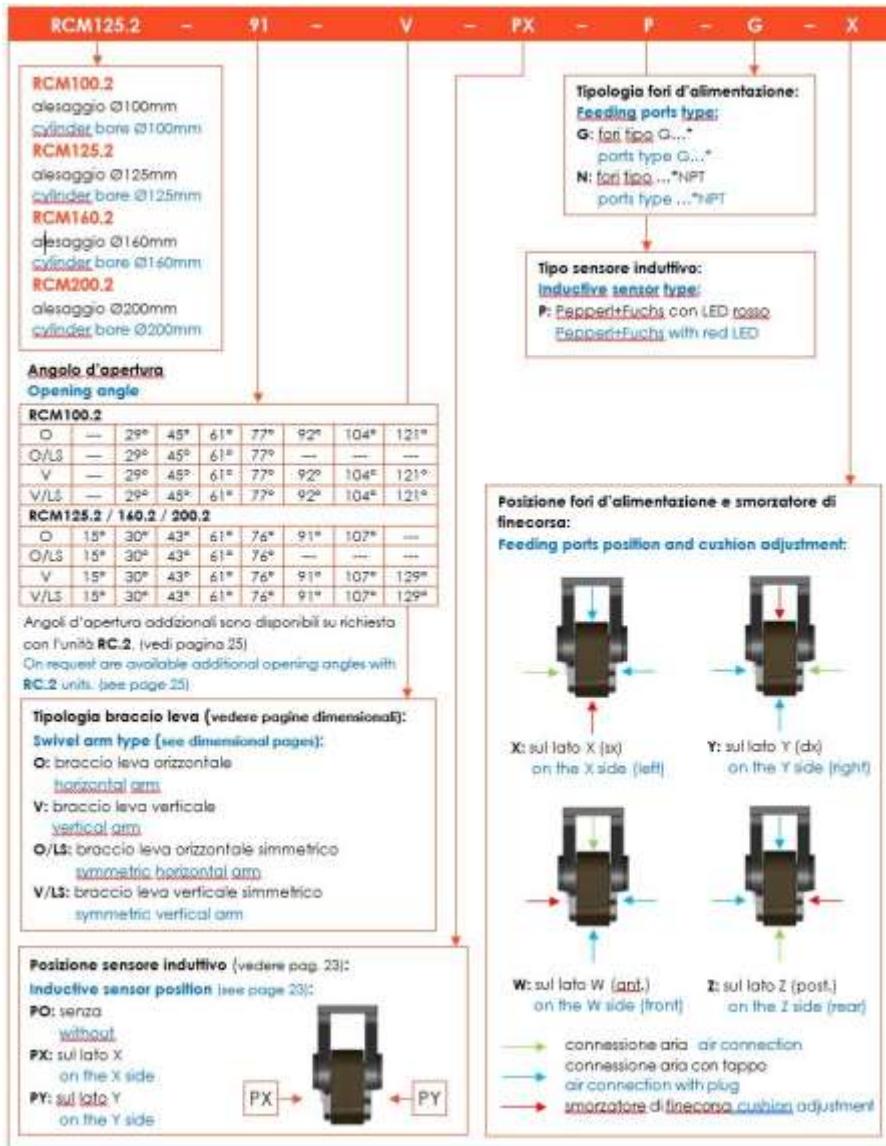


[PDF](#)

[3D Step](#)

[WEB](#)

7. Ordination Codes (RFM/RF – RCM/RC)



Ribalzatore pneumo-idraulico RCM/RC.2 Pneumo-hydraulic swivel unit RCM/RC.2

Caratteristiche principali:

- Sistema di cambio angolo facilitato (RCM)
- Versione (RC) con angolo d'apertura fisso
- Controllo idraulico della movimentazione integrato nel cilindro pneumatico
- Fianchetti in alluminio
- Dispositivo a ginocchiera interno
- Bracci leva in acciaio
- Arresto bracci leva esterno
- 2 possibilità di staffaggio (fronte e retro)
- Alesaggio del cilindro pneumatico: 100/125/160/200 mm
- 6 fori di connessione (GAS o NPT)
- 2 smorzatori di finecorsa pneumatici regolabili
- Nuovo finecorsa induttivo (connessione M12x1)

