



SOLMEC SRL  
IMPIANTI &  
MACCHINE

**DOCUMENTAZIONE TECNICA  
TECHNICAL CATALOGUE  
JOB:2F11**

**ITEM 62SR1 BIN ACTIVATOR**

**ITEM 62Z1 ROTARY VALVE VPR350**

**ITEM 65Z1 ROTARY VALVE RS180**

**ITEM 64Z1-64Z2 ROTARY VALVE SF180**

**MANUALE PER L'USO  
MANUALE PER LA MANUTENZIONE  
PARTI DI RICAMBIO**

**INSTRUCTIONS FOR USE  
MAINTENANCE CATALOGUE  
SPARE PARTS CATALOGUE**

- PRIMA DI UTILIZZARE LA MACCHINA LEGGERE INTERAMENTE IL CONTENUTO DEL MANUALE.
  - IL COSTRUTTORE DECLINA OGNI RESPONSABILITA' CONSEGUENTE AD UN USO NON CORRETTO DELLA MACCHINA O DELLE ATTREZZATURE FORNITE.
  - QUESTE ISTRUZIONI PER L'USO CONTENGONO LA DICHIARAZIONE DI CONFORMITA' ALLE DIRETTIVE DELLA COMUNITA' EUROPEA 73/23 + 89/336 + 98/37.
  - DEVE ESSERE CONSERVATO PER TUTTA LA VITA DELLA MACCHINA E, IN CASO DI CESSIONE DELLA STESSA, DEVE ESSERE CONSEGNAZIONE AL NUOVO UTENTE O PROPRIETARIO.
- 
- *READ THE ENTIRE MANUAL BEFORE USING THE MACHINE.*
  - *THE MANUFACTURER WILL BE RELIEVED OF ALL LIABILITY IF THE MACHINE OR THE EQUIPMENT SUPPLIED ARE USED IMPROPERLY.*
  - *THIS MANUAL CONTAINS THE DECLARATION OF CONFORMITY 73/23 + 89/336 + 98/37.*
  - *THE MANUAL MUST BE KEPT FOR THE ENTIRE LIFE OF MACHINE AND IF THE MACHINE IS TRANSFERRED TO ANOTHER USER, IT MUST BE GIVEN TO THE NEW USER OR OWNER.*

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## **ELENCO DOCUMENTI**

- A DECLARATION OF CONFORMITY CE**
- B DECLARATION OF RESPONSABILITY**
- C DATA SHEET**
- D STANDARD PAINT FINISH**
- E DIMENSIONAL DRAWING**
- F INSTALLATION OPERATION AND MAINTENANCE**
- G SPECIFICATION SHEET**
- H QUALITY CONTROL PLAN DIMENSIONAL AND RUNNING TEST**



SOLMEC S.R.L.  
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**PARAGRAFO A**



SOLMEC S.R.L.  
IMPIANTI  
MACCHINE

## DECLARATION OF CONFORMITY (Encl.2 letter B)



SOLMEC S.R.L.  
with office at  
Corso Italia, 648  
44043 MIRABELLO (Ferrara) Italy

declares, under its exclusive responsibility, that

the machine : **VIBRATING EXTRACTOR**

model : **EVW 1250**

project n. : 2F11 item: **62SR1**

constructed in the year: 2012

to which this declaration refers,

conform to the basic safety requisites required by

**EC Directives:**

**98/37 ; 73/23 ; 89/336**

**and conforms to the European standards**

**SN 292 ; EN 294**

It is forbidden to start the machine before that the plant on which the machine will be installed has been declared complying with the provisions of the above-mentioned directives.

Technical Manager  
Ing. Armando Inserra



SOLMEC S.R.L.  
IMPIANTI  
MACCHINE

## DECLARATION OF CONFORMITY (Encl.2 letter B)



SOLMEC S.R.L.  
with office at  
Corso Italia, 648  
44043 MIRABELLO (Ferrara) Italy

declares, under its exclusive responsibility, that

the machine : **ROTARY VALVE**

model : **RS180 SE**

project n. : 2F11 item: **65Z1**

constructed in the year: 2012

to which this declaration refers,

conform to the basic safety requisites required by

**EC Directives:**

**98/37 ; 73/23 ; 89/336**

**and conforms to the European standards**

**SN 292 ; EN 294**

It is forbidden to start the machine before that the plant on which the machine will be installed has been declared complying with the provisions of the above-mentioned directives.

Technical Manager  
Ing. Armando Inserra



SOLMEC S.R.L.  
IMPIANTI  
MACCHINE

## DECLARATION OF CONFORMITY (Encl.2 letter B)



SOLMEC S.R.L.  
with office at  
Corso Italia, 648  
44043 MIRABELLO (Ferrara) Italy

declares, under its exclusive responsibility, that

the machine : **ROTARY VALVE**

model : **SF180 SE**

project n. : 2F11 item: **64Z1-64Z2**

constructed in the year: 2012

to which this declaration refers,

conform to the basic safety requisites required by

**EC Directives:**

**98/37 ; 73/23 ; 89/336**

**and conforms to the European standards**

**SN 292 ; EN 294**

It is forbidden to start the machine before that the plant on which the machine will be installed has been declared complying with the provisions of the above-mentioned directives.

Technical Manager  
Ing. Armando Inserra



SOLMEC S.R.L.  
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MACCHINE

## DECLARATION OF CONFORMITY (Encl.2 letter B)



SOLMEC S.R.L.  
with office at  
Corso Italia, 648  
44043 MIRABELLO (Ferrara) Italy

declares, under its exclusive responsibility, that

the machine : **ROTARY VALVE**

model : **VPR350 SE**

project n. : 2F11 item: **62Z1**

constructed in the year: 2012

to which this declaration refers,

conform to the basic safety requisites required by

**EC Directives:**

**98/37 ; 73/23 ; 89/336**

**and conforms to the European standards**

**SN 292 ; EN 294**

It is forbidden to start the machine before that the plant on which the machine will be installed has been declared complying with the provisions of the above-mentioned directives.

Technical Manager  
Ing. Armando Inserra



**PARAGRAFO B**



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## DICHIARAZIONE

DICHIARIAMO SOTTO LA NS. RESPONSABILITA' CHE LE VALVOLE ROTATIVE E  
L'ESTRATTORE A VIBRAZIONE

ITEM:62Z1-65Z1-64Z1-64Z2-62SR1

VS. ORDINE N.2F11

SONO CONTROLLATE E PROVATE IN TUTTE LE LORO PARTI E SONO SOTTOPOSTE  
A COLLAUDO PER LA VERIFICA DI CONFORMITA' ALLE PRESTAZIONI  
CONTRATTUALI.

## DECLARATION

UNDER OUR RESPONSABILITY WE DECLARE THAT THE ROTARY VALVE AND BIN  
ACTIVATOR

ITEM: 62Z1-65Z1-64Z1-64Z2-62SR1

YOUR WORK ORDER N.2F11

ARE CONTROLLED AND TESTED IN ALL THEIR PARTS AND ARE ALWAYS  
SUBJECTED TO A TEST SO TO CHECK THEIR REGULAR OPERATION AS WELL AS  
THEIR CONFORMITY TO THE CONTRACTUAL PERFORMANCES,

Technical Manager  
Ing. Armando Inserra



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**PARAGRAFO C**



## DATA SHEET

### VIBRATING EXTRACTOR EV1250 ITEM 62SR1

JOB N° : 2F11

SERVICE : ZEOLITE BIN ACTIVATOR

TREATED SOLIDS : ZEOLITE

FLOW RATE : 12000 KG/H

TECHNITAL FEAUTURES:

CONSTRUCTION MATERIAL :CARBON STEEL

VIBRATING BOTTOM .D1230

DISCARGING HOPPER : D .i 273 WITH SLIDE GATE MANUAL

SUSPENSION TIE RODS : 4 TYPE "L" SEAL TECNOPOLIMER SINTER

MOTOVIBRATOR

TYPE : OLI MVE 400/15

ELETTRICAL DATA

POWER :300 WATT 400 VOLTS 50 Hz 4 POLES IP 65 TROPICALIZED



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## DATA SHEET : ROTARY VALVE ITEM 62Z1

TYPE: ROTARY VALVE VPR 350

ITEM: 62Z1

DRW: N13512002 REV.A

### SERVICE :

TREATED SOLIDS TYPE : SODIUM SULPHATE 1100-1600 KG/M3 SODIUM CARBONATE 600-700 KG/M3 STPP 700-1000 KG/M3 ZEOLITE 600-800 KG/M3

FLOW RATE 28 M3/H AT 35 HZ-40 M3/H AT 50 HZ

### CONSTRUCTION MATERIALS

MATERIAL OF BODY CAST IRON

ROTOR INCLINED BLADES CAST IRON

EXTERNAL SUPPORTS CHAIN DRIVE RANGE TEMPERATURE 60-250 °C

TIPS STEEL C 72

### MANUFACTURER

ROTOR TYPE OPEN WITH TIPS

N° 8 VANES ROTOR

PTFE PACKING GLANDS WITH AIR PURGE

VOLUMETRIC CAPACITY 30 L/ROTATION

### DRIVE TYPE

GEAR MOTOR TYPE : BONFIGLIOLI C312 R=1:25,1-56 rpm

MOTOR : KW 1,5 4 POLES 415V 50Hz B5 (DRIVEN BY INVERTER) SIZE 90

TRASMISSION :CHAIN 5/8 DUPLEX

MOTOR GEAR : Z=20

ROTOR GEAR : Z=40

SPEED ROTOR : 28 RPM AT 50 Hz

VOLUME DESIGN FLOW : 40 m3 /H AT 700 KG/H

VOLUME DESIGN FLOW : 28 m3 /H AT 1000 KG/H



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## DATA SHEET : ROTARY VALVE ITEM 65Z1

TYPE: ROTARY VALVE RS 180

ITEM: 65Z1

DRW: N153120003 REV.A

SERVICE :

TREATED SOLIDS TYPE : SOLID R.M. 200-600 KG/M3

FLOW RATE 50 KG/H

CONSTRUCTION MATERIALS

MATERIAL OF BODY CAST IRON

ROTOR INCLINED BLADES CAST IRON

EXTERNAL SUPPORTS CHAIN DRIVE RANGE TEMPERATURE 60-250 °C

TIPS STEEL C 72

MANUFACTURER

ROTOR TYPE OPEN WITH TIPS ON THE LONG SIDE

N° 8 VANES ROTOR

PTFE PACKING GLANDS WITH AIR PURGE

VOLUMETRIC CAPACITY 4 L/ROTATION

DRIVE TYPE

GEAR MOTOR TYPE : BONFIGLIOLI C212 R=1:36,8-37 rpm

MOTOR : KW 0,37 4 POLES 415V 50Hz B5 SIZE 71

TRANSMISSION :CHAIN 1/2 DUPLEX

MOTOR GEAR : Z=17

ROTOR GEAR : Z=30

SPEED ROTOR : 22 RPM AT 50 Hz



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## DATA SHEET : ROTARY VALVE ITEM 64Z1 64Z2

TYPE: ROTARY VALVE SF 180

ITEM: 64Z1 64Z2

DRW: N13512004 REV.A

SERVICE :

TREATED SOLIDS TYPE : ZEOLITE 430-600 KG/M3

FLOW RATE 800 KG/H

CONSTRUCTION MATERIALS

MATERIAL OF BODY CAST IRON

ROTOR INCLINED BLADES CAST IRON

EXTERNAL SUPPORTS CHAIN DRIVE RANGE TEMPERATURE 60-250 °C

TIPS STEEL C 72

MANUFACTURER

ROTOR TYPE OPEN WITH TIPS

N° 8 VANES ROTOR

PTFE PACKING GLANDS WITH AIR PURGE

VOLUMETRIC CAPACITY 4 L/ROTATION

SHAFT SEAL FLUSHING SYSTEM: SOLENOID VLAVE TYPE NORGREN V04X486L-B628A 2 WAY 1/8" 110V 50 HZ

FLOW REGULATOR 1/8" FROM 0,5-1,5 BAR

DRIVE TYPE

GEAR MOTOR TYPE : BONFIGLIOLI C212 R=1:54,7-28 rpm

MOTOR : KW 0,37 4 POLES 415V 50Hz B5 SIZE 71

TRASMISSION :CHAIN 1/2 DUPLEX

MOTOR GEAR : Z=18

ROTOR GEAR : Z=24

SPEED ROTOR : 20 RPM AT 50 Hz

VOLUME DESIGN FLOW : 1,86 m3 /H AT 430 KG/M3

VOLUME DESIGN FLOW : 1,33 m3 /H AT 600 KG/M3



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**PARAGRAFO D**



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## STANDARD PAINT FINISH

ORDER N. 135/12

**BALLESTRA JOB:** 2F11

- **SOLMEC JOB:** 135/12

**SUBJECT:** BIN ACTIVATOR

**ITEM:** 62SR1

**STANDARD SOLMEC SPECIFICATION**

### **INTERNAL**

Finishing : External grid blasting SA 2.5  
Paint : 1 Primer coat µm 40  
Ral : Red – Brown

### **EXTERNAL**

Finishing : External grid blasting SA 2.5  
Paint : 1 Primer coat µm 40  
          1 Paint coat µm 40  
Ral : 7035

**NOTE :** \_\_\_\_\_

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## STANDARD PAINT FINISH

ORDER N. 135/12

**BALLESTRA JOB:** 2F11

- **SOLMEC JOB:** 135/12

**SUBJECT:** ROTARY VALVE

**ITEM:** 62Z1-65Z1-64Z1-64Z2

**STANDARD SOLMEC SPECIFICATION**

### **INTERNAL**

Finishing : External grid blasting SA 2.5  
Paint : 1 Primer coat µm 40  
Ral : Red – Brown

### **EXTERNAL**

Finishing : External grid blasting SA 2.5  
Paint : 1 Primer coat µm 40  
          1 Paint coat µm 40  
Ral : 7035

NOTE :	_____
	_____
	_____
	_____
	_____



**PARAGRAFO E**

DOCUMENTO RISERVATO A TERMINI DI LEGGE  
All rights reserved  
TUTTE LE DIMENSIONI SONO IN mm. SALVO INDICAZIONI CONTRARIE  
TOLLERANZE PER DIMENSIONI LINEARI VEDI TAB. UNI 5707-63  
TUTTE LE FLANGE HANNO I FORI DEI BULLONI FUORI ASSE

All sizes are in mm, failing contrary indications  
Tolerances for usual linear sizes, see tab. UNI 5707-63

All the flanges have the bolts-holes out of axis

QUOTE SENZA INDICAZIONE DI TOLLERANZA :  
Dimension without tolerance:

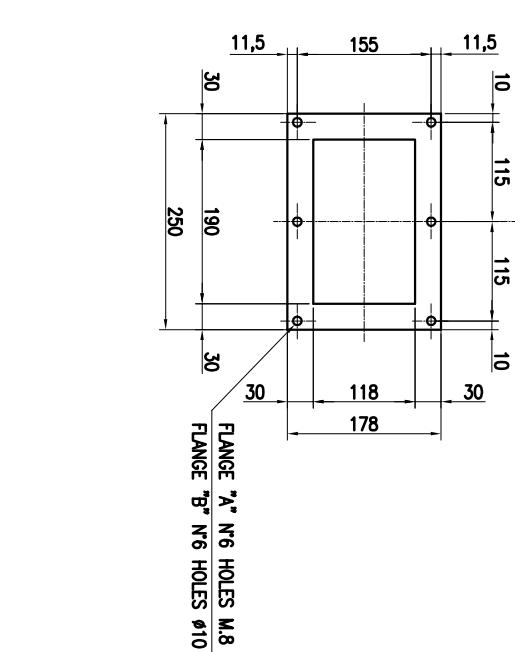
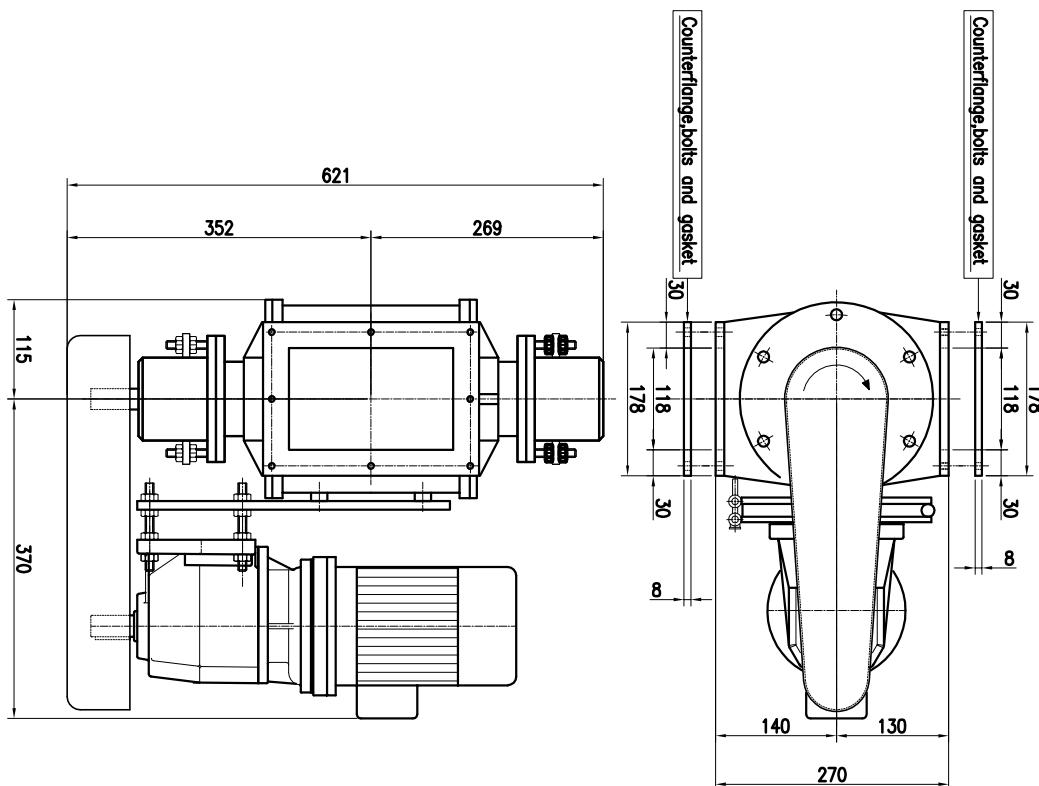
- GRADO DI PRECISIONE MEDIO UNI 5307  
Average precision degree UNI 5707
- GRADO DI PRECISIONE GROSSOLANO UNI 5307 FORI TOLLERANZA +/ ALBERI TOLLERANZA -  
Rough precision degree UNI 5707 tolerance holes +/ tolerance shaft -

GRADO DI PRECISIONE  
Precision degree

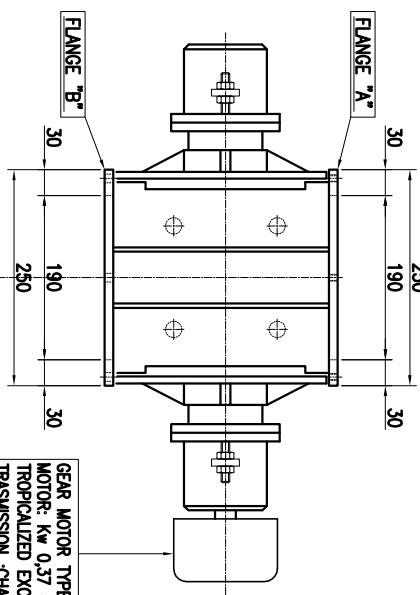
OLTRE FINO A From to		6	30	120	315	315	1000	2000	4000
GROSSOLANO	Rough	#2	#5	#8	#12	#12	#12	#12	#12
MEDIO	Average	#10	#20	#40	#80	#80	#120	#120	#120
PRECISO	Accurate	#100	#110	#115	#120	#120	#120	#120	-

GRUPPO DI DIMENSIONI Dimensional group

SCOSTAMENTI Deviation	0	6	30	120	315	315	1000	2000	4000
#2	#2	#5	#8	#12	#12	#12	#12	#12	#12
#10	#10	#20	#40	#80	#80	#120	#120	#120	-



GEAR MOTOR TYPE : BONFIGLIUO C212 R=1:36.8-37 rpm  
MOTOR: KW 0.37 4 POLES 415V - 50Hz BS SIZE 71  
TROPICALIZED EXCLUDED FROM SUPPLY  
TRANSMISSION :CHAIN 1/2 DUPLEX  
MOTOR GEAR : Z=17 - ROTOR GEAR : Z=30  
SPEED ROTOR : 22 RPM AT 50 Hz



WEIGHT: 90 Kg

ITEM: 65Z1 - JOB: 2F11	MATERIAL : CAST IRON	TECHNICAL DATE	
		C A	B 27/06/2012
SERVICE	TREATED SOLIDS TYPE : SOLID RM 200-600 Kg/m3	PAINTE : RAL 7035	
FLOW RATE	50 kg/h		
MANUFACTURER	ROTOR TYPE OPEN WITH TIPOS N° 8 VANNES ROTOR PTFE PACKING GLANDS WITH AIR PURGE VOLUMETRIC CAPACITY 4 L/ROTATION		
CONSTRUCTION MATERIALS	MATERIAL OF BODY CAST IRON ROTOR INCLINED BLADES CAST IRON EXTERNAL SUPPORTS CHAIN DRIVE RANGE TEMPERATURE 60-250 °C TIPOS STEEL C 72		
DRIVE TYPE	GEAR MOTOR TYPE : BONFIGLIUO C212 R=1:36.8-37 rpm MOTOR: KW 0.37 4 POLES 415V - 50Hz BS SIZE 71 TROPICALIZED EXCLUDED FROM SUPPLY TRANSMISSION :CHAIN 1/2 DUPLEX MOTOR GEAR : Z=17 - ROTOR GEAR : Z=30 SPEED ROTOR : 22 RPM AT 50 Hz		

SPETT. DESMET BALLESTRA	DESCRIZIONE Description	COMMESA N°	
		JOB N°	Item N°
MIRAFIORI (FE) ITALY	ROTOR VALVE TYPE: RS-180 SE JOB:2F11 - ITEM:65Z1	135/12	65Z1

DATA Date	DISEGNATO Drawn by	SCALE Scale	DISEGNO N. Drawing n°	
			REV. Rev.	A
27/06/2012	BONDI	1:----	N13512003	A

SOLMEC srl  
IMPIANTI & MACCHINE  
MIRAFIORI (FE) ITALY

GEAR MOTOR TYPE : BONFIGLIUO C212 R=1:36.8-37 rpm  
MOTOR: KW 0.37 4 POLES 415V - 50Hz BS SIZE 71  
TROPICALIZED EXCLUDED FROM SUPPLY  
TRANSMISSION :CHAIN 1/2 DUPLEX MOTOR GEAR : Z=17 - ROTOR GEAR : Z=30 SPEED ROTOR : 22 RPM AT 50 Hz

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QUOTE SENZA INDICAZIONE DI TOLLERANZA :  
Dimension without tolerance: GRADO DI PRECISIONE MEDIO UNI 5307

Average precision degree UNI 5707

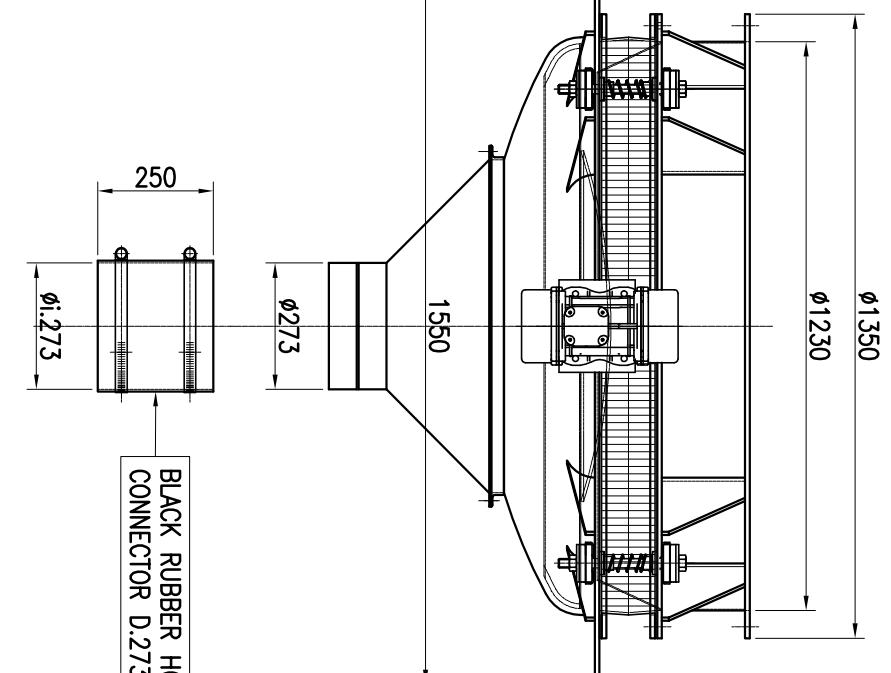
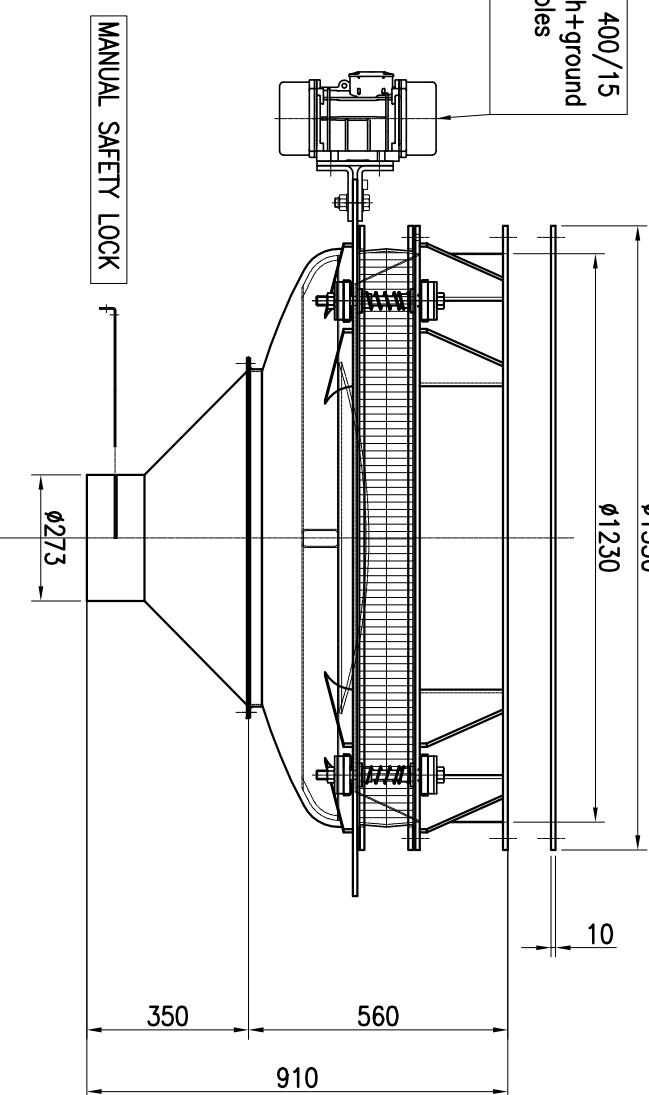
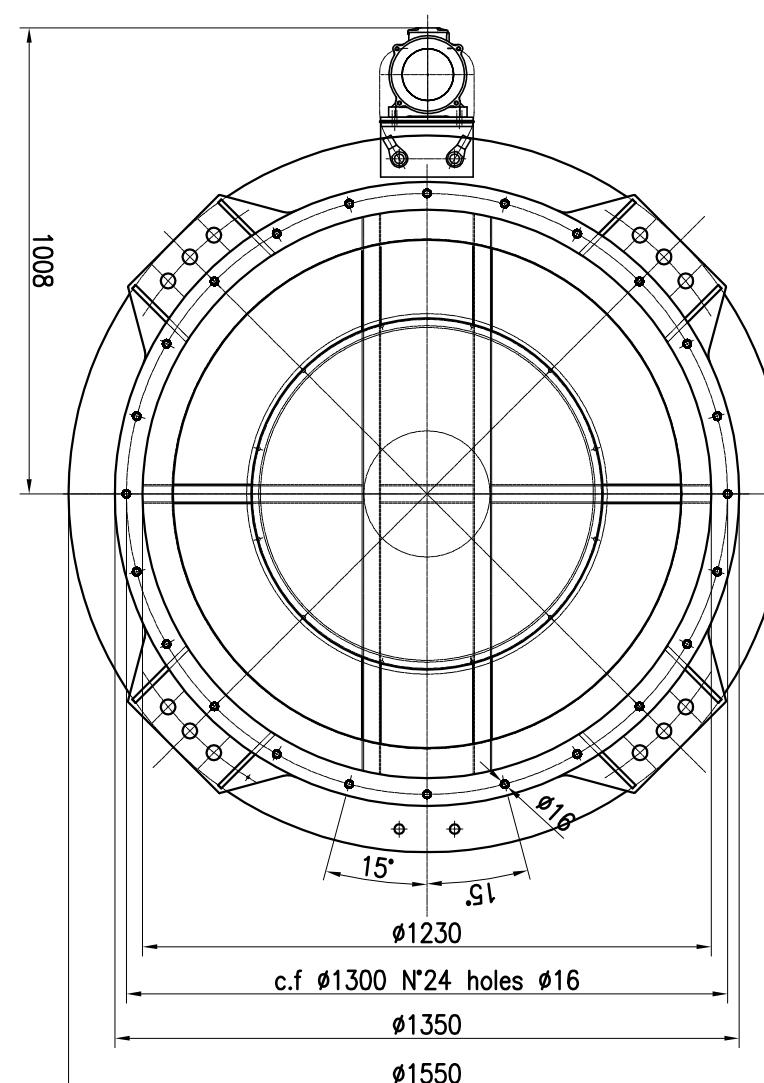
 GRADO DI PRECISIONE GROSSOLANO UNI 5307 FORI TOLLERANZA +/ALBERI TOLLERANZA -

Rough precision degree UNI 5707 tolerance holes +/tolerance shaft -

GRADO DI PRECISIONE  
Precision degreeOLTORE FINO A  
From to

GRUPPO DI DIMENSIONI Dimensional group							
	0 6	6 30	30 120	120 315	315 1000	1000 2000	2000 4000
GROSSOLANO Rough	+02	+05	+08	+12	#	#	#
MEDIO Average	+01	+02	+03	+05	+08	+12	#
PRECISO Accurate	+005	+01	+015	+02	+03	+05	-

Vibration motor OLI MVE 400/15  
Power:415 V 50 Hz 3 Ph+ground  
IP-65 – 300 W – 4 Poles  
TROPICALIZED



WEIGHT: 430 Kg

## TECHNICAL DATE

ITEM: 62SR1 – JOB: 2F11

SERVICE TYPE

CONSTRUCTION MATERIAL

FEATURES OF PRODUCTS

DENSITY OF PRODUCTS

OPERATING TEMPERATURE

FLOW RATE

DIAMETER OF SILOS

VIBRATION MOTOR

SUSPENSION

SEAL

COUNTERFLANGE BOLTS AND GASKET

MANUAL SAFETY LOCK

BLACK RUBBER HOSE CONNECTOR D.273

TECNOPOLIMER SINTER

ACCESORIES

1008

Ø1350

Ø1230

Ø273

15°

Ø1230

Ø1300

N°24 holes Ø16

Ø1350

Ø1550

10

350

560

910

WEIGHT: 430 Kg

C

B

A

REV.REV

CLIENTE

SPETT.

DESMET BALLESTRA

MILANO

COMMESA N°

JOB N°

135/12

Item N°

62SR1

DESCRIZIONE

BIN ACTIVATOR TYPE: EWV-1250

ITEM:62SR1 JOB.2F11

SCALA

DRAWING N°.

1:-----

REV.

B

**SOLMEC srl**  
**IMPLANTI &**  
**MACCHINE**

MIRABELLO (FE) ITALY

DISEGNATO

Drawn by

BONDI

Scale

Drawing n°.

N13512001

Rev.

B



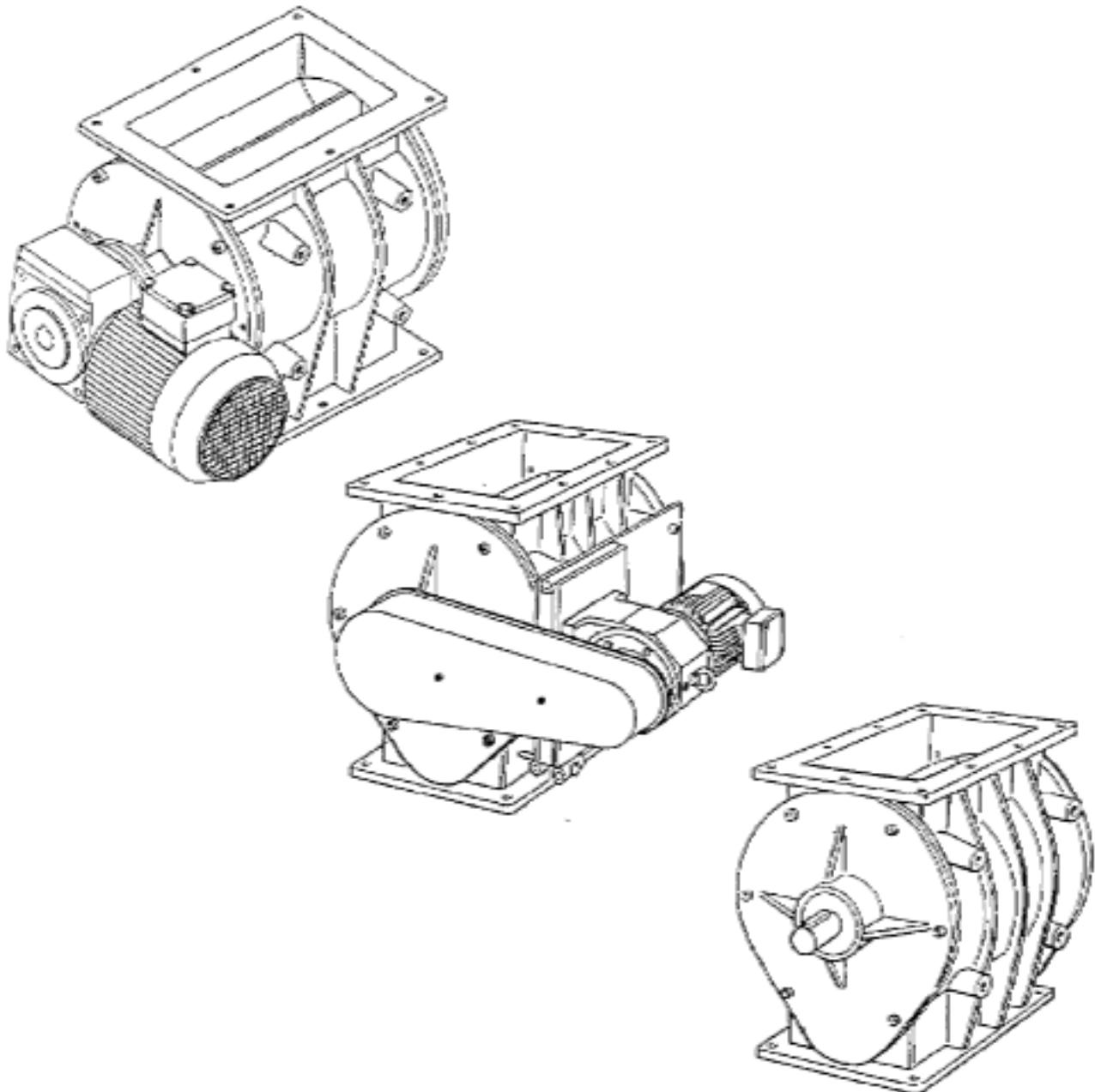


**PARAGRAFO F**

***ROTARY VALVE TYPE***

**“RS”**

***ITEM 65Z1***



***EDITION 1/02***



***USE AND MAINTENANCE GUIDE***

***USE AND MAINTENANCE OF THE ROTARY VALVE***

The “RS” drop-through rotary valves are suitable for the metering and conveying of powders and granulated products on medium and low pressure pneumatic lines. Thanks to the type of construction, the several rotors and the very low tolerances between rotor-stator and rotor-flange, they ensure an excellent tightness. These valves have been designed to enable them to be specifically adapted to all the products and the requirements of the customer. Simple assembly and maintenance operations allow the quick checking and/or replacement of their components without the use of particular tools, or the need to call in a specialised serviceman. The operating pressure during conveyance and the speed of rotation are two parameters of great importance for the excellent operation and performance of the valve. Close attention should therefore be paid to their recommended values

## § 1. 1

### MAIN COMPONENTS

A “RS” rotary valve mainly consists of:

N°1 Valve body, usually in G25 cast iron or stainless steel AISI316.

N°1 Rotor in G25 cast iron or in electrowelded mild steel or electrowelded stainless steel AISI 316.

N°2 Side flanges, usually in G25 cast iron or AISI316 stainless steel

The valve can also be supplied already fitted with a chain drive composed of:

N°1 Electrowelded steel hinged plate for attachment of the geared motor.

N°1 Sheet metal guard plate.

N°1 Drive unit (crown wheel, pinion and chain).

