Fucoli-Somepal
FUNDIÇÃO DE FERRO, S.A.
DESDE SINCE 1946

NEXUS
GATE VALVES

OPERATION MANUAL

MO42 Ed. 8 10/2026

APLICATION



MADE IN EUROPE

www.fucoli-somepal.pt

HEAD OFFICE
Estrada de Coselhas
3000-125 Coimbra - PORTUGAL
Tel.: (+351) 239 490 100
Fax: (+351) 239 490 198
comercial@fucoli-somepal.pt

BRANCH OFFICE
Rua de Aveiro 50
3050-420 Pampilhosa - PORTUGAL
Tel.: (+351) 239 490 100
Fax: (+351) 231 949 292
comercial@fucoli-somepal.pt

CONTENTS

1. GENERAL DESCRIPTION 2

1.1. PRODUCT DESCRIPTION 3

1.2. COMPONENTS AND MATERIALS 3

1.3. PRODUCT MARKS 6

1.4. DIMENSIONAL FEATURES 8

1.5. TIGHTNESS TESTS 10

1.6. SERVICE TEMPERATURE 10

1.8. APPROVAL OF MATERIALS 10

2. POTENCIAL RISK IDENTIFICATION 12

3. BASIC INSTRUCTION FOR SAFETY 12

3.1. USED ADVICE 12

3.2. HANDLING HAZARDS 12

3.3. PRODUCT CHANGE 12

4. TRANSPORTATION 13

5. STORAGE 13

6. INSTALLATION 13

6.1 INSTALLATION INSTRUCTION 15

7. HANDLING 16

8. MAINTENANCE 17

9. PRESSURE TESTING 17

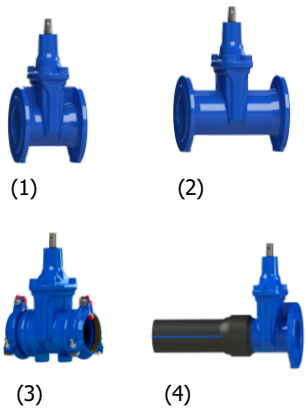
10. FURTHER INFORMATION 17

1. GENERAL DESCRIPTION

The soft sealing gate valve series Nexus from Fucoli-Somepal, is na isolation valve for fully open or fully closed servisse installed in pipelines and should not be used as a flow regulator. These valves can be used in drinking water or neutral water installations.

The servisse conditions must take into account the servisse temperature and pressure, which are specified in the product data sheets.

This product has at least the following mark:

	Marking	Observation
Product manufacturer	Fucoli-Somepal	See section 10 – Further information.
Design/ Model  (1) (2) (3) (4)	Three models: (1) Flanged soft sealing gate valve S14 Nexus (2) Flanged soft sealing gate valve S15 Nexus (3) Soft sealing gate valve PE/UPVC Nexus Blockplus (1) (4) Soft sealing gate valve flange/PE spigot end Nexus	Identification according to the application of the product: Drinking water 01.110 (1), 01.210 (2), 01.410 (3) and 01.511 (4).
Identification	Lot/date/product code	Identified in the product itself. See section 1.3 – Product marks.
Nominal diameter	e.g. DN and numerical value	Numerical value for DN in [mm].
Nominal pressure	PN and numerical value	Numerical value for PN in bar.
Working pressure range	Operation pressure range PN and numerical value	See section 1.5 – Tightness tests. Pressure data is displayed as overpressure above atmospheric pressure.
Service temperature	Max. permitted temperature	See section 1.6 – Service temperature
Material	EN-GJS-500	Identification of the materiais of the compoments in the technical datasheet. See section 1.2.
Flow direction	-	Bidirectional

ATTENTION: The markings should neither be covered, painted nor altered to remain identifiable.

1.1. PRODUCT DESCRIPTION

The soft sealing gate valve series Nexus and Nexus Blockplus are designed according to EN 1171. The flanged valves have flange drilling according to EN 1092-2. The face-to-face are acording EN 558 series 14 (ref. 01.110) and series 15 (ref. 01.210).

The soft sealing gate valves serie Nexus are available for PN 10, PN 16 and available in DNs according to table 1.

.



Flanged soft sealing gate valve S14 Nexus 01.110



Flanged soft sealing gate valve S15 Nexus 01.210



Soft sealing gate valve PE/PVC Nexus Blockplus 01.410



Soft sealing gate valve flange/PE spigot end Nexus 01.511

Ref.	Product	PN	DN Dimensions						
			50	65	80	100	125	150	200
01.110	Flanged soft sealing gate valve S14 Nexus	10/16	-	-	-	-	-	-	-
01.210	Flanged soft sealing gate valve S15 Nexus	10/16	-	-	-	-	-	-	-
01.410	Soft sealing gate valve PE/uPVC Nexus Blockplus	10/16	63*	75*	90*	110*	125*	160*	200*
01.511	Soft sealing gate valve flange/PE spigot end Nexus	16	63*	75*	90*	110* 125*	-	160* 180*	200* 225*