Main characteristics:

- Opening angle easily adjustable (RCM)
- (RC) version with fixed opening angle
- Hydraulic motion control Integrated into the pneumatic cylinder
- Aluminum flanks
- Toggle action mechanism
- Steel arms
- External arms stop
- 2 mounting areas (front and back)
- 4 Pneumatic cylinder bore: 100/125/160/200 mm
- 6 feeding ports (GAS or NPT)
- 2 end strokes pneumatic cushioning adjustable
- Inductive proximity switch (connection M12x1)



[PDF](#)

[3D Step](#)

[WEB](#)

Comparison Between GR.1 and RFM.2



Old GR100.1



New RFM100.2

**Comparison Between
GR.1 and RFM.2**

Comparison Between GR.1 and RFM.2



Previous GR100.1



New RFM100.2

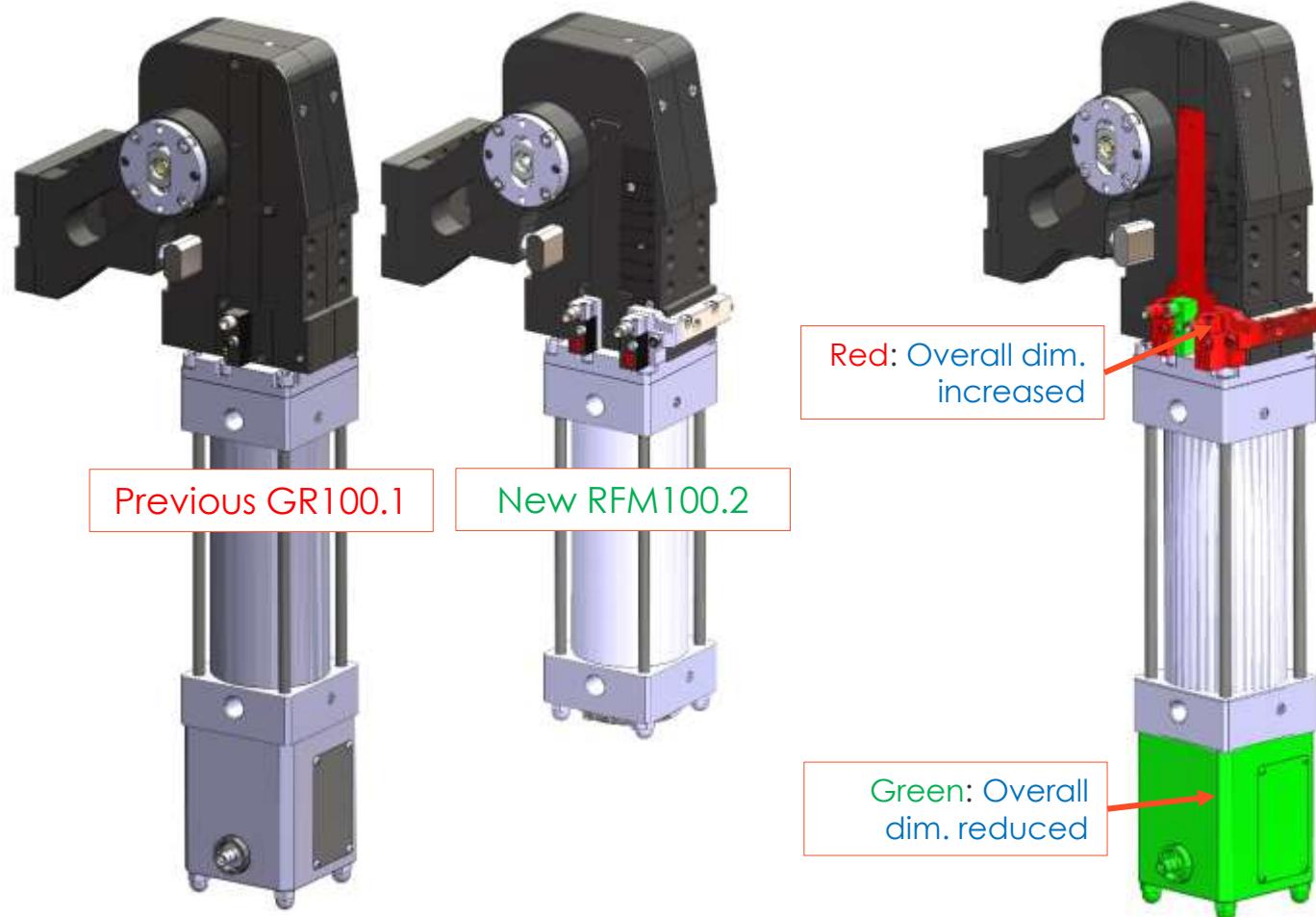
Main advantages:

- The fixings of the new units RFM.2/RCM.2 are interchangeable with the GR.1/RC.1 units
- The external dimension (length) of the new units RFM.2 are reduced than the GR.1
- The RFM.2 arms don't have gap with brake activated
- Opening angles are changeable easily
- The Hydraulic Motion Control is made through the hydraulic control as RC unit more reliable against the wrong uses
- The new head lay-out have increased even more the head resistance against the wrong uses

Disadvantages:

- The RFM.2 opening angles are not exactly the same than the GR.1 if you need to interchange the old one with the new one (It's not a problem on the new project)

External dimensions Comparison between GR.1 and RFM.2

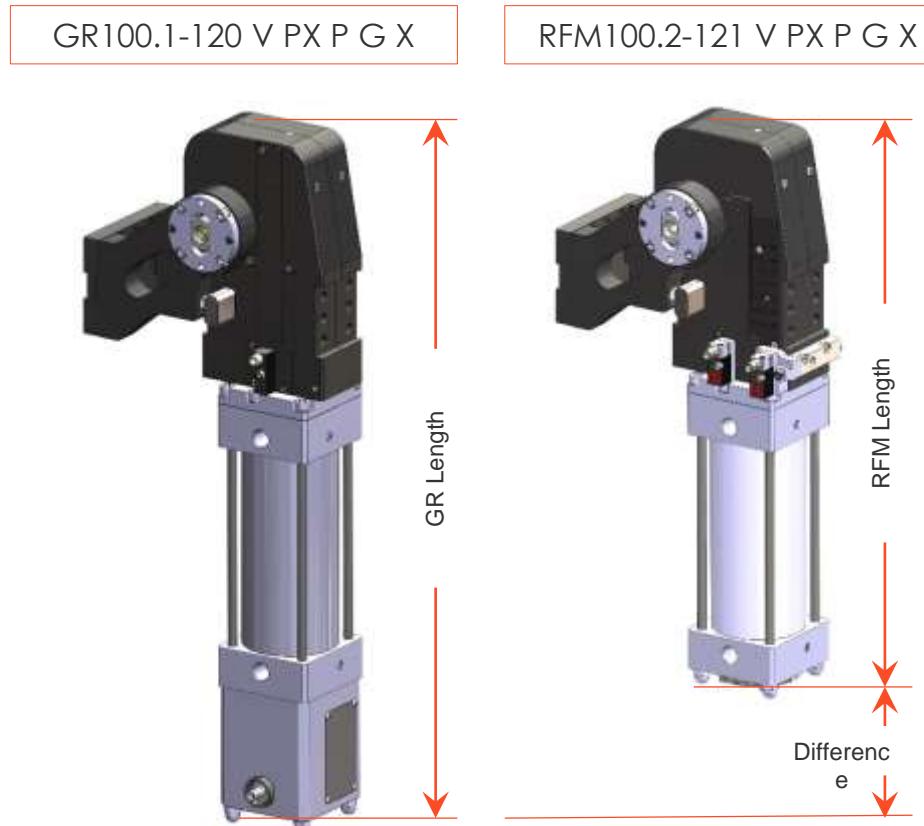


The RFM/RCM.2 units are interchangeable with the previous GR/RC. The fixing load plate and unit fixing plate are the same.