N°1 Standard 220/380V – 50Hz geared motor

N°1 Sheet metal safety housing

## § 1. 2

### TECHNICAL DATA

VALVE TYPE	RS180	RS230	RS270	RS300	RS350	RS450
VOLUMETRIC CAPACITY (l/rotation)	4	9	14	20	40	80
MAX.SPEED RATE. (RPM)	35*	35*	35*	35*	35*	35*
MAX. DIFF. OF PRESSURE (bar)	1*	1*	1*	1*	1*	1*
RANGE OF TEMPERATURE (°C)	-15÷60	-15÷60	-15÷60	-15÷60	-15÷60	-15÷60
CLEARANCE ROTOR / BODY (mm)**	0,05÷0,10	0,05÷0,10	0,05÷0,10	0,10÷0,15	0,10÷0,15	0,15
CLEARANCE rotor / flange (mm)**	0,05÷0,10	0,05÷0,10	0,05÷0,10	0,10÷0,15	0,10÷0,15	0,10÷0,15
WEIGHT – BARE SHAFT (Kg)	35	58	80	125	218	400
WEIGHT with CHAIN DRIVE (Kg)	65	89	117	188	295	515

\* MAX suggested values - \*\* standard values (they can change according to the type of product and temperature)

## § 1. 3

### PRODUCT IDENTIFICATION

Each valve is identified by means of a data-plate placed upon the valve body and having the following informations:

- Name of the producer
- CE mark
- Type of the valve
- Register number
- Year of construction
- Weight

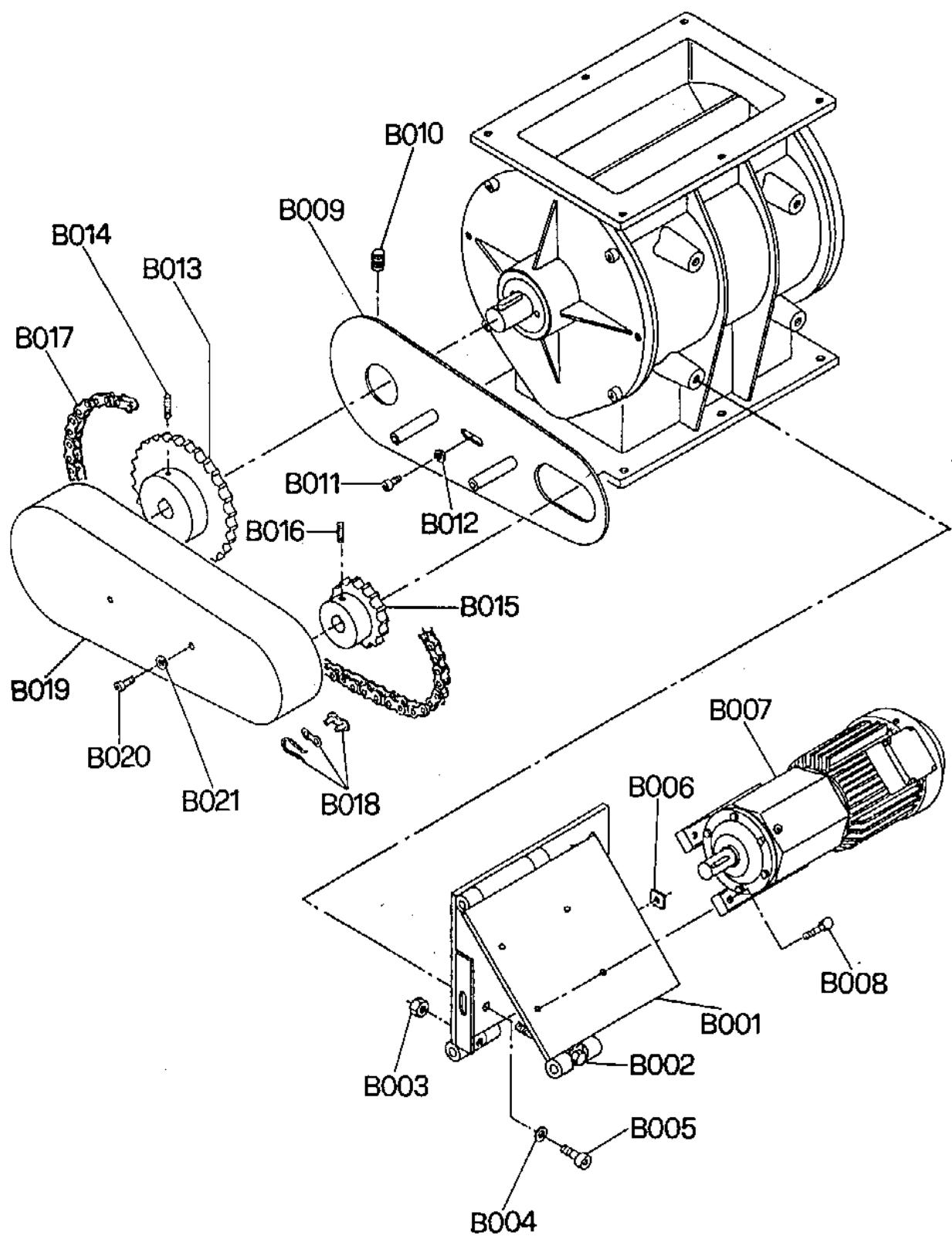


*For no reason the plate should be removed or modified..*



**Rotary valve type RS:  
GENERAL INFORMATION**

**UM 01/01 Date :05-11-01  
SECT.1 – REV.0 PAGE 1/19**



### § 2.3 EXPLODED VIEW OF THE VALVE WITH CHAIN DRIVE

<b>Pos.</b>	<b>Q.ty</b>	<b>Description</b>	<b>RS180</b>	<b>RS230</b>	<b>RS270</b>	<b>RS300</b>	<b>RS350</b>	<b>RS450</b>	<b>Material</b>	<b>Reference</b>
<b>B001</b>	01	Motor-plate	RS180	RS230	RS270	RS300	RS350	RS450	Fe37 steel	--
<b>B002</b>	01*	Chain tightener	M14 x 120	M14 x 120	M14 x 120	M14 x 130	M14 x 130	M14 x 130	cl 5.8 Zn steel	UNI 5739-65
<b>B003</b>	01*	Hex.screw nut	M14	M14	M14	M14	M14	M14	cl 8.8 Zn steel	UNI 5588-65
<b>B004</b>	04	Washer	Di 8,4 De17	Di 10,5 De21	Di 10,5 De21	Di 13 De24	Di 13 De24	Di 15 De28	R40 Zn steel	UNI 6592-69
<b>B005</b>	04	Hex.sock head cap screw	TC-EI M8x20	TC-EI M10x25	TC-EI M10x25	TC-EI M12x30	TC-EI M12x30	TC-EI M14x40	cl 8.8 Zn steel	UNI 5931-67
<b>B006</b>	01	Small plate	RS180	RS230	RS270	RS300	RS350	RS450	C40 steel	--
<b>B007</b>	01	SEW geared motor	0,37Kw	0,55Kw	0,75Kw	1,1Kw	1,5Kw	2,2Kw	--	--
<b>B008</b>	04	Hex.head screw	TE M8x30	TE M8x30	TE M8x30	TE M12x40	TE M12x40	TE M14x50	cl 8.8 Zn steel	UNI 5725-65
<b>B009</b>	01	Protection plate	RS180	RS230	RS270	RS300	RS350	RS450	Steel sheet.P011	--
<b>B010</b>	01	Hex.headless conic point screw	EI M8x16	TS-EI M8x16	cl 8.8 Zn steel	UNI 5923-67				
<b>B011</b>	01	Hex.sock head cap screw	TC-EI M8x15	cl 8.8 Zn steel	UNI 5931-67					
<b>B012</b>	01	Washer	Di 8,4 De17	R40 Zn steel	UNI 6592-69					
<b>B013</b>	01	Gear	max Z36 1/2 S	max Z36 5/8 S	max Z36 5/8 S	max Z44 5/8 D	max Z54 5/8D	max Z44 3/4D	C43 steel	DIN 8187
<b>B014</b>	01	Hex.headless conic point screw	EI M6x16	EI M8x16	Hardened temp.steel	UNI 5923-67				
<b>B015</b>	01	Gear	max Z20 1/2 S	max Z20 5/8 S	max Z20 5/8 S	max Z20 5/8 D	max Z24 5/8D	max Z23 3/4D	C43 steel	DIN 8187
<b>B016</b>	01	Hex.headless conic point screw	EI M6x10	EI M6x10	EI M6x10	EI M6x10	EI M8x16	EI M8x16	Hardened temp.steel	UNI 5923-67
<b>B017</b>	01	Chain	ISO 08B-1 1/2	ISO 10B-1 5/8	ISO 10B-1 5/8	ISO 10B-2 5/8	ISO 10B-2 5/8	ISO 12B-2 3/4	16 NiCr 11 steel	DIN 8187
<b>B018</b>	01	Chain joint	ISO 08B-1 1/2	ISO 10B-1 5/8	ISO 10B-1 5/8	ISO 10B-2 5/8	ISO 10B-2 5/8	ISO 12B-2 3/4	16 NiCr 11 steel	DIN 8187
<b>B019</b>	01	Protection casing	RS180	RS230	RS270	RS300	RS350	RS450	Steel sheet.P011	--
<b>B020</b>	02	Hex.sock head cap screw	TC-EI M8x15	cl 8.8 Zn steel	UNI 5931-67					
<b>B021</b>	02	Washer	Di 8,4 De17	R40 ZB steel	UNI 6592-69					
*	02	<b><u>RS300-350-450</u></b>								

The valve is usually dispatched already assembled after dry-testing in the workshop. On its arrival the customer must carefully check the consignment dockets to make sure that his order has been fully and correctly complied with. If a valve has to be stored in the yard for a short period, its intake mouth must be covered with tarpaulins to prevent direct exposure to the weather, rust and dampness, together with the likely entry of dust and fragments of particles of various kinds that could be responsible for incorrect operation of the valve or damages to rotor/stator when it is brought into use.

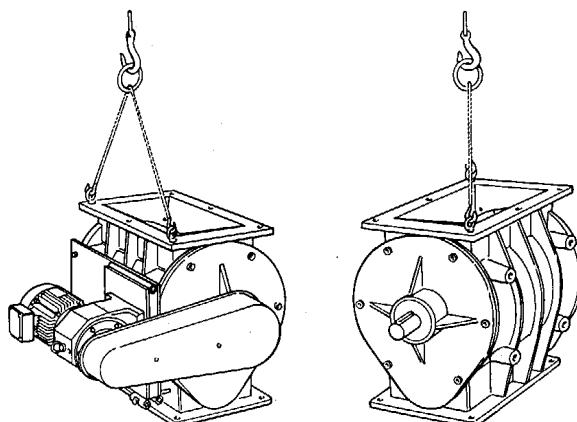
If a valve has to be stored for a long time, the same protection must be provided with the maximum care. In addition, its machined parts must be lubricated and all its components must be duly protected. Before starting to use the valve, it is always advisable to check that its interior is clean and free from foreign bodies. If necessary, clean the inside with a clean cloth while turning the rotor by hand.



**BEFORE CLEANING THE INSIDE OF THE VALVE, MAKE ABSOLUTELY SURE THAT THE MOTOR IS DISENGAGED FROM ALL ELECTRICAL CONNECTIONS. GREAT ATTENTION MUST BE PAID TO THE HANDS WHEN TURNING THE ROTOR MANUALLY**

## § 3.1

## LIFTING AND HANDLING



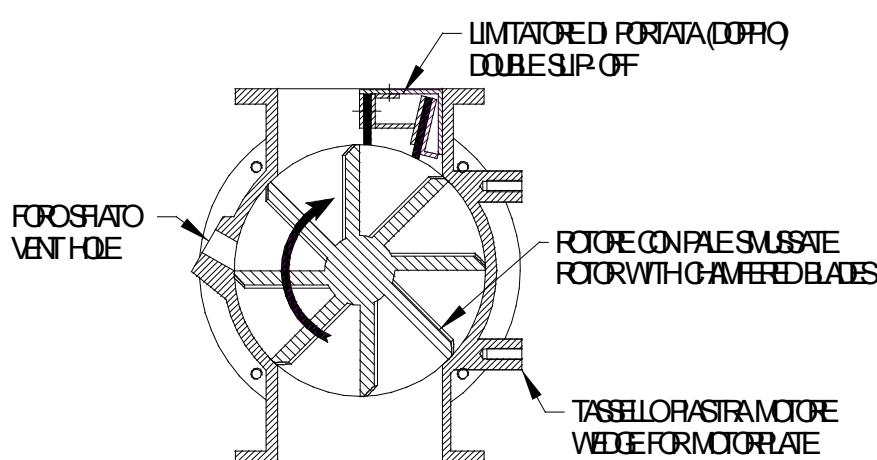
Particular care must be exercised when handling the rotary valve to prevent damage to its components, such as the top and bottom flanges, the guards, the geared motor, the protruding shaft and accessories, and impairment of its specifications and regular operation. It should be anchored at the points indicated and raised with appropriate means when being stored or set in place.



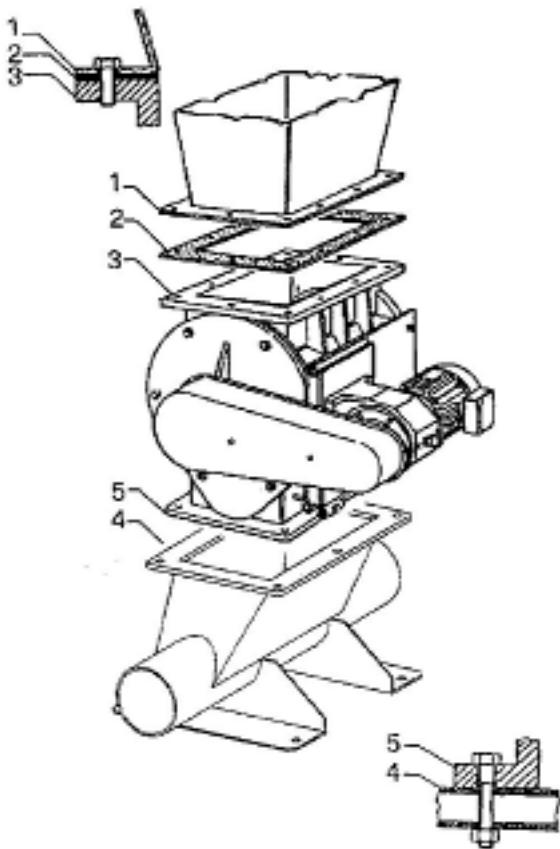
**NEVER REMAIN BELOW THE VALVE NOR REPAIR IT WHEN IT IS SUSPENDED ABOVE THE GROUND**

## § 4.0

## INSTALLATION

**ROTATING DIRECTION:**

If the valve is supplied with a complete chain drive the right direction is shown by an arrow placed upon the safety guard. Anyway there is one right direction only (see the side sketch) if there are tips or chamfered blades upon the rotor, when there is a slip-off or when vent holes are used



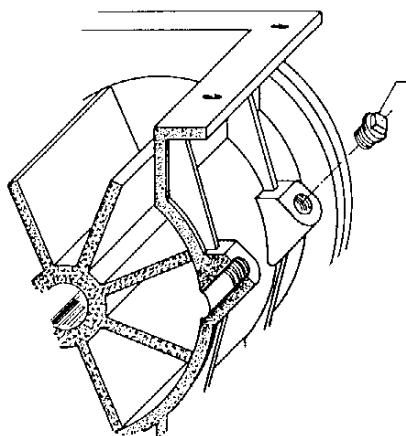
The following rules should be followed when installing a valve to ensure its good operation:

- Check that the attachment base is perfectly flat.
- Do not attach the connection flangings of hoppers or pipes directly to the valve by welding
- Make sure that no abnormal loads and stresses that could result in dangerous deformations are imposed when attaching the valve to the base and connecting the accessories.
- If a chain drive is to be fitted, it is advisable not to use salvaged materials and first check the flatness before assembly so as to prevent deformation of the valve body during its attachment. Do not make the chain too tight, since here again an excessive force could deform the structure.
- It is suggested to insert a soft seal between the flanges in order to prevent from leakages of the product
- If there are sticky or granular products it is always recommended to start the valve without product inside. It is possible, for example, to insert a slide gate upon the valve. Sometimes it is also suggested to close partially the inlet to reduce the filling coefficient (please contact the Olocco&C for any information)

1) Hopper; 2) Seal; 3)Upper valve flange; 4)Injector; 5) Below valve flange



**ANY KIND OF ABNORMAL LOAD, THRUST, STRAIN OR DISTORTION MAY RESULT IN AN INCORRECT OPERATION OF THE ROTARY VALVE**



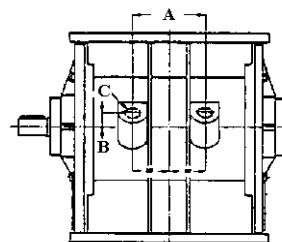
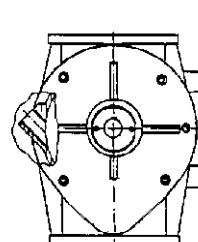
In order to extract the air taken above from the rotor during its turning (after the discharge of the material) each valve is supplied with **VENT HOLES**.

*It is recommended to link these holes to a filter or a suction system in particular if the product is light or where there isn't a separation between air and product in the hopper.*



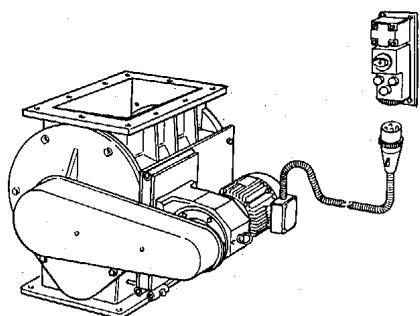
**WHEN NOT IN USE, THE HOLES MUST UNDER ALL CIRCUMSTANCES REMAIN SEALED WITH THE SUPPLIED PLUGS.**

TYPE	180	230	270	300	350	450
A	119	131	145	182	249	270
B	29	29	31	31	42	42
C	¾ G	¾G	¾G	¾G	1G	1G
holes	2	2	2	2	2	2



The electrical connections, wirings, protective devices and all other safety measures must conform to the local standards in force.

Unless otherwise indicated, the standard mains supply is **220/380V at 50Hz**.



*To prevent accidents and ensure greater safety during operations carried out on the valve after it is installed, it is advisable to provide for the installation of a cut-out switch with an EU standard bayonet plug near the valve. Disengagement of this plug from the switch will make it absolutely certain that the main supply is disconnected from the motor.*

## § 4.2

## PRELIMINARY OPERATIONS

The following checks should be carried out before starting to use the valve:

- Make sure that no foreign bodies have been forgotten or accidentally dropped inside the valve
- Make sure that all the components and any accessories are correctly assembled and mounted.
- Check that all the components employed to attach the valve to the base are firmly tightened
- Carry out a free run to make sure that the direction of rotation of the valve and its operation are correct. Check that the structure has not been affected by any yielding stresses or distortions during its installation on the line

## § 4.3

## START-UP

On completion of the checks listed in para.4.2, the rotary valve can be brought into operation. It is none the less advisable to carry out some initial runs with very small quantities of product keeping the valve under control via the electrical panel.

## § 4.4

## SAFETY PRECAUTIONS



- Each rotary valve is composed of a stator (body) and a rotor turned by a geared motor. All cleaning, checking, maintenance and disassembly operations must be performed with the rotor at rest and after disconnecting the electrical supply from the motor. The maximum caution and prudence is none the less advisable during the execution of any operation and intervention..
- Each rotary valve is a component and integral part of a plant and cannot be used on its own. It will thus be the responsibility of the plant designer to make sure that machine parts that can be freely reached from the outside are duly protected against careless intrusions on the part of the user.
- Due attention must be paid to the weight of the valve (as shown on its data plate) when it is being handled, installed and maintained. These operations are in any event governed by general work safety regulations.
- Rotary valves are supplied with vent holes closed by plugs which can be removed with a tool. These plugs must never be removed except when the hole is connected to a suction plant.
- A valve that comes into contact with hot products will itself transmit heat to the outside and care should be taken to avoid touching its parts in situations of this kind

The "RS" rotary valves do not require any special attention. The routine maintenance operations are the following:

- Every three months lubricate the seal rings inside the flange mounting with a vegetable grease appropriate to the operating temperature.
- Every three months lubricate the drive chain with special graphite grease.
- The bearings are sealed, shielded on both sides and lubricated for life.
- Life of bearings and seal rings is deeply influenced by the product to which they are exposed and by the working conditions of the whole plant so it is nearly impossible to establish before using. Anyway it is recommended to replace the bearings (and the seal rings too) when the valve might become noisy while turning.

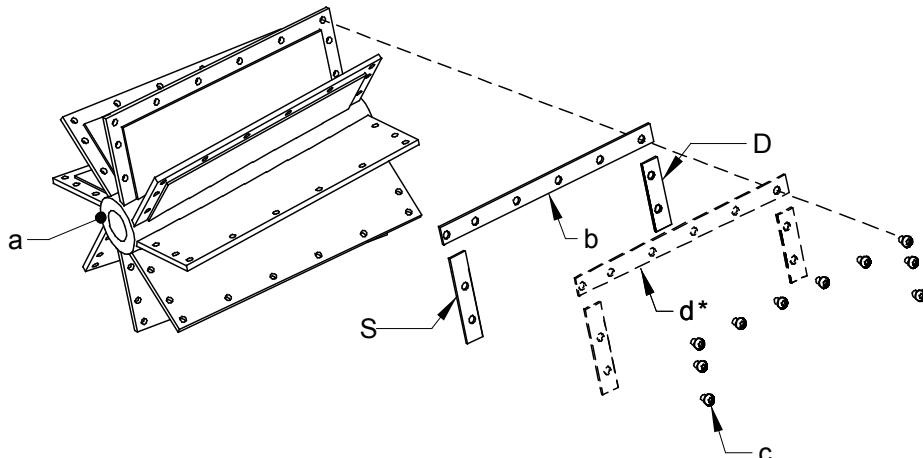
## § 5.1

## HOW TO REPLACE ROTOR TIPS

To replace the hardened steel tips of the rotor proceed as here described:

- 1) Using a screw-driver, remove the screws M8-EI, which close the tips on the rotor blades.
- 2) Clean the area where you will fit the new tips, removing dirtiness and powder.
- 3) Fit on both later sides the short tips. Please pay attention to put them in contact with the hub.

**NOTE: in the inclined blades versions, side hardened steel tips are made with different length so it is recommended to remove the old side tips from a blade only and measure them before removing all.**



pos	description	material
a	rotor	steel / stainless steel
b	tip	hardened steel / st.steel / vulkolan / rubber / PTFE/teflon
c	screwround head hexagonal sock M8x10	88 galvanised steel / stainless steel
d*	coverblades (for vulkolan, rubber, teflon)	steel / stainless steel

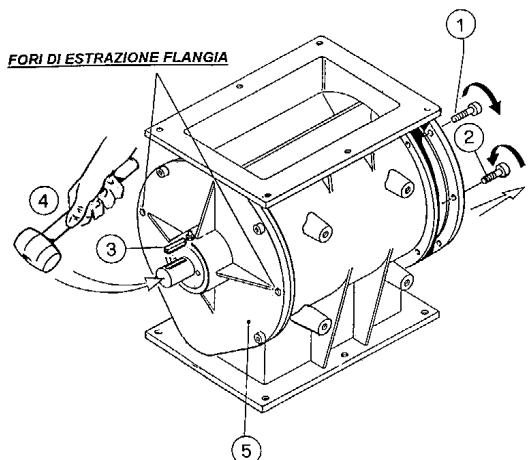
- 4) Fix to each blade the top tips
- 5) Pay attention top tips are in contact with the upper surface of the side tips without leaving any space between.

*After you have ended the fitting of all tips you have to turn the rotor in a lathe to get the correct diameter and length of the rotor (see page 1 for the standard clearances between rotor and body). This is necessary because tips are supplied 1mm longer than their final dimension to allow a correct installation.*

#### For further information please contact the Solmec

- To replace teflon or vulkolan tips it is necessary to do the same operations but please consider the play between the rotor and the body should be smaller (about 0,05mm)
- To replace black rubber tips you should consider the rotor diameter, after replacing the tips, should be about 4mm larger than the inner diameter of the body in order to allow the right flexion of the tip itself. The same for the axial direction where the rotor lenght should be about 4mm longer than that of the body (don't forget to consider the protruding part of the flange to calculate the right dimension). Once replaced rubber tips don't need to be turned

When a maintenance operation is necessary, the valve can be disassembled without being removed from its place of installation if there is enough room and the conditions are satisfactory. Operations of this type, however, should be preferably be carried out in the workshop. Dismantling, checking and/or replacement of mechanical parts, seal rings and bearings can be easily performed by servicemen with the aid of these instructions.



**01** - Remove the bolts locking the rear flange of the valve.

**02** - Insert two of these bolts in threaded holes (F) in the flange and take it off

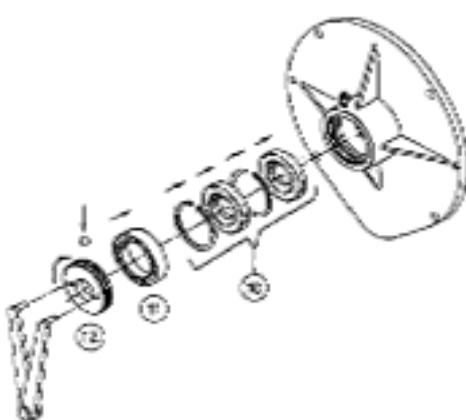
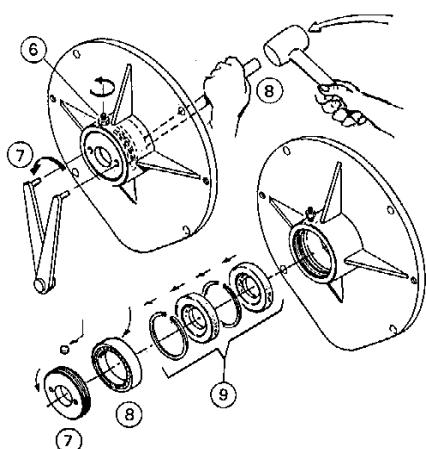
**03** - Remove the key from the seat of the drive shaft to allow the extraction of the rotor

**04** - Strike the protruding end of the shaft with a rubber or lead bullet until it comes away from the seat of the bearing. Then remove the rotor from the stator from the opposite side

**05** - Repeat steps 01 and 02 to take off the front flange

## § 5.3

## REPLACEMENT OF THE SEAL RINGS AND BEARINGS



**06** - Slacken the nut and locking dowel of the adjustment ring

**07** - Unscrew the ring nut and (if necessary) the thread protection shim

**08** - Drive the bearing out from inside with a hammer and a (preferably aluminium) punch

**09** - Take out the other components in the following order: circlip, seal ring, spacer, seal ring

**10** - Change and reassemble the worn components in the following order: seal, ring, spacer, seal ring, circlip

**11** - Replace the bearing in its seat up against the circlip

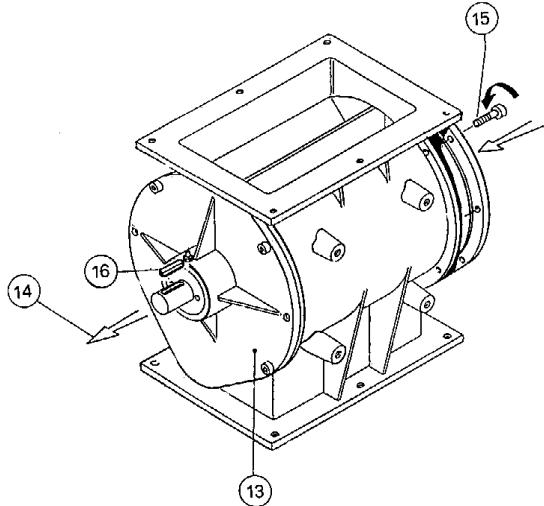
**12** - Screw on the adjustment ring nut so as to leave it protruding about 2mm from the outside of the hub and thus facilitate positioning of the bearing when the rotor is reassembled

## § 5.4

## REASSEMBLY OF THE VALVE

The following rules should be followed before reassembling the valve:

- Thoroughly clean all working parts and remove any product residues or metal particles.
- Check the stator for signs of wear
- Check the rotor for signs of wear or any dents caused by handling during disassembly or foreign bodies inside the line, and remedy as required.
- When seal rings are changed, it is advisable to fill their inside cavities with grease before replacing them in their seats, to prevent them from becoming dry and wearing out earlier than expected.



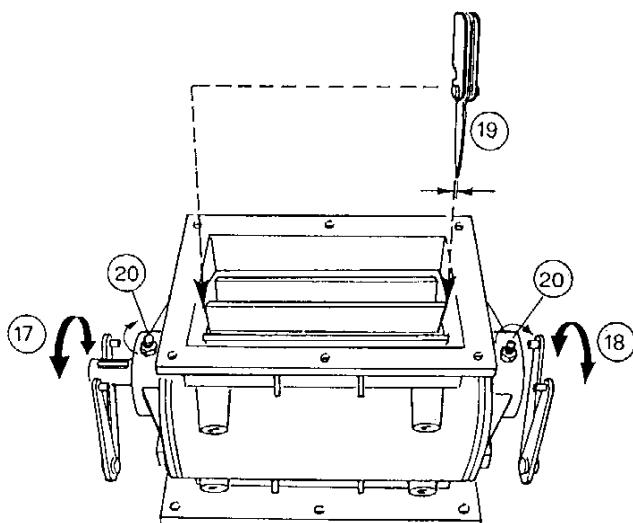
- 13 - Bolt the front flange to the valve body  
 14 - Carefully insert the rotor in the stator and position against the already remounted front flange  
 15 - Carefully mount the rear flange on the drive shaft and attach it to the body with the provided bolts

**NB:** Very great care must be taken during the (14) and (15) operations to see that no damage is caused to the sealing elements when the seats of the drive shaft are inserted in the hub of the flange.

- 16 - Mount the key on the protruding end of the drive shaft and position it in its seat

## § 5.5

## ADJUSTMENT OF THE END PLAY



A - Make sure that the bearings are correctly positioned against the shoulder of the shaft seating. To do this, screw the ring nut (17) down until it meets resistance. Repeat this operation on the opposite ring nut (18)

B - Now slacken the ring nuts (17) and (18) about half a turn to take the thrust off the bearings. This will allow the drive shaft and hence the rotor to move axially so that the end play can be adjusted. Use a compass spanner to turn one ring nut or the other right or left to obtain the axial shift movements required. The axial movement in the right and left direction is obtained by turning the two ring nuts. Use a compass key to do it.

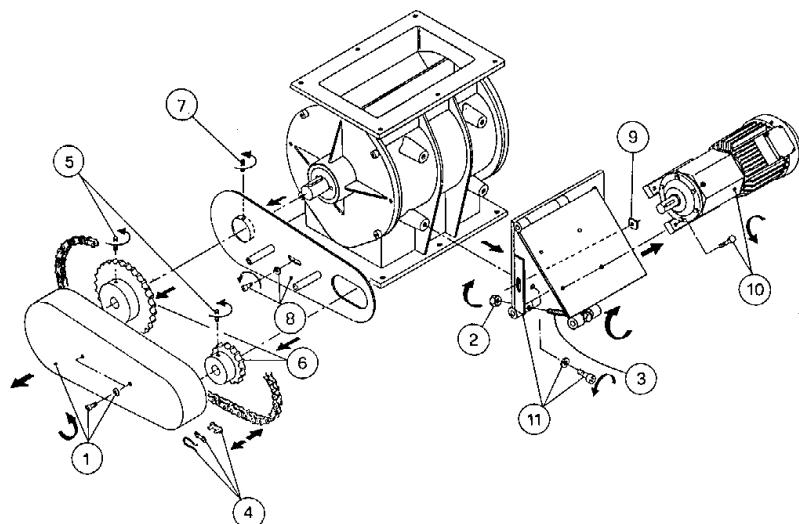
- C - Check the clearance between the rotor and the flange (19) by inserting a feeler gauge at the points indicated  
 D - To adjust the end play between the rotor and the flange, impose a thrust on the bearing by turning the ring nut on the side where the clearance was found to be less in step "C".

**N.B.** After this adjustment, the end play between the rotor and the stator must be the same on both sides and be included between the expected values. See the list at page 1.

E - Now repeat step "D" on the other side. Exert pressure on the bearing by tightening the opposite ring nut to offset the thrust of the two bearings. Then keep the end play (as in "C") under constant observation and turn one ring nut and the other alternatively with greater force until the setting becomes distinctly harder. Check the state of the thread protection shim and replace if necessary. Lock the ring nuts in their present position with the dowels and nuts (20)

It is advisable to turn the rotor by hand during the adjustment process to check the perfect operation and correct assembly and settings of the working parts.

**NOTE:** When the end of the drive shaft is operated by hand, the rotor must turn freely and effortlessly (apart from the initial inertia) and not touch the flange or the stator. If this is not the case, check the clearances and the concentricity of the rotor with respect to the seats of bearings. Make sure that the ring nuts are not too tight and there are no dents in the rotor tips.



- 01 - Remove the bolts and washers and take off the housing
- 02 - Slacken the lock nut on the chain tautness adjustment tie rod
- 03 - Screw the tie rod up fully to slacken the chain
- 04 - Use a screwdriver to remove the safety catch on the junction link. Take off this link and remove the chain
- 05 - Slacken the locking dowels on the sprocket and crown wheel hubs
- 06 - Use a puller to remove the sprocket and crown wheel from the respective geared motor and valve shafts

07 – Slacken the dowel retaining the protection plate on the valve hub

08 – Remove the bolt fixing the protection plate to the geared motor attachment assembly

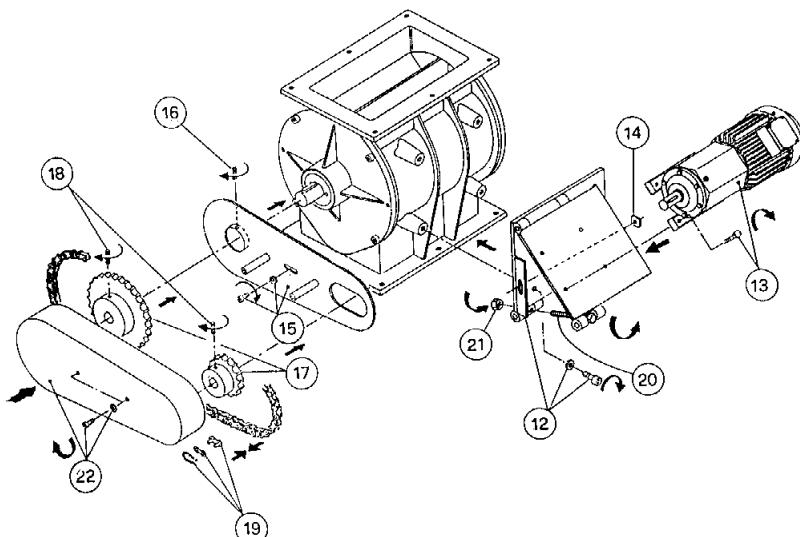
09 – Put aside the threaded plate locking the protection plate on the geared motor mounting plate

10 – Unbolt the geared motor from its mounting plate

11 – Unbolt the geared motor mounting plate from the valve

## § 5.7

## REASSEMBLY OF THE CHAIN DRIVE



12 - Bolt the geared motor mounting plate to the valve

13 - Bolt the geared motor to its mounting plate . Screw up the chain tautness adjustment tie rod (20) and attach its lock nut (21)

14 - Position and hold still the threaded plate locking the protection plate

15 - Position the protection plate and loosely bolt it to the threaded plate

16 - Slightly unscrew the dowel using a slight pressure to hold the plate still without fixing it

17 – Mount the sprocket and crown wheel on their shafts and align them on the same axis

18 – Lock the sprocket and crown wheel in their aligned positions (17) with the dowels on their hubs

19 – Mount the chain and fasten its ends together with the junction link

20 – Adjust the tautness of the chain with the threaded tie rod

**NB: The chain should be taut, but not over-tight since this could cause distortion and yielding of the valve structure , and result in poor operation of the valve, noisiness or seizing of the rotor.**

21 – Lock the nut (21). Position the protection plate making sure that the chain has enough room to turn and does not cause any impediment or rubbing when the housing is mounted. Lock the plate in its correct position with bolts (15) and (16)

**§ 5 . 10****WARRANTY**

- The warranty refers to the perfect execution of the machine. The Solmec. company doesn't guarantee this machine for a settled period because working conditions change from plant to plant and they are deeply influenced by the kind of conveyed material.
- The Solmec. is not responsible for adjustments or alterations made by the customer or for the use of not original spare parts.
- The Solmec. reserves the right to modify this product at any moment without pledging itself to update this guide.

**§ 5 . 11****REMEDIES FOR POSSIBLE PROBLEMS**

PROBLEM	POSSIBLE REASON	REMEDY
<b>Insufficient capacity</b>	<b>①</b> The product isn't correctly feeded.	Check how the valve is feeded.
	<b>②</b> Too low rotation speed.	Increase the rotation speed.
	<b>③</b> Insufficient air leakage.	Check the air leakage.
<b>Excessive noise</b>	<b>①</b> The product is inclined to be stick on the inner surface of the body and the flanges.	Not proper choice of the rotor
	<b>②</b> Too low clearances between rotor /body or rotor/flanges.	Increase the clearances between rotor/body or rotor/flanges (*).
<b>Getting out of product from the flanges</b>	<b>①</b> Faulty seals on the shaft	Replace the seals.
<b>Not uniform movement of the rotor</b>	<b>①</b> Faulty bearing	Check and replace the bearing if necessary.
	<b>②</b> Faulty chain	Check the whole chain drive system.
	<b>③</b> Not aligned gears	Align the gears
	<b>④</b> Loosened chain	Tighten the chain
<b>Seized valve</b>	<b>①</b> Foreign bodies in the rotor	Disassemble and repair the rotor
	<b>②</b> Too high temperature	Increase the clearances between rotor/body or rotor/flanges (*).

(\*) **BE CAREFUL:** before doing such an operation please contact our technical office

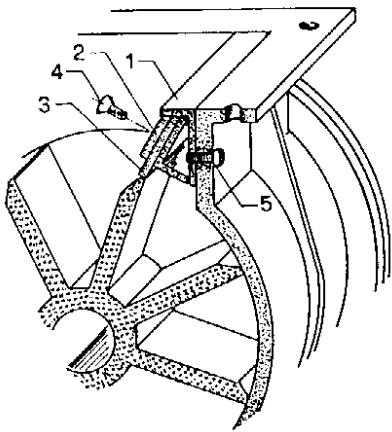
**NOTE:** These examples of remedies for possible problems must not be considered the only ones.

**§ 6 . 0****ACCESSORIES AND THEIR APPLICATIONS****SLIP OFF**

It's a mechanical device inserted in the intake mouth of the valve to prevent infiltration and jamming of the product between the rotor blade and the stator. Normally it is used to convey or meter granular products. Its main component is a wulkollan strip on a galvanised steel or AISI304 stainless steel mounting.