* Ø exterior do tubo

Table 1

1.2. COMPONENTS AND MATERIALS

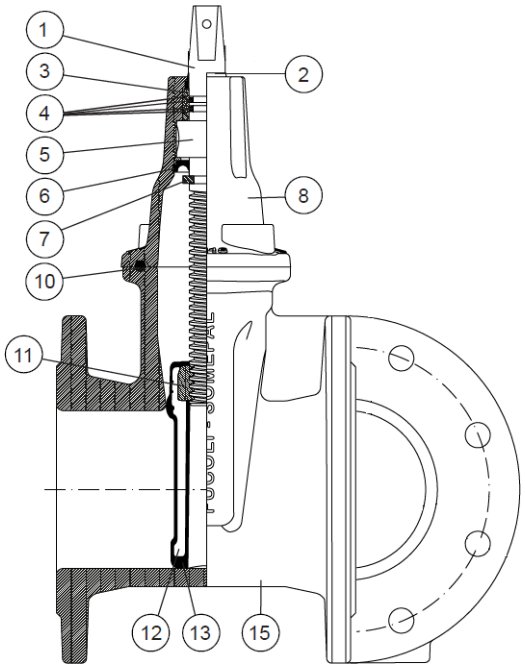


Figure 1

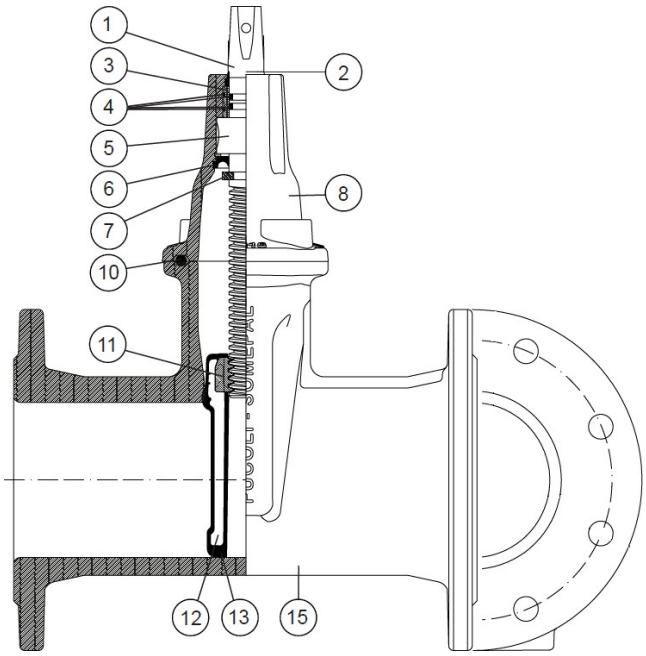


Figure 2

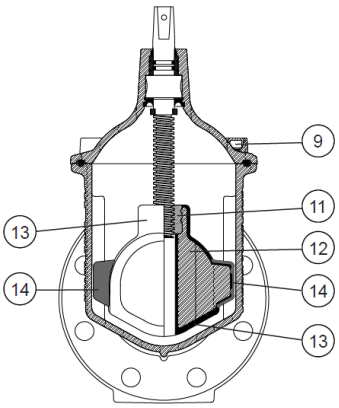


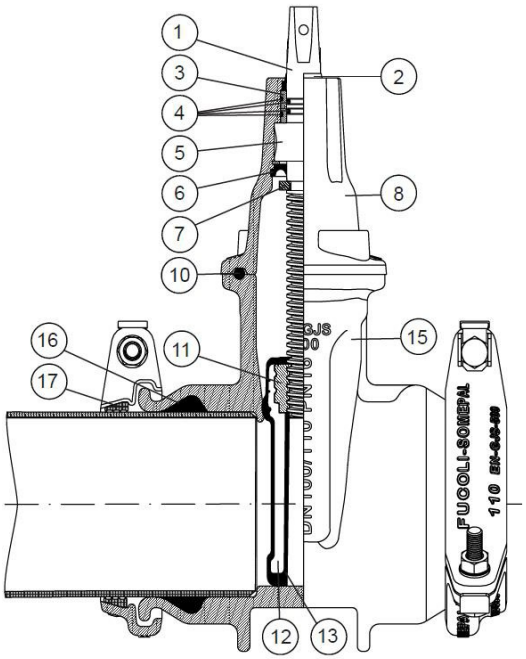
Figure 1 – Flanged soft sealing gate valve S14 Nexus [ref. 01.110]

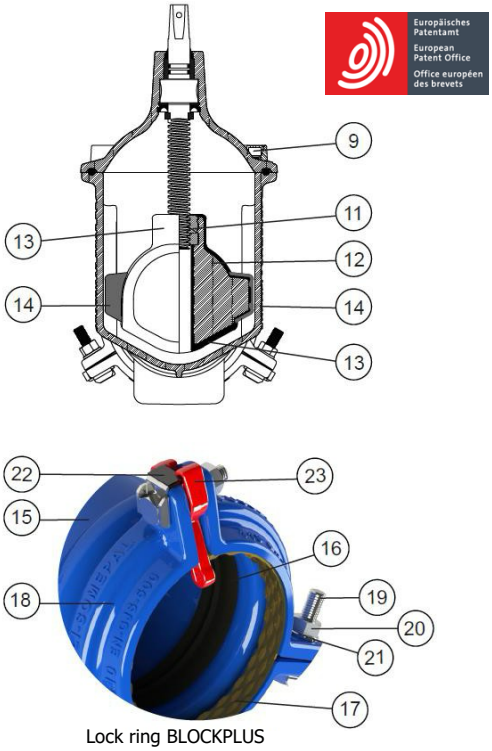
Figure 2 – Flanged soft sealing gate valve S15 Nexus [ref. 01.210]

Component list

pos.	components	material	standard
1	Stem	Stainless steel AISI 420	EN 10088 - 1
2	Clearing joint	Elastomer	
3	Bearing	POM	
4	O-rings	Elastomer EPDM	EN 681 - 1
5	Stem washer	Brass	EN 12164
6	Joint	Elastomer EPDM	EN 681 - 1
7	Wedge stop	Stainless steel AISI 420	EN 10088 - 1
8	Bonnet	Ductile iron EN-GJS-500-7	EN 1563

pos.	components	material	standard
9	Bolts	Stainless steel A2	EN 10088 - 1
10	Bonnet gasket	Elastomer EPDM	EN 681 - 1
11	Wedge nut	Brass	EN 12164
12	Wedge	Ductile iron EN-GJS-500-7	EN 1563
13	Wedge covering	Elastomer EPDM	EN 681 - 1
14	Wedge guide	Polyamide	
15	Body	Ductile iron EN-GJS-500-7	EN 1563





Lock ring BLOCKPLUS

Figure 3 – Soft sealing gate valve PE/uPVC Nexus Blockplus [ref. 01.410]

Component list

pos.	components	material	standard
1	Stem	Stainless steel AISI 420	EN 10088 - 1
2	Clearing joint	Elastomer	
3	Bearing	POM	
4	O-rings	Elastomer EPDM	EN 681 - 1
5	Stem washer	Brass	EN 12164
6	Joint	Elastomer EPDM	EN 681 - 1
7	Wedge stop	Stainless steel AISI 420	EN 10088 - 1
8	Bonnet	Ductile iron EN-GJS-500-7	EN 1563
9	Bolts	Stainless steel A2	EN 10088 - 1
10	Bonnet gasket	Elastomer EPDM	EN 681 - 1
11	Wedge nut	Brass	EN 12164
12	Wedge	Ductile iron EN-GJS-500-7	EN 1563

pos.	components	material	standard
13	Wedge covering	Elastomer EPDM	EN 681 - 1
14	Wedge guide	Polyamide	
15	Body	Ductile iron EN-GJS-500-7	EN 1563
16	Lip seal ring	Elastomer EPDM	EN 681 - 1
17	Grip ring	Brass	EN 1982
18	Lock ring	Ductile iron EN-GJS-500-7	EN 1563
19	Bolts	Stainless steel A2	EN 10088 - 1
20	Nuts	Stainless steel A4	EN 10088 - 1
21	Washer	Stainless steel A2	EN 10088 - 1
22	Bolt head locking device	Stainless steel A2 with protection coating	EN 10088 - 1
23	Stop tab	Polypropylene	