There is a difference in some opening angles between the current unit RFM.2/RCM.2 and the previous one GR.1/RC.1 due to the rack brake system and the opening angle change system

The comparison showed, the **red** parts represent the **additional** dimensions and the **green** parts the **reduced** dimensions

External dimensions Comparison between GR.1 and RFM.2 (Unit length – RFM100)

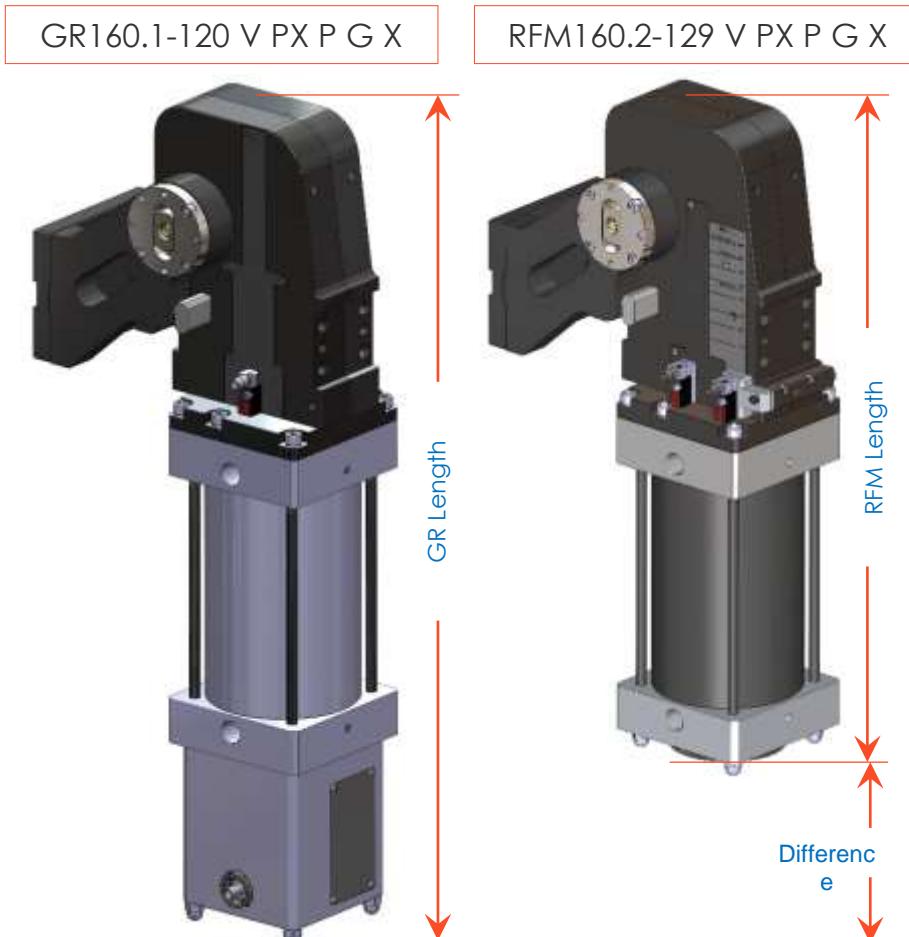


The new RFM units are always shorter than the old GR ones
The improvement of the external dimensions is due to the
displacement of the brake group from the lower part of the
cylinder (GR) to inside the mechanical head

Below the length comparison between GR100 and RFM100
The reducing on the external dimensions are from -44,5mm to
-134mm

LENGTH COMPARISON BETWEEN GR100.1 AND RFM100.2														
Unit Codes	GR100.1-30 V	RFM100.2-29 V	GR100.1-45 V	RFM100.2-45 V	GR100.1-60 V	RFM100.2-61 V	GR100.1-75 V	RFM100.2-77 V	GR100.1-90 V	RFM100.2-92 V	GR100.1-105 V	RFM100.2-104 V	GR100.1-120 V	RFM100.2-121 V
Angles	30°	29°	45°	45°	60°	61°	75°	77°	90°	92°	105°	104°	120°	121°
Unit Length (mm)	690,0	645,5	705,0	645,5	719,5	645,5	735,0	645,5	750,0	645,5	766,0	645,5	779,5	645,5
Differences (mm)	-44,5	-59,5	-74,0	-89,5	-104,5	-120,5	-134,0							

External dimensions Comparison between GR.1 and RFM.2 (Unit length – RFM160)



The new RFM units are always shorter than the old GR ones. The improvement of the external dimensions is due to the displacement of the brake group from the lower part of the cylinder (GR) to inside the mechanical head.