**COMPONENTS**

- 1 - Mounting
- 2 - Blade cover
- 3 - Wulkollan strip
- 4 - Attachment bolt TS.EI M6x15
- 5 - attachment bolt TC.EI M8x15/20

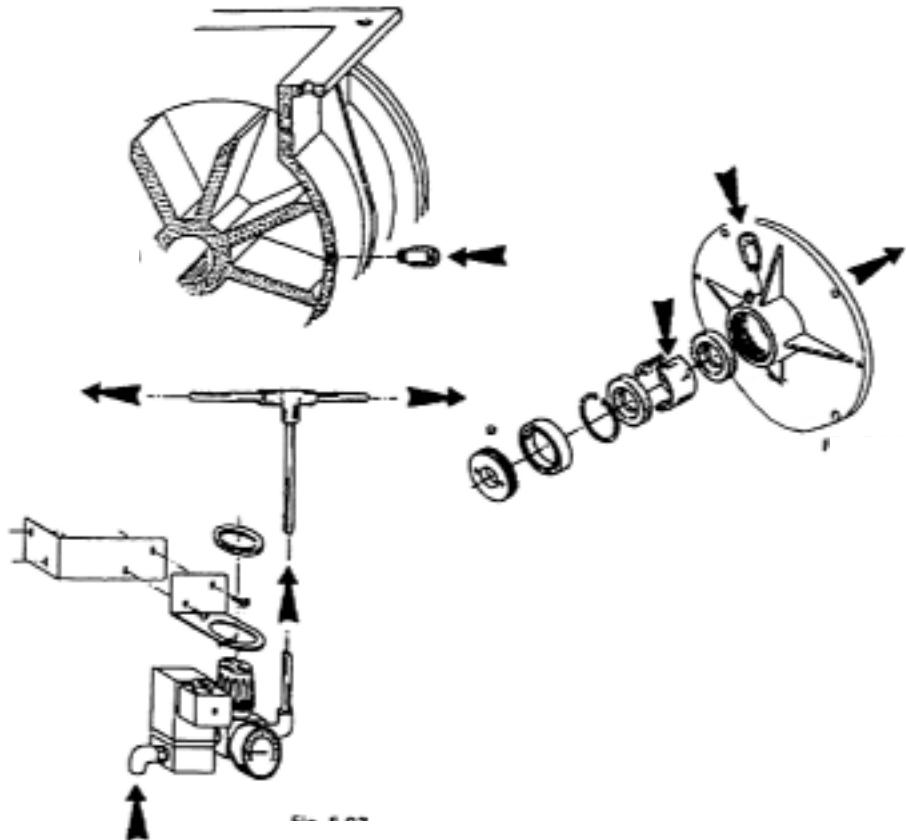
**AIR INJECTION**

These rotary valves can be fitted with an air union on the body to clean rotor and inside of the valve from time to time, or more commonly on the flange hub to ensure the more effective operation of the seal rings and better protection of the bearings with regard to the product being conveyed (mainly when it is very fine or aggressive). It is available, on request, the "air injection kit":

- electrovalve with single coil
- pressure gauge
- air regulator
- mounting brackets.

The following air injection pressure values are suggested:

- **5 bar** with air union in the body
- from **0,5** to **1,5 bar** more than the pneumatic conveying line pressure with air union on the flange



**S.I.M.**

SOLMEC S.p.A.  
IMPIANTI +  
MACCHINE

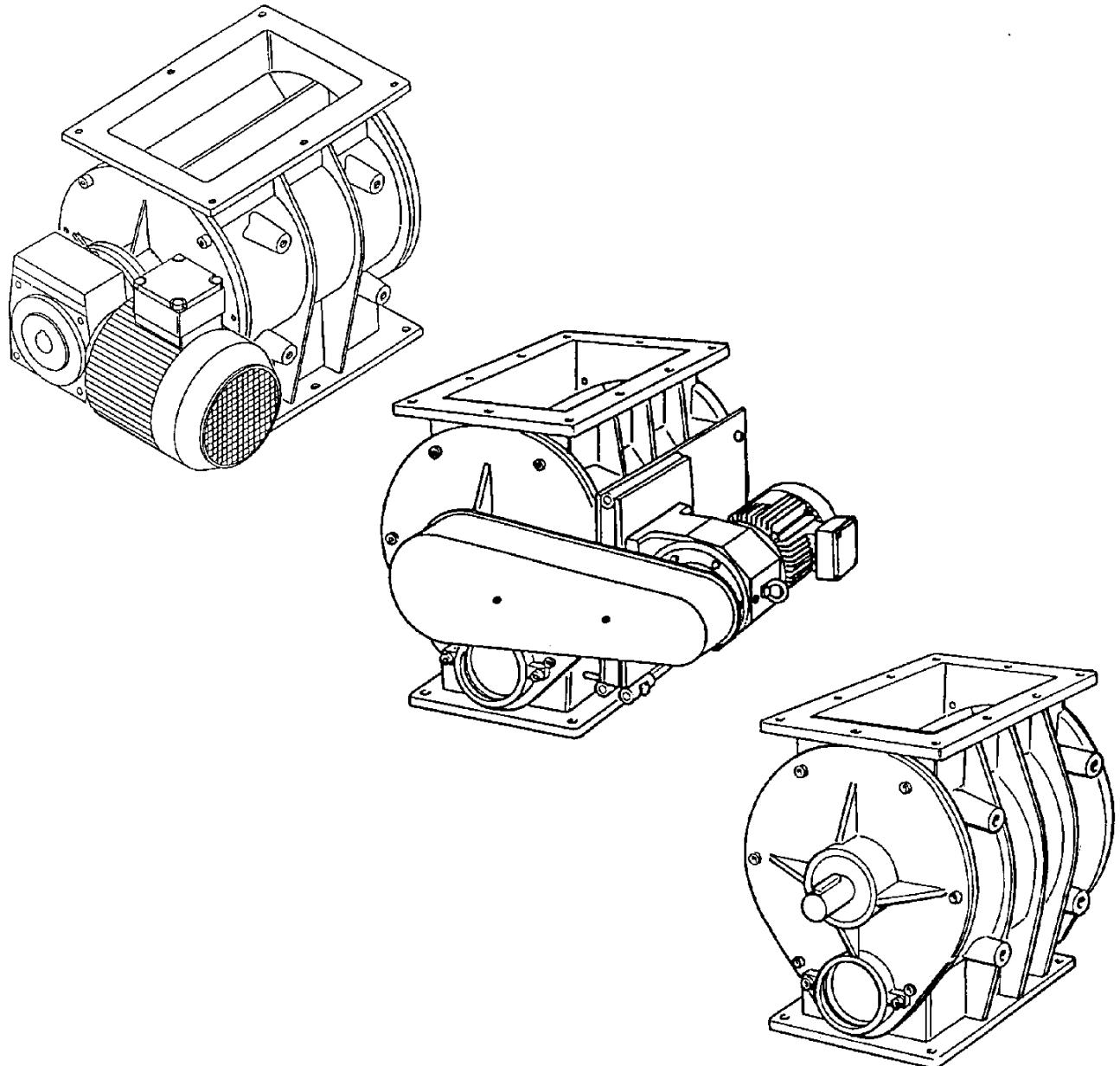
*Rotary valve type RS:  
ACCESSORIES*

UM 01/01 Date:05/11/01  
Sect.6 – REV.0 PAGE 19/19

***ROTARY VALVE TYPE***

**“SF”**

***ITEM 64Z1-64Z2***



***EDITION 1/02***



***USE AND MAINTENANCE GUIDE***

***USE AND MAINTENANCE OF THE ROTARY VALVE***

The “SF” blow-through rotary valves are suitable for the metering and conveying of powders and other products on medium and low pressure pneumatic lines. Thanks to the type of construction, the several rotors and the very low tolerances between rotor-stator and rotor-flange, they ensure an excellent tightness. These valves have been designed to enable them to be specifically adapted to all the products and the requirements of the customer. Simple assembly and maintenance operations allow the quick checking and/or replacement of their components without the use of particular tools, or the need to call in a specialised serviceman. The operating pressure during conveyance and the speed of rotation are two parameters of great importance for the excellent operation and performance of the valve. Close attention should therefore be paid to their recommended values

## § 1. 1

### **MAIN COMPONENTS**

A “Sf” rotary valve mainly consists of:

N°1 Valve body, usually in G25 cast iron or stainless steel AISI316.

N°1 Rotor in G25 cast iron or in electrowelded mild steel or electrowelded stainless steel AISI 316.

N°2 Side flanges, usually in G25 cast iron or AISI316 stainless steel

The valve can also be supplied already fitted with a chain drive composed of:

N°1 Electrowelded steel hinged plate for attachment of the geared motor.

N°1 Sheet metal guard plate.

N°1 Drive unit (crown wheel, pinion and chain).

N°1 Standard 220/380V – 50Hz geared motor

N°1 Sheet metal safety housing

## § 1. 2

### **TECHNICAL DATA**

<b>VALVE TYPE</b>	<b>SF180</b>	<b>SF230</b>	<b>SF270</b>	<b>SF300</b>	<b>SF350</b>	<b>SF450</b>
<i>VOLUMETRIC CAPACITY (l/rotation)</i>	4	9	14	20	40	80
<i>MAX.SPEED RATE. (RPM)</i>	35*	35*	35*	35*	35*	35*
<i>MAX. DIFF. OF PRESSURE (bar)</i>	1*	1*	1*	1*	1*	1*
<i>RANGE OF TEMPERATURE (°C)</i>	-15÷60	-15÷60	-15÷60	-15÷60	-15÷60	-15÷60
<i>CLEARANCE ROTOR / BODY (mm)**</i>	0,05÷0,10	0,05÷0,10	0,05÷0,10	0,10÷0,15	0,10÷0,15	0,15
<i>CLEARANCE rotor / flange (mm)**</i>	0,05÷0,10	0,05÷0,10	0,05÷0,10	0,10÷0,15	0,10÷0,15	0,10÷0,15
<i>WEIGHT – BARE SHAFT (Kg)</i>	37	65	87	135	228	415
<i>WEIGHT with CHAIN DRIVE (Kg)</i>	67	96	122	195	306	530

\* MAX suggested values - \*\* standard values (they can change according to the type of product and temperature)

## § 1. 3

### **PRODUCT IDENTIFICATION**

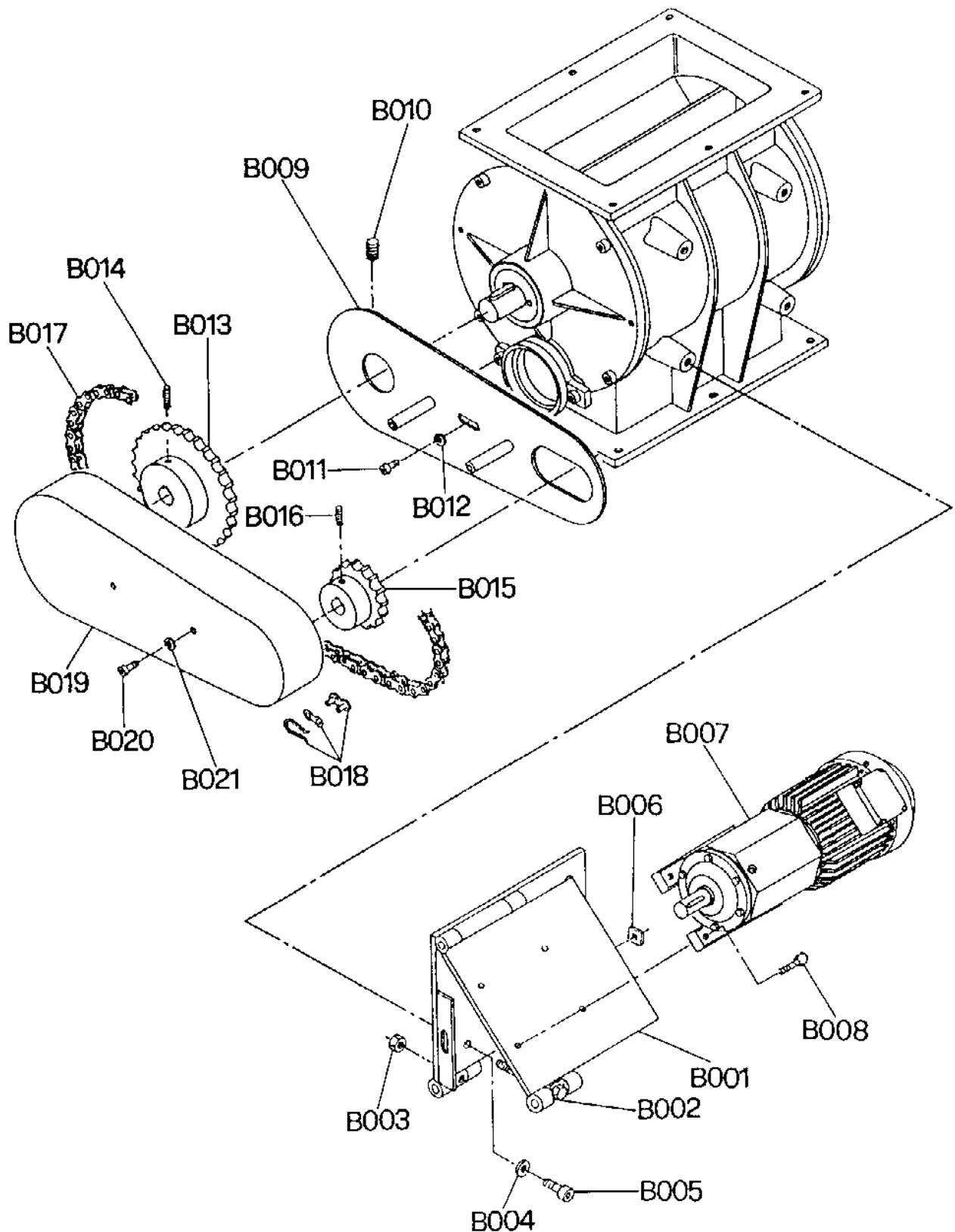
Each valve is identified by means of a data-plate placed upon the valve body and having the following informations:

- Name of the producer
- CE mark
- Type of the valve
- Register number
- Year of construction
- Weight



*For no reason the plate should be removed or modified..*

<b>Rotary valve type SF:</b> <b>GENERAL INFORMATION</b>	<b>UM 01/01</b> <b>Date :05-11-01</b> <b>SECT.1 – REV.0</b> <b>PAGE 1/19</b>
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### § 2.3 EXPLODED VIEW OF THE VALVE WITH CHAIN DRIVE

<b>Pos.</b>	<b>Q.ty</b>	<b>Description</b>	<b>SF180</b>	<b>SF230</b>	<b>SF270</b>	<b>SF300</b>	<b>SF350</b>	<b>SF450</b>	<b>MATERIAL</b>	<b>REFERENCE</b>
<b>B001</b>	01	Motor-plate	<b>SF180</b>	<b>SF230</b>	<b>SF270</b>	<b>SF300</b>	<b>SF350</b>	<b>SF450</b>	<i>Fe37 steel</i>	--
<b>B002</b>	01*	Chain tightener	<i>M14 x 120</i>	<i>M14 x 120</i>	<i>M14 x 120</i>	<i>M14 x 130</i>	<i>M14 x 130</i>	<i>M14 x 130</i>	<i>cl 5.8 Zn steel</i>	<i>UNI 5739-65</i>
<b>B003</b>	01*	Hex.screw nut	<i>M14</i>	<i>M14</i>	<i>M14</i>	<i>M14</i>	<i>M14</i>	<i>M14</i>	<i>cl 8.8 Zn steel</i>	<i>UNI 5588-65</i>
<b>B004</b>	04	Washer	<i>Di 8,4 De17</i>	<i>Di 10,5 De21</i>	<i>Di 10,5 De21</i>	<i>Di 13 De24</i>	<i>Di 13 De24</i>	<i>Di 15 De28</i>	<i>R40 Zn steel</i>	<i>UNI 6592-69</i>
<b>B005</b>	04	Hex.sock head cap screw	<i>TC-EI M8x20</i>	<i>TC-EI M10x25</i>	<i>TC-EI M10x25</i>	<i>TC-EI M12x30</i>	<i>TC-EI M12x30</i>	<i>TC-EI M14x40</i>	<i>cl 8.8 Zn steel</i>	<i>UNI 5931-67</i>
<b>B006</b>	01	Small plate	<b>SF180</b>	<b>SF230</b>	<b>SF270</b>	<b>SF300</b>	<b>SF350</b>	<b>SF450</b>	<i>C40 steel</i>	--
<b>B007</b>	01	SEW geared motor	<i>0,37Kw</i>	<i>0,55Kw</i>	<i>0,75Kw</i>	<i>1,1Kw</i>	<i>1,5Kw</i>	<i>2,2Kw</i>	--	--
<b>B008</b>	04	Hex.head screw	<i>TE M8x30</i>	<i>TE M8x30</i>	<i>TE M8x30</i>	<i>TE M12x40</i>	<i>TE M12x40</i>	<i>TE M14x50</i>	<i>cl 8.8 Zn steel</i>	<i>UNI 5725-65</i>
<b>B009</b>	01	Protection plate	<b>SF180</b>	<b>SF230</b>	<b>SF270</b>	<b>SF300</b>	<b>SF350</b>	<b>SF450</b>	<i>Steel sheet.P011</i>	--
<b>B010</b>	01	Hex.headless conic point screw	<i>EI M8x16</i>	<i>EI M8x16</i>	<i>EI M8x16</i>	<i>EI M8x16</i>	<i>EI M8x16</i>	<i>TS-EI M8x16</i>	<i>cl 8.8 Zn steel</i>	<i>UNI 5923-67</i>
<b>B011</b>	01	Hex.sock head cap screw	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>cl 8.8 Zn steel</i>	<i>UNI 5931-67</i>
<b>B012</b>	01	Washer	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>R40 Zn steel</i>	<i>UNI 6592-69</i>
<b>B013</b>	01	Gear	<i>max Z36 1/2 S</i>	<i>max Z36 5/8 S</i>	<i>max Z36 5/8 S</i>	<i>max Z44 5/8 D</i>	<i>max Z54 5/8D</i>	<i>max Z44 3/4D</i>	<i>C43 steel</i>	<i>DIN 8187</i>
<b>B014</b>	01	Hex.headless conic point screw	<i>EI M6x16</i>	<i>EI M6x16</i>	<i>EI M6x16</i>	<i>EI M6x16</i>	<i>EI M8x16</i>	<i>EI M8x16</i>	<i>Hardened temp.steel</i>	<i>UNI 5923-67</i>
<b>B015</b>	01	Gear	<i>max Z20 1/2 S</i>	<i>max Z20 5/8 S</i>	<i>max Z20 5/8 S</i>	<i>max Z20 5/8 D</i>	<i>max Z24 5/8D</i>	<i>max Z23 3/4D</i>	<i>C43 steel</i>	<i>DIN 8187</i>
<b>B016</b>	01	Hex.headless conic point screw	<i>EI M6x10</i>	<i>EI M6x10</i>	<i>EI M6x10</i>	<i>EI M6x10</i>	<i>EI M8x16</i>	<i>EI M8x16</i>	<i>Hardened temp.steel</i>	<i>UNI 5923-67</i>
<b>B017</b>	01	Chain	<i>ISO 08B-1 1/2</i>	<i>ISO 10B-1 5/8</i>	<i>ISO 10B-1 5/8</i>	<i>ISO 10B-2 5/8</i>	<i>ISO 10B-2 5/8</i>	<i>ISO 12B-2 3/4</i>	<i>16 NiCr 11 steel</i>	<i>DIN 8187</i>
<b>B018</b>	01	Chain joint	<i>ISO 08B-1 1/2</i>	<i>ISO 10B-1 5/8</i>	<i>ISO 10 B-1 5/8</i>	<i>ISO 10 B-2 5/8</i>	<i>ISO 10 B-2 5/8</i>	<i>ISO 12 B-2 3/4</i>	<i>16 NiCr 11 steel</i>	<i>DIN 8187</i>
<b>B019</b>	01	Protection casing	<b>SF180</b>	<b>SF230</b>	<b>SF270</b>	<b>SF300</b>	<b>SF350</b>	<b>SF450</b>	<i>Steel sheet.P011</i>	--
<b>B020</b>	02	Hex.sock head cap screw	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>cl 8.8 Zn steel</i>	<i>UNI 5931-67</i>
<b>B021</b>	02	Washer	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>R40 Zn steel</i>	<i>UNI 6592-69</i>
*	02	<b><u>SF300-350-450</u></b>								

**Rotary valve type SF:**  
**SPARE PARTS**

<b>UM 01/01</b>	<b>Date:05-11-01</b>
<b>SECT.2 – REV.0</b>	<b>PAGE 8/19</b>

The valve is usually dispatched already assembled after dry-testing in the workshop. On its arrival the customer must carefully check the consignment dockets to make sure that his order has been fully and correctly complied with. If a valve has to be stored in the yard for a short period, its intake mouth must be covered with tarpaulins to prevent direct exposure to the weather, rust and dampness, together with the likely entry of dust and fragments of particles of various kinds that could be responsible for incorrect operation of the valve or damages to rotor/stator when it is brought into use.

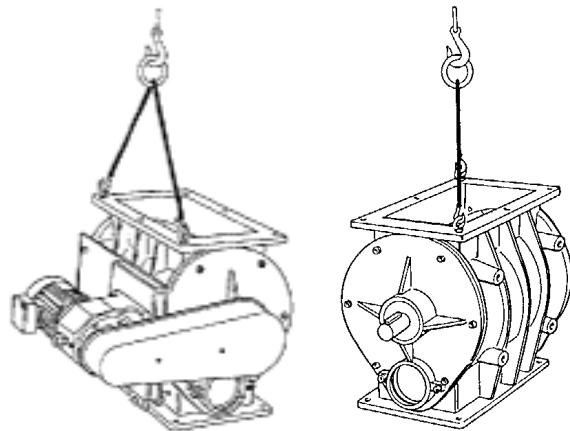
If a valve has to be stored for a long time, the same protection must be provided with the maximum care. In addition, its machined parts must be lubricated and all its components must be duly protected. Before starting to use the valve, it is always advisable to check that its interior is clean and free from foreign bodies. If necessary, clean the inside with a clean cloth while turning the rotor by hand.



**BEFORE CLEANING THE INSIDE OF THE VALVE, MAKE ABSOLUTELY SURE THAT THE MOTOR IS DISENGAGED FROM ALL ELECTRICAL CONNECTIONS. GREAT ATTENTION MUST BE PAID TO THE HANDS WHEN TURNING THE ROTOR MANUALLY**

## § 3 . 1

## LIFTING AND HANDLING



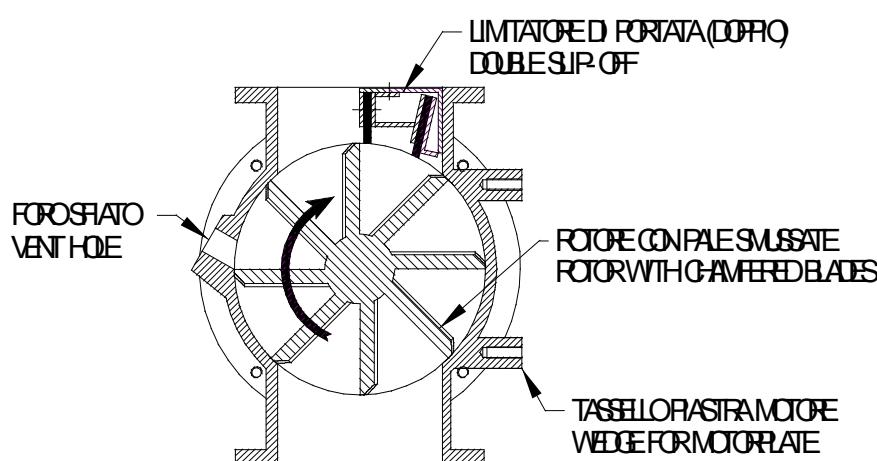
Particular care must be exercised when handling the rotary valve to prevent damage to its components, such as the top and bottom flanges, the guards, the geared motor, the protruding shaft and accessories, and impairment of its specifications and regular operation. It should be anchored at the points indicated and raised with appropriate means when being stored or set in place.



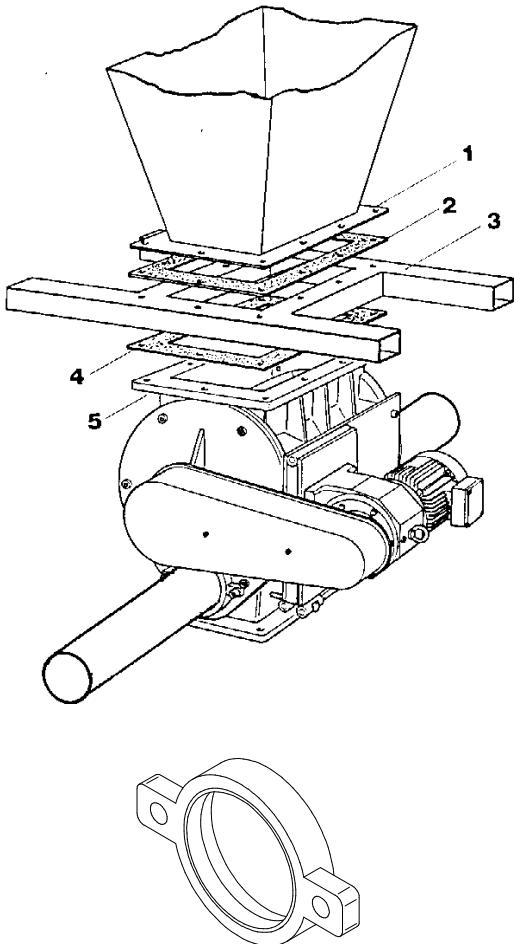
**NEVER REMAIN BELOW THE VALVE NOR REPAIR IT WHEN IT IS SUSPENDED ABOVE THE GROUND**

## § 4 . 0

## INSTALLATION

**ROTATING DIRECTION:**

If the valve is supplied with a complete chain drive the right direction is shown by an arrow placed upon the safety guard. Anyway there is one right direction only (see the side sketch) if there are tips or chamfered blades upon the rotor, when there is a slip-off or when vent holes are used



The following rules should be followed when installing a valve to ensure its good operation:

- Check that the attachment base is perfectly flat.
- Do not attach the connection flanges of hoppers or pipes directly to the valve by welding



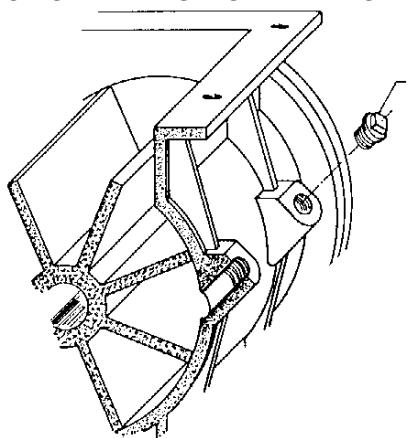
***The pipe connection between the valve and the pipes must be removed (unscrewing its proper bolts) before doing any welding operation. If you won't do that there is the risk to damage the valve***

- Make sure that no abnormal loads and stresses that could result in dangerous deformations are imposed when attaching the valve to the base and connecting the accessories.
- If a chain drive is to be fitted, it is advisable not to use salvaged materials and first check the flatness before assembly so as to prevent deformation of the valve body during its attachment. Do not make the chain too tight, since here again an excessive force could deform the structure.
- It is suggested to insert a soft seal between the flanges in order to prevent leakages of the product
- If there are sticky or granular products it is always recommended to start the valve without product inside. It is possible, for example, to insert a slide gate upon the valve. Sometimes it is also suggested to close partially the inlet to reduce the filling coefficient (please contact the Olocco&C for any information)

1)Hopper ; 2) Seal; 3)Upper valve flange; 4)Injector; 5) Below valve flange



***ANY KIND OF ABNORMAL LOAD, THRUST, STRAIN OR DISTORTION MAY RESULT IN AN INCORRECT OPERATION OF THE ROTARY VALVE***



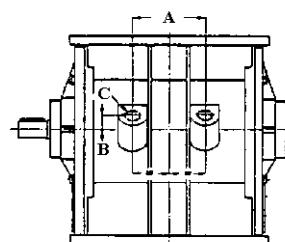
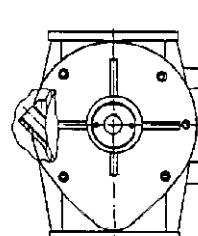
In order to extract the air taken above from the rotor during its turning (after the discharge of the material) each valve is supplied with **VENT HOLES**.

***It is recommended to link these holes to a filter or a suction system in particular if the product is light or where there isn't a separation between air and product in the hopper.***



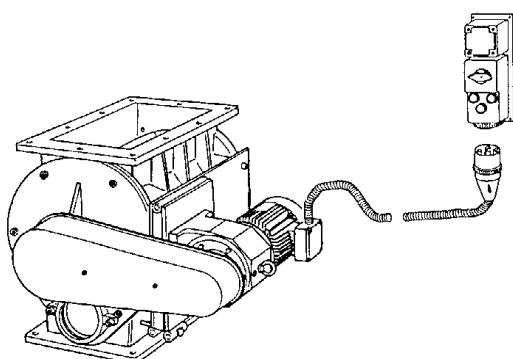
***WHEN NOT IN USE, THE HOLES MUST UNDER ALL CIRCUMSTANCES REMAIN SEALED WITH THE SUPPLIED PLUGS.***

TYPE	180	230	270	300	350	450
A	119	131	145	182	249	270
B	29	29	31	31	42	42
C	¾ G	¾G	¾G	¾G	1G	1G
holes	2	2	2	2	2	2



The electrical connections, wirings, protective devices and all other safety measures must be conform to the local standards in force.

Unless otherwise indicated , the standard mains supply is **220/380V at 50Hz.**



*To prevent accidents and ensure greater safety during operations carried out on the valve after it is installed, it is advisable to provide for the installation of a cut-out switch with an EU standard bayonet plug near the valve. Disengagement of this plug from the switch will make it absolutely certain that the main supply is disconnected from the motor.*

The following checks should be carried out before starting to use the valve:

- Make sure that no foreign bodies have been forgotten or accidentally dropped inside the valve
- Make sure that all the components and any accessories are correctly assembled and mounted.
- Check that all the components employed to attach the valve to the base are firmly tightened
- Carry out a free run to make sure that the direction of rotation of the valve and its operation are correct. Check that the structure has not been affected by any yielding stresses or distortions during its installation on the line

On completion of the checks listed in para.4.2, the rotary valve can be brought into operation. It is none the less advisable to carry out some initial runs with very small quantities of product keeping the valve under control via the electrical panel.



- Each rotary valve is composed of a stator (body) and a rotor turned by a geared motor. All cleaning, checking, maintenance and disassembly operations must be performed with the rotor at rest and after disconnecting the electrical supply from the motor. The maximum caution and prudence is none the less advisable during the execution of any operation and intervention..
- Each rotary valve is a component and integral part of a plant and cannot be used on its own. It will thus be the responsibility of the plant designer to make sure that machine parts that can be freely reached from the outside are duly protected against careless intrusions on the part of the user.
- Due attention must be paid to the weight of the valve (as shown on its data plate) when it is being handled, installed and maintained. These operations are in any event governed by general work safety regulations.
- Rotary valves are supplied with vent holes closed by plugs which can be removed with a tool. These plugs must never be removed except when the hole is connected to a suction plant.
- A valve that comes into contact with hot products will itself transmit heat to the outside and care should be taken to avoid touching its parts in situations of this kind

The "SF" rotary valves do not require any special attention. The routine maintenance operations are the following:

- Every three months lubricate the seal rings inside the flange mounting with a vegetable grease appropriate to the operating temperature.
- Every three months lubricate the drive chain with special graphite grease.
- The bearings are sealed, shielded on both sides and lubricated for life.
- Life of bearings and seal rings is deeply influenced by the product to which they are exposed and by the working conditions of the whole plant so it is nearly impossible to establish before using. Anyway it is recommended to replace the bearings (and the seal rings too) when the valve might become noisy while turning.

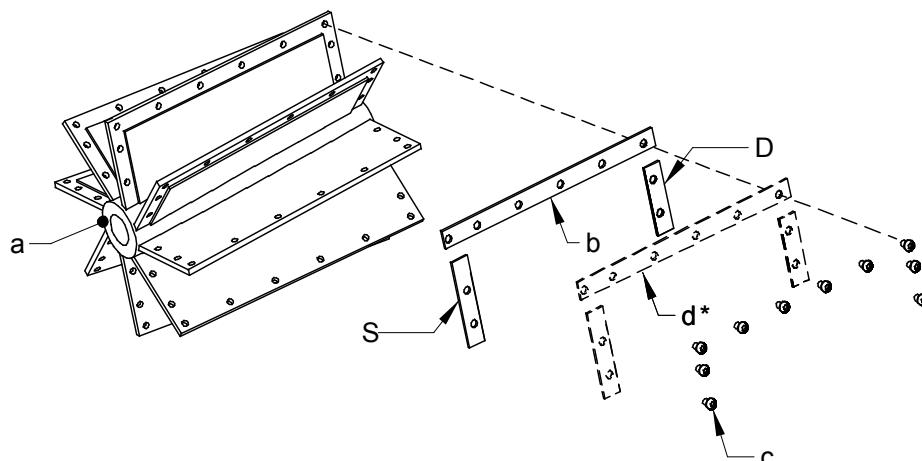
## § 5.1

## HOW TO REPLACE ROTOR TIPS

To replace the hardened steel tips of the rotor proceed as here described:

- 1) Using a screw-driver, remove the screws M8-EI, which close the tips on the rotor blades.
- 2) Clean the area where you will fit the new tips, removing dirtiness and powder.
- 3) Fit on both later sides the short tips. Please pay attention to put them in contact with the hub.

**NOTE: in the inclined blades versions, side hardened steel tips are made with different length so it is recommended to remove the old side tips from a blade only and measure them before removing all.**



pos.	description	material
a	rotor	steel / stainless steel
b	tip	hardened steel / st.steel / vulkolan / rubber / PTFE teflon
c	screw round head hexagonal socket M8x10	8.8 galvanised steel / stainless steel
d*	cover blades (for vulkolan, rubber, teflon)	steel / stainless steel

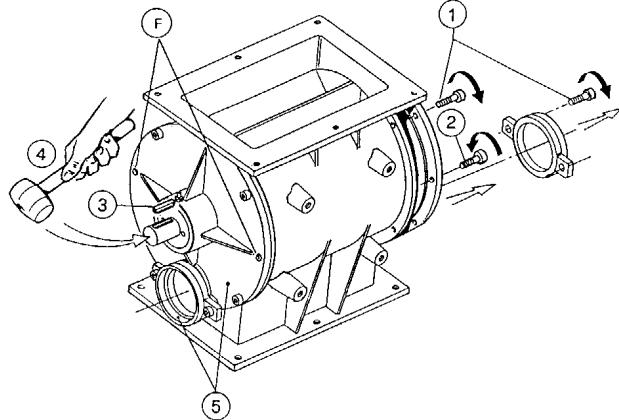
- 4) Fix to each blade the top tips
- 5) Pay attention top tips are in contact with the upper surface of the side tips without leaving any space between.

*After you have ended the fitting of all tips you have to turn the rotor in a lathe to get the correct diameter and length of the rotor (see page 1 for the standard clearances between rotor and body). This is necessary because tips are supplied 1mm longer than their final dimension to allow a correct installation.*

#### For further information please contact the Olocco&C

- To replace teflon or vulkolan tips it is necessary to do the same operations but please consider the play between the rotor and the body should be smaller (about 0,05mm)
- To replace black rubber tips you should consider the rotor diameter, after replacing the tips, should be about 4mm larger than the inner diameter of the body in order to allow the right flexion of the tip itself. The same for the axial direction where the rotor length should be about 4mm longer than that of the body (don't forget to consider the protruding part of the flange to calculate the right dimension). Once replaced rubber tips don't need to be turned

When a maintenance operation is necessary, the valve can be disassembled without being removed from its place of installation if there is enough room and the conditions are satisfactory. Operations of this type, however, should be preferably be carried out in the workshop. Dismantling, checking and/or replacement of mechanical parts, seal rings and bearings can be easily performed by servicemen with the aid of these instructions.



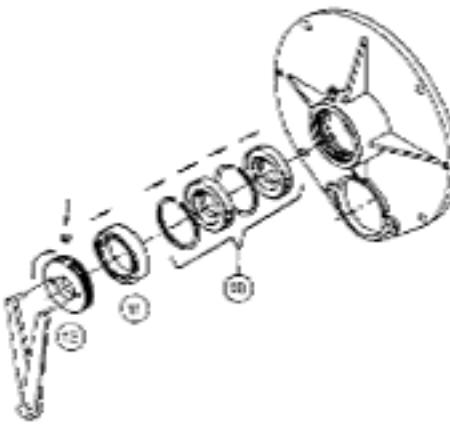
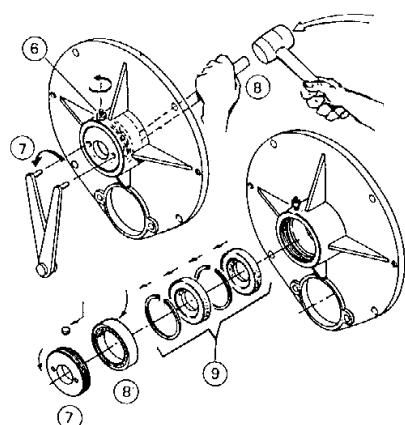
**01** – After removing the valve from the conveying pipe remove the bolts locking the rear flange of the valve.