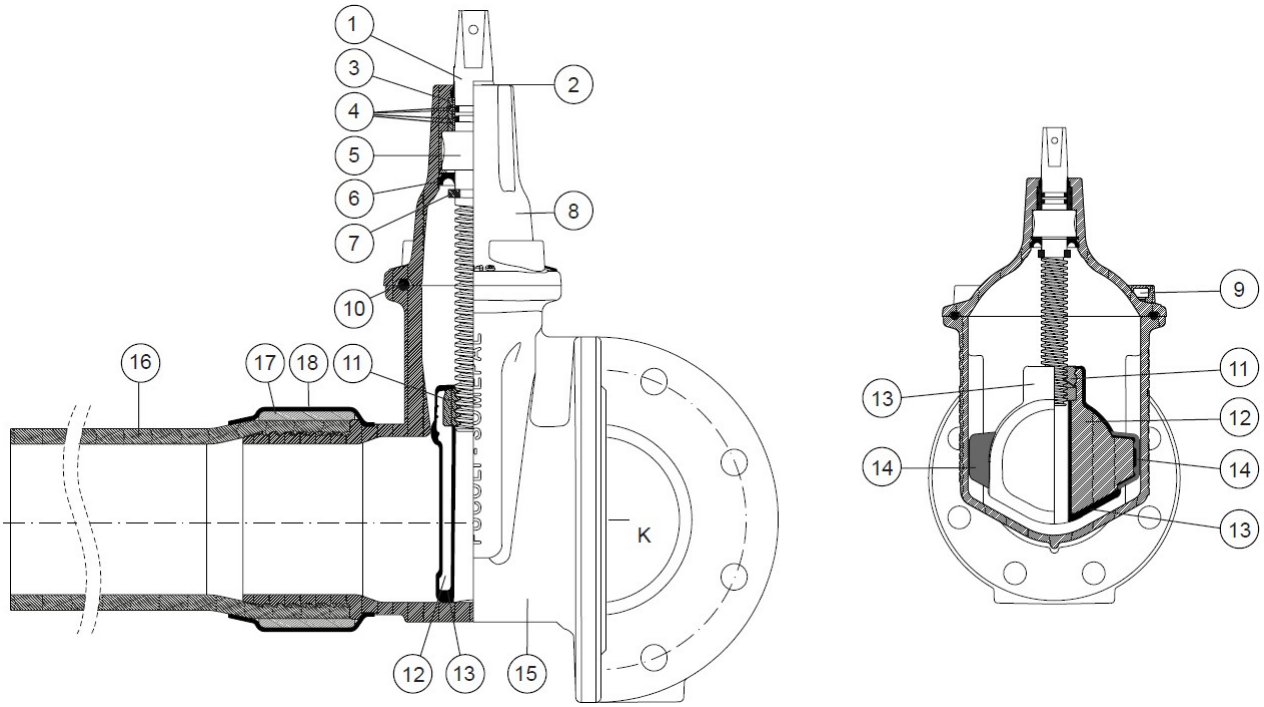


Figure 4 – Soft sealing gate valve flange/PE spigot end Nexus [ref. 01.511]

Component list

pos.	components	material	standard
1	Stem	Stainless steel AISI 420	EN 10088 - 1
2	Clearing joint	Elastomer	
3	Bearing	POM	
4	O-rings	Elastomer EPDM	EN 681 - 1
5	Stem washer	Brass	EN 12164
6	Joint	Elastomer EPDM	EN 681 - 1
7	Wedge stop	Stainless steel AISI 420	EN 10088 - 1
8	Bonnet	Ductile iron EN-GJS-500-7	EN 1563
9	Bolts	Stainless steel A2	EN 10088 - 1

pos.	components	material	standard
10	Bonnet gasket	Elastomer EPDM	EN 681 - 1
11	Wedge nut	Brass	EN 12164
12	Wedge	Ductile iron EN-GJS-500-7	EN 1563
13	Wedge covering	Elastomer EPDM	EN 681 - 1
14	Wedge guide	Polyamide	
15	Body	Ductile iron EN-GJS-500-7	EN 1563
16	Pipe	PE100 PN16 SDR11	EN 12201 - 2
17	Sleeve	Ductile iron EN-GJS-500-7	EN 1563
18	Shrink hose	Plastic	

1.3. PRODUCT MARKS

A – Lot / date / product code / EN 1074
B – GSK coating certification mark
C – Foundry lot identification mark (the localition may vary depending on the DN)
D – ACS potability certification mark