Below the length comparison between GR160 and RFM160. The reducing on the external dimensions are from -64,5mm to -179,5mm.

LENGTH COMPARISON BETWEEN GR160.1 AND RFM160.2																
Unit Codes	GR160.1-15 V	RFM160.2-15 V	GR160.1-30 V	RFM160.2-30 V	GR160.1-45 V	RFM160.2-43 V	GR160.1-60 V	RFM160.2-61 V	GR160.1-75 V	RFM160.2-76 V	GR160.1-90 V	RFM160.2-91 V	GR160.1-105 V	RFM160.2-107 V	GR160.1-120 V	RFM160.2-129 V
Angles	15°	15°	30°	30°	45°	43°	60°	61°	75°	76°	90°	91°	105°	107°	120°	129°
Unit Length (mm)	815,0	750,5	836,0	750,5	853,5	750,5	870,0	750,5	886,5	750,5	902,5	750,5	917,5	750,5	930,0	750,5
Differences (mm)	-64,5	-85,5	-103,0	-119,5	-136,0	-152,0	-167,0	-179,5								

CONVERSION CODES GR.1-RFM.2

CONVERSION CODES SHEET (from GR.1 to RFM.2)			
$\varnothing 100$ Sizes V - V/LS Arms	GR.1 Code	RFM.2 Code	$\varnothing 100$ Sizes O - O/LS Arms
	GR100.1-30 V PX P G X	RFM100.2- 29 V PX P G X	
	GR100.1-45 V PX P G X	RFM100.2-45 V PX P G X	
	GR100.1-60 V PX P G X	RFM100.2- 61 V PX P G X	
	GR100.1-90 V PX P G X	RFM100.2- 92 V PX P G X	
	GR100.1-105 V PX P G X	RFM100.2- 104 V PX P G X	
	GR100.1-120 V PX P G X	RFM100.2- 121 V PX P G X	
	GR100.1-30 V/LS PX P G X	RFM100.2- 29 V/LS PX P G X	
	GR100.1-45 V/LS PX P G X	RFM100.2-45 V/LS PX P G X	
	GR100.1-60 V/LS PX P G X	RFM100.2- 61 V/LS PX P G X	
$\varnothing 125-160-200$ Sizes V - V/LS Arms	GR.1 Code	RFM.2 Code	$\varnothing 125-160-200$ Sizes O - O/LS Arms
	GR125/160/200.1-30 V PX P G X	RFM125/160/200.2-30 V PX P G X	
	GR125/160/200.1-45 V PX P G X	RFM125/160/200.2- 43 V PX P G X	
	GR125/160/200.1-60 V PX P G X	RFM125/160/200.2- 61 V PX P G X	
	GR125/160/200.1-90 V PX P G X	RFM125/160/200.2-91 V PX P G X	
	GR125/160/200.1-105 V PX P G X	RFM125/160/200.2- 107 V PX P G X	
	GR125/160/200.1-120 V PX P G X	RFM125/160/200.2- 129 V PX P G X	
	GR125/160/200.1-30 V/LS PX P G X	RFM125/160/200.2-30 V/LS PX P G X	
	GR125/160/200.1-45 V/LS PX P G X	RFM125/160/200.2- 43 V/LS PX P G X	
	GR125/160/200.1-60 V/LS PX P G X	RFM125/160/200.2- 61 V/LS PX P G X	
$\varnothing 125-160-200$ Sizes O - O/LS Arms	GR.1 Code	RFM.2 Code	
	GR125/160/200.1-30 O PX P G X	RFM125/160/200.2-30 O PX P G X	
	GR125/160/200.1-45 O PX P G X	RFM125/160/200.2- 43 O PX P G X	
	GR125/160/200.1-60 O PX P G X	RFM125/160/200.2- 61 O PX P G X	
	GR125/160/200.1-90 O PX P G X	RFM125/160/200.2- 91 O PX P G X	
	GR125/160/200.1-105 O PX P G X	RFM125/160/200.2- 107 O PX P G X	
$\varnothing 125-160-200$ Sizes RF.2 Unit 122° available	GR.1 Code	RFM.2 Code	
	GR125/160/200.1-30 O/LS PX P G X	RFM125/160/200.2-30 O/LS PX P G X	
	GR125/160/200.1-45 O/LS PX P G X	RFM125/160/200.2- 43 O/LS PX P G X	
	GR125/160/200.1-60 O/LS PX P G X	RFM125/160/200.2- 61 O/LS PX P G X	
	GR125/160/200.1-80 O/LS PX P G X	RFM125/160/200.2- 76 O/LS PX P G X	
	GR125/160/200.1-120 O/LS PX P G X	RFM125/160/200.2- 122 ° available	