**02** - Insert two of these bolts in threaded holes (F) in the flange and take it off

**03** - Remove the key from the seat of the drive shaft to allow the extraction of the rotor

**04** - Strike the protruding end of the shaft with a rubber or lead mullet until it comes away from the seat of the bearing. Then remove the rotor from the stator from the opposite side

**05** - Repeat steps 01 and 02 to take the flange off



**06** - Slacken the nut and locking dowel of the adjustment ring

**07** - Unscrew the ring nut and (if necessary) the thread protection shim

**08** - Drive the bearing out from inside with a hammer and a (preferably aluminium) punch

**09** - Take out the other components in the following order: circlip, seal ring, spacer, seal ring

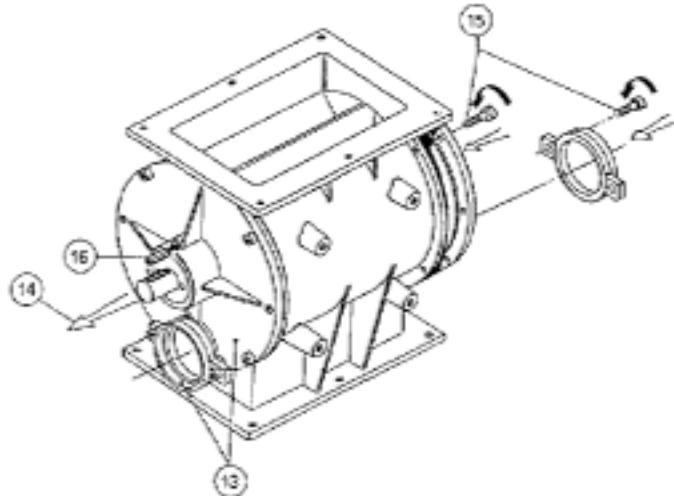
**10** - Change and reassemble the worn components in the following order: seal, ring, spacer, seal ring, circlip

**11** - Replace the bearing in its seat up against the circlip

**12** - Screw on the adjustment ring nut so as to leave it protruding about 2mm from the outside of the hub and thus facilitate positioning of the bearing when the rotor is reassembled

The following rules should be followed before reassembling the valve:

- Thoroughly clean all working parts and remove any product residues or metal particles.
- Check the stator for signs of wear
- Check the rotor for signs of wear or any dents caused by handling during disassembly or foreign bodies inside the line, and remedy as required.
- When seal rings are changed, it is advisable to fill their inside cavities with grease before replacing them in their seats, to prevent them from becoming dry and wearing out earlier than expected.



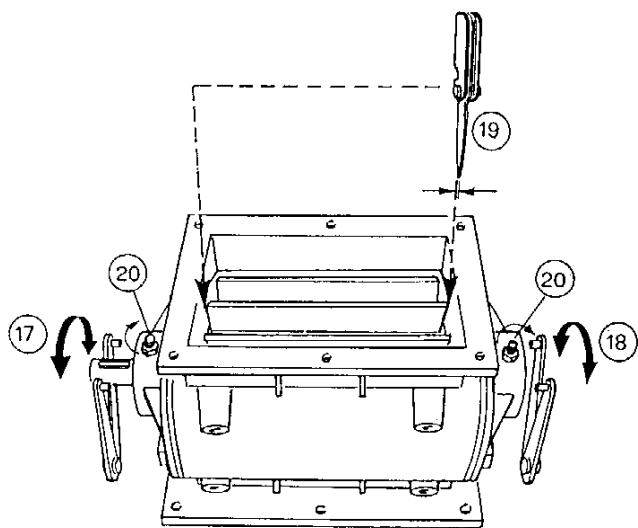
- 13 - Bolt the front flange to the valve body  
 14 - Carefully insert the rotor in the stator and position against the already remounted front flange  
 15 - Carefully mount the rear flange on the drive shaft and attach it to the body with the provided bolts

**NB:** Very great care must be taken during the (14) and (15) operations to see that no damage is caused to the sealing elements when the seats of the drive shaft are inserted in the hub of the flange.

- 16 - Mount the key on the protruding end of the drive shaft and position it in its seat

## § 5.5

## ADJUSTMENT OF THE END PLAY



A - Make sure that the bearings are correctly positioned against the shoulder of the shaft seating. To do this, screw the ring nut (17) down until it meets resistance. Repeat this operation on the opposite ring nut (18)

B - Now slacken the ring nuts (17) and (18) about half a turn to take the thrust off the bearings. This will allow the drive shaft and hence the rotor to move axially so that the end play can be adjusted. Use a compass spanner to turn one ring nut or the other right or left to obtain the axial shift movements required. The axial movement in the right and left direction is obtained by turning the two ring nuts. Use a compass key to do it.

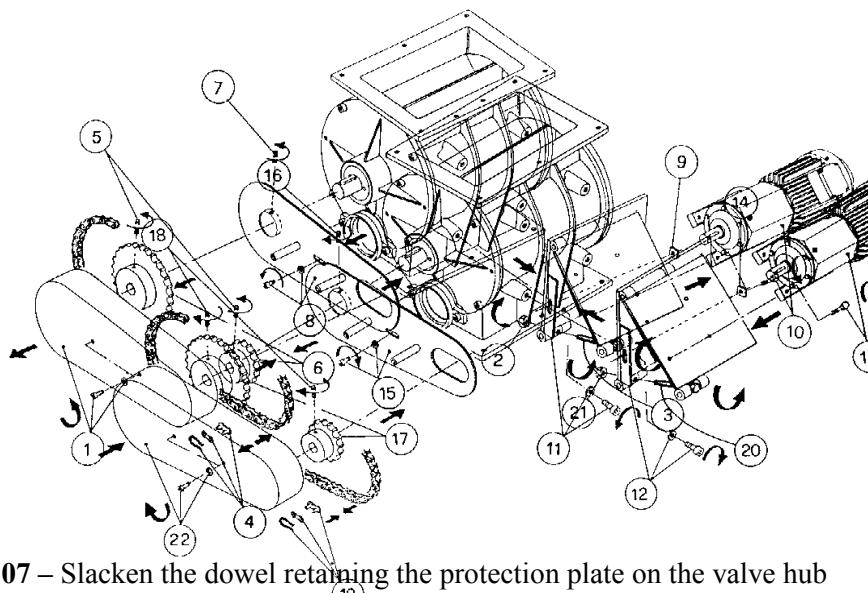
- C - Check the clearance between the rotor and the flange (19) by inserting a feeler gauge at the points indicated  
 D - To adjust the end play between the rotor and the stator, impose a thrust on the bearing by turning the ring nut on the side where the clearance was found to be less in step "C".

**N.B.** After this adjustment, the end play between the rotor and the stator must be the same on both sides and be included between the expected values. See the list at page 1.

E - Now repeat step "D" on the other side. Exert pressure on the bearing by tightening the opposite ring nut to offset the thrust of the two bearings. Then keep the end play (as in "C") under constant observation and turn one ring nut and the other alternatively with greater force until the setting becomes distinctly harder. Check the state of the thread protection shim and replace if necessary. Lock the ring nuts in their present position with the dowels and nuts (20)

It is advisable to turn the rotor by hand during the adjustment process to check the perfect operation and correct assembly and settings of the working parts.

**NOTE:** When the end of the drive shaft is operated by hand, the rotor must turn freely and effortlessly (apart from the initial inertia) and not touch the flange or the stator. If this is not the case, check the clearances and the concentricity of the rotor with respect to the seats of bearings. Make sure that the ring nuts are not too tight and there are no dents in the rotor tips.



- 01 - Remove the bolts and washers and take off the housing
- 02 - Slacken the lock nut on the chain tautness adjustment tie rod
- 03 - Screw the tie rod up fully to slacken the chain
- 04 - Use a screwdriver to remove the safety catch on the junction link. Take off this link and remove the chain
- 05 - Slacken the locking dowels on the sprocket and crown wheel hubs
- 06 - Use a puller to remove the sprocket and crown wheel from the respective geared motor and valve shafts

07 – Slacken the dowel retaining the protection plate on the valve hub

08 – Remove the bolt fixing the protection plate to the geared motor attachment assembly

09 – Put aside the threaded plate locking the protection plate on the geared motor mounting plate

10 – Unbolt the geared motor from its mounting plate

11 – Unbolt the geared motor mounting plate from the valve

## § 5 . 7

## REASSEMBLY OF THE CHAIN DRIVE

12 - Bolt the geared motor mounting plate to the valve

13 - Bolt the geared motor to its mounting plate . Screw up the chain tautness adjustment tie rod (20) and attach its lock nut (21)

14 - Position and hold still the threaded plate locking the protection plate

15 - Position the protection plate and loosely bolt it to the threaded plate

16 - Slightly unscrew the dowel using a slight pressure to hold the plate still without fixing it

17 – Mount the sprocket and crown wheel on their shafts and align them on the same axis

18 – Lock the sprocket and crown wheel in their aligned positions (17) with the dowels on their hubs

19 – Mount the chain and fasten its ends together with the junction link

20 – Adjust the tautness of the chain with the threaded tie rod

**NB: The chain should be taut, but not over-tight since this could cause distortion and yielding of the valve structure , and result in poor operation of the valve, noisiness or seizing of the rotor.**

21 – Lock the nut (21). Position the protection plate making sure that the chain has enough room to turn and does not cause any impediment or rubbing when the housing is mounted. Lock the plate in its correct position with bolts (15) and (16)

- The warranty refers to the perfect execution of the machine. The SOLMEC. company doesn't guarantee this machine for a settled period because working conditions change from plant to plant and they are deeply influenced by the kind of conveyed material.
- The Olocco&C. is not responsible for adjustments or alterations made by the customer or for the use of not original spare parts.
- The Olocco &C. reserves the right to modify this product at any moment without pledging itself to update this guide.

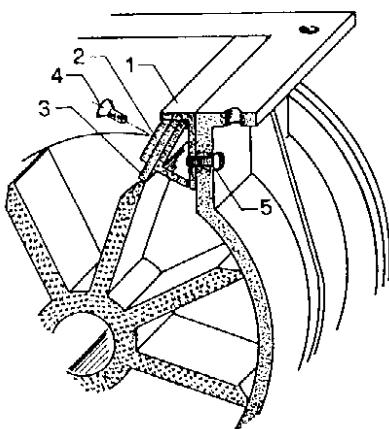
***§ 5 . 11******REMEDIES FOR POSSIBLE PROBLEMS***

<b>PROBLEM</b>	<b>POSSIBLE REASON</b>		<b>REMEDY</b>
<b>Insufficient capacity</b>	<b>①</b>	The product isn't correctly feeded.	Check how the valve is feeded.
	<b>②</b>	Too low rotation speed.	Increase the rotation speed.
	<b>③</b>	Insufficient air leakage.	Check the air leakage.
<b>Excessive noise</b>	<b>①</b>	The product is inclined to be stick on the inner surface of the body and the flanges.	Not proper choice of the rotor
	<b>②</b>	Too low clearances between rotor /body or rotor/flanges.	Increase the clearances between rotor/body or rotor/flanges (*).
<b>Getting out of product from the flanges</b>	<b>①</b>	Faulty seals on the shaft	Replace the seals.
<b>Not uniform movement of the rotor</b>	<b>①</b>	Faulty bearing	Check and replace the bearing if necessary.
	<b>②</b>	Faulty chain	Check the whole chain drive system.
	<b>③</b>	Not aligned gears	Align the gears
	<b>④</b>	Loosened chain	Tighten the chain
<b>Seized valve</b>	<b>①</b>	Foreign bodies in the rotor	Disassemble and repair the rotor
	<b>②</b>	Too high temperature	Increase the clearances between rotor/body or rotor/flanges (*).

***(\*) BE CAREFUL: before doing such an operation please contact our technical office***

***NOTE: These examples of remedies for possible problems must not be considered the only ones.***

### SLIP OFF



It's a mechanical device inserted in the intake mouth of the valve to prevent infiltration and jamming of the product between the rotor blade and the stator. Normally it is used to convey or meter granular products. Its main component is a wulkollan strip on a galvanised steel or AISI304 stainless steel mounting.

### COMPONENTS

- 1 - Mounting
- 2 - Blade cover
- 3 - Wulkollan strip
- 4 - Attachment bolt TS.EI M6x15
- 5 - attachment bolt TC.EI M8x15/20

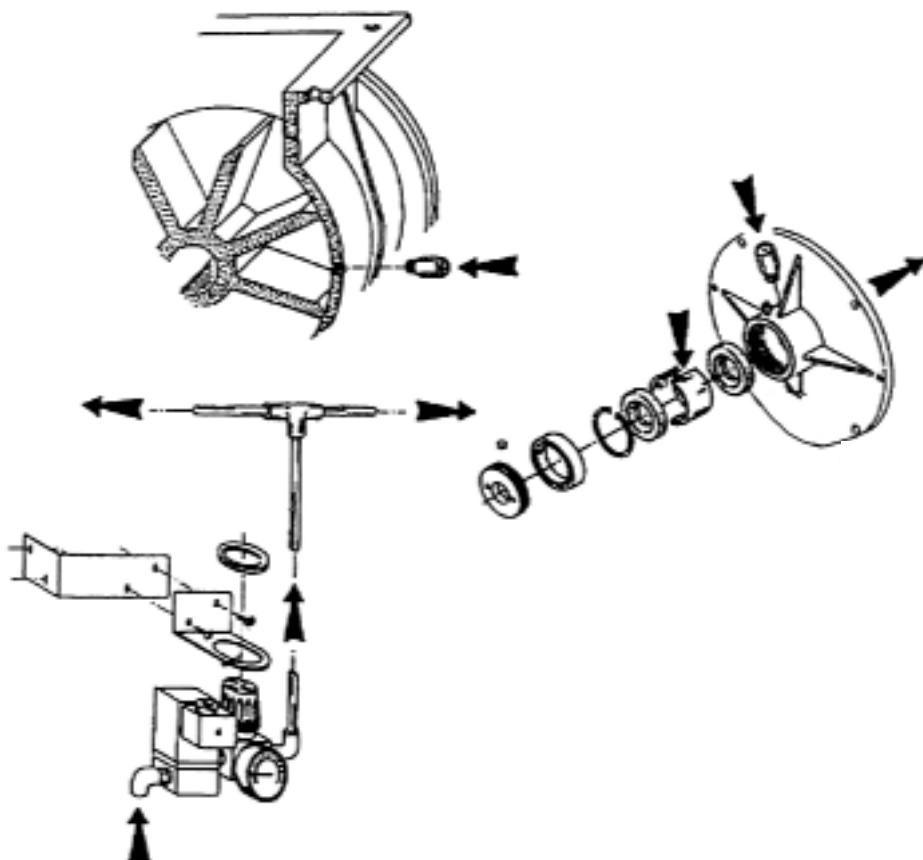
### AIR INJECTION

These rotary valves can be fitted with an air union on the body to clean rotor and inside of the valve from time to time, or more commonly on the flange hub to ensure the more effective operation of the seal rings and better protection of the bearings with regard to the product being conveyed (mainly when it is very fine or aggressive). It is available, on request, the "air injection kit":

- electrovalve with single coil
- pressure gauge
- air regulator
- mounting brackets.

The following air injection pressure values are suggested:

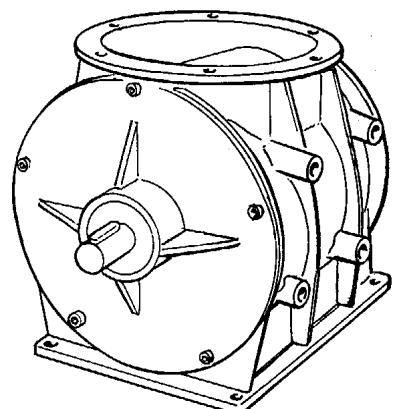
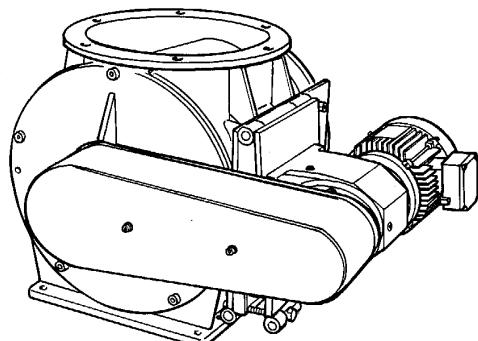
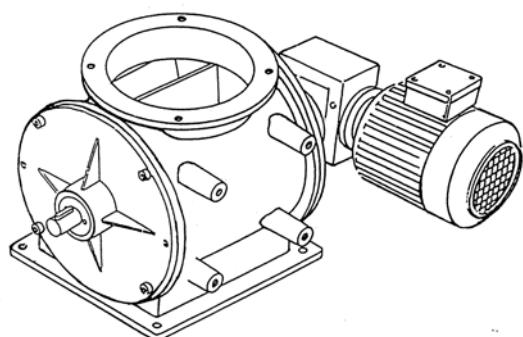
- **5 bar** with air union in the body
- from **0,5** to **1,5 bar** more than the pneumatic conveying line pressure with air union on the flange



***ROTARY VALVE TYPE***

**“VPR”**

***ITEM 62Z1***



***EDITION 1/02***



***USE AND MAINTENANCE GUIDE***

## § 1.0

## GENERAL DESCRIPTION OF THE VALVE

The “VPR” drop-through rotary valves are suitable for the metering and conveying of powders and granulated products on medium and low pressure pneumatic lines. Thanks to the type of construction, the several rotors and the very low tolerances between rotor-stator and rotor-flange, they ensure an excellent tightness. These valves have been designed to enable them to be specifically adapted to all the products and the requirements of the customer. Simple assembly and maintenance operations allow the quick checking and/or replacement of their components without the use of particular tools, or the need to call in a specialised serviceman. The operating pressure during conveyance and the speed of rotation are two parameters of great importance for the excellent operation and performance of the valve. Close attention should therefore be paid to their recommended values

### § 1.1

### MAIN COMPONENTS

A “VPR” rotary valve mainly consists of:

N°1 Valve body, usually in G25 cast iron or stainless steel AISI316.

N°1 Rotor in electrowelded mild steel or electrowelded stainless steel AISI 316.

N°2 Side flanges, usually in G25 cast iron or AISI316 stainless steel

The valve can also be supplied already fitted with a chain drive composed of:

N°1 Electrowelded steel hinged plate for attachment of the geared motor.

N°1 Sheet metal guard plate.

N°1 Drive unit (crown wheel, pinion and chain).

N°1 Standard 220/380V – 50Hz geared motor

N°1 Sheet metal safety housing

### § 1.2

### TECHNICAL DATA

VALVE TYPE	VPR180	VPR230	VPR270	VPR300	VPR350	VPR400
VOLUMETRIC CAPACITY (l/rotation)	3	6	11	17	30	48
MAX.SPEED RATE. (RPM)	35*	35*	35*	35*	35*	35*
MAX. DIFF. OF PRESSURE (bar)	1*	1*	1*	1*	1*	1*
RANGE OF TEMPERATURE (°C)	-15÷60	-15÷60	-15÷60	-15÷60	-15÷60	-15÷60
CLEARANCE ROTOR / BODY (mm)**	0,05÷0,10	0,05÷0,10	0,05÷0,10	0,10÷0,15	0,10÷0,15	0,15
CLEARANCE rotor / flange (mm)**	0,05÷0,10	0,05÷0,10	0,05÷0,10	0,10÷0,15	0,10÷0,15	0,10÷0,15
WEIGHT – BARE SHAFT (Kg)	31	51	76	95	167	218
WEIGHT with CHAIN DRIVE (Kg)	61	82	113	158	244	295

\* MAX suggested values - \*\* standard values (they can change according to the type of product and temperature)

### § 1.3

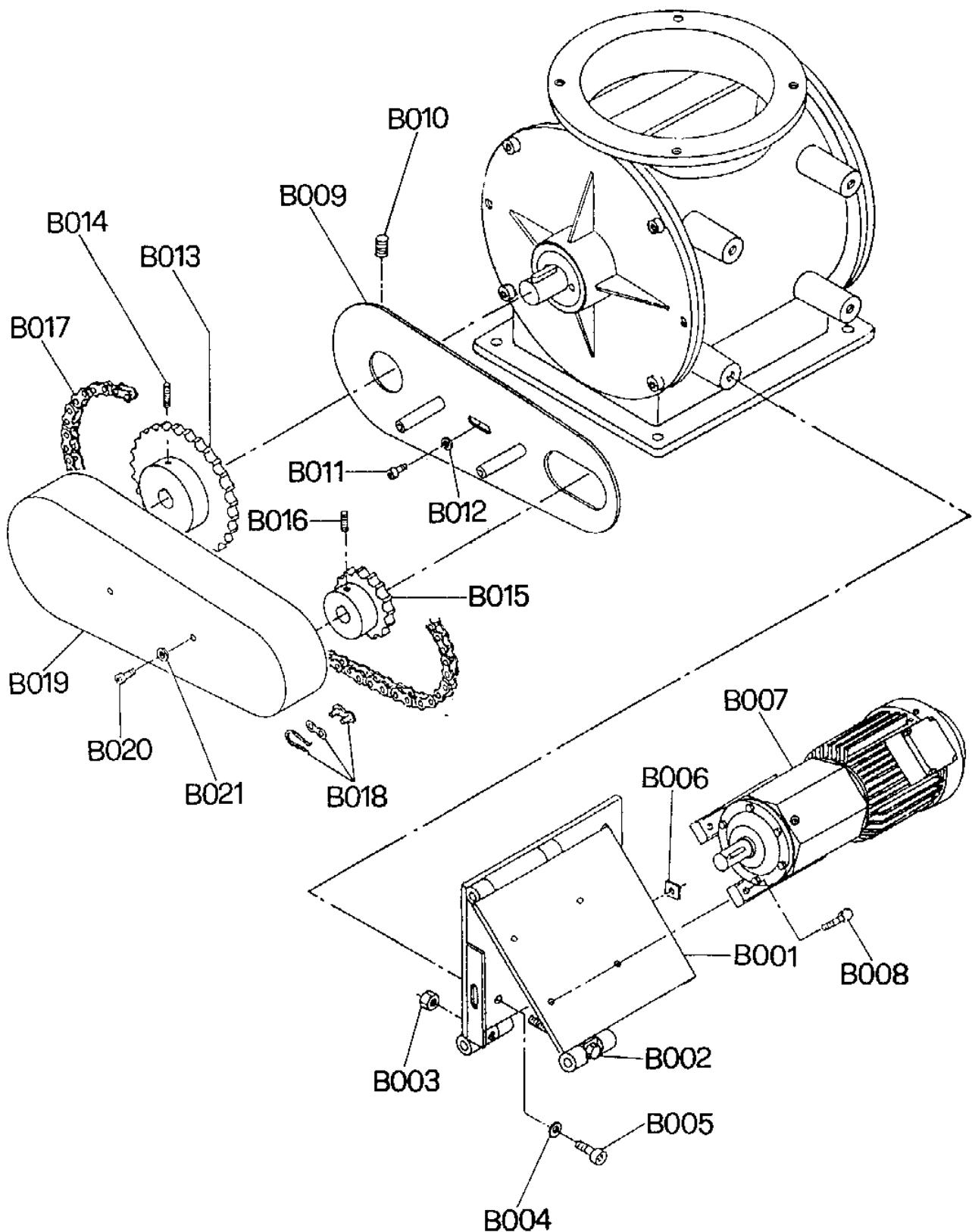
### PRODUCT IDENTIFICATION

Each valve is identified by means of a data-plate placed upon the valve body and having the following informations:

- Name of the producer
- CE mark
- Type of the valve
- Register number
- Year of construction
- Weight



*For no reason the plate should be removed or modified..*



### § 2.3 SPARE PARTS – WITH CHAIN DRIVE

<b>Pos.</b>	<b>Q.ty</b>	<b>Description</b>	<b>VPR180</b>	<b>VPR230</b>	<b>VPR270</b>	<b>VPR300</b>	<b>VPR350</b>	<b>VPR400</b>	<b>Material</b>	<b>Reference</b>	
<b>B001</b>	01	Motor-plate	<b>VPR180</b>	<b>VPR230</b>	<b>VPR270</b>	<b>VPR300</b>	<b>VPR350</b>	<b>VPR400</b>	<i>Fe37 steel</i>	--	
<b>B002</b>	01*	Chain tightener	<i>M14 x 120</i>	<i>M14 x 120</i>	<i>M14 x 120</i>	<i>M14 x 130</i>	<i>M14 x 130</i>	<i>M14 x 130</i>	<i>cl 5.8 Zn steel</i>	<i>UNI 5739-65</i>	
<b>B003</b>	01*	Hex.screw nut	<i>M14</i>	<i>M14</i>	<i>M14</i>	<i>M14</i>	<i>M14</i>	<i>M14</i>	<i>cl 8.8 Zn steel</i>	<i>UNI 5588-65</i>	
<b>B004</b>	04	Washer	<i>Di 8,4 De17</i>	<i>Di 10,5 De21</i>	<i>Di 10,5 De21</i>	<i>Di 13 De24</i>	<i>Di 13 De24</i>	<i>Di 13 De24</i>	<i>R40 Zn steel</i>	<i>UNI 6592-69</i>	
<b>B005</b>	04	Hex.sock head cap screw	<i>TC-EI M8x20</i>	<i>TC-EI M10x25</i>	<i>TC-EI M10x25</i>	<i>TC-EI M12x30</i>	<i>TC-EI M12x30</i>	<i>TC-EI M12x30</i>	<i>cl 8.8 Zn steel</i>	<i>UNI 5931-67</i>	
<b>B006</b>	01	Small plate	<b>VPR180</b>	<b>VPR230</b>	<b>VPR270</b>	<b>VPR300</b>	<b>VPR350</b>	<b>VPR400</b>	<i>C40 steel</i>	--	
<b>B007</b>	01	SEW gearmotor	<i>0,37Kw</i>	<i>0,55Kw</i>	<i>0,75Kw</i>	<i>1,1Kw</i>	<i>1,5Kw</i>	<i>2,2</i>	--	--	
<b>B008</b>	04	Hex.head screw	<i>TE M8x30</i>	<i>TE M8x30</i>	<i>TE M8x30</i>	<i>TE M12x40</i>	<i>TE M12x40</i>	<i>TE M12x40</i>	<i>cl 8.8 ZB steel</i>	<i>UNI 5725-65</i>	
<b>B009</b>	01	Protection plate	<b>VPR180</b>	<b>VPR230</b>	<b>VPR270</b>	<b>VPR300</b>	<b>VPR350</b>	<b>VPR400</b>	<i>steel sheet.P011</i>	--	
<b>B010</b>	01	Hex.headless conic point screw	<i>EI M8x16</i>	<i>EI M8x16</i>	<i>EI M8x16</i>	<i>EI M8x16</i>	<i>EI M8x16</i>	<i>EI M8x16</i>	<i>cl 8.8 Zn steel</i>	<i>UNI 5923-67</i>	
<b>B011</b>	01	Hex.sock head cap screw	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>cl 8.8 Zn steel</i>	<i>UNI 5931-67</i>	
<b>B012</b>	01	Washer	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>R40 Zn steel</i>	<i>UNI 6592-69</i>	
<b>B013</b>	01	Gear	<i>max Z36 1/2 S/D</i>	<i>max Z36 5/8 S</i>	<i>max Z36 5/8 S</i>	<i>max Z44 5/8 D</i>	<i>max Z54 5/8D</i>	<i>max Z54 5/8D</i>	<i>C43 steel</i>	<i>DIN 8187</i>	
<b>B014</b>	01	Hex.headless conic point screw	<i>EI M6x16</i>	<i>EI M6x16</i>	<i>EI M6x16</i>	<i>EI M6x16</i>	<i>EI M8x16</i>	<i>EI M8x16</i>	<i>Hardened temp.steel</i>	<i>UNI 5923-67</i>	
<b>B015</b>	01	Gear	<i>max Z20 1/2 S</i>	<i>max Z20 5/8 S</i>	<i>max Z20 5/8 S</i>	<i>max Z20 5/8 D</i>	<i>max Z24 5/8D</i>	<i>max Z24 5/8D</i>	<i>C43 steel</i>	<i>DIN 8187</i>	
<b>B016</b>	01	Hex.headless conic point screw	<i>EI M6x10</i>	<i>EI M6x10</i>	<i>EI M6x10</i>	<i>EI M6x10</i>	<i>EI M8x16</i>	<i>EI M8x16</i>	<i>Hardened steel</i>	<i>UNI 5923-67</i>	
<b>B017</b>	01	Chain	<i>ISO 08B-1 1/2</i>	<i>ISO 10B-1 5/8</i>	<i>ISO 10B-1 5/8</i>	<i>ISO 10B-2 5/8</i>	<i>ISO 10B-2 5/8</i>	<i>ISO 10B-2 5/8</i>	<i>I6 NiCr 11 steel</i>	<i>DIN 8187</i>	
<b>B018</b>	01	Chain joint	<i>ISO 08B-1 1/2</i>	<i>ISO 10B-1 5/8</i>	<i>ISO 10 B-1 5/8</i>	<i>ISO 10 B-2 5/8</i>	<i>ISO 10 B-2 5/8</i>	<i>ISO 10 B-2 5/8</i>	<i>I6 NiCr 11 steel</i>	<i>DIN 8187</i>	
<b>B019</b>	01	Protection casing	<b>VPR180</b>	<b>VPR230</b>	<b>VPR270</b>	<b>VPR300</b>	<b>VPR350</b>	<b>VPR400</b>	<i>Steel sheet.P011</i>	--	
<b>B020</b>	02	Hex.sock head cap screw	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>TC-EI M8x15</i>	<i>cl 8.8 Zn steel</i>	<i>UNI 5931-67</i>	
<b>B021</b>	02	Washer	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>Di 8,4 De17</i>	<i>R40 Zn steel</i>	<i>UNI 6592-69</i>	
*	02		<b>VPR300-350-400</b>								



SOLMEC S.R.L.  
IMPIANTI &  
MACCHINE

*Rotary valve type VPR:*  
**SPARE PARTS**

**UM 01/01 Date:05-11-01**  
**SECT.2 - REV.0 PAGE 8/19**

The valve is usually dispatched already assembled after dry-testing in the workshop. On its arrival the customer must carefully check the consignment dockets to make sure that his order has been fully and correctly complied with. If a valve has to be stored in the yard for a short period, its intake mouth must be covered with tarpaulins to prevent direct exposure to the weather, rust and dampness, together with the likely entry of dust and fragments of particles of various kinds that could be responsible for incorrect operation of the valve or damages to rotor/stator when it is brought into use.

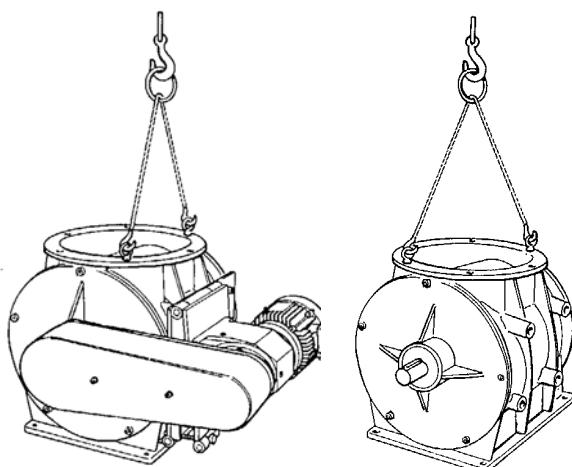
If a valve has to be stored for a long time, the same protection must be provided with the maximum care. In addition, its machined parts must be lubricated and all its components must be duly protected. Before starting to use the valve, it is always advisable to check that its interior is clean and free from foreign bodies. If necessary, clean the inside with a clean cloth while turning the rotor by hand.



**BEFORE CLEANING THE INSIDE OF THE VALVE, MAKE ABSOLUTELY SURE THAT THE MOTOR IS DISENGAGED FROM ALL ELECTRICAL CONNECTIONS. GREAT ATTENTION MUST BE PAID TO THE HANDS WHEN TURNING THE ROTOR MANUALLY**

## § 3.1

## LIFTING AND HANDLING



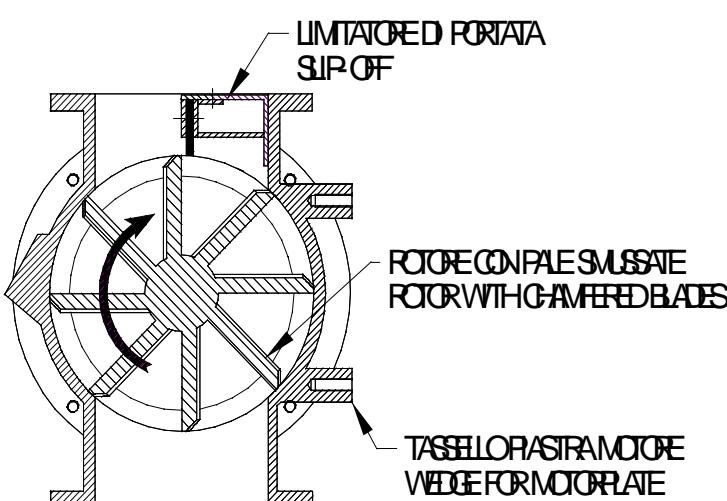
Particular care must be exercised when handling the rotary valve to prevent damage to its components, such as the top and bottom flanges, the guards, the geared motor, the protruding shaft and accessories, and impairment of its specifications and regular operation. It should be anchored at the points indicated and raised with appropriate means when being stored or set in place.



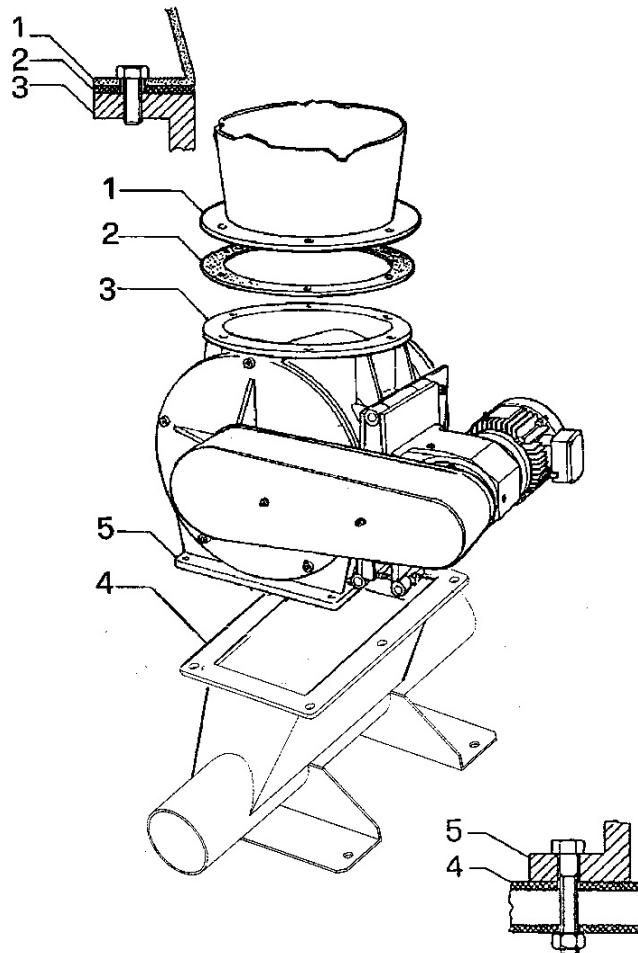
**NEVER REMAIN BELOW THE VALVE NOR REPAIR IT WHEN IT IS SUSPENDED ABOVE THE GROUND**

## § 4.0

## INSTALLATION

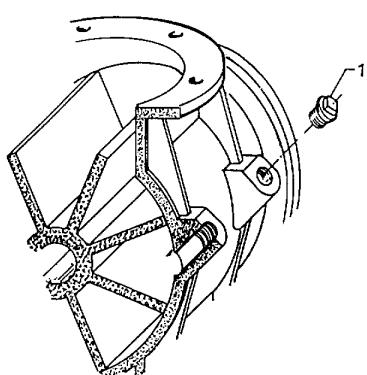
**ROTATING DIRECTION:**

If the valve is supplied with a complete chain drive the right direction is shown by an arrow placed upon the safety guard. Anyway there is one right direction only (see the side sketch) if there are tips or chamfered blades upon the rotor, when there is a slip-off or when vent holes are used.



1) Hopper; 2) Seal; 3) Upper valve flange; 4) Injector; 5) Below valve flange

**!** ANY KIND OF ABNORMAL LOAD, THRUST, STRAIN OR DISTORTION MAY RESULT IN AN INCORRECT OPERATION OF THE ROTARY VALVE



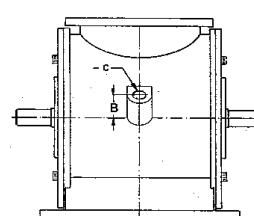
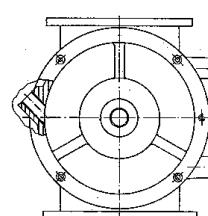
In order to extract the air taken above from the rotor during its turning (after the discharge of the material) each valve is supplied with **VENT HOLES**.

*It is recommended to link these holes to a filter or a suction system in particular if the product is light or where there isn't a separation between air and product in the hopper.*



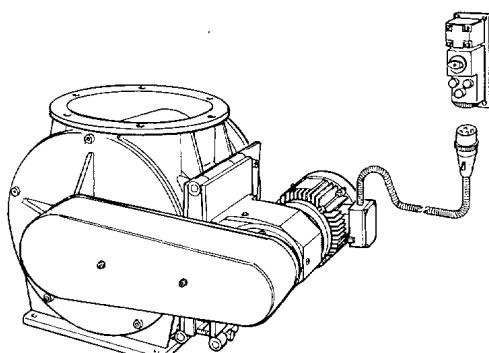
**WHEN NOT IN USE, THE HOLES MUST UNDER ALL CIRCUMSTANCES REMAIN SEALED WITH THE SUPPLIED PLUGS.**

TYPE	180	230	270	300	350	400
A	--	--	--	130	208	210
B	25	27	31	31	42	42
C	3/4 G	3/4G	3/4G	3/4G	1G	1G
n° fori	1	1	1	2	2	2



The electrical connections, wirings, protective devices and all other safety measures must conform to the local standards in force.

Unless otherwise indicated, the standard mains supply is **220/380V at 50Hz**.



*To prevent accidents and ensure greater safety during operations carried out on the valve after it is installed, it is advisable to provide for the installation of a cut-out switch with an EU standard bayonet plug near the valve. Disengagement of this plug from the switch will make it absolutely certain that the main supply is disconnected from the motor.*

## § 4.2

## PRELIMINARY OPERATIONS

The following checks should be carried out before starting to use the valve:

- Make sure that no foreign bodies have been forgotten or accidentally dropped inside the valve
- Make sure that all the components and any accessories are correctly assembled and mounted.
- Check that all the components employed to attach the valve to the base are firmly tightened
- Carry out a free run to make sure that the direction of rotation of the valve and its operation are correct. Check that the structure has not been affected by any yielding stresses or distortions during its installation on the line

## § 4.3

## START-UP

On completion of the checks listed in para.4.2, the rotary valve can be brought into operation. It is none the less advisable to carry out some initial runs with very small quantities of product keeping the valve under control via the electrical panel.