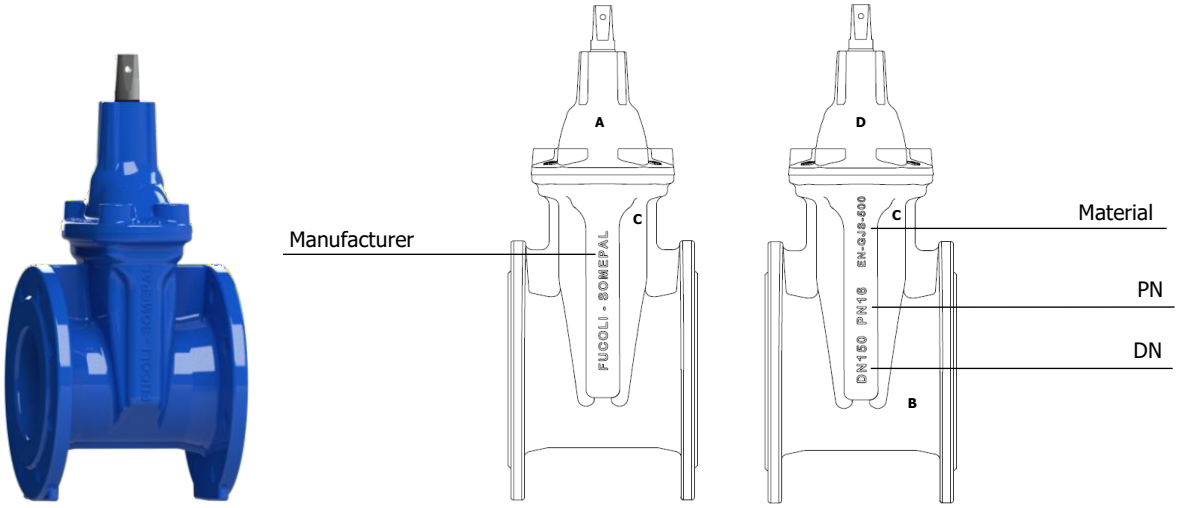


Figure 5 – Flanged soft sealing gate valve S14 Nexus [ref. 01.110]

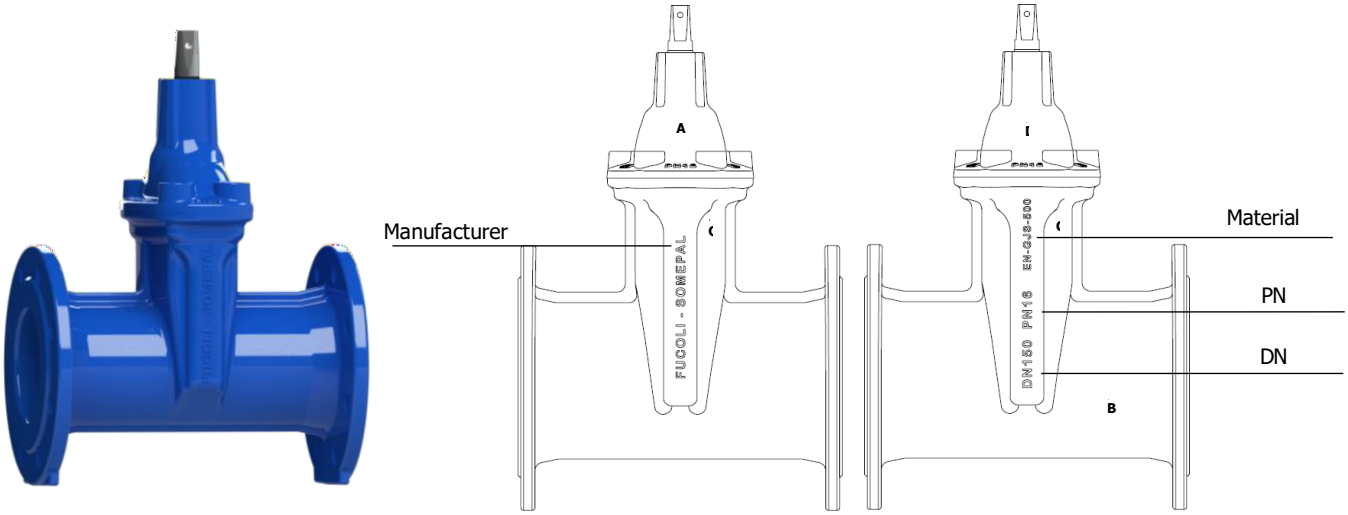


Figure 6 – Flanged soft sealing gate valve S15 Nexus [ref. 01.210]

A – Lot / date / product code / EN 1074
B – GSK coating certification mark
C – Foundry lot identification mark (the localition may vary depending on the DN)
D – ACS potability certification mark

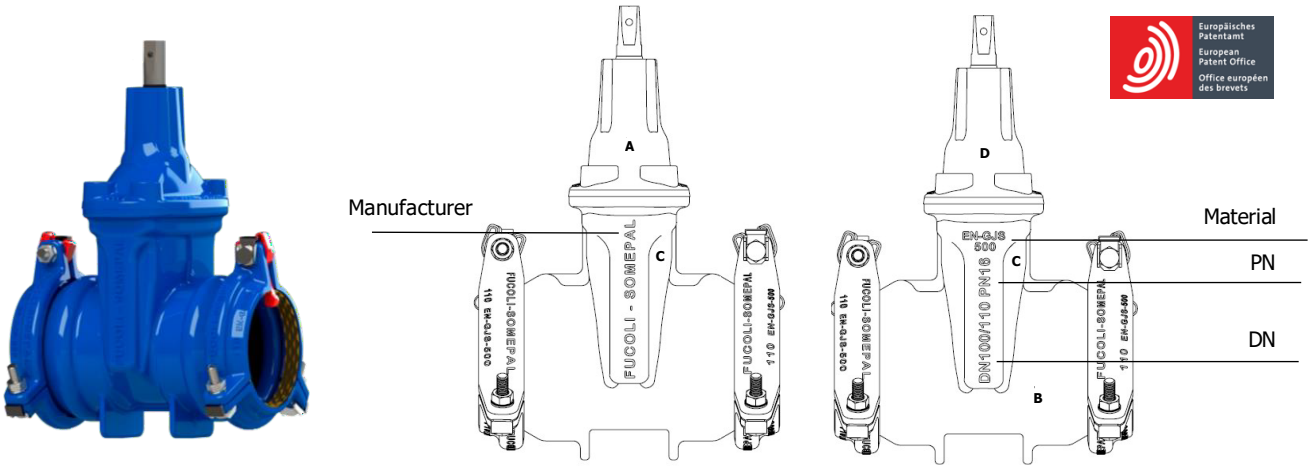


Figure 7 – Soft sealing gate valve PE/uPVC Nexus Blockplus [ref. 01.410]

A – Lot / date / product code / EN 1074
B – GSK coating certification mark
C – Foundry lot identification mark (the localition may vary depending on the DN)