CONVERSION CODES RC.1-RCM.2

CONVERSION CODES SHEET (from RC.1 to RCM.2)			
Ø 100 Sizes V - V/LS Arms	RC.1 Code	RCM.2 Code	Ø 100 Sizes O - O/LS Arms
	RC100.1-30 V PX P G X	RCM100.2- 29 V PX P G X	
	RC100.1-45 V PX P G X	RCM100.2-45 V PX P G X	
	RC100.1-60 V PX P G X	RCM100.2- 61 V PX P G X	
	RC100.1-90 V PX P G X	RCM100.2- 92 V PX P G X	
	RC100.1-105 V PX P G X	RCM100.2- 104 V PX P G X	
	RC100.1-120 V PX P G X	RCM100.2- 121 V PX P G X	
	RC100.1-30 V/LS PX P G X	RCM100.2- 29 V/LS PX P G X	
	RC100.1-45 V/LS PX P G X	RCM100.2-45 V/LS PX P G X	
	RC100.1-60 V/LS PX P G X	RCM100.2- 61 V/LS PX P G X	
Ø 125-160-200 Sizes V - V/LS Arms	RC.1 Code	RCM.2 Code	Ø 125-160-200 Sizes O - O/LS Arms
	RC125/160/200.1-30 V PX P G X	RCM125/160/200.2-30 V PX P G X	
	RC125/160/200.1-45 V PX P G X	RCM125/160/200.2- 43 V PX P G X	
	RC125/160/200.1-60 V PX P G X	RCM125/160/200.2- 61 V PX P G X	
	RC125/160/200.1-90 V PX P G X	RCM125/160/200.2-91 V PX P G X	
	RC125/160/200.1-105 V PX P G X	RCM125/160/200.2- 107 V PX P G X	
	RC125/160/200.1-120 V PX P G X	RCM125/160/200.2- 129 V PX P G X	
	RC125/160/200.1-30 V/LS PX P G X	RCM125/160/200.2-30 V/LS PX P G X	
	RC125/160/200.1-45 V/LS PX P G X	RCM125/160/200.2- 43 V/LS PX P G X	
	RC125/160/200.1-60 V/LS PX P G X	RCM125/160/200.2- 61 V/LS PX P G X	
Ø 125-160-200 Sizes V - V/LS Arms	RC.1 Code	RCM.2 Code	Ø 125-160-200 Sizes O - O/LS Arms
	RC125/160/200.1-90 V/LS PX P G X	RCM125/160/200.2- 91 V/LS PX P G X	
	RC125/160/200.1-105 V/LS PX P G X	RCM125/160/200.2- 107 V/LS PX P G X	
	RC125/160/200.1-120 V/LS PX P G X	RCM125/160/200.2- 129 V/LS PX P G X	
	RC125/160/200.1-30 O/LS PX P G X	RCM125/160/200.2-30 O/LS PX P G X	
		RC.2 Unit 120° available	
		RC125/160/200.1-45 O/LS PX P G X	RCM125/160/200.2- 43 O/LS PX P G X
		RC125/160/200.1-60 O/LS PX P G X	RCM125/160/200.2- 61 O/LS PX P G X
		RC125/160/200.1-80 O/LS PX P G X	RCM125/160/200.2- 76 O/LS PX P G X