## § 4.4

## SAFETY PRECAUTIONS



- Each rotary valve is composed of a stator (body) and a rotor turned by a geared motor. All cleaning, checking, maintenance and disassembly operations must be performed with the rotor at rest and after disconnecting the electrical supply from the motor. The maximum caution and prudence is none the less advisable during the execution of any operation and intervention..
- Each rotary valve is a component and integral part of a plant and cannot be used on its own. It will thus be the responsibility of the plant designer to make sure that machine parts that can be freely reached from the outside are duly protected against careless intrusions on the part of the user.
- Due attention must be paid to the weight of the valve (as shown on its data plate) when it is being handled, installed and maintained. These operations are in any event governed by general work safety regulations.
- Rotary valves are supplied with vent holes closed by plugs which can be removed with a tool. These plugs must never be removed except when the hole is connected to a suction plant.
- A valve that comes into contact with hot products will itself transmit heat to the outside and care should be taken to avoid touching its parts in situations of this kind

The "VPR" rotary valves do not require any special attention. The routine maintenance operations are the following:

- Every three months lubricate the seal rings inside the flange mounting with a vegetable grease appropriate to the operating temperature.
- Every three months lubricate the drive chain with special graphite grease.
- The bearings are sealed, shielded on both sides and lubricated for life.
- Life of bearings and seal rings is deeply influenced by the product to which they are exposed and by the working conditions of the whole plant so it is nearly impossible to establish before using. Anyway it is recommended to replace the bearings (and the seal rings too) when the valve might become noisy while turning.

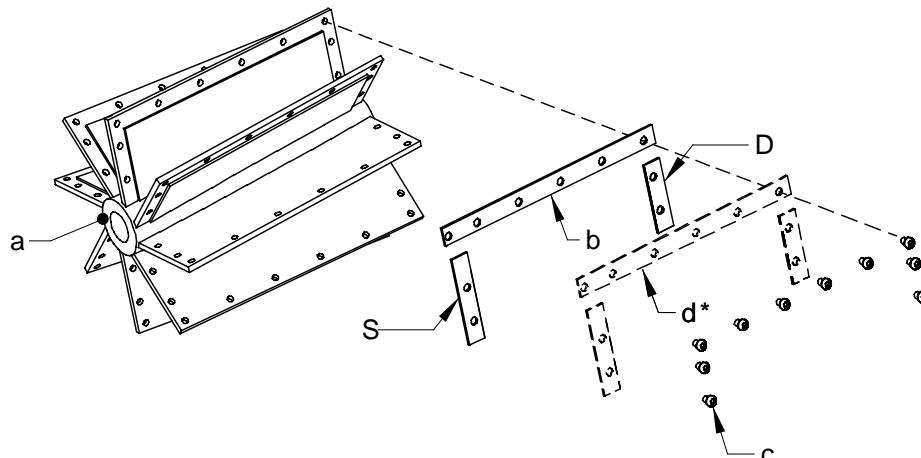
## § 5 . 1

## HOW TO REPLACE ROTOR TIPS

To replace the hardened steel tips of the rotor proceed as here described:

- 1) Using a screw-driver, remove the screws M8-EI, which close the tips on the rotor blades.
- 2) Clean the area where you will fit the new tips, removing dirtiness and powder.
- 3) Fit on both later sides the short tips. Please pay attention to put them in contact with the hub.

**NOTE: in the inclined blades versions, side hardened steel tips are made with different length so it is recommended to remove the old side tips from a blade only and measure them before removing all.**



pos.	description	material
a	rotor	steel / stainless steel
b	tip	hardened steel / st.steel / vulkollan / rubber / PTFE teflon
c	screw round head hexagonal socket M8x10	88 galvanised steel / stainless steel
d *	cover blades (for vulkollan, rubber, teflon)	steel / stainless steel

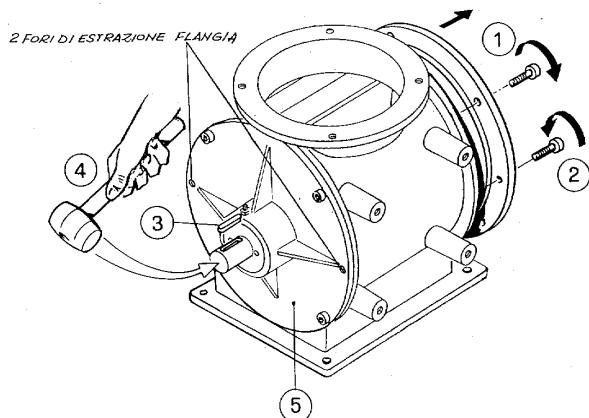
- 4) Fix to each blade the top tips
- 5) Pay attention top tips are in contact with the upper surface of the side tips without leaving any space between.

*After you have ended the fitting of all tips you have to turn the rotor in a lathe to get the correct diameter and length of the rotor (see page 1 for the standard clearances between rotor and body). This is necessary because tips are supplied 1mm longer than their final dimension to allow a correct installation.*

#### For further information please contact the Solmec

- To replace teflon or vulkollan tips it is necessary to do the same operations but please consider the play between the rotor and the body should be smaller (about 0,05mm)
- To replace black rubber tips you should consider the rotor diameter, after replacing the tips, should be about 4mm larger than the inner diameter of the body in order to allow the right flexion of the tip itself. The same for the axial direction where the rotor length should be about 4mm longer than that of the body (don't forget to consider the protruding part of the flange to calculate the right dimension). Once replaced rubber tips don't need to be turned

When a maintenance operation is necessary, the valve can be disassembled without being removed from its place of installation if there is enough room and the conditions are satisfactory. Operations of this type, however, should be preferably be carried out in the workshop. Dismantling, checking and/or replacement of mechanical parts, seal rings and bearings can be easily performed by servicemen with the aid of these instructions.



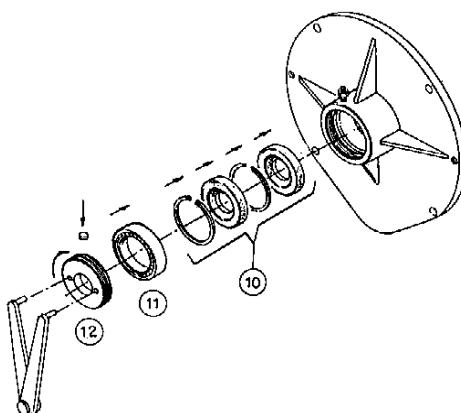
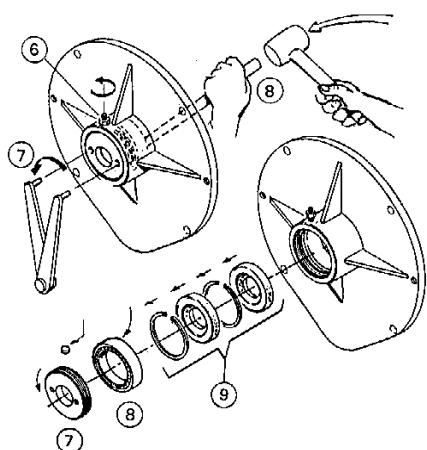
**01** - Remove the bolts locking the rear flange of the valve.

**02** - Insert two of these bolts in threaded holes (F) in the flange and take it off

**03** - Remove the key from the seat of the drive shaft to allow the extraction of the rotor

**04** - Strike the protruding end of the shaft with a rubber or lead mullet until it comes away from the seat of the bearing. Then remove the rotor from the stator from the opposite side

**05** - Repeat steps 01 and 02 to take off the front flange



**06** - Slacken the nut and locking dowel of the adjustment ring

**07** - Unscrew the ring nut and (if necessary) the thread protection shim

**08** - Drive the bearing out from inside with a hammer and a (preferably aluminium) punch

**09** - Take out the other components in the following order: circlip, seal ring, spacer, seal ring

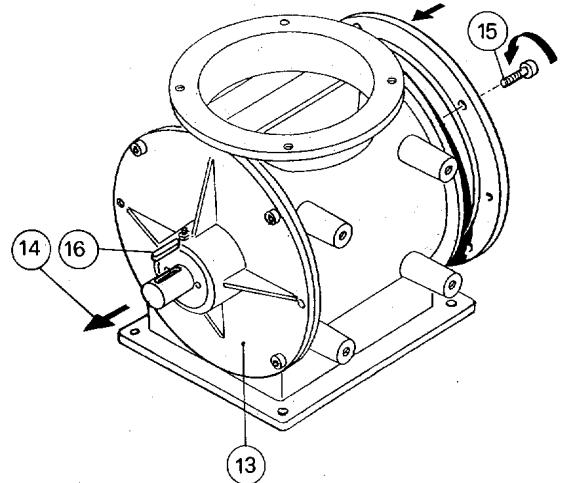
**10** - Change and reassemble the worn components in the following order: seal, ring, spacer, seal ring, circlip

**11** - Replace the bearing in its seat up against the circlip

**12** - Screw on the adjustment ring nut so as to leave it protruding about 2mm from the outside of the hub and thus facilitate positioning of the bearing when the rotor is reassembled

The following rules should be followed before reassembling the valve:

- Thoroughly clean all working parts and remove any product residues or metal particles.
- Check the stator for signs of wear
- Check the rotor for signs of wear or any dents caused by handling during disassembly or foreign bodies inside the line, and remedy as required.
- When seal rings are changed, it is advisable to fill their inside cavities with grease before replacing them in their seats, to prevent them from becoming dry and wearing out earlier than expected.



**13** - Bolt the front flange to the valve body

**14** - Carefully insert the rotor in the stator and position against the already remounted front flange

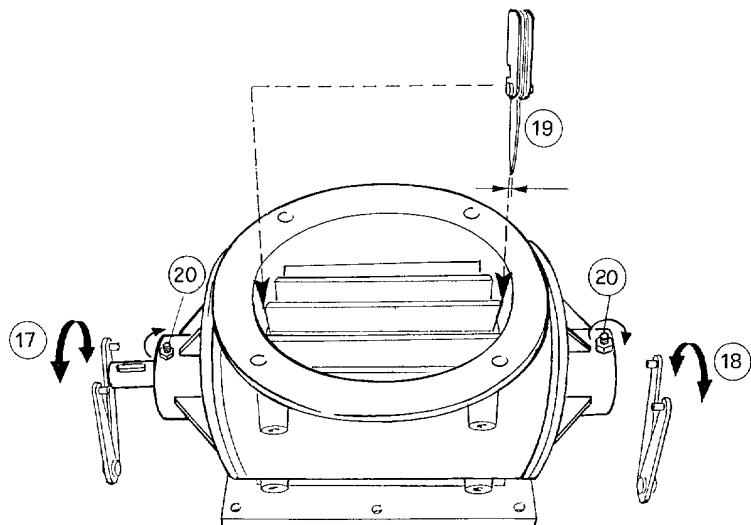
**15** - Carefully mount the rear flange on the drive shaft and attach it to the body with the provided bolts

**NB:** Very great care must be taken during the (14) and (15) operations to see that no damage is caused to the sealing elements when the seats of the drive shaft are inserted in the hub of the flange.

**16** - Mount the key on the protruding end of the drive shaft and position it in its seat

## § 5.5

### ADJUSTMENT OF THE END PLAY



**A** - Make sure that the bearings are correctly positioned against the shoulder of the shaft seating. To do this, screw the ring nut (17) down until it meets resistance. Repeat this operation on the opposite ring nut (18)

**B** - Now slacken the ring nuts (17) and (18) about half a turn to take the thrust off the bearings. This will allow the drive shaft and hence the rotor to move axially so that the end play can be adjusted. Use a compass spanner to turn one ring nut or the other right or left to obtain the axial shift movements required. The axial movement in the right and left direction is obtained by turning the two ring nuts. Use a compass key to do it.

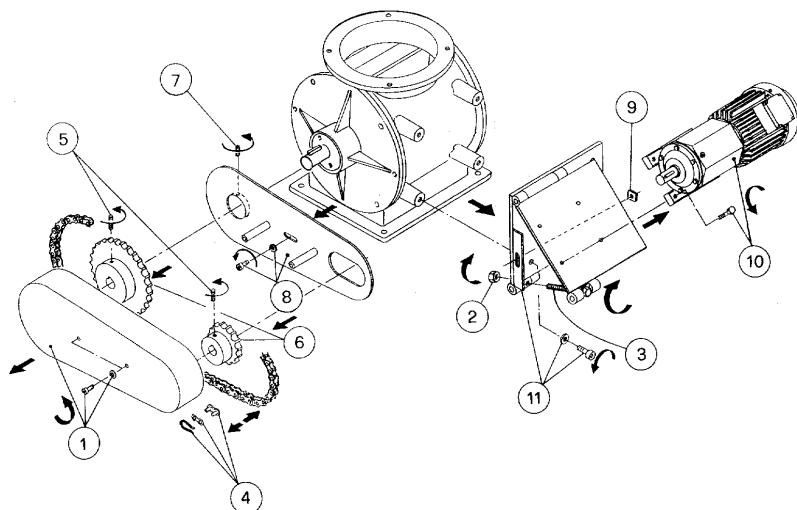
**C** – Check the clearance between the rotor and the flange (19) by inserting a feeler gauge at the points indicated  
**D** - To adjust the end play between the rotor and the stator, impose a thrust on the bearing by turning the ring nut on the side where the clearance was found to be less in step "C".

**N.B.** After this adjustment, the end play between the rotor and the stator must be the same on both sides and be included between the expected values. See the list at page 1.

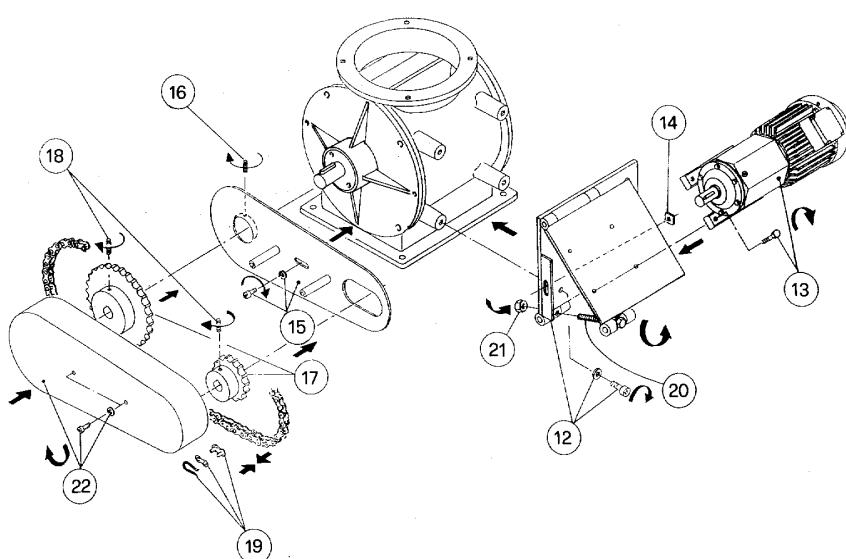
**E** – Now repeat step "D" on the other side. Exert pressure on the bearing by tightening the opposite ring nut to offset the thrust of the two bearings. Then keep the end play (as in "C") under constant observation and turn one ring nut and the other alternatively with greater force until the setting becomes distinctly harder. Check the state of the thread protection shim and replace if necessary. Lock the ring nuts in their present position with the dowels and nuts (20)

It is advisable to turn the rotor by hand during the adjustment process to check the perfect operation and correct assembly and settings of the working parts.

**NOTE:** When the end of the drive shaft is operated by hand, the rotor must turn freely and effortlessly (apart from the initial inertia) and not touch the flange or the stator. If this is not the case, check the clearances and the concentricity of the rotor with respect to the seats of bearings. Make sure that the ring nuts are not too tight and there are no dents in the rotor tips.

**§ 5 . 6****DISASSEMBLY OF THE CHAIN DRIVE**

- 07** – Slacken the dowel retaining the protection plate on the valve hub
- 08** – Remove the bolt fixing the protection plate to the geared motor attachment assembly
- 09** - Put aside the threatened plate locking the protection plate on the geared motor mounting plate
- 10** – Unbolt the geared motor from its mounting plate
- 11** – Unbolt the geared motor mounting plate from the valve

**§ 5 . 7****REASSEMBLY OF THE CHAIN DRIVE**

- 17** – Mount the sprocket and crown wheel on their shafts and align them on the same axis
  - 18** – Lock the sprocket and crown wheel in their aligned positions (17) with the dowels on their hubs
  - 19** – Mount the chain and fasten its ends together with the junction link
  - 20** – Adjust the tautness of the chain with the threaded tie rod
- NB: The chain should be taut, but not over-tight since this could cause distortion and yielding of the valve structure , and result in poor operation of the valve, noisiness or seizing of the rotor.**
- 21** – Lock the nut (21). Position the protection plate making sure that the chain has enough room to turn and does not cause any impediment or rubbing when the housing is mounted. Lock the plate in its correct position with bolts (15) and (16)

- 01** - Remove the bolts and washers and take off the housing
- 02** - Slacken the lock nut on the chain tautness adjustment tie rod
- 03** - Screw the tie rod up fully to slacken the chain
- 04** - Use a screwdriver to remove the safety catch on the junction link. Take off this link and remove the chain
- 05** - Slacken the locking dowels on the sprocket and crown wheel hubs
- 06** - Use a puller to remove the sprocket and crown wheel from the respective geared motor and valve shafts

- 12** - Bolt the geared motor mounting plate to the valve
- 13** - Bolt the geared motor to its mounting plate . Screw up the chain tautness adjustment tie rod (20) and attach its lock nut (21)
- 14** - Position and hold still the threaded plate locking the protection plate
- 15** - Position the protection plate and loosely bolt it to the threaded plate
- 16** - Slightly unscrew the dowel using a slight pressure to hold the plate still without fixing it



**§ 5 . 10**

**WARRANTY**

- The warranty refers to the perfect execution of the machine. The Solmec. company doesn't guarantee this machine for a settled period because working conditions change from plant to plant and they are deeply influenced by the kind of conveyed material.
- The Solmec. is not responsible for adjustments or alterations made by the customer or for the use of not original spare parts.
- The Solmec. reserves the right to modify this product at any moment without pledging itself to update this guide.

**§ 5 . 11**

**REMEDIES FOR POSSIBLE PROBLEMS**

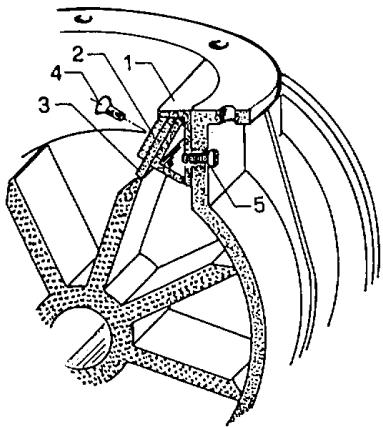
PROBLEM	POSSIBLE REASON	REMEDY
Insufficient capacity	① The product isn't correctly feeded.	Check how the valve is feeded.
	② Too low rotation speed.	Increase the rotation speed.
	③ Insufficient air leakage.	Check the air leakage.
Excessive noise	① The product is inclined to be stick on the inner surface of the body and the flanges.	Not proper choice of the rotor
	② Too low clearances between rotor /body or rotor/flanges.	Increase the clearances between rotor/body or rotor/flanges (*).
Getting out of product from the flanges	① Faulty seals on the shaft	Replace the seals.
Not uniform movement of the rotor	① Faulty bearing	Check and replace the bearing if necessary.
	② Faulty chain	Check the whole chain drive system.
	③ Not aligned gears	Align the gears
	④ Loosened chain	Tighten the chain
Seized valve	① Foreign bodies in the rotor	Disassemble and repair the rotor
	② Too high temperature	Increase the clearances between rotor/body or rotor/flanges (*).

(\*) **BE CAREFUL: before doing such an operation please contact our technical office**

**NOTE: These examples of remedies for possible problems must not be considered the only ones.**

**§ 6 . 0****ACCESSORIES AND THEIR APPLICATIONS****SLIP OFF**

It's a mechanical device inserted in the intake mouth of the valve to prevent infiltration and jamming of the product between the rotor blade and the stator. Normally it is used to convey or meter granular products. Its main component is a wulkollan strip on a galvanised steel or AISI304 stainless steel mounting.

**COMPONENTS**

- 1** - Mounting
- 2** - Blade cover
- 3** - Wulkollan strip
- 4** - Attachment bolt TS.EI M6x15
- 5** - attachment bolt TC.EI M8x15/20

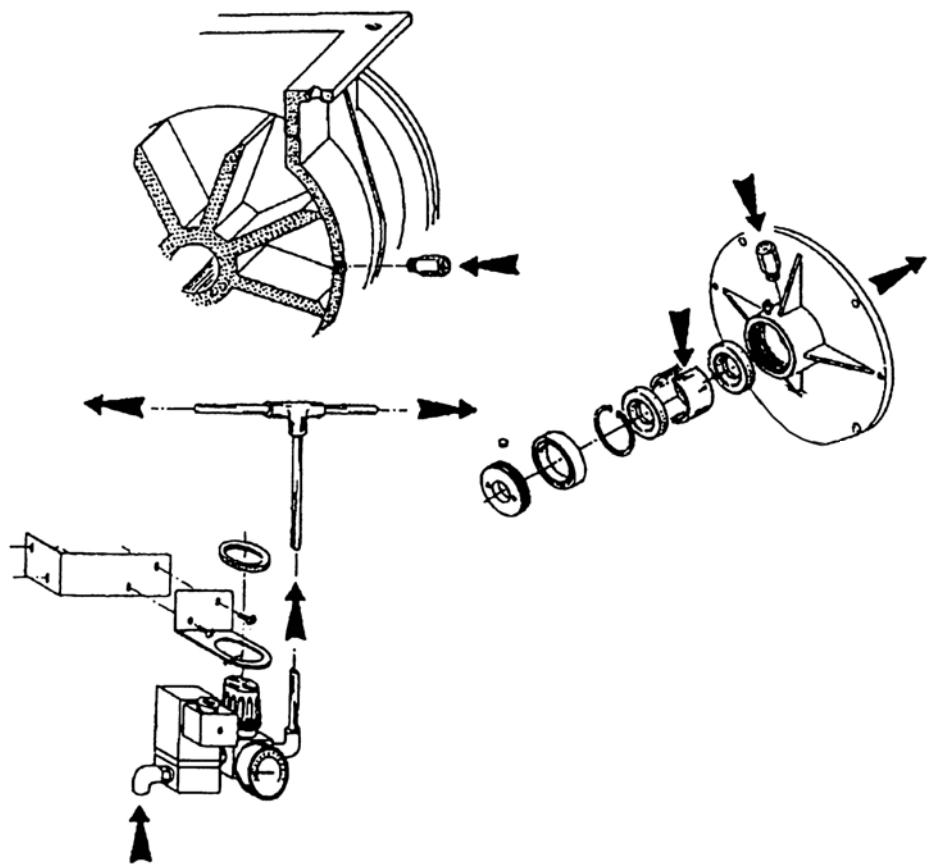
**AIR INJECTION**

These rotary valves can be fitted with an air union on the body to clean rotor and inside of the valve from time to time, or more commonly on the flange hub to ensure the more effective operation of the seal rings and better protection of the bearings with regard to the product being conveyed (mainly when it is very fine or aggressive). It is available, on request, the "air injection kit":

- electrovalve with single coil
- pressure gauge
- air regulator
- mounting brackets.

The following air injection pressure values are suggested:

- **5 bar** with air union in the body
- from **0,5** to **1,5 bar** more than the pneumatic conveying line pressure with air union on the flange



**S.I.M.**

SOLMEC S.R.L.  
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MACCHINE

*Rotary valve type VPR:  
ACCESSORIES*

UM 01/01 Date:05/11/01  
Sect.6 - REV.0 PAGE 19/19

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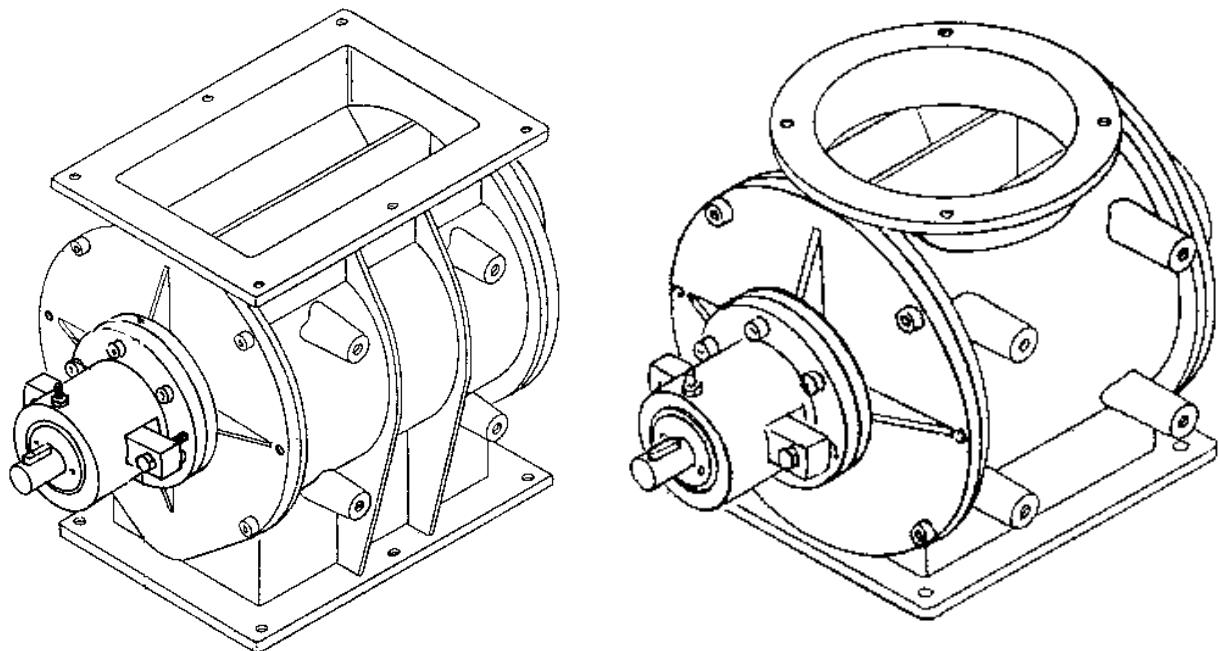
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## **ROTARY VALVE “RS, SF, VPS, VPR”**

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*Version: external supports for high temperatures*



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## **USE AND MAINTENANCE GUIDE**

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# **USE AND MAINTENANCE OF THE ROTARY VALVES TYPE “RS, SF, VPS, VPR” WITH EXTERNAL SUPPORTS**

## **CONTENTS**

### **SECT.1 GENERAL INFORMATIONS AND SPECIFICATIONS**

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§ - 1.1 -	Component parts	» 1
§ - 1.2 -	Overall measurements of the “Rs /SE” - bare shaft	» 2
§ - 1.3 -	Overall measurements of the “Sf /SE” - bare shaft	» 3
§ - 1.4 -	Overall measurements of the “Vps -Vpr /SE” - bare shaft	» 4
§ - 1.5 -	Overall measurements of the “Rs-Sf /SE” with drive	» 5
§ - 1.6 -	Overall measurements of the “Vps-Vpr /SE” with drive	» 6

### **SECT.2 SPARE PARTS**

§ - 1.0 -	Exploded view of the “Rs /SE” with external supports - bare shaft	Page 7
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§ - 1.3 -	List of spare parts of the rotary valves type “Rs - Sf -Vps -Vpr / SE - bare shaft	» 10

### **SECT.3 MAINTENANCE AND REPAIR INSTRUCTIONS**

§ - 1.0 -	Disassembly of the external supports - Replacement of the seal rings and bearings	Page 11
§ - 1.1 -	Reassembly of the valve with external supports	» 12

## § 1.0 GENERAL DESCRIPTION

The rotary valves type RS / SF / VPS / VPR with external supports allow the conveying and discharge of products with high temperatures (**up to 250°C**), keeping the same working features of the standard ones. They are equipped with steel supports and the bearings are placed completely outside of the valve body. The tightness is ensured by teflon™ packing glands.

### § 1.1 COMPONENT PARTS

A rotary valve with external supports consists of:

N°1 - Valve body, usually in G25 cast iron, nodular iron or stainless steel AISI 316.

N°1 - Rotor in G25 cast iron or in electrowelded mild steel or electrowelded stainless steel AISI316.

N°2 - Side flanges, usually in G25 cast iron, nodular iron or AISI316 stainless steel.

N°2 - External supports in C40 steel or chromium plated, with packing glands.

The valve can also be supplied already fitted with a chain drive composed of:

N°1 - Electrowelded steel hinged plate for attachment of the geared motor and the adjustment of the chain tension.

*Note: These valves are equipped with special oversize plates owing to the larger dimension of the valve with external supports compared to the standard one.*

N°1 - Sheet metal guard plate.

N°1 - Drive unit (crown wheel, pinion and chain).

N°1 - Standard 220/380V; 50Hz geared motor

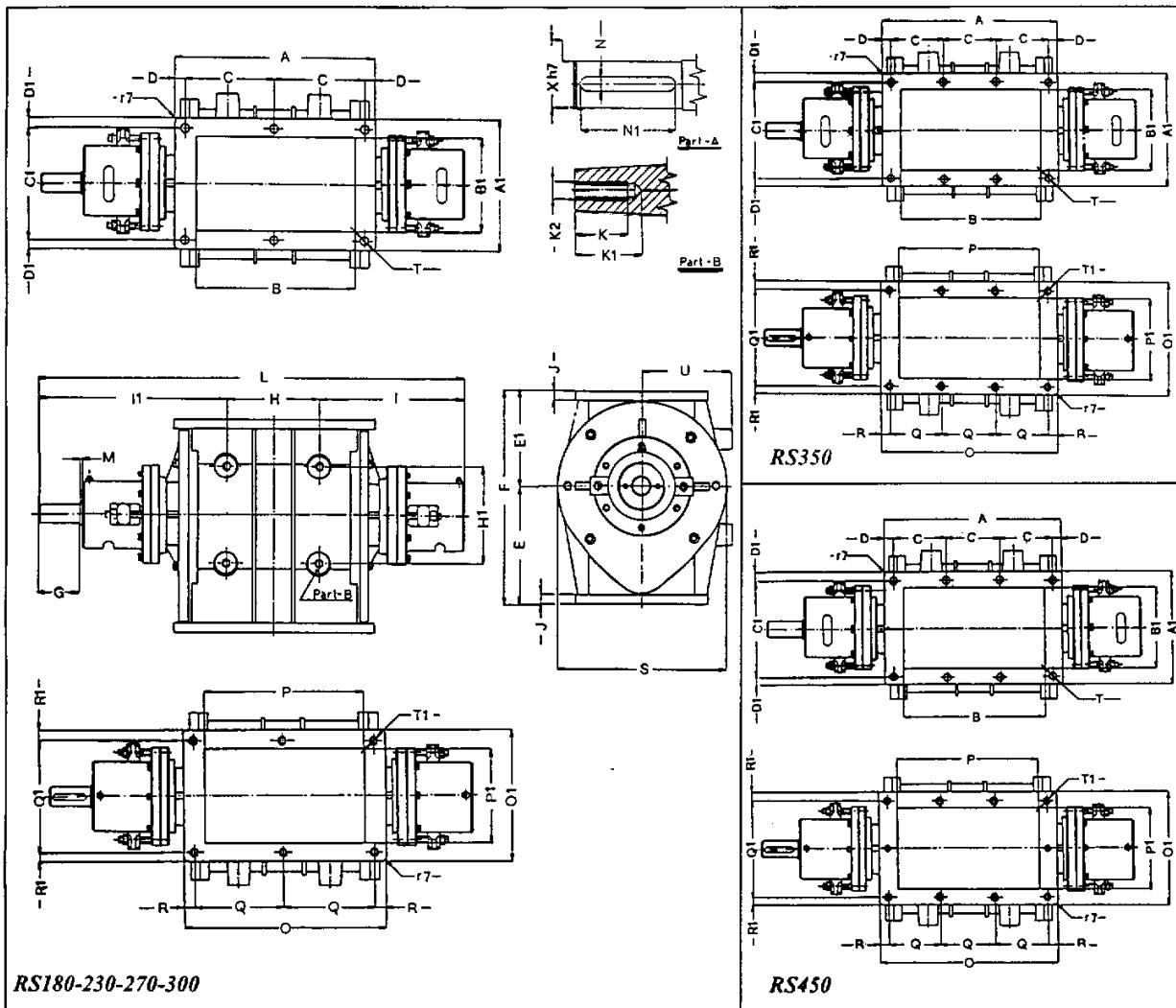
N°1 - Sheet metal safety housing.

**VERY IMPORTANT:** This guide is a supplement of the use and maintenance guide for the VPS/RS/SF/VPR rotary valves (standard version). For all the other technical features such as type of rotors, handling, storage, lifting, set-up and installation, electrical connections, preliminary operations, start-up, routine maintenance, safety precautions, maintenance and repair instructions, accessories and their applications, please refer to the standard use and maintenance guide of the respective valves.