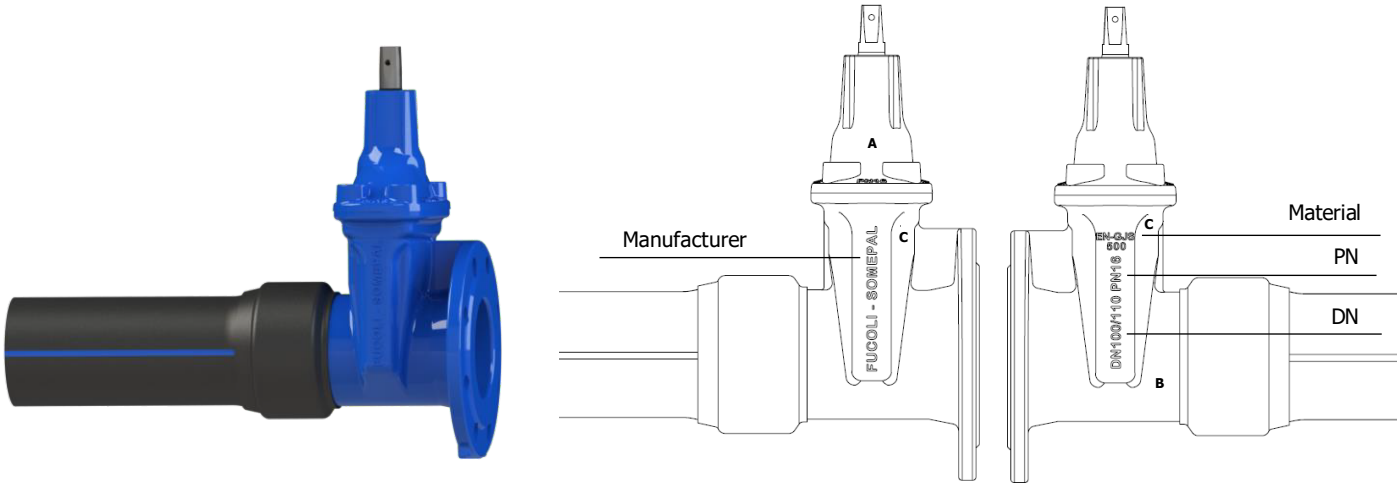


Figure 8 – Soft sealing gate valve flange/PE spigot end Nexus [ref. 01.511]

1.4. DIMENSIONAL FEATURES

The dimensional characteristics referred to in the standards EN 1171 (design), DIN EN 1092-2 (flange drilling), EN 558 (face-to-face) can be found in the technical sheets of each model/ type of valve.

FLANGED SOFT SEALING GATE VALVE S14 NEXUS [ref. 01.110]

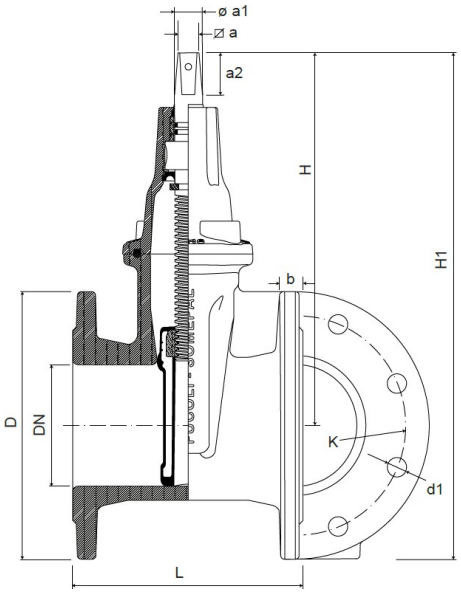


Figura 9

Check the datasheet flanged soft sealing gate valve S14 series NEXUS [ref.01.110] for the product references and dimensions.

FLANGED SOFT SEALING GATE VALVE S15 NEXUS [ref. 01.210]

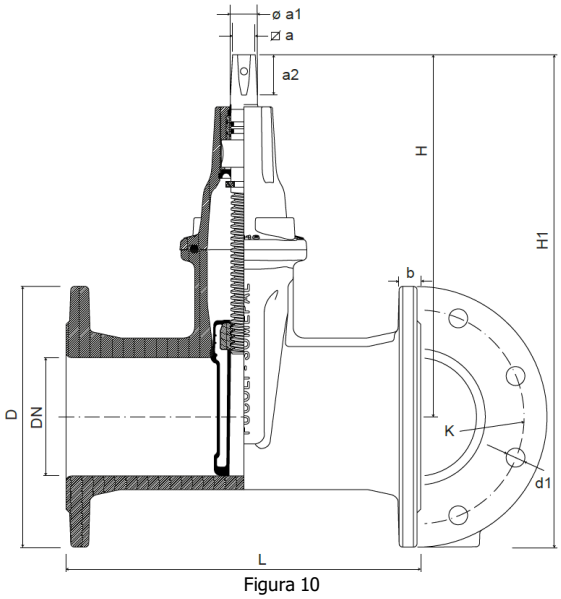


Figura 10

Check the datasheet flanged soft sealing gate valve S15 series NEXUS [ref.01.210] for the product references and dimensions.

SOFT SEALING GATE VALVE PE/UPVC BLOCKPLUS [ref. 01.410]

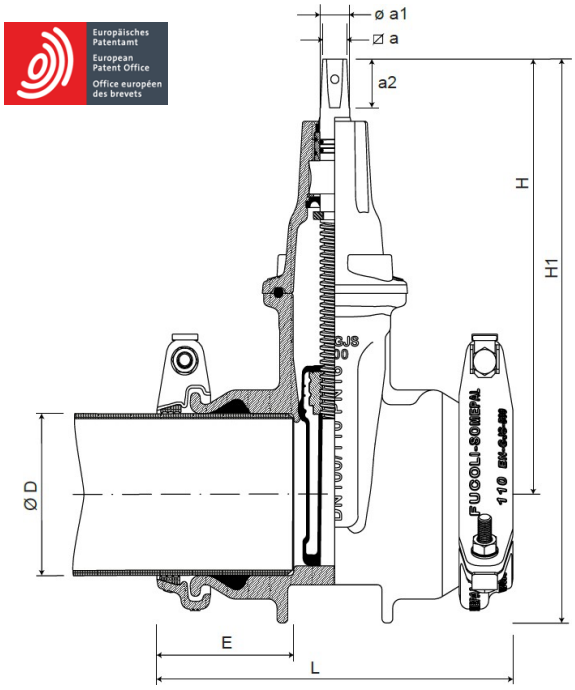


Figura 11

Check the datasheet soft sealing gate valve with restrain system for PE and uPVC pipes series NEXUS BLOCKPLUS [ref.01.410] for the product references and dimensions.

SOFT SEALING GATE VALVE FLANGE/PE SPIGOT END NEXUS [ref. 01.511]

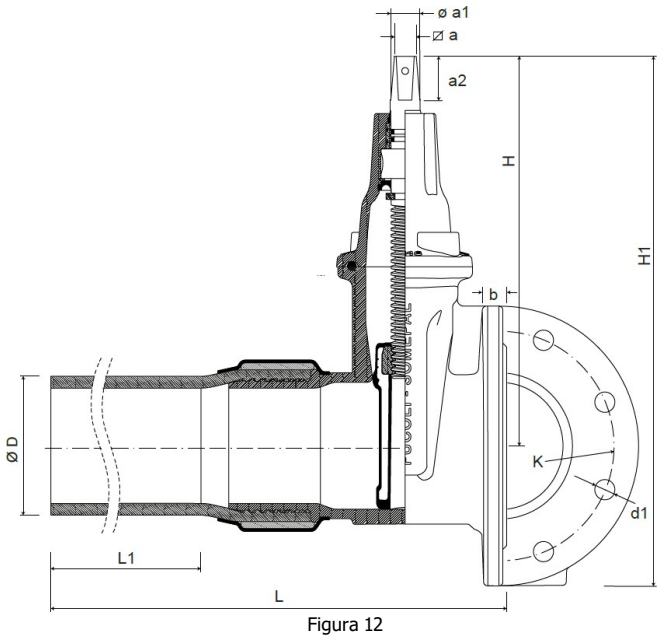


Figura 12

Check the datasheet soft sealing gate valve series NEXUS with flange/PE pipe spigot end [ref.01.511] for the product references and dimensions.

1.5. TIGHTNESS TESTS

All the valves, without exception, are individually tested at factory, according to standard EN 1074-1/2 e EN 12266:

- Seal:
  High pressure: 1.1 x PN (bar)
  Low pressure: 0.5 (bar)
- Body: 1.5 x PN (bar)
- Operatin torque set

1.6. SERVICE TEMPERATURE

Ref.	Product	Service temperature
01.110	Flanged soft sealing gate valve S14 Nexus	from 0ºC (excluding frost) to 70ºC
01.210	Flanged soft sealing gate valve S15 Nexus	from 0ºC (excluding frost) to 70ºC
01.410	Soft sealing gate valve PE/uPVC Nexus Blockplus	from 0ºC (excluding frost) to 70ºC
01.511	Soft sealing gate valve flange/PE spigot end Nexus	from 0ºC (excluding frost) to 40ºC

1.7. MAXIMUM FLUID SPEED

The soft sealing gate valves Nexus are designed to work at maximum speed according to table 2.

PFA bar	Speed
10	3 meters/second
16	4 meters/second

Table 2 – Maximum fluid speed

1.8. APPROVAL OF MATERIALS

The valve Nexus have the following homologation – table 3.

Approvals	Entity
COATING (Approved for drinking water)	BRL – K759 (Netherlands)
	BS6920 – 1 (United Kingdom)
	ACS (France)
ELASTOMERS	WITH CE MARKING, homologated according to EN 681-1 stanndard
	DVGW – W270 (Germany)

Table 3 – Approval of materials

1.9. CERTIFICATIONS

CERTIFICATIONS ACCORDING EN 1074

Valves for water supply

Ref.	Product	AENOR Spain
01.110	Flanged soft sealing gate valve S14 Nexus	PN 10/16
01.210	Flanged soft sealing gate valve S15 Nexus	PN 10/16
01.410	Soft sealing gate valve PE/uPVC Nexus Blockplus	PN 10/16
01.511	Soft sealing gate valve flange/PE spigot end Nexus	PN 16

CERTIFICATIONS SYMBOLS ON THE VALVE BODY



POTABILITY CERTIFICATIONS

All range of soft sealing gate valves have the ACS certification (Attestation of Sanitary Conformity) issued by Eurofins, this certification ensures that the materials used are approved for contact with potable water.

CERTIFICATIONS SYMBOLS ON THE VALVE BODY



COATING CERTIFICATION

All range of soft sealing gate valves have the GSK certification, that ensure na excelente corrosion protection with epoxy poder coating resin.

GSK CERTIFICATION SYMBOL ON THE VALVE BODY



2. POTENCIAL RISK IDENTIFICATION

During the development of the product, no use risks were identified. In commercialization and after sales assitance, no risks were encountered in assembly and operation.

3. BASIC INSTRUCTION FOR SAFETY

3.1. USED ADVICE

Ensure that all health and safety regulations are being applied on the system which this product is being installed. The following requirements identified below are no responsibility of the manufacturer, but have to be guaranteed by the user:

1. The product may only be used for purposes described in seccion 1.
2. The installation must be carried out by competent and trained person using the appropriate equipment. The main contractor must garantee that any operators or subcontractors involved in thre installation are properly competente to carry out the work. The installer shall assure that all equipment used during the instalation is properly maintained, suitable for safe installation and will not cause any damage to the product.
3. Whenever the products are installed, operated or maneuvered, the risks inherent in the pressurizing of liquids or gases must all be taken into account. The coupling must be fully insulated, depressurized and drained before starting the work.
4. The system must be designed properly so that the product is not in tension.
5. The Fucoli-Somepal products are designed to be suitable for their purpose and to high standard of realiability, providing a safe and low risk product when used correctly for the purpose for which it was designed.

The Fucoli-Somepal cannot be held responsibility for incidents involving installation, operation or incorrect maintenance. In this way the responsibility will be entirely on the user.

3.2. HANDLING HAZARDS

Operators must comply with the rules defined at the intervention place.

In addition to the defined, during maintenance operations, of the product or other elements where the product is installed, it is necessary to always comply with the safety rules, taking into account the risk of falling with a drop in the use of this type of products, seeking to delimit the dangerous area and allowing only access to operators who know the risks.

During handling the product, always use the following personal protective equipment:



Protection gloves



Steel-tipped boots

You can prevent situations associated with the risk of product fall during handling

When moving the product manually, if the weight of the product exceeds 30 Kg, you must carry out with more than one operator.

Those involved in assembly/disassembly operations, utilization, inspection and maintenance must have read and understood this installation manual.

3.3. PRODUCT CHANGE

Before any modification and/or alteration to the product, carried out by the user, Fucoli-Somepal SA should be asked about it in order to give its approval. Otherwise, the warranty becames invalid.