**NOTE:** IN THESE VERSIONS THE CLEARANCES BETWEEN ROTOR BODY / ROTOR FLANGE ARE MODIFIED ACCORDING TO THE TEMPERATURE.

 <b>S.I.M.</b> SOLMEC S.R.L. IMPIANTI & MACCHINE	Description:	<b>UM 97 / 1</b>
	<b>ROTARY VALVE TYPE</b> <b>RS/SF/VPS/VPR – External supports</b>	Date: 1998-02-10
	GENERAL INFORMATION AND SPECIFICATIONS	Sect. 1

**§ 1.2 OVERALL MEASUREMENTS - RS / SE - bare shaft**

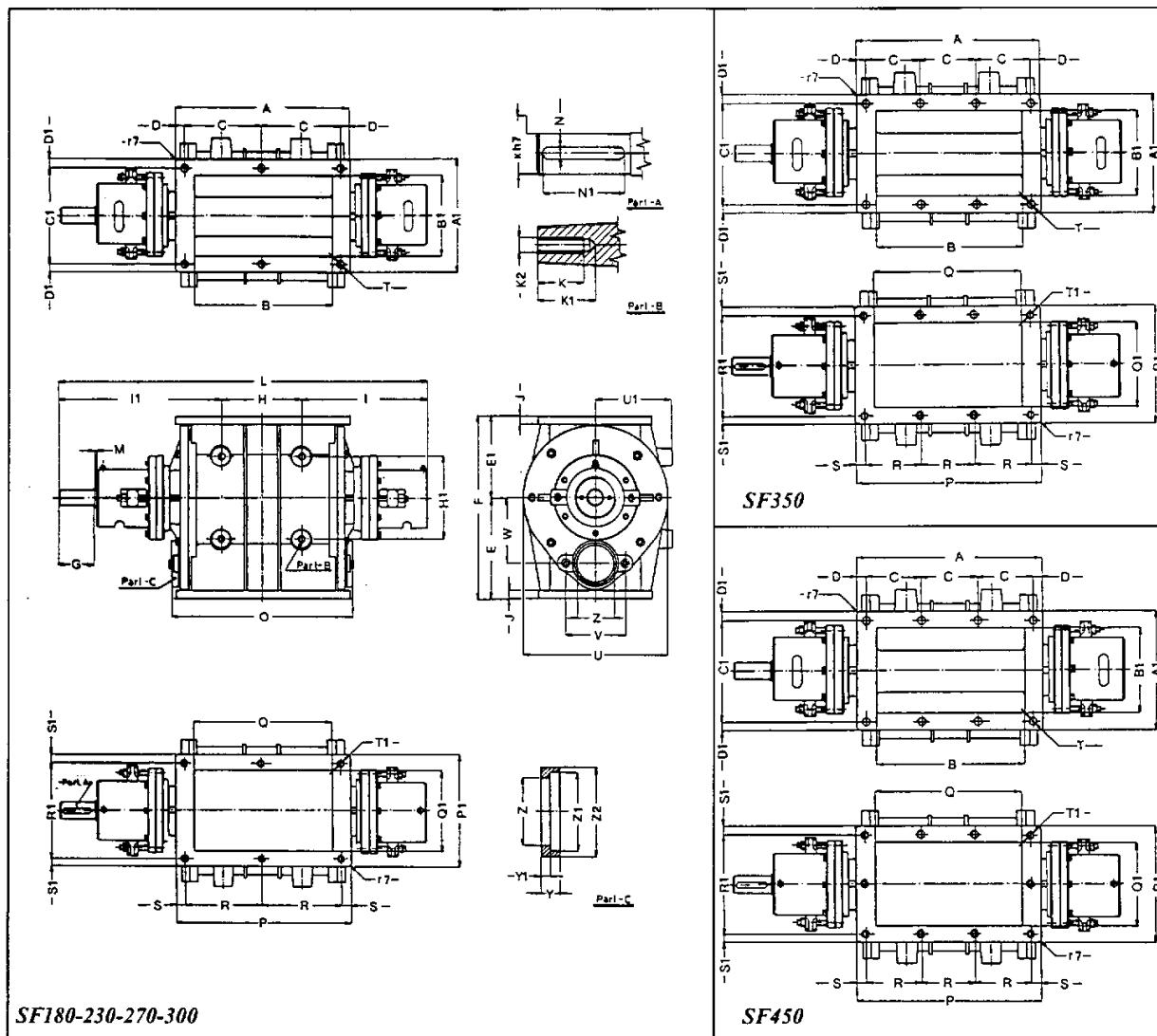


TYPE	A	A1	B	B1	C	C1	D	D1	E	E1	F	G	H	H1	I	I1	J	K	K1	K2
RS180	250	178	190	118	115	155	10	11,5	140	130	270	55	120	120	209,5	266,5	10	28	33	M8
RS230	298	200	235	135	135	172	14	14	174	156	330	60	150	150	223	285	12	30	35	M10
RS270	342	222	276	158	155	194	16	14	213	177	390	60	175	175	239	301	12	30	35	M10
RS300	428	278	340	198	195	195	19	14	248	199	447	60	200	200	276	338	13	32	37	M12
RS350	580	332	476	220	180	300	20	16	290	240	530	90	320	220	292,5	384,5	15	35	40	M12
RS450	710	416	570	285	215	370	32,5	23	338,5	338,5	677	100	400	300	344,5	447,5	22	35	40	M14

TYPE	L	M	N	N1	O	O1	P	P1	Q	Q1	R	R1	S	$\phi T$	holes	T1	holes	U	$\phi X$
RS180	596	2	8	50	250	178	190	118	115	155	10	10	230	10	6	M8	6	118	24
RS230	658	2	8	50	298	200	238	135	135	172	14	14	280	10	6	M8	6	146	28
RS270	715	2	8	50	342	222	276	148	155	194	16	14	317	12	6	M10	6	166	28
RS300	814	2	10	50	428	278	340	198	195	250	19	14	362	13	6	M12	6	188	34
RS350	997	2	12	80	580	352	470	238	180	200	20	26	430	14	8	M12	8	220	42
RS450	1192	3	16	90	710	426	570	285	215	370	32,5	28	550	15	8	M14	10	285	54

Description		<b>ROTARY VALVE TYPE</b>										UM 97 / 1					
S.I.M.		<b>ROTARY VALVE TYPE</b>										Date: 1998-02-10					
<b>RS - External supports</b>												Sheet N. 0210/02					
												Sect. 1					
												Page 2					

**§ 1.3 OVERALL MEASUREMENTS - SF / SE - bare shaft**



**SF180-230-270-300**

**SF450**

TYPE	A	A1	B	B1	C	C1	D	D1	E	E1	F	G	H	H1	I	I1	J	K	K1	K2	L	M	N	N1
SF180	250	178	190	118	115	155	10	11,5	140	130	270	55	120	120	209, 5	266, 5	10	28	33	M8	596	2	8	50
SF230	298	200	235	135	135	172	14	14	174	156	330	60	150	150	223	285	12	30	35	M10	658	2	8	50
SF270	342	222	276	158	155	194	16	14	213	177	390	60	175	175	239	301	12	30	35	M10	715	2	8	50
SF300	428	278	340	198	195	195	19	14	248	199	447	60	200	200	276	338	13	32	37	M12	814	2	10	50
SF350	580	332	476	220	180	300	20	16	290	240	530	90	320	220	292, 5	384, 5	15	35	40	M12	997	2	12	80
SF450	710	416	570	285	215	370	32,5	23	368	309	677	100	400	300	344, 5	447, 5	22	35	40	M14	1192	3	16	90

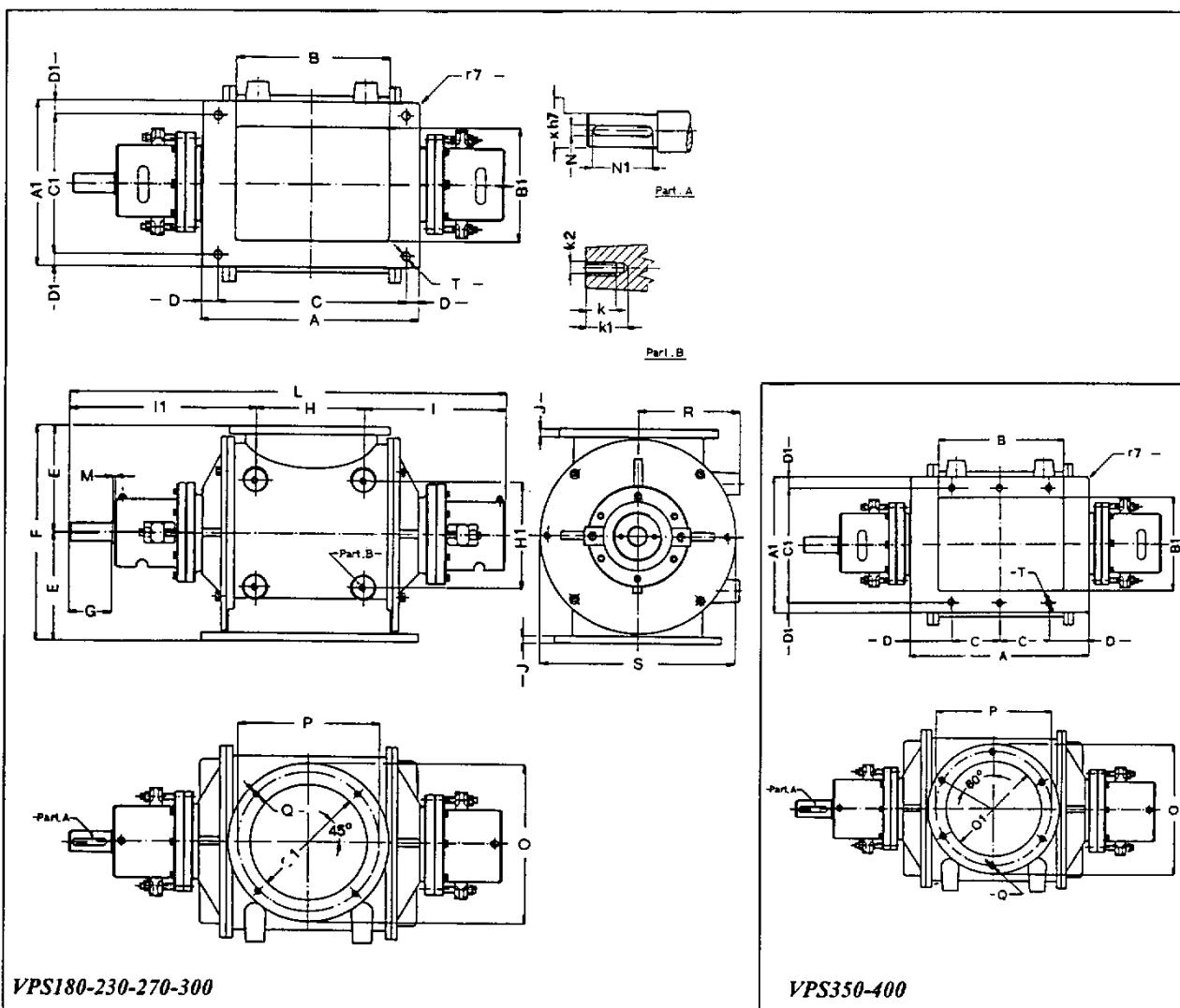
TYPE	O	P	P1	Q	Q1	R	R1	S	øT	holes	T1	holes	U	U1	øX	Y	Y1	V	W	øZ	øZ1	øZ2
SF180	269	250	178	190	118	115	155	10	10	6	M8	6	230	118	24	15	7,5	92	95	54	61	70
SF230	321	298	200	238	135	135	172	14	10	6	M8	6	280	146	28	18	9	100	120	64	71	78
SF270	375	342	222	276	148	155	194	16	12	6	M10	6	317	166	28	20	10	116	140	74	81	95
SF300	466	428	278	340	198	195	250	19	13	6	M12	6	362	188	34	30	16	146	160	96	103	115
SF350	603	580	352	470	238	180	300	20	14	8	M12	8	430	220	42	30	16	185	185	118	127	140
SF450	730	710	426	570	285	215	370	32,5	15	8	M14	10	550	285	54	35	17	220	240	150	159	178

Description		UM 97 / 1
<b>ROTARY VALVE TYPE</b>		Date: 1998-02-10
<b>SF - External supports</b>		Sheet N. 0210/03

**S.I.M.**

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### § 1.4 OVERALL MEASUREMENTS - VPS / SE - Bare shaft

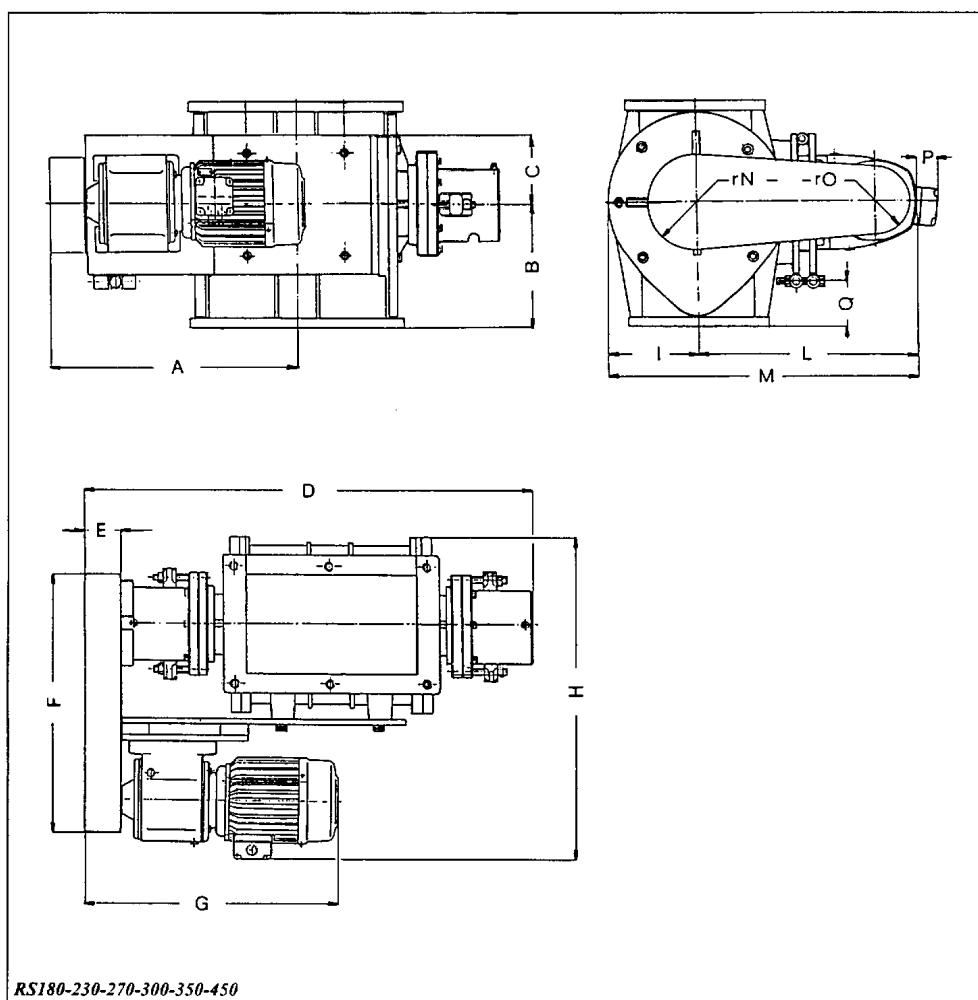


TYPE	A	A1	B	B1	C	C1	D	D1	E	F	G	H	H1	I	I1	J	K
VPS180	210	188	150	120	180	160	15	14	122,5	245	55	110	105	196	253	10	25
VPS230	256	218	185	148	220	185	18	16,5	155	310	60	120	120	210,5	272,5	12	25
VPS270	340	258	242	180	290	220	25	19	170	340	60	170	170	223,5	285,5	12	30
VPS300	372	310	266	218	330	270	21	20	191	382	60	200	185	239	301	13	35
VPS350	470	360	360	250	210	320	25	20	235	470	60	240	200	264	326	15	32
VPS400	490	410	400	320	145	380	100	15	263,5	527	60	250	250	289	382	16	35

TYPE	K1	K2	L	M	N	N1	$\phi O$	$\phi O1$	$\phi P$	Q holes	R	$\phi S$	$\phi T$ holes	$\phi X$		
VPS180	30	M8	559	2	8	50	180	120	150	M8	4	112	218	10	4	24
VPS230	30	M10	603	2	8	50	210	150	185	M8	4	140	268	12	4	28
VPS270	35	M10	679	2	8	50	250	180	220	M10	4	160	312	13	4	28
VPS300	40	M12	740	2	10	50	300	220	260	M12	4	182	352	14	4	34
VPS350	40	M12	830	2	10	50	385	300	350	M12	6	222	430	14	6	34
VPS400	40	M12	921	2	10	50	438	350	400	M12	6	249	490	16	6	34

<b>S.I.M.</b> <b>SOLMEC S.R.L.</b> <b>IMPIANTI &amp;</b> <b>MACCHINE</b>	Description:										<b>UM 97 / 1</b>		
	<b>ROTARY VALVE TYPE</b>												Date: <b>1998-02-10</b>
<b>VPS - External supports</b>												Sheet N. <b>0210/04</b>	

### § 1.5 OVERALL MEASUREMENTS - RS-SF / SE with drive



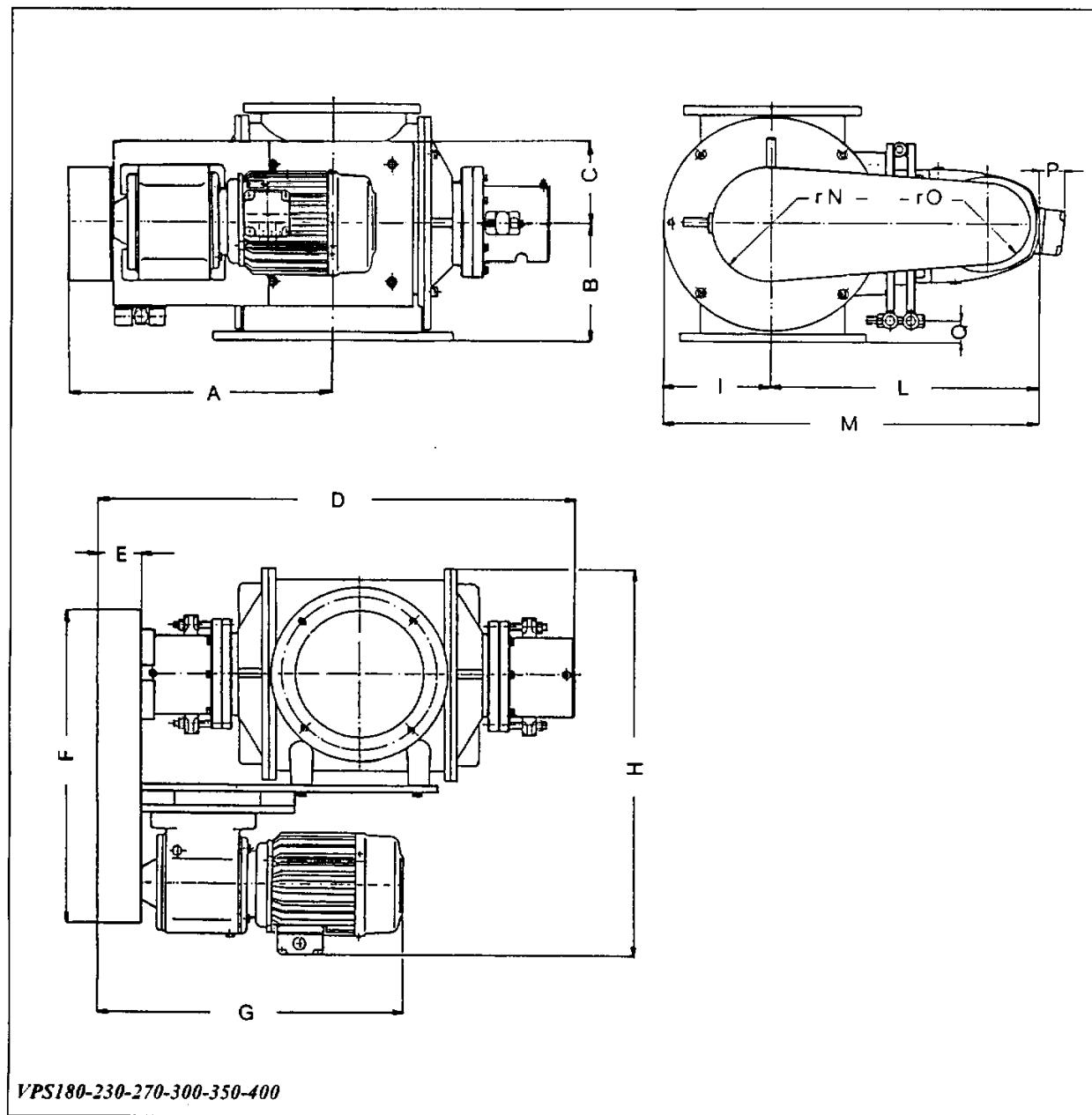
\* These measures might change according to the type of the geared motor

TYPE	A	B	C	D	E	F	G*	H*	I	L*	M*	rN	rO	P	Q
RS180	353	140	100	679	83	450	492	485	115	325	440	87	62	45	23
RS230	394	174	120	752	94	530	510	540	140	355	495	132	67	45	36
RS270	422	213	130	809	94	550	510	578	158	375	533	132	67	45	68
RS300	472	248	140	908	94	594	554	671	181	440	621	147	67	50	80
RS350	577	290	150	1120	123	704	600	745	215	475	690	177	87	55	125
RS450	670	338,5	200	1315	123	754	676	920	275	590	865	152	87	55	123,5

TYPE	A	B	C	D	E	F	G*	H*	I	L*	M*	rN	rO	P	Q
SF180	353	140	100	679	83	450	492	485	115	325	440	60	60	45	23
SF230	394	174	120	752	94	530	510	540	140	355	495	81	67	45	36
SF270	422	213	130	809	94	550	510	578	158	375	533	93	67	45	68
SF300	472	248	140	908	94	594	554	671	181	440	621	102	67	50	80
SF350	577	290	150	1120	123	704	600	745	215	475	690	117	72	55	125
SF450	670	368	200	1315	123	754	676	920	275	590	865	152	87	55	153

Description:	UM 97 / 1
	Date: 1998-02-10
<b>S.I.M.</b> <b>SOLMEC S.R.L.</b> <b>IMPIANTI &amp;</b> <b>MACCHINE</b>	<b>ROTARY VALVE TYPE</b>

**§ 1.6 OVERALL MEASUREMENTS - VPS / SE with drive**



VPS180-230-270-300-350-400

- These measures might change according to the type of the geared motor

TYPE	A	B	C	D	E	F	G*	H*	I	L*	M*	rN	rO	P*	Q
VPS180	334	145	107	585	83	420	488	484	109	331	440	95	72	45	40
VPS230	365	155	112	635	94	460	499	536	134	357	491	95	72	45	40
VPS270	405	170	132	711	94	507	499	580	156	379	535	120	72	45	35
VPS300	433	191	142	772	94	532	504	622	176	401	577	120	72	55	46
VPS350	508	235	152	891	123	594	578	756	215	486	701	117	72	55	80
VPS400	538	263,5	187	951	123	619	600	803	245	513	758	122	75	55	73,5

Description:

**S.I.M.**

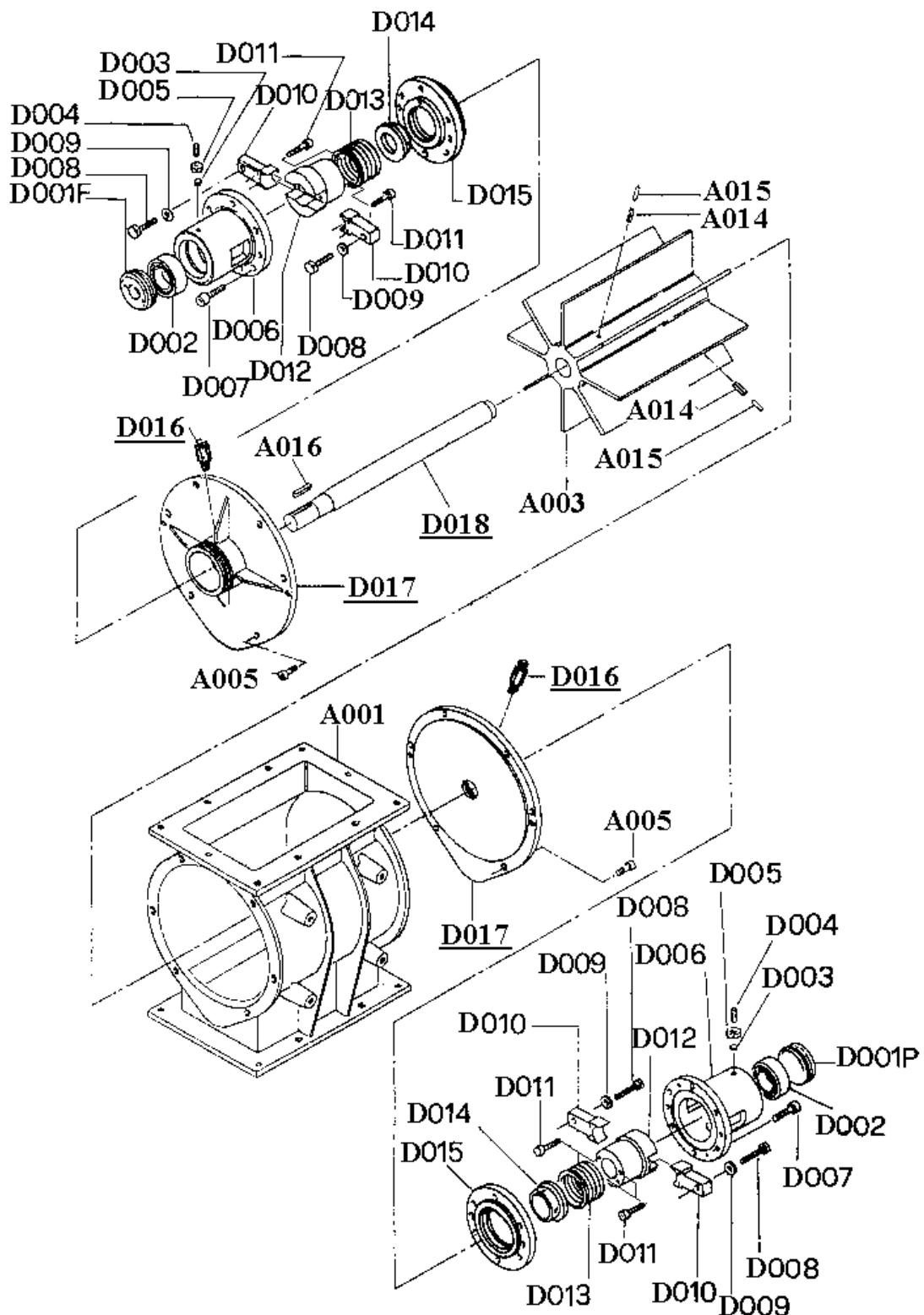
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MACCHINE**

**ROTARY VALVE TYPE**

**UM 97 / 1**

Date: 1998-02-10

**§ 1.0 EXPLODED VIEW OF THE VALVE TYPE RS / SE - bare shaft**



Description

**ROTARY VALVE TYPE**

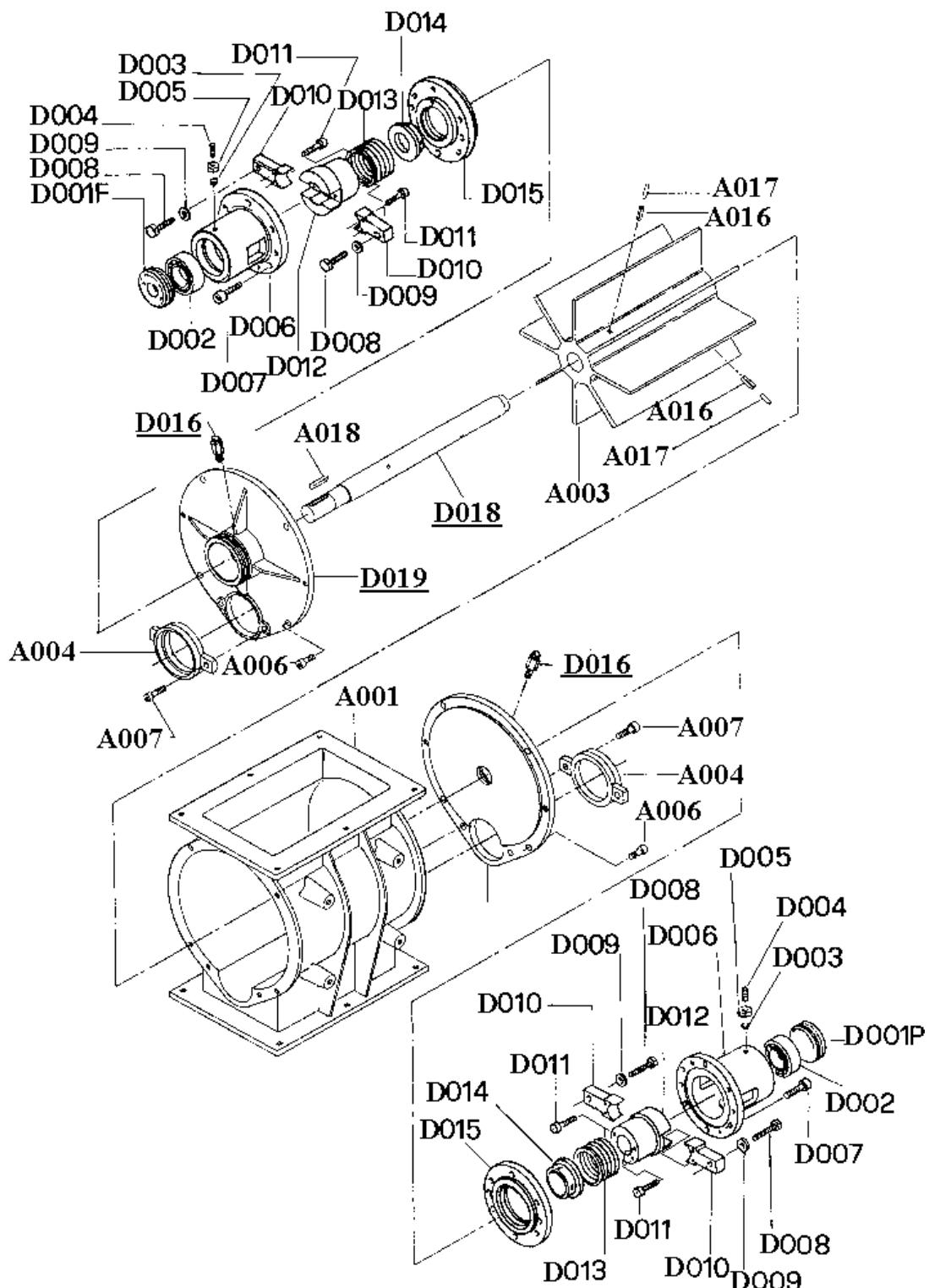
UM 97 / 1

Date: 1998-02-10

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 § 1.1 EXPLODED VIEW OF THE VALVE TYPE SF / SE - bare shaft
 

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Description:

UM 97 / 1

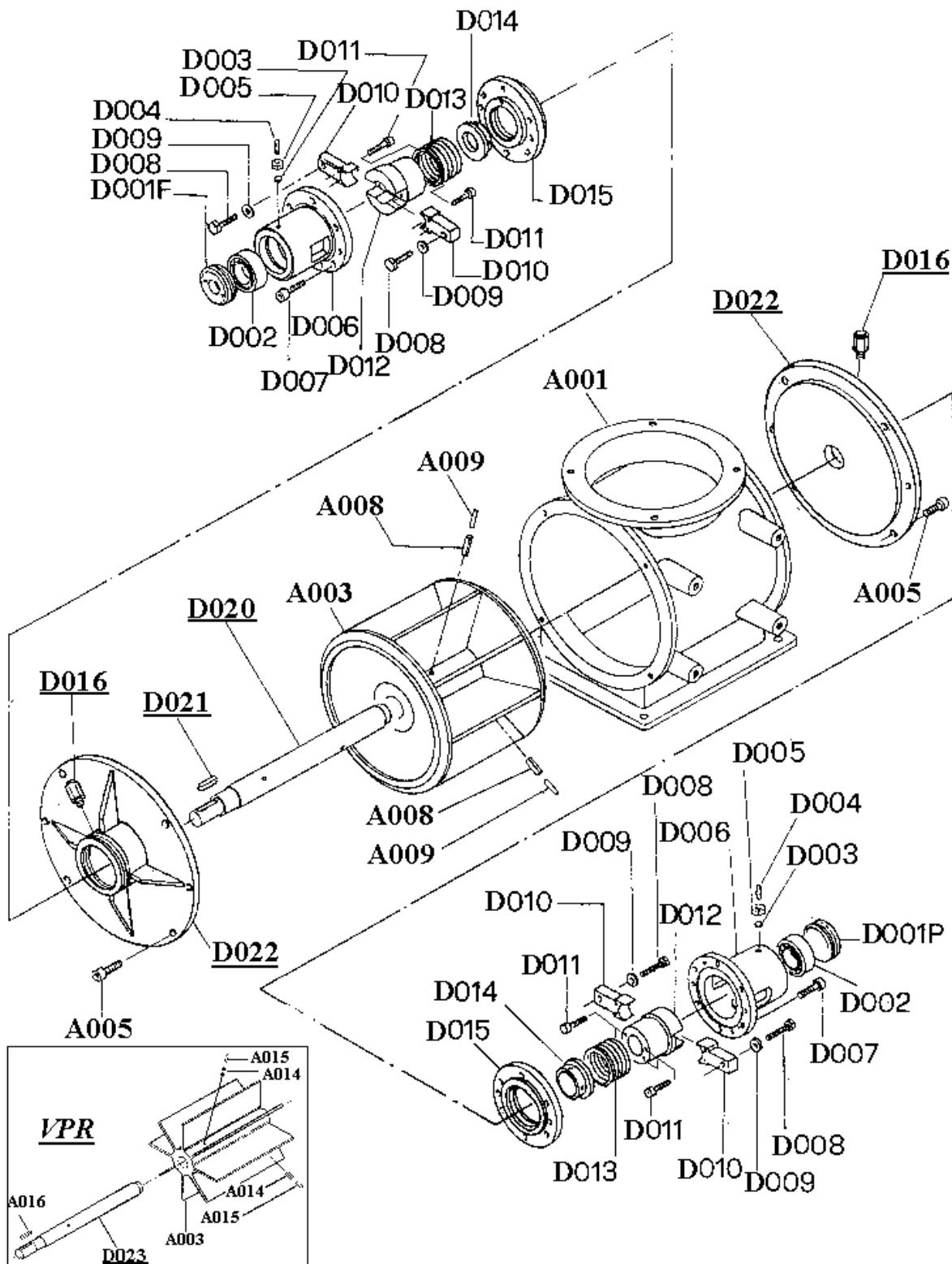

**SOLMEC S.R.L.**  
**IMPIANTI &**  
**MACCHINE**
**ROTARY VALVE TYPE**

Date: 1998-02-10

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 § 1.2 EXPLODED VIEW OF THE VALVE TYPE VPS/R SE - bare shaft
 

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Description:

UM 97 / 1

**S.I.M.**SOLMEC S.R.L.  
IMPIANTI &  
MACCHINE**ROTARY VALVE TYPE**

Date: 1998-02-10

**§ 1 . 3 SPARE PARTS LIST RS/SF/VPS/VPR - SE**

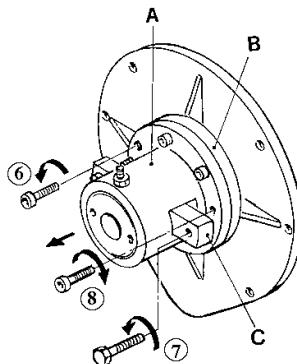
**UM 97 / 1 Sect. 2 Page10**

**Sheet N. 0210/10**

<b>Pos.</b>	<b>Q.ty</b>	<b>Description</b>	<b>SE180</b>	<b>SE230</b>	<b>SE270</b>	<b>SE300</b>	<b>SE350</b>	<b>SE450</b>	<b>MATERIAL</b>	<b>REFERENCE</b>
D001F	01	<i>Locking nut</i>	<i>Rs / Sf 180</i> <i>Vps / Vpr 180</i>	<i>Rs / Sf 230</i> <i>Vps / Vpr 230</i>	<i>Rs / Sf 270</i> <i>Vps / Vpr 270</i>	<i>Rs / Sf 300</i> <i>Vps / Vpr 300÷350</i>	<i>Rs / Sf 350</i> <i>Vps / Vpr 400</i>	<i>Rs / Sf 450</i>	<i>C40 / Cr steel</i>	--
D001P	01	<i>Locking nut</i>	<i>Rs / Sf 180</i> <i>Vps / Vpr 180</i>	<i>Rs / Sf 230</i> <i>Vps / Vpr 230</i>	<i>Rs / Sf 270</i> <i>Vps / Vpr 270</i>	<i>Rs / Sf 300</i> <i>Vps / Vpr 300÷350</i>	<i>Rs / Sf 350</i> <i>Vps / Vpr 400</i>	<i>Rs / Sf 450</i>	<i>C40 / Cr steel</i>	--
D002	02	<i>Bearing</i>	<i>Di25 De52 Sp15</i> <i>6205.2RS</i>	<i>Di30 De62 Sp16</i> <i>6206.2RS</i>	<i>Di30 De72 Sp19</i> <i>6306.2RS</i>	<i>Di35 De80 Sp21</i> <i>6307.2RS</i>	<i>Di45 De85 Sp23</i> <i>62209.2RS</i>	<i>Di55 De100 Sp25</i> <i>62211.2RS</i>	<i>Hardened steel</i>	--
D003	02	<i>Thread safety plate</i>	<i>D5S4</i>	<i>D5S4</i>	<i>D5S4</i>	<i>D5S4</i>	<i>D5S4</i>	<i>D5S4</i>	<i>Lead</i>	--
D004	02	<i>Hex.headless flat point screw</i>	<i>EI M8x20</i>	<i>EI M8x20</i>	<i>EI M8x20</i>	<i>EI M8x20</i>	<i>EI M8x25</i>	<i>EI M8x20</i>	<i>cl.8.8 Zn steel</i>	<i>UNI 5927-67</i>
D005	02	<i>Hex.nut</i>	<i>M8</i>	<i>M8</i>	<i>M8</i>	<i>M8</i>	<i>M8</i>	<i>M8</i>	<i>cl.8.8 Zn steel</i>	<i>UNI 5588-65</i>
D006	02	<i>External support</i>	<i>Rs / Sf 180</i> <i>Vps / Vpr 180</i>	<i>Rs / Sf 230</i> <i>Vps / Vpr 230</i>	<i>Rs / Sf 270</i> <i>Vps / Vpr 270</i>	<i>Rs / Sf 300</i> <i>Vps / Vpr 300÷350</i>	<i>Rs / Sf 350</i> <i>Vps / Vpr 400</i>	<i>Rs / Sf 450</i>	<i>C40 / Cr steel</i>	--
D007	012	<i>Hex.sock head cap screw</i>	<i>TC-EI M8x25</i>	<i>TC-EI M8x25</i>	<i>TC-EI M10x30</i>	<i>TC-EI M12x30</i>	<i>TC-EI M12x35</i>	<i>TC-EI M14x40</i>	<i>cl.8.8 Zn steel</i>	<i>UNI 5931-67</i>
D008	04	<i>Hex.head screw</i>	<i>TE M10x70</i>	<i>TE M10x70</i>	<i>TE M12x80</i>	<i>TE M12x80</i>	<i>TE M12x80</i>	<i>TE M14x80</i>	<i>cl.8.8 Zn steel</i>	<i>UNI 5725-65</i>
D009	04	<i>Washer</i>	<i>Di10,5 De21</i>	<i>Di10,5 De21</i>	<i>Di13 De24</i>	<i>Di13 De24</i>	<i>Di13 De24</i>	<i>Di15 De28</i>	<i>R40 Zn steel</i>	--
D010	04	<i>Dragger</i>	<i>Rs / Sf 180</i> <i>Vps / Vpr 180</i>	<i>Rs / Sf 230</i> <i>Vps / Vpr 230</i>	<i>Rs / Sf 270</i> <i>Vps / Vpr 270</i>	<i>Rs / Sf 300</i> <i>Vps / Vpr 300÷350</i>	<i>Rs / Sf 350</i> <i>Vps / Vpr 400</i>	<i>Rs / Sf 450</i>	<i>C40 steel</i>	--
D011	08	<i>Hex.sock head cap screw</i>	<i>TC-EI M6x50</i>	<i>TC-EI M6x50</i>	<i>TC-EI M8x60</i>	<i>TC-EI M8x60</i>	<i>TC-EI M8x60</i>	<i>TC-EI M8x60</i>	<i>cl.8.8 Zn steel</i>	<i>UNI 5931-67</i>
D012	02	<i>Stuffing box</i>	<i>Rs / Sf 180</i> <i>Vps / Vpr 180</i>	<i>Rs / Sf 230</i> <i>Vps / Vpr 230</i>	<i>Rs / Sf 270</i> <i>Vps / Vpr 270</i>	<i>Rs / Sf 300</i> <i>Vps / Vpr 300÷350</i>	<i>Rs / Sf 350</i> <i>Vps / Vpr 400</i>	<i>Rs / Sf 450</i>	<i>C40 / inox 316 steel</i>	--
D013	06	<i>Seal rings</i>	<i>Sect.12x12</i>	<i>Sect.15x15</i>	<i>Sect.20x20</i>	<i>Sect.23x23</i>	<i>Sect.20x20</i>	<i>Sect.23x23</i>	<i>teflon</i>	--
D014	02	<i>Air conveyor</i>	<i>Rs / Sf 180</i> <i>Vps / Vpr 180</i>	<i>Rs / Sf 230</i> <i>Vps / Vpr 230</i>	<i>Rs / Sf 270</i> <i>Vps / Vpr 270</i>	<i>Rs / Sf 300</i> <i>Vps / Vpr 300÷350</i>	<i>Rs / Sf 350</i> <i>Vps / Vpr 400</i>	<i>Rs / Sf 450</i>	<i>C40 steel</i>	--
D015	02	<i>Flange</i>	<i>Rs / Sf 180</i> <i>Vps / Vpr 180</i>	<i>Rs / Sf 230</i> <i>Vps / Vpr 230</i>	<i>Rs / Sf 270</i> <i>Vps / Vpr 270</i>	<i>Rs / Sf 300</i> <i>Vps / Vpr 300÷350</i>	<i>Rs / Sf 350</i> <i>Vps / Vpr 400</i>	<i>Rs / Sf 450</i>	<i>C40 / inox 316 steel</i>	--
D016	02	<i>Air connection quick clutch</i>	<i>1/8G</i>	<i>1/8G</i>	<i>1/8G</i>	<i>1/8G</i>	<i>1/8G</i>	<i>1/8G</i>	<i>Nickel plated brass</i>	--
D017	02	<i>Flange</i>	<i>Rs180 SE</i>	<i>Rs230 SE</i>	<i>Rs270 SE</i>	<i>Rs300 SE</i>	<i>Rs350 SE</i>	<i>Rs450 SE</i>	<i>G25cast iron - inox316 s.steel</i>	--
D018	01	<i>Shaft</i>	<i>Rs / Sf 180 SE</i>	<i>Rs / Sf 230 SE</i>	<i>Rs / Sf 270 SE</i>	<i>Rs / Sf 300 SE</i>	<i>Rs / Sf 350 SE</i>	<i>Rs / Sf 450 SE</i>	<i>C40 steel</i>	--
D019	02	<i>Flange</i>	<i>Sf180 SE</i>	<i>Sf230 SE</i>	<i>Sf270 SE</i>	<i>Sf300 SE</i>	<i>Sf350 SE</i>	<i>Sf450 SE</i>	<i>G25 cast iron - inox316 s.steel</i>	--
D020	01	<i>Shaft</i>	<i>Vps / Vpr180 SE</i>	<i>Vps / Vpr230 SE</i>	<i>Vps / Vpr270 SE</i>	<i>Vps/Vpr 300 SE</i> <i>Vps/Vpr350 SE</i>	<i>Vps / Vpr400 SE</i>	--	<i>C40 steel</i>	--
D021	01	<i>Key</i>	<i>8x50</i>	<i>8x50</i>	<i>8x50</i>	<i>10x50 (Vps300)</i> <i>12X80 (Vpr350)</i>	<i>12x80 Vpr400 SE</i>	--	<i>Carbon steel</i>	<i>UNI6604-69</i>
D022	02	<i>Flange</i>	<i>Vps / Vpr180 SE</i>	<i>Vps / Vpr230 SE</i>	<i>Vps / Vpr270 SE</i>	<i>Vps/Vpr 300 SE</i> <i>Vps/Vpr350 SE</i>	<i>Vps / Vpr400 SE</i>	--	<i>G25cast iron - inox316 s.steel</i>	--

**§ 1.0 DISASSEMBLY OF THE EXTERNAL SUPPORTS  
REPLACEMENT OF SEAL RINGS AND BEARINGS**

Once removed the flange with the support from the body (how indicated at point 01÷05 in the use and maintenance guide for the standard versions), proceed as follow:



(Fig. A01)

**06** - Loosen and remove the bolts locking the support (A). (Fig. A01)

**07** - Loosen and unscrew the bolts of the dragger (C). (Fig. A01)

**08** - Insert two of the bolts removed at point 06 in the threaded holes of the support (A) and take it off (B). (Fig. A01)

**09** - Loosen and remove the screws locking the stuffing box to the draggers (C). (Fig. A02)

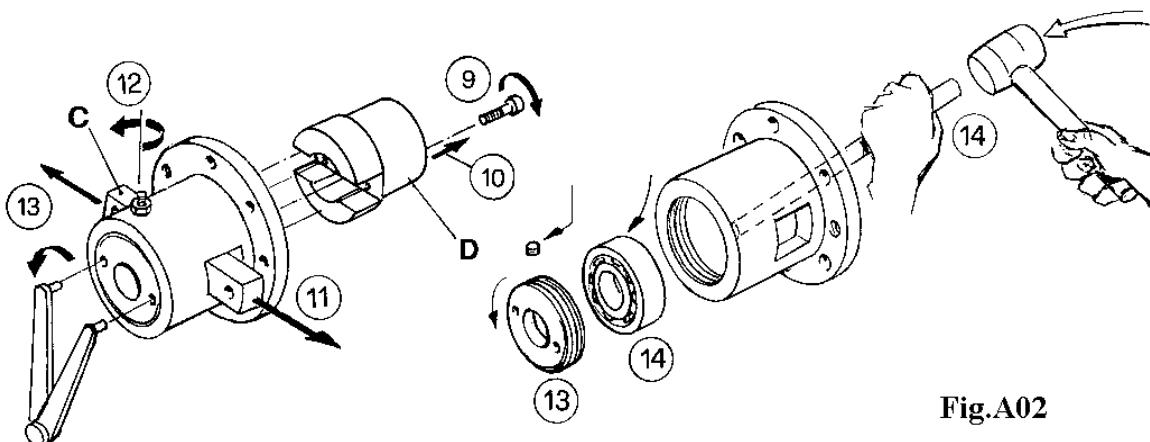


Fig.A02

**10** - Take the stuffing box off (D). (Fig. A02)

**11** - Extract the draggers from the two side holes (Fig. A02)

**12** - Slacken the nut and the locking dowel of the adjustment ring (Fig. A02)

**13** - Unscrew the ring nut and, if necessary, the thread protection shim (Fig. A02)

**14** - Drive the bearing out from inside striking with a hammer and a punch (preferably in aluminium) (Fig. A02)

**15** - Take the seals off by means of a screwdriver (Fig. A03)

Before replacing, if necessary, the teflon™ seals clean carefully their seats.

*Note: The seal rings are obtained from a square teflon™ rope having a lenght approximately equal to the perimeter of the seat. To have a good tightness, the rings must have their cuts offset of 90° one with respect to the other.*

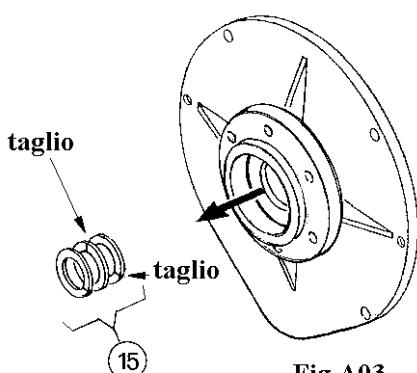
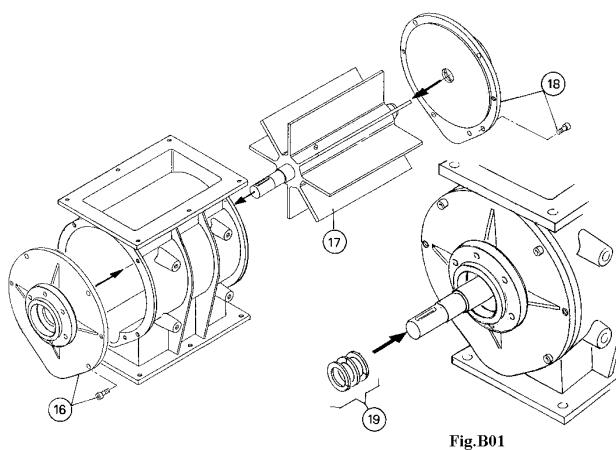


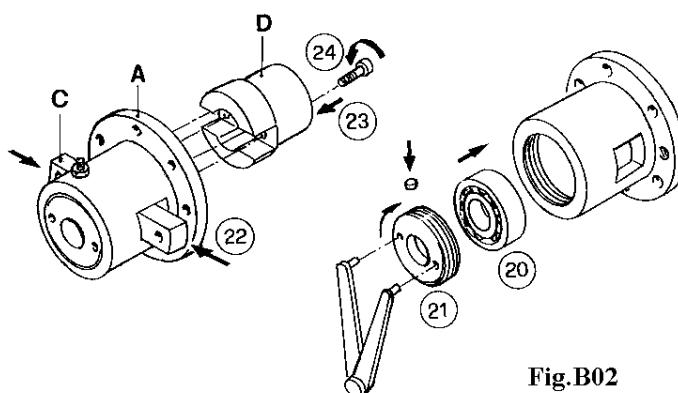
Fig.A03

<b>SOLMEC S.R.L. IMPIANTI &amp; MACCHINE</b>	<b>Description:</b>  <b>ROTARY VALVE TYPE</b>	<b>UM 97 / 1</b>
		<b>Date: 1998-02-10</b>
	<b>RS / SF / VPS / VPR - External supports</b> <b>MAINTENANCE AND REPAIR INSTRUCTIONS</b>	<b>Sheet N. 0210 /11</b>
	<b>Sect. 3</b>	<b>Page 11</b>

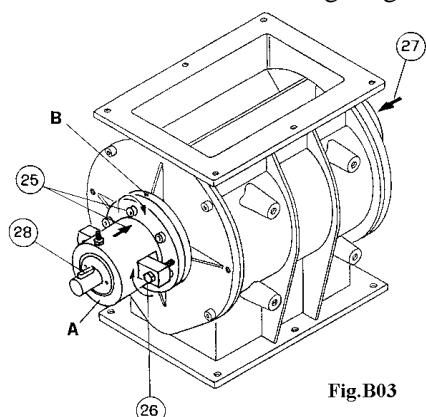
## § 1.1 ASSEMBLY OF THE VALVE WITH EXTERNAL SUPPORTS



**21** - Screw on the adjustment ring nut so as to leave it protruding about 2mm from the hub(Fig. B02)



**26** - Insert the two tie-rods (hex.head screws) into the holes of the draggers and screw them to the threaded holes of the flange lightly tamping the seal rings.(Fig. B03)



**30** - After the end play adjustment (for RS,SF,VPR only) tamp the seals screwing the two side tie-rods of the stuffing box. Execute this operation alternatively one side and the other and do it again after turning the rotor by hand till a good tightness will be obtained. It is suggested to check the seal efficiency after the early hours of working and if necessary to turn the stuffing-box bolts. In case of leakage screw the stuffing-box bolts till a good tightness is ensured. If the leakage goes on, replace the seal rings as shown above.

**16** - Bolt the front flange to the valve body by means of its proper screws (Fig. B01)

**17** - Carefully insert the rotor in the stator and position against the front flange (RS/SF only). (Fig. B01)

**18** - Carefully mount the rear flange on the drive shaft and attach it to the body with the provided bolts (Fig. B01)

**19** - Place the seal rings into their seats (Fig. B01)

**20** -Replace the bearings in the support seats. (Fig. B02)

**22** - Place the draggers (C) into the side holes of the support (A) (Fig. B02)

**23** - Put the stuffing box (D) into the support and place the two draggers in their seats. (Fig. B02)

**24** -Fix the draggers to the stuffing box with the provided screws. (Fig. B02)

**25** - Place the whole external support assembly (A) on the front flange (B) and lock it with the provided screws. (Fig. B03)

**27** - Fix the whole "external support group" to the rear flange as shown at points 25-26. (Fig. B03)

**28** -Insert the key into the shaft. (Fig. B03)

**29** -After the reassembly of the valve, it is necessary to adjust the end play between the rotor and the side flanges (for rotary valves type RS, SF and VPR only). This operation is described in the use and maintenance guides for standard rotary valves. The VPS rotary valve doesn't need any end play adjustment. You have only to pay attention to place the rotor inside the upper inlet.

 <b>SOLMEC S.R.L. IMPIANTI &amp; MACCHINE</b>	<b>Description</b> <b>ROTARY VALVE TYPE</b>	<b>UM 97 / 1</b>
	<b>Date: 1998-02-10</b>	
	<b>RS / SF / VPS / VPR - External supports</b> <b>MAINTENANCE AND REPAIR INSTRUCTIONS</b>	<b>Sheet N. 0210 /12</b>
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Leggere attentamente



*Read carefully*



Aufmerksam lesen



*Lire attentivement*



Rischio di fulgorazione



*Electrical hazard*



Fulgurationsgefahr



*Risque d'électrocution*

**Revisioni**  
L'indice di revisione del catalogo è riportato a pag. 80.  
Al sito [www.bonfiglioli.com](http://www.bonfiglioli.com) sono disponibili i cataloghi con le revisioni aggiornate.

**Revisions**  
Refer to page 80 for the catalogue revision index.  
Visit [www.bonfiglioli.com](http://www.bonfiglioli.com) to search for catalogues with latest revision index.

**Änderungen**  
Das Revisionsverzeichnis des Kata-logs wird auf Seite 80 wiedergegeben.  
Auf unserer Website [www.bonfiglio-li.com](http://www.bonfiglio-li.com) werden die Kataloge in ihrer letzten, überarbeiteten Version angeboten.

**Révisions**  
Le sommaire de révision du catalogue est indiqué à la page 80.  
Sur le site des catalogues avec les dernières révisions sont disponibles.

## ISTRUZIONI DI SICUREZZA

 Le seguenti istruzioni di sicurezza fanno riferimento in via principale all'utilizzo di motoriduttori. Tenere in considerazione le istruzioni di sicurezza supplementari riportate nelle singole sezioni di questo manuale istruzioni. I conduttori di tensione e gli organi in movimento di macchine elettriche possono provocare gravi lesioni o la morte. L'installazione, il collegamento e la messa in funzione, unitamente agli interventi di manutenzione e riparazione, devono essere effettuati esclusivamente da personale specializzato tenendo in considerazione quanto di seguito riportato:

- le presenti istruzioni
- i segnali di avvertimento e le etichette istruzione sull'unità motore/riduttore
- tutte le documentazioni di progettazione, le istruzioni di messa in funzione e gli schemi tecnici
- le regolamentazioni e i requisiti specifici del sistema
- le normative nazionali/regionali vigenti (normative di sicurezza/antinfortunistiche)

### Uso previsto

Questi motori elettrici sono destinati all'uso in sistemi industriali. Essi sono conformi alle normative e alle regolamentazioni vigenti e rispettano le disposizioni della Direttiva Bassa Tensione 73/23/CEE. I dati tecnici, come pure le condizioni ammesse sul luogo, sono indicati sulla targhetta identificativa della macchina e nel presente manuale istruzioni. Le informazioni ivi riportate devono essere rispettate!

## 1.0 IDENTIFICAZIONE

Tutti i riduttori, motoriduttori e motori sono muniti di una targhetta dalla quale potranno essere rilevati i dati necessari alla loro identificazione.

Nella tabella sono indicate le tre tipologie di targhe di identificazione utilizzate per le varie configurazioni.

## SAFETY INSTRUCTIONS

 The following safety instructions relate primarily to the use of geared motors. Please consider the additional safety instructions in the individual sections of these operating instructions. Voltage conductors and movable parts of electrical machines can cause serious or fatal injury. Installation, connection, commissioning as well as maintenance and repair work may only be carried out by qualified specialists, taking into account:

- these instructions
- the warning and instructions labels on the motor / gear unit
- all other project planning documentation, commissioning instructions and schematic diagrams
- the system specific regulations and requirements
- the current national / regional regulations (safety / accident prevention regulations)

### Intended use

These electrical motors are intended for industrial systems. They conform to the valid standards and regulations and meet the requirements of the Low Voltage Directive 73/23/EEC. Technical data as well as permitted conditions on site can be found on the nameplate and in these operating instructions. These details must be observed!

## SICHERHEITSANWEISUNGEN

 Die nachstehenden Sicherheitsanweisungen beziehen sich hauptsächlich auf den Einsatz der Getriebemotoren. Dabei sind jedoch auch die zusätzlichen in den einzelnen Abschnitten dieses Anleitungshandbuchs enthaltenen Sicherheitsanweisungen zu berücksichtigen. Die Spannungsteile und die beweglichen Teile von elektrischen Maschinen können schwere Verletzungen verursachen oder gar tödliche Gefahren in sich bergen. Die Installation, der Anschluss und die Inbetriebsetzung, ebenso wie die Instandhaltungs- und Reparatureingriffe, dürfen ausschließlich nur von Fachpersonal durchgeführt werden, dass folgendes berücksichtigen muss:

- die vorliegenden Anleitungen
- die Warnhinweise und die Angaben auf dem Einheit Motor/Getriebe angebrachten Anweisungsetiketten
- alle Projektdokumente, die Anleitungen für die Inbetriebsetzung und die technischen Pläne
- die spezifischen Regeln und Anforderungen des Systems
- die sich in Kraft befindlichen nationalen/regionalen Richtlinien (Sicherheits-/Unfallschutznormen)

### Vorgesehener Einsatz

Diese Elektromotoren sind für den Einsatz in industriellen Systemen bestimmt. Sie entsprechen den gültigen Richtlinien und Regelungen und der Niederspannungsrichtlinie EWG/73/23. Die technischen Daten, ebenso wie die zulässigen Bedingungen vor Ort, werden auf dem Typenschild der Maschine und in der vorliegenden Anleitung angegeben. Die hier enthaltenen Informationen müssen eingehalten werden!

## INSTRUCTION DE SÉCURITÉ

 Les instructions de sécurité suivantes se réfèrent principalement à l'utilisation des motoréducteurs. Considérer les instructions de sécurité supplémentaires indiquées dans les chapitres de ce manuel d'instructions. Les conducteurs de tension et les organes en mouvement des machines électriques peuvent provoquer de graves blessures, voire même être mortels. L'installation, le branchement et la mise en service, ainsi que les interventions d'entretien et de réparation, doivent être effectuées exclusivement par du personnel qualifié, dans le respect des indications suivantes:

- les présentes instructions
- les signaux d'avertissement et les autocollants d'instructions présents sur l'unité moteur/réducteur
- tous les documents de conception, les instructions de mise en service et les schémas techniques
- les réglementations et les conditions requises spécifiques du système
- les normes nationales/régionales en vigueur (normes de sécurité/de prévention des accidents)

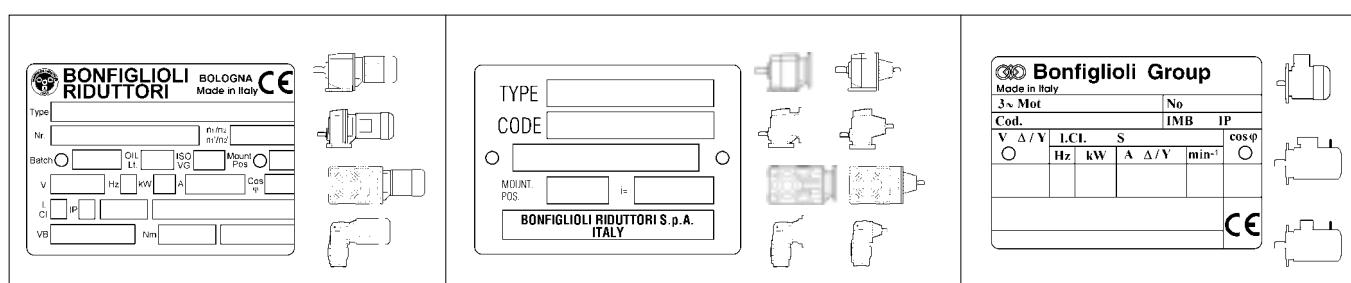
### Utilisation prévue

Ces moteurs électriques sont destinés à être utilisés dans des systèmes industriels. Ils sont conformes aux normes et réglementations en vigueur et respectent les dispositions de la Directive Basse Tension 73/23/CEE. Les caractéristiques techniques ainsi que les conditions admises sur le site sont indiquées sur la plaque signalétique de la machine et dans ce manuel d'instructions. Il est indispensable de respecter les informations qui y sont indiquées !

## 1.0 IDENTIFICATION

Tous les réducteurs, motoréducteurs et moteurs sont munis d'une plaque sur laquelle figurent les données nécessaires à leur identification.

Dans le tableau sont indiquées les trois types de plaques signalétiques utilisées pour les différentes configurations.



## 2.0 RICHIESTA RICAMBI

La tabella indica i dati che è indispensabile fornire in fase di richiesta ricambi per poter effettuare una corretta identificazione del prodotto e di conseguenza una sollecita risposta alla richiesta stessa. In funzione delle particolari tecniche di montaggio dei componenti utilizzate dalla BONFIGLIOLI RIDUTTORI si consiglia, dove previsto, l'acquisto dei kit di montaggio.

## 2.0 SPARE PARTS ORDER

Table indicates the data that must be supplied when placing a spare part order so that the product may be correctly identified and the order processed promptly. Due to the assembly techniques for components used by BONFIGLIO- LI RIDUTTORI to optimise the performance of gearboxes and gearmotors, we recommend the purchase (where applicable) of the mounting kits.

## 2.0 BESTELLUNG VON ERSATZTEILEN

In der Tabelle sind die Daten aufgelistet, die bei der Bestellung von Ersatzteilen unbedingt angegeben werden müssen, damit die Teile richtig identifiziert werden und die Bestellung schneller erfolgen kann. Wegenderspezialen Montagetechniken der Komponenten, die bei BONFIGLIOLI RIDUTTORI angewendet werden und die zu einer Verbesserung der Leistungen der Getriebe und Getriebemotoren führen, empfehlen wir, wenn möglich die Ausrüstungselemente zu kaufen.

## 2.0 DEMANDE DE PIÈCES DETACHEES

Le tableau indique les données qu'il est indispensable de fournir pour toute commande de pièces détachées, ceci pour permettre l'identification correcte du produit et, par conséquent, une livraison dans les meilleurs délais. Du fait des techniques particulières de montage des composants utilisées par BON- FIGLIOLI RIDUTTORI à la même d'optimiser les performances de réducteurs et de motoréducteurs, nous vous conseillons dans la mesure du possible l'achat des kits.

Identificazione prodotto	Product information	Produktbeschreibung	Identification produit
Type/Mot. :		Nr./Code :	
Batch/N° :		Nm :	
Identificazione parti	Parts identification	Beschreibung der Teile	Identification des composants
N.	Denominazione / Description / Benennung / Dénomination		Q.tà / Q.ty / Menge / Q.té

BONFIGLIOLI RIDUTTORI S.p.A.  
si riserva il diritto di richiedere ulteriori informazioni sul prodotto.

BONFIGLIOLI RIDUTTORI S.p.A.  
reserves the rights to require further information on the product itself.

BONFIGLIOLI RIDUTTORI S.p.A.  
beeinhaltet das Recht, weitere Informationen über das Produkt zu erfragen.

BONFIGLIOLI RIDUTTORI S.p.A.  
se réserve le droit pour tout autre renseignement sur le produit.

### 3.0 LAYOUT GENERALE

La tabella sottostante illustra lo schema generale di collegamento dei vari moduli con l'indicazione dei paragrafi in cui sono riportate le sezioni e le liste dei componenti.

### 3.0 GENERAL LAYOUT

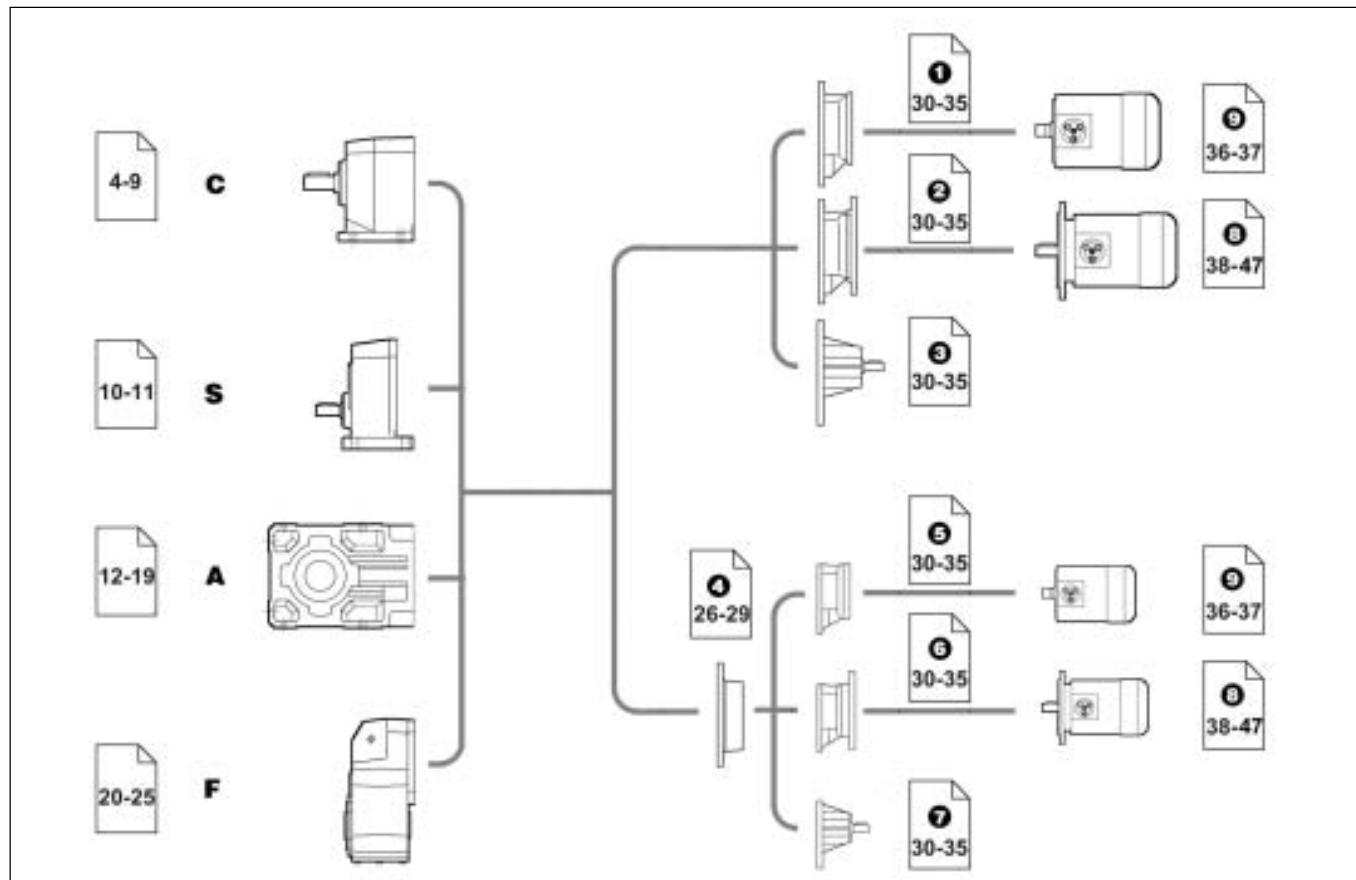
Table below shows the general layout for the various modules and indicates the paragraphs in which the cross-sectional drawings and parts lists are given.

### 3.0 ALLGEMEINES LAYOUT

Die Tabelle zeigt das Gesamtschema zum Zusammenbau der verschiedenen Baueinheiten und verweist auf die Abschnitte, in denen die einzelnen Untergruppen und Komponentenlisten aufgeführt sind.

### 3.0 SCHEMA D'IMPLANTATION

Le tableau présente le schéma général d'accouplement des différents modules, avec l'indication des paragraphes où sont fournies les sections et les nomenclatures des composants.



Legenda:

- C Modulo uscita C  
S Modulo uscita S  
A Modulo uscita A  
F Modulo uscita F

Key:

- C Output module C  
S Output module S  
A Output module A  
F Output module F

Zeichenerklärung:

- C Abtriebseinheit C  
S Abtriebseinheit S  
A Abtriebseinheit A  
F Abtriebseinheit F

Legende:

- C Module de sortie C  
S Module de sortie S  
A Module de sortie A  
F Module de sortie F

- ① Modulo S (2 stadi)  
② Modulo P (IEC) (2 stadi)  
③ Modulo HS (2 stadi)  
④ Modulo addizionale (3 stadi)  
⑤ Modulo S (3 stadi)  
⑥ Modulo P (IEC) (3 stadi)  
⑦ Modulo HS (3 stadi)  
⑧ Motore IEC  
⑨ Motore M

- ① S Module (2 stages)  
② P Module (IEC) (2 stages)  
③ HS module (2 stages)  
④ Additional module (3 stages)  
⑤ Module S (3 stages)  
⑥ P Module (IEC) (3 stages)  
⑦ HS module (3 stages)  
⑧ IEC motor  
⑨ M motor

- ① S Baueinheit (2 Stufen)  
② P Baueinheit (IEC) (2 Stufen)  
③ HS Baueinheit (2 Stufen)  
④ Zusatzbaueinheit (3 Stufen)  
⑤ S Baueinheit (3 Stufen)  
⑥ P Baueinheit (IEC) (3 Stufen)  
⑦ HS Baueinheit (3 Stufen)  
⑧ IEC Motor  
⑨ M Motor

- ① Module S (2 étages)  
② Module P (IEC) (2 étages)  
③ Module HS (2 étages)  
④ Module additionnel (3 étages)  
⑤ Module S (3 étages)  
⑥ Module P (CEI) (3 étages)  
⑦ Module HS (3 étages)  
⑧ Moteur normalisé CEI  
⑨ Moteur M

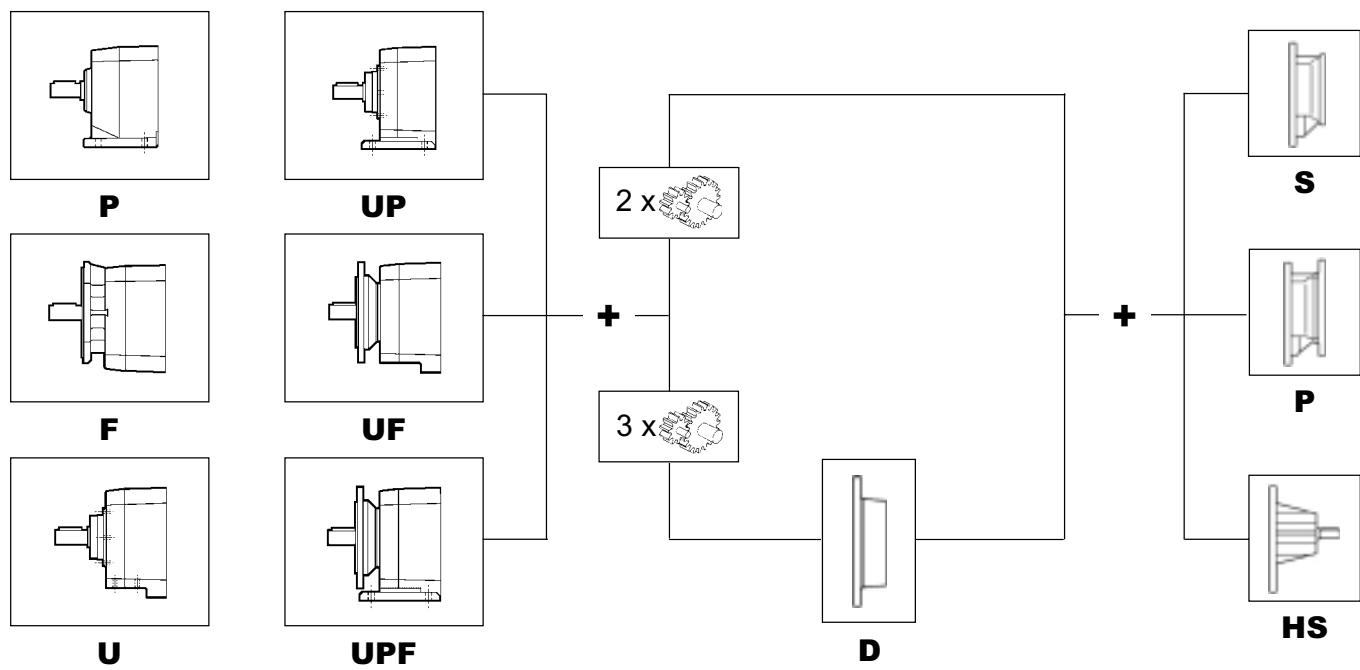
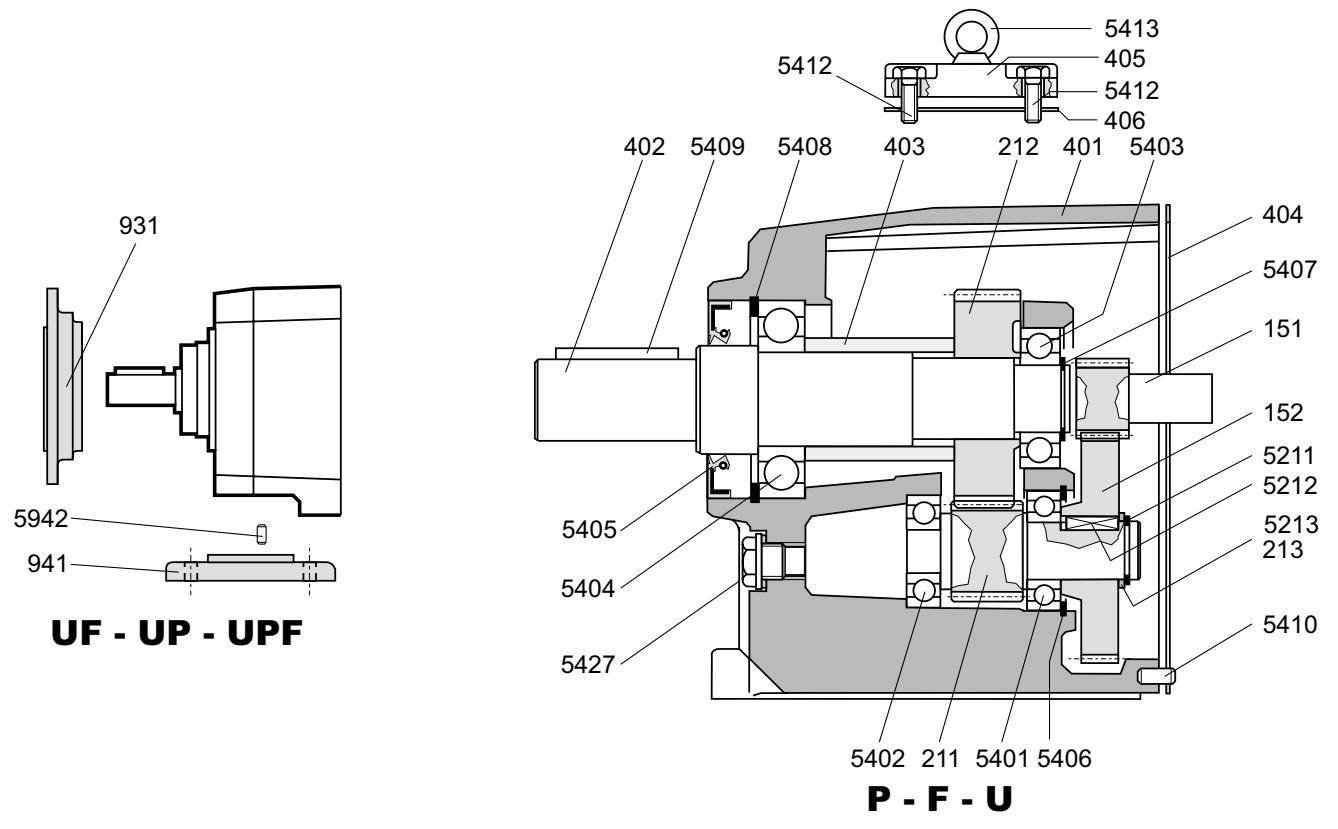
4.0 MODULO USCITA  
C10 ... C60

4.0 C10 ... C60  
OUTPUT MODULE

4.0 ABTRIEBSEINHEIT  
C10 ... C60

4.0 MODULE SORTIE  
C10 ... C60

## C10 ... C60



C_	ref.	<b>P - F - U - UP - UF - UPF</b>			
10 - 20 - 30 40 - 50 - 60	151	Pignone 1 <sup>a</sup> riduzione	<i>1<sup>st</sup> red. pinion</i>	Ritzel 1. Stufe	<i>Pignon 1<sup>ère</sup> réd.</i>
	152	Corona 1 <sup>a</sup> riduzione	<i>1<sup>st</sup> red. gearwheel</i>	Zahnrad 1. Stufe	<i>Couronne 1<sup>ère</sup> réd.</i>
	211	Pignone lento	<i>Pinion shaft</i>	Abtriebsritzel	<i>Pignon à la sortie</i>
	212	Corona lenta	<i>Gear</i>	Abtriebszahnrad	<i>Couronne à la sortie</i>
	401	Cassa	<i>Gear case</i>	Gehäuse	<i>Carter</i>
	402	Albero lento	<i>Output shaft</i>	Abtriebswelle	<i>Arbre de sortie</i>
	403	Distanziale	<i>Spacer</i>	Distanzring	<i>Entretoise</i>
	404	Guarnizione	<i>Gasket</i>	Dichtung	<i>Joint</i>
	5211	Anello seeger	<i>Circlip</i>	Seegerring	<i>Seeger</i>
	5212	Linguetta	<i>Key</i>	Paßteder	<i>Clavette</i>
	5401	Cuscinetto	<i>Bearing</i>	Kugellager	<i>Roulement</i>
	5402	Cuscinetto	<i>Bearing</i>	Kugellager	<i>Roulement</i>
	5403	Cuscinetto	<i>Bearing</i>	Kugellager	<i>Roulement</i>
	5404	Cuscinetto	<i>Bearing</i>	Kugellager	<i>Roulement</i>
	5405	Anello di tenuta	<i>Seal ring</i>	Simmerring	<i>Bague d'étanchéité</i>
	5406	Anello seeger	<i>Circlip</i>	Seegerring	<i>Seeger</i>
	5407	Anello seeger	<i>Circlip</i>	Seegerring	<i>Seeger</i>
	5408	Anello seeger	<i>Circlip</i>	Seegerring	<i>Seeger</i>
	5409	Linguetta	<i>Key</i>	Paßteder	<i>Clavette</i>
	5410	Spina cilindrica	<i>Dowel pin</i>	Zylinderstift	<i>Goupille cylindrique</i>
20 - 30	213	Ralla pignone lento	<i>Washer</i>	Scheibe des Abtriebsritzel	<i>Butée pignon à la sortie</i>
40	5213	Ralla pignone lento	<i>Washer</i>	Scheibe des Abtriebsritzel	<i>Butée pignon à la sortie</i>
60	405	Coperchio ispezione	<i>Inspection cover</i>	Inspektionsdeckel	<i>Couvercle d'inspection</i>
	406	Guarnizione	<i>Gasket</i>	Dichtung	<i>Joint</i>
	5412	Vite di fissaggio	<i>Fixing screw</i>	Befestigungsschraube	<i>Vis de fixation</i>
	5413	Golfare	<i>Eyebolt</i>	ÖSENSCHRAUBE	<i>Cheville à oeil</i>
	5427	Tappo olio	<i>Oil plug</i>	ÖLVERSCHLUß	<i>Bouchon d'huile</i>
<b>UF - UPF</b>					
10 - 20 - 30 40 - 50 - 60	931	Flangia	<i>Bolted flange</i>	Flansch	<i>Bride</i>
<b>UP - UPF</b>					
10 - 20 - 30 40 - 50 - 60	941	Piedi riportati	<i>Bolted flange</i>	Eingesetzte Füße	<i>Pattes rapportées</i>
	5942	Spina cilindrica piede	<i>Dowel pin</i>	Zylinderstift des Fußes	<i>Goupille cylindrique patte</i>

## 8.0 MODULO ADDIZIONALE

Il modulo addizionale viene interposto fra il modulo uscita del riduttore (C, A, F) e uno dei moduli entrata (paragrafo 9.0).

## 8.0 ADDITIONAL GEAR MODULE

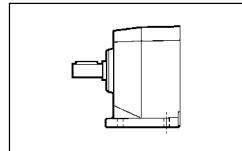
The additional module is assembled between the output module of the gearbox (C, A, F) and one of the input modules (section 9.0).

## 8.0 ZUSÄTZLICHE BAUEINHEIT

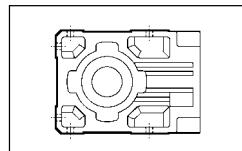
Die zusätzliche Baueinheit wird zwischen die Ausgangseinheit des Getriebes (C, A, F) und eine der Baueinheiten mit (siehe Abschnitt 9.0) eingefügt.

## 8.0 MODULE ADDITIONNEL

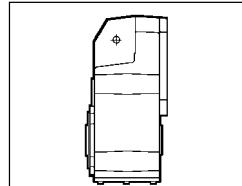
Le module additionnel est interpolé entre le module de sortie du réducteur (C, A, F) et un des modules d'entrée (paragraphe 9.0).



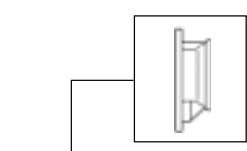
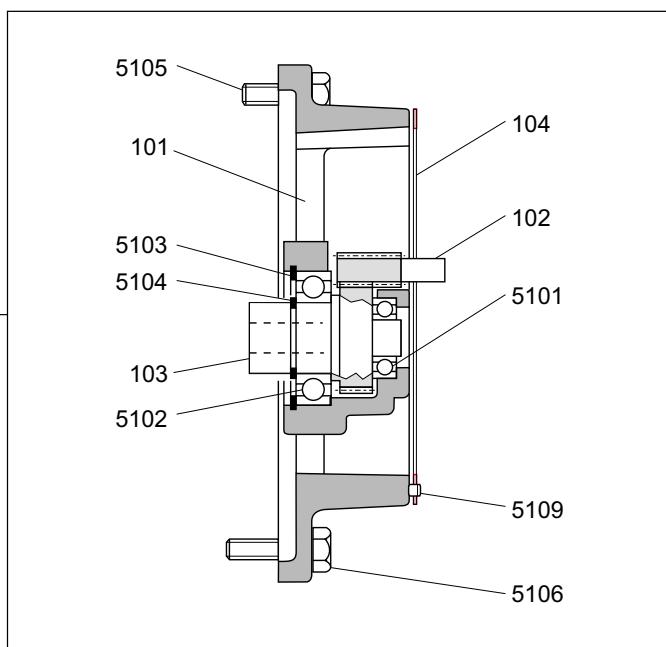
C203 - C503 - C603



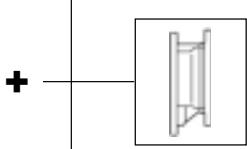
A203 - A504 - A604



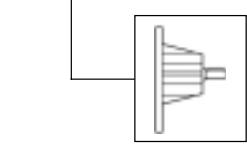
F203 - F504 - F604



S



P



HS

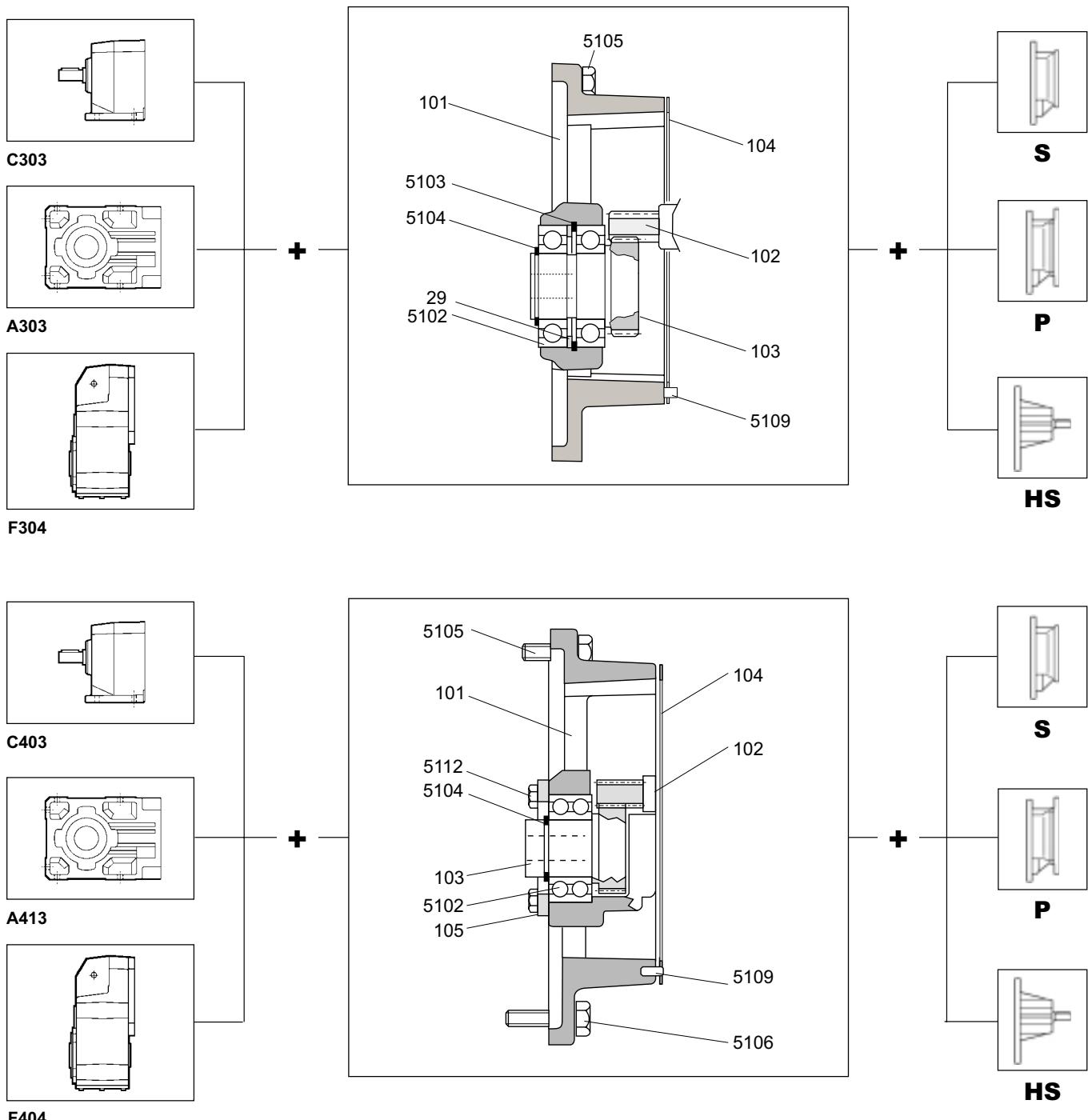
**!** Quando le entrate S,P,HS devono essere fissate alle casse o ai moduli addizionali, le viti di fissaggio, nel caso in cui si trovino in corrispondenza di fori passanti devono avere il trattamento "DRILOC" sul filetto. Se non è possibile reperirle, è indispensabile effettuare un'efficace sigillatura applicando un adeguato prodotto (Loctite 574) sul filetto all'atto del montaggio.

**!** S (integr. motor), P (IEC motor interface), or HS (free shaft) input kits are to be fitted onto the main gear housings or to the additional gear module. Should fasteners engage into through holes, the threads of the former must be "DRILOC" treated for sealing purposes. If such screws are not available locally, we recommend to apply Loctite 574, or an equivalent product, on the threads before connecting the parts.

**!** Sollten die Antriebe S,P,HS an den Gehäusen oder den zusätzlichen Einheiten befestigt werden, muß auf die Gewinde der Schrauben 5002, 5027, und 5047, falls sie in den durchgehenden Bohrungen angeordnet sein sollten, "DRILOC" aufgetragen werden. Sollte dieses Mittel nicht erhältlich sein, muß bei der Montage durch das Auftragen eines geeigneten Produkts (Loctite 574) auf das Gewinde, eine haltbare Sicherung gewährleistet werden.

**!** Lorsque les entrées S,P,HS doivent être fixées aux carter ou aux modules additionnels, les vis de fixation, lorsqu'elles se trouvent en face des orifices passants, doivent être traitées avec "DRILOC" au niveau du filetage. Si ce produit n'est pas disponible, au moment du montage, il est indispensable d'effectuer un scellement efficace en appliquant un produit spécifique (Loctite 574) sur le filetage.

C_, A_, F_	ref.				
20 - 50 - 60	101	Modulo addizionale	Gear housing	Zusatzbaueinheit	Module additionnel
	102	Pignone modulo addizionale	Pinion shaft	Ritzel für Zusatzbaueinheit	Pignon module additionnel
	103	Corona modulo addizionale	Gear	Zahnrad für Zusatzbaueinheit	Couronne module additionnel
	104	Guarnizione	Gasket	Dichtung	Bague d'étanchéité
	5101	Cuscinetto	Bearing	Kugellager	Roulement
	5102	Cuscinetto	Bearing	Kugellager	Roulement
	5103	Anello seeger	Circlip	Seegerring	Seeger
	5104	Anello seeger	Circlip	Seegerring	Seeger
	5105	Vite di fissaggio	Fixing Screw	Befestigungsschraube	Vis de fixation
	5106	Vite di fissaggio	Fixing Screw	Befestigungsschraube	Vis de fixation
	5109	Spina cilindrica	Dowel pin	Zylinderstift	Goupille cylindrique



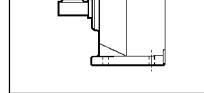
C_, A_, F_	ref.				
30 - 40	101 102 103 104 5102 5104 5105 5109	Modulo addizionale Pignone modulo addizionale Corona modulo addizionale Guarnizione Cuscinetto Anello seeger Vite di fissaggio Spina cilindrica	Gear housing Pinion shaft Gear Gasket Bearing Circlip Fixing Screw Dowel pin	Zusatzbaueinheit Ritzel für Zusatzbaueinheit Zahnrad für Zusatzbaueinheit Dichtung Kugellager Seegerring Befestigungsschraube Zylinderstift	Module additionnel Pignon module additionnel Couronne module additionnel Bague d'étanchéité Roulement Seeger Vis de fixation Goupille cylindrique
30	5103 29	Anello seeger Ralla	Circlip Washer	Seegerring Scheibe	Seeger Butée
40	105 5106 5112	Anello di chiusura Vite di fissaggio Vite di fissaggio	Closing ring Fixing Screw Fixing screw	Schlüßring Befestigungsschraube Befestigungsschraube	Bague de fermeture Vis de fixation Vis de fixation

Il modulo aggiornale viene inserito fra il modulo uscita del riduttore (C, A, F) e uno dei moduli entrata (paragrafo 9.0).

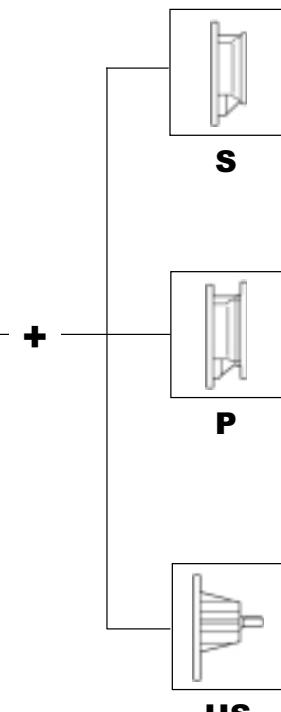
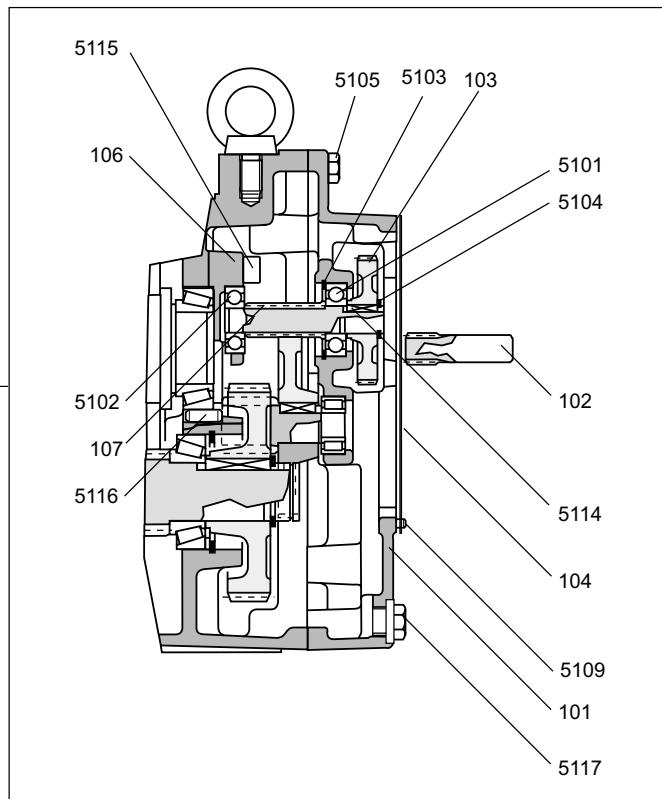
The additional module is fitted between the output module of the gearbox (C, A, F) and one of the input modules (section 9.0).

Die zusätzliche Baueinheit wird zwischen die Ausgangseinheit des Getriebes (C, A, F) und eine der Baueinheiten mit (siehe Abschnitt 9.0) eingefügt.

Le module additionnel est inséré entre le module de sortie du réducteur (C, A, F) et un des modules d'entrée (paragraphe 9.0).



C704 - C804  
C904 - C1004



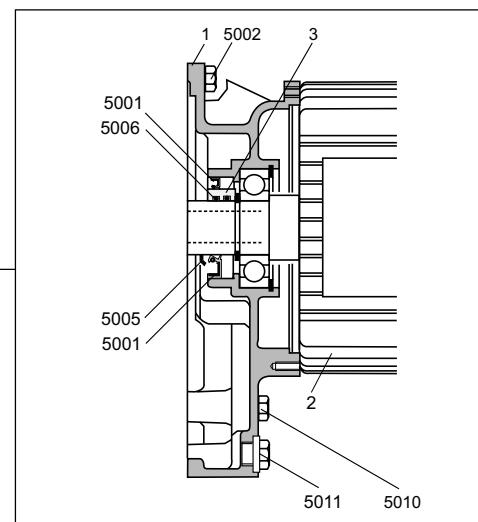
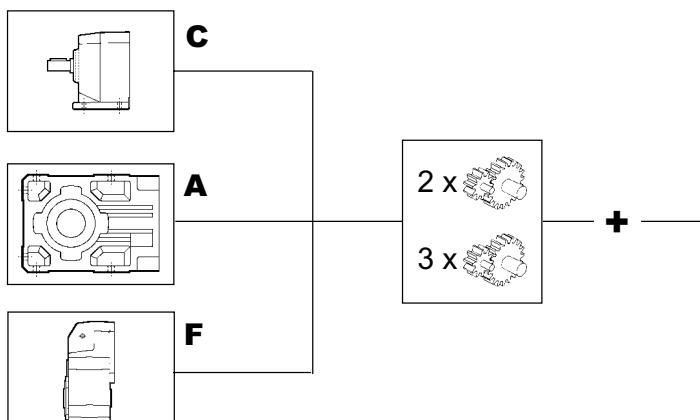
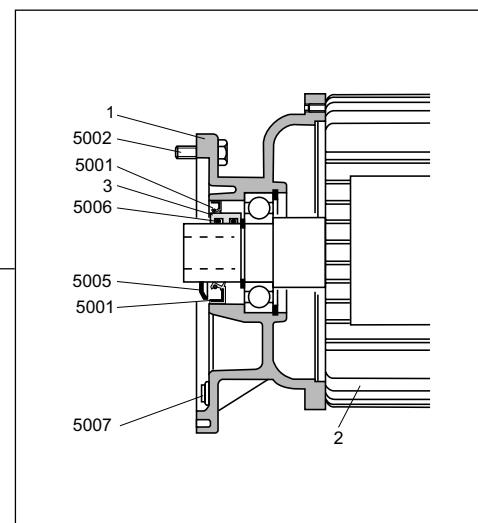
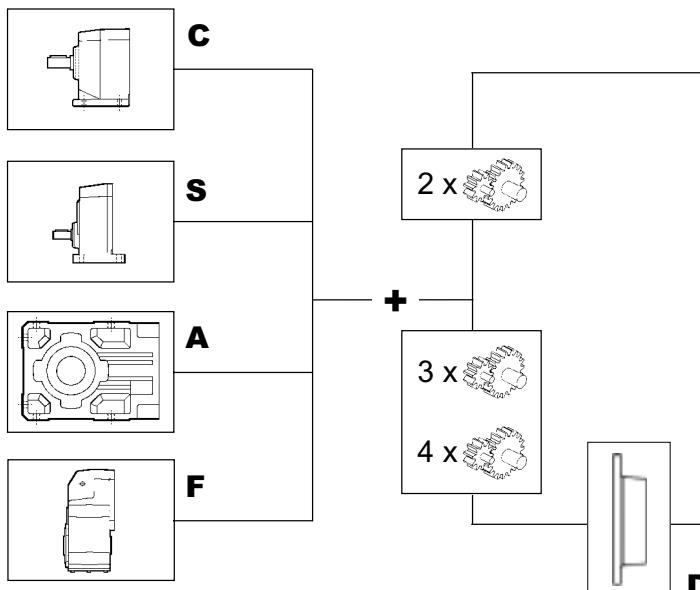
**!** Quando le entrate S,P,HS devono essere fissate alle casse o ai moduli aggiornamenti, le viti di fissaggio, nel caso in cui si trovino in corrispondenza di fori passanti devono avere il trattamento "DRILOC" sul filetto. Se non è possibile reperirle, è indispensabile effettuare un'efficace sigillatura applicando un adeguato prodotto (Loctite 574) sul filetto all'atto del montaggio.

**!** S (integr. motor), P (IEC motor interface), or HS (free shaft) input kits are to be fitted onto the main gear housings or to the additional gear module. Should fasteners engage into through holes, the threads of the former must be "DRILOC" treated for sealing purposes. If such screws are not available locally, we recommend to apply Loctite 574, or an equivalent product, on the threads before connecting the parts.

**!** Sollten die Antriebe S,P,HS an den Gehäusen oder den zusätzlichen Einheiten befestigt werden, muß auf die Gewinde der Schrauben 5002, 5027, und 5047, falls sie in den durchgehenden Bohrungen angeordnet sein sollten, "DRILOC" aufgetragen werden. Sollte dieses Mittel nicht erhältlich sein, muß bei der Montage durch das Auftragen eines geeigneten Produkts (Loctite 574) auf das Gewinde, eine haltbare Sicherung gewährleistet werden.

**!** Lorsque les entrées S,P,HS doivent être fixées aux carter ou aux modules additionnels, les vis de fixation, lorsqu'elles se trouvent en face des orifices passants, doivent être traitées avec "DRILOC" au niveau du filetage. Si ce produit n'est pas disponible, au moment du montage, il est indispensable d'effectuer un scellement efficace en appliquant un produit spécifique (Loctite 574) sur le filetage.

C_	ref.				
70 - 80 90 - 100	101	Modulo aggiornale	Gear housing	Zusatzbaueinheit	Module additionnel
	102	Pignone modulo aggiornale	Pinion shaft	Ritzel für Zusatzbaueinheit	Pignon module additionnel
	103	Corona modulo aggiornale	Gear	Zahnrad für Zusatzbaueinheit	Couronne module additionnel
	104	Guarnizione	Gasket	Dichtung	Bague d'étanchéité
	106	Supporto cuscinetto	Bearing support	Lageraufnahme	Support roulement
	107	Pignone 1° mod.D	Pinion shaft	Ritzel 1 Mod. D	Pignon 1 mod. D
	5101	Cuscinetto	Bearing	Kugellager	Roulement
	5102	Cuscinetto	Bearing	Kugellager	Roulement
	5103	Anello seeger	Circlip	Seegerring	Seeger
	5104	Anello seeger	Circlip	Seegerring	Seeger
	5105	Vite di fissaggio	Fixing Screw	Befestigungsschraube	Vis de fixation
	5109	Spina cilindrica	Dowel pin	Zylinderstift	Goupille cylindrique
	5111	Linguetta	Key	Paßfeder	Clavette
	5115	Vite di fissaggio	Fixing screw	Befestigungsschraube	Vis de fixation
	5117	Tappo olio	Oil plug	Ölverschluß	Bouchon d'huile
70 - 80	5116	Spina elastica	Dowel pin	Zylinderstift	Goupille cylindrique

**9.0 MODULO ENTRATA S**
**9.0 S INPUT MODULE**
**9.0 ANTRIEBSEINHEIT S**
**9.0 MODULE ENTREE S**


**!** Quando le entrate S,P,HS devono essere fissate alle casse o ai moduli addizionali, le viti di fissaggio, nel caso in cui si trovino in corrispondenza di fori passanti devono avere il trattamento "DRILOC" sul filetto. Se non è possibile reperire, è indispensabile effettuare un'efficace sigillatura applicando un adeguato prodotto (Loctite 574) sul filetto all'atto del montaggio.

**!** S (integr. motor), P (IEC motor interface), or HS (free shaft) input kits are to be fitted onto the main gear housings or to the additional gear module. Should fasteners engage into through holes, the threads of the former must be "DRILOC" treated for sealing purposes. If such screws are not available locally, we recommend to apply Loctite 574, or an equivalent product, on the threads before connecting the parts.

**!** Sollten die Antriebe S,P,HS an den Gehäusen oder den zusätzlichen Einheiten befestigt werden, muß auf die Gewinde der Schrauben 5002, 5027, und 5047, falls sie in den durchgehenden Bohrungen angeordnet sein sollten, "DRILOC" aufgetragen werden. Sollte dieses Mittel nicht erhältlich sein, muß bei der Montage durch das Auftragen eines geeigneten Produkts (Loctite 574) auf das Gewinde, eine haltbare Sicherung gewährleistet werden.

**!** Lorsque les entrée S,P,HS doivent être fixées aux carters ou aux modules additionnels, les vis de fixation, lorsqu'elles se trouvent en face des orifices passants, doivent être traitées avec "DRILOC" au niveau du filetage. Si ce produit n'est pas disponible, au moment du montage, il est indispensable d'effectuer un scellement efficace en appliquant un produit spécifique (Loctite 574) sur le filetage.

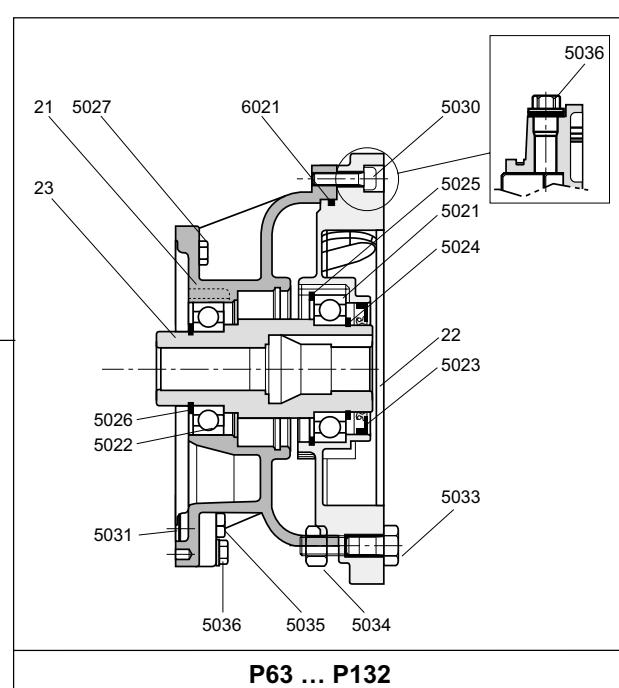
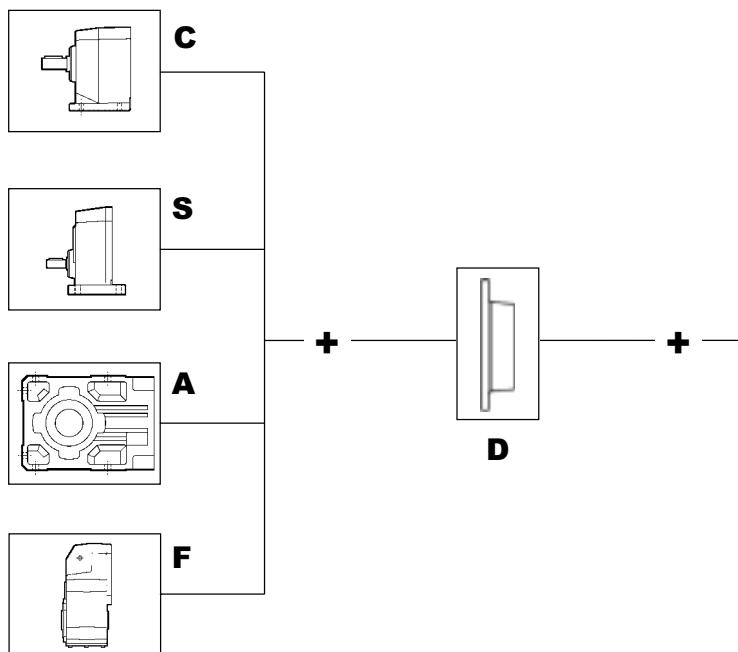
<b>S_(C_, A_, S_, F_)</b>	<b>ref.</b>				
<b>M1 - M2 - M3 - M4 - M5</b>	1	Flangia motore compatto	Compact motor flange	Flansch des kompakten Motors	Bride moteur compact
	2	Motore compatto	Compact motor	Kompakter Motor	Moteur compact
	3	Boccolla per anello di tenuta	Oil seal bushing	Buchse für Dichtungsringe	Douille pour joint d'étanchéité
	5001	Anello di tenuta	Oil seal	Simmerring	Bague d'étanchéité
	5002	Vite di fissaggio	Fixing screw	Befestigungsschraube	Vis de fixation
<b>M3 - M4 - M5</b>	5005	Gamma seals	Gamma ring	Gamma - Ring	Déflecteur
	5007	Tappo olio	Oil plug	Ölverschluß	Bouchon d'huile
<b>M3 - M4 - M5</b>	5006	Anello O-ring	O-ring seal	O-Ring	Bague O-ring
<b>M2 - M3 - M4 - M5</b>	5010	Vite di fissaggio	Fixing screw	Befestigungsschraube	Vis de fixation
	5011	Tappo olio	Oil plug	Ölverschluß	Bouchon d'huile

## 9.1 MODULO ENTRATA P

## 9.1 P INPUT MODULE

## 9.1 ANTRIEBSEINHEIT P

## 9.1 MODULE ENTREE P



P63 ... P132

**!** Quando le entrate S,P,HS devono essere fissate alle casse o ai moduli addizionali, le viti di fissaggio, nel caso in cui si trovino in corrispondenza di fori passanti devono avere il trattamento "DRILOC" sul filetto. Se non è possibile reperirle, è indispensabile effettuare un'efficace sigillatura applicando un adeguato prodotto (Loctite 574) sul filetto all'atto del montaggio.

**!** S (integr. motor), P (IEC motor interface), or HS (free shaft) input kits are to be fitted onto the main gear housings or to the additional gear module. Should fasteners engage into through holes, the threads of the former must be "DRILOC" treated for sealing purposes. If such screws are not available locally, we recommend to apply Loctite 574, or an equivalent product, on the threads before connecting the parts.

**!** Sollten die Antriebe S,P,HS an den Gehäusen oder den zusätzlichen Einheiten befestigt werden, muß auf die Gewinde der Schrauben 5002, 5027, und 5047, falls sie in den durchgehenden Bohrungen angeordnet sein sollten, "DRILOC" aufgetragen werden. Sollte dieses Mittel nicht erhältlich sein, muß bei der Montage durch das Auftragen eines geeigneten Produkts (Loctite 574) auf das Gewinde, eine haltbare Sicherung gewährleistet werden.

**!** Lorsque les entrée S,P,HS doivent être fixées aux carters ou aux modules additionnels, les vis de fixation, lorsqu'elles se trouvent en face des orifices passants, doivent être traitées avec "DRILOC" au niveau du filetage. Si ce produit n'est pas disponible, au moment du montage, il est indispensable d'effectuer un scellement efficace en appliquant un produit spécifique (Loctite 574) sur le filetage.

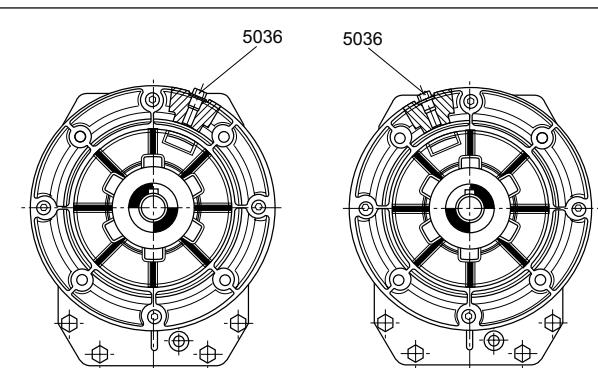
P_ (C_, S_, A_, F_)	ref.				
P63 ... P132	21	Flangia motore	Main flange	Motorflansch	Bride moteur
	22	Controflangia IEC	IEC interface	IEC-Flansch	Bride
	23	Albero veloce	Input shaft	Antriebswelle	Arbre rapide
	5021	Cuscinetto	Bearing	Kugellager	Roulement
	5022	Cuscinetto	Bearing	Kugellager	Roulement
	5023	Anello di tenuta	Oil seal	Simmerring	Bague d'étanchéité
	5024	Anello seeger	Circlip	Seegerring	Seeger
	5025	Anello seeger	Circlip	Seegerring	Seeger
	5026	Anello seeger	Circlip	Seegerring	Seeger
	5027	Vite di fissaggio	Fixing screw	Befestigungsschraube	Vis de fixation
	5030	Vite di fissaggio	Fixing screw	Befestigungsschraube	Vis de fixation
	5031	Tappo olio	Oil plug	Ölverschluß	Bouchon d'huile
	5033	Vite di fissaggio	Fixing screw	Befestigungsschraube	Vis de fixation
	5034	Dado	Nut	Mutter	Ecrou
	5035	Vite di fissaggio	Fixing screw	Befestigungsschraube	Vis de fixation
	5036	Tappo olio	Oil plug	Ölverschluß	Bouchon d'huile
	5040	Anello Seeger	Circlip	Seegerring	Seeger

**Posizione tappo olio su flangia  
attacco motore**

**Breather plug location onto  
motor mounting flange**

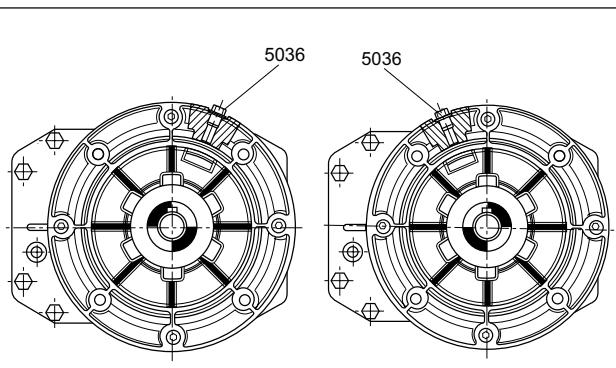
**Position der Ölschraube am  
Motoranschlussflansch**

**Position bouchon d'huile sur  
bride de fixation moteur**



**P63 ... P112**

**P132**

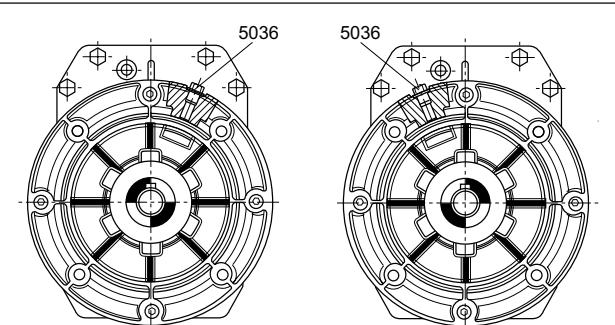


**P 63 ... P112**

**P132**

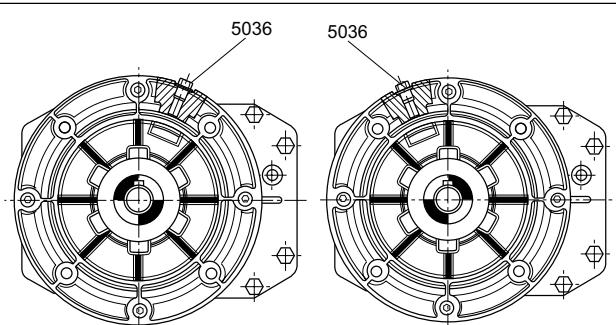
Tipo - Type Typ - Type	Posizioni di montaggio - Mounting Positions Einbaulagen - Positions de montage
<b>A</b>	B3 - VA - VB
<b>C (P-UP-UPF)</b>	B3 - V5 - V6
<b>C (F-UF-U)</b>	B5 - V1 - V3
<b>F</b>	H1 - H5 - H6
<b>S (P)</b>	B3 - V5 - V6
<b>S (F)</b>	B5 - V1 - V3

Tipo - Type Typ - Type	Posizioni di montaggio - Mounting Positions Einbaulagen - Positions de montage
<b>A</b>	B7
<b>C (P-UP-UPF)</b>	B7
<b>F</b>	H3
<b>S (P)</b>	B7
<b>S (F)</b>	B53



**P63 ... P112**

**P132**



**P 63 ... P112**

**P132**

Tipo - Type Typ - Type	Posizioni di montaggio - Mounting Positions Einbaulagen - Positions de montage
<b>A</b>	B8
<b>C (P-UP-UPF)</b>	B8
<b>F</b>	H2
<b>S (P)</b>	B8
<b>S (F)</b>	B52

Tipo - Type Typ - Type	Posizioni di montaggio - Mounting Positions Einbaulagen - Positions de montage
<b>A</b>	B6
<b>C (P-UP-UPF)</b>	B6
<b>F</b>	H4
<b>S (P)</b>	B6
<b>S (F)</b>	B51

**Note:**

Sostituire il tappo chiuso con il tappo di sfiato fornito a corredone i seguenti casi:

**Note:**

Replace the closed plug with the breather plug supplied in the following cases:

**Hinweis:**

Den mitgelieferten Ablassverschlussstopfen in den folgenden Fällen verwenden:

**Remarques:**

Remplacer le bouchon fermé par le bouchon de vidange livré en dotation dans les cas suivants :

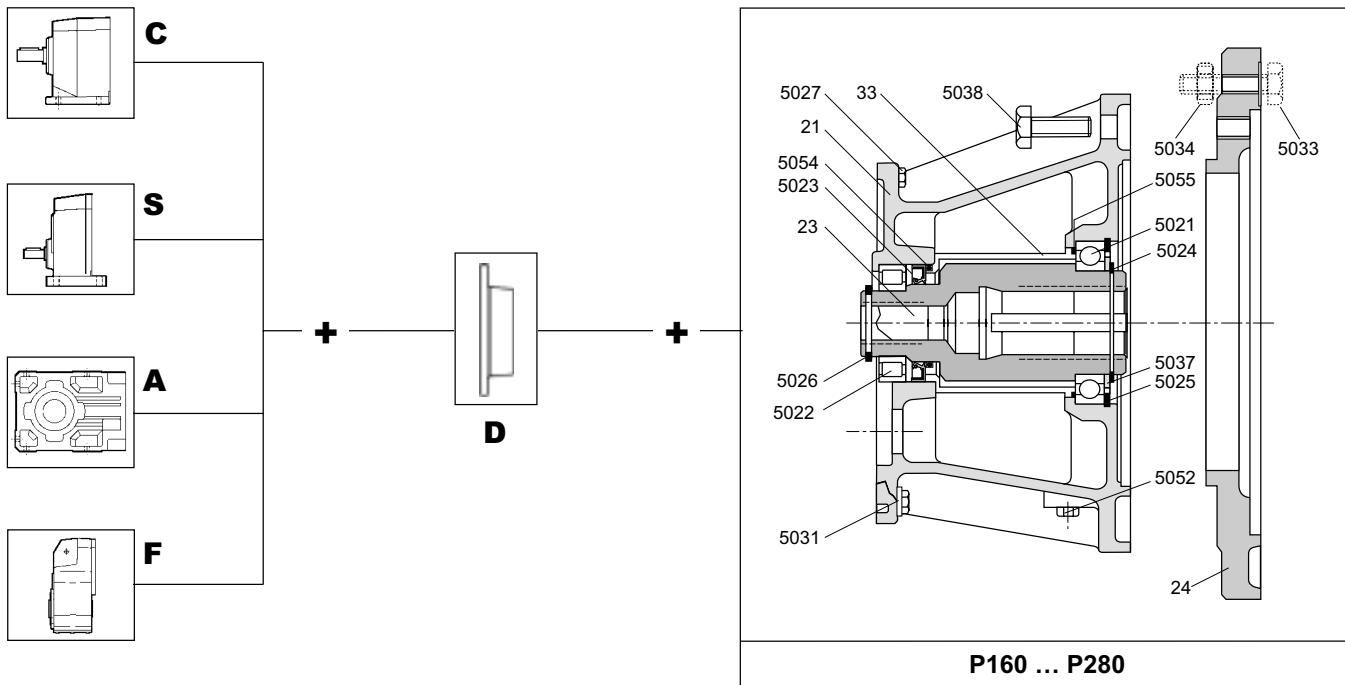
Tipo - Type - Typ - Type