4. TRANSPORTATION

The valve should be handled, transported and stored with care. The load should be placed gently on the floor without dropping, avoiding shocks. Raise only by suitable straps.

When mechanical means are required for lifting and handling the valve, they must be appropriate and applied as shown in figure 13.

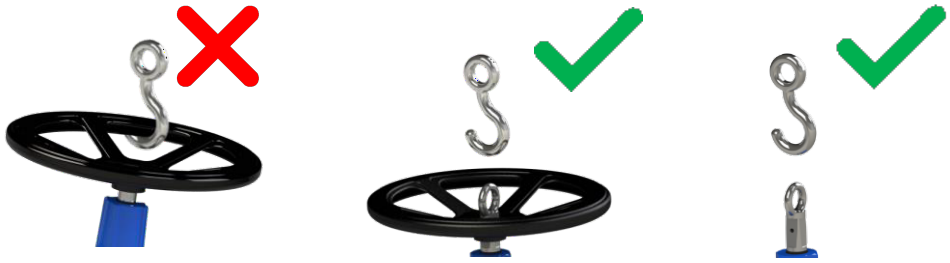


Figure 13

ATTENTION: *Handwheels should not be used as lifting points for the valves.*

5. STORAGE

Under no circumstance should the valve be stored outdoors, to avoid damage caused by environmental conditions. The valve must not come into contact with any contaminants before installation.

Climate protection must be provided. Ideally, valves should be stored in a location that protects the equipement from direct exposure to sunlight and freezing.

If the valve is stored for a long time, it is recommended to inspected before use.

Make sure that the seals are not compressed during storage.

NOTE: *ISO 2230 describes the storage conditions for elastomers in detail and specifies the permissible storage period.*

6. INSTALLATION

Before installation, operators must ensure that the pipework is free of debris and the equipement is in proper condition. If debris are found disposed of them .

ATTENTION: *Prior to installation make sure the pipes are cleaned of all debris.*

It is very important that the sealing of the valve is protected from dust and debris during the installation process, avoiding non-compliant sealing.

WARNING: *Before installation, make sure that all pressurized lines involved in the installation are insulated, depressured and drained before starting any work.*

It is the responsability of the user to ensure that the fluid is clean and free of rubbish before installing the valve. This operation may limit or for concerned the valve seal if this operation is not performed the valve sealing may be limite or hindered.

During the installation of the valve, it is necessary procedures must be taken into account to ensure that it is aligned with the pipeline/fitting, in order to avoid any tension load that may act on the valve body.

Pay special attention to the stem, sealing area, flanges and coating. If you notice defects such as out-of-place parts, knocks, scratches or other defects, actions must be taken to repare and correct them.

It is recommended installing the vertical or 90º angles – figure 14. We do not recommend installing the valve in the upside down position – figure 15.

VALVE INSTALLATION POSITION



Figure 14

Figure 15

Fucoli-Somepal's Nexus valves can be supplied for diferente types of connections. The use of flange or socket ends will depend on the type of connection the customer chooses .

FLANGED VALVE

The tightening of the flange bolts must be carried out crosswise and in the sequence shown acoording to figure 16. The recommended tighteninh torques are those referred to in table 4, which must be in accordance with those recommended by the manufacturers and screw suppliers. We advise to ensure the alignment of the flanges to ensure uniform pressure.

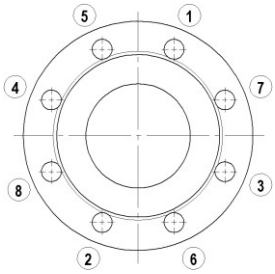


Figure 16 and Table 4

DN	Bolts		Flange Torque – (máx.)	
	PN 10	PN 16	PN 10	PN 16
40	M16		45Nm	60Nm
50				
65				
80				
100				
125				
150	M20		70Nm	90Nm
200				

The soft sealing gate valve flange/PE spigot end Nexus [ref.01.511] has a pipe PE100 PN16 SDR11 at its extremity to be joind by electro welding, top welding or mechanical coupling like multimaterials coupling with GFIX sytem [ref. 08.400] or socket colar PE/uPVC Blockplus [ref. 10.2100].

SOCKET ENDS VALVE

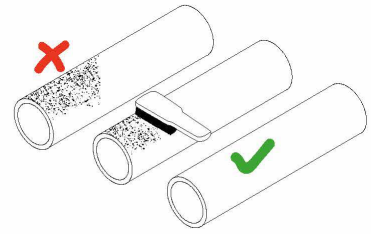
The soft sealing gate valve PE/uPVC Nexus Blockplus [ref. 01.410] must be installed according to the following installation instruction.

6.1 INSTALLATION INSTRUCTION

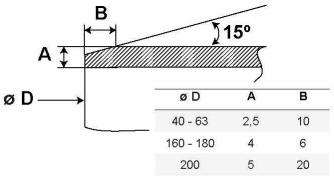
Fucoli Somepal
FUNDIÇÃO DE FERRO, S.A.
DESDE SINCE 1946

SYSTEM BLOCKPLUS
INSTALLATION INSTRUCTION

PIPE PREPARATION

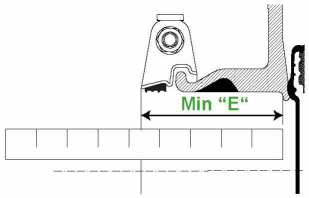


1. Clean the pipe



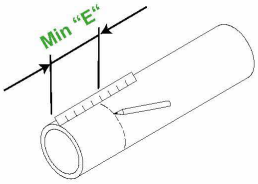
ø D	A	B
40 - 63	2,5	10
160 - 180	4	6
200	5	20

2. Chamfer the pipe

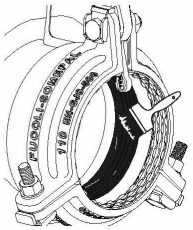


3. See tube insertion depth (E) in product

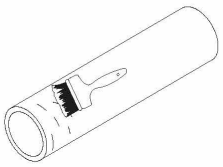
DN	Min. "E" mm
DN 50	86
DN 65	94
DN 80	97
DN 100	102
DN 125	108
DN 150	125
DN 200	138



4. Mark the insertion depth (E) in the tube

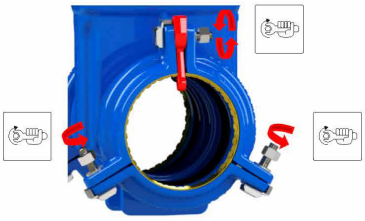






5. Lubricate the lip seal ring and pipe. **Don't use oil**

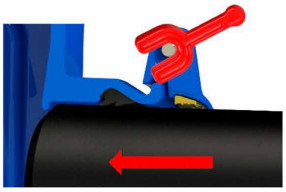
ASSEMBLY INSTRUCTIONS



1. Loose the screws



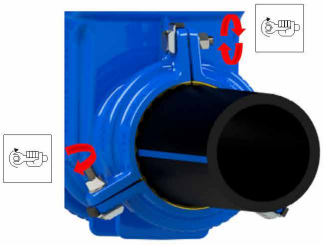
2. Raise the stop tab



3. Insert the pipe until the stop



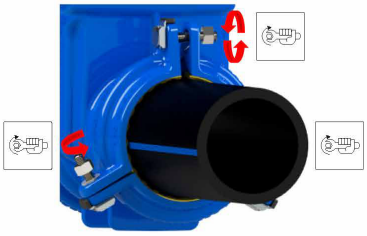
4. Removing the stop tab



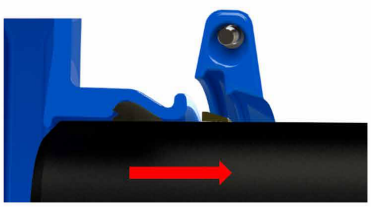
5. Tight the locking system

	Bolt		Torque
50 / 63	M10	17 mm	30 - 40 Nm
65 / 75			
80 / 90			
100 / 110			
125 / 125			
150 / 160	M12	19 mm	50 - 70 Nm
200 / 200			

DISMANTLING INSTRUCTIONS



1. Loose the screws



2. Remove the pipe

HEAD OFFICE
Estrada de Coselhas
3000-125 Coimbra - PORTUGAL
Tel.: (+351) 239 490 100
Fax: (+351) 239 490 198
comercial.sede@fucoli-somepal.pt

BRANCH OFFICE
Rua de Aveiro 50
3050-420 Pampilhosa - PORTUGAL
Tel.: (+351) 239 490 100
Fax: (+351) 231 949 292
comercial.filial@fucoli-somepal.pt

www.fucoli-somepal.pt

VERSÃO 03/2019 - EN

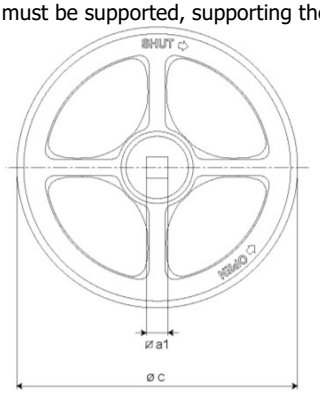
Figure 17 – Installation instruction system Blockplus 03/2019 PT

7. HANDLING

The valves handling and installation must be carried out by qualified person, complying with existing local, national or international regulations.

The gate valve must be handled/maneuvered in the diferente models and diameters, through handwheel (installed in chambers or overhead installations), stem cap or extension spindle (installed underground) – figure 18.

When installing the extension spindle, please note, that there are no vertical forces on the square bar that are transmitted to the valve. It must be supported, supporting the weight and other force to the wall, preventing them from being transmtted to the valve.



Handwheel
05.100


Stem cap
05.200


Extension Spindle
05.300

Figura 18

Diameter of the handwheels to operate the valve:

DN	code	Ø C mm	Ø a1 mm
50	10709511	150	14
65 / 80	10709520	200	17
100	10709525	250	19
125 / 150	10709531	300	19
200	10709540	400	24

Table 5 – Handwheel datasheet [ref. 05.100]

The operation of the gate valves are performed by rotating the stem. Turning the valve stem, the wedge moves up or down in the threaded área of the stem. The valves Nexus are designed to be self-cleaning, due to their unimpeded and direct passage.

The soft sealing gate valve Nexus have a bidirectional flow, supplied as standard with clokwise closing direction (CTC). At the request of the customer it can be supplied with the anti-clockwise closing direction (CTO).

After the valve reaches the fully open position, it is recommended to slightly rotate the stem in the valve's closing direction to remove any tension on the spindle and nut threads.

During the closing operation, ensure that the closing torque and the number of turns are adequate. See table 6.

DN	Closing torque		Turns to open
	EN 1074 – 1/2	NEXUS	
50	50	25	13
65	65	35	14
80	80	35	16
100	100	40	20
125	125	50	25
150	150	70	30
200	200	120	40
250	250	180	42
300	300	190	50

Table 6 – Operating torque [ET 355-1]

The flanged models S14 and S15 can also be supplied with an open/close indicator – figure 19 or an open/close indicator and limit switch figure 20.



Figure 19



Figure 20

8. MAINTENANCE

Due to their design and the materials, the soft sealing gate vale Nexus does not require any mandatory periodic mantenance, however, because conditions may vary from installation to installation, it is recommended that they be operated (opening and closing cycles) once a year in order to guarantee perfect operation. Consequently, no replacement or repair components are needed.

However, if replacement are required for maintenance or repair, only original Fucoli-Somepal componentes may be used. We are not responsible for damage caused by componentes/spare parts that are not Fucoli-Somepal origin.

9. PRESSURE TESTING

After installation perform a pressure test before the trench is closed, inspecting the connections. Secure the pipe and gate valve are correctelly installed and without any movements. Ensure that the pipeline and valve arte drained to prevent frost damage.

The soft sealing gate valve Nexus are designed to resiste a test pressure of 1.5 x PN.

10. FURTHER INFORMATION

You can obtain instructions, technical datasheet and addicional information at the following addresses:

HEAD OFFICE Estrada de Coselhas, 3000-125 Coimbra – Portugal Tel.: (+351) 239 490 100 Fax: (+351) 239 490 198 E-mail: comercial@fucoli-somepal.pt	**BRANCH OFFICE** Rua de Aveiro 50, 3050-420 Pampilhosa – Portugal Tel.: (+351) 239 490 100 Fax: (+351) 231 949 292 E-mail: comercial@fucoli-somepal.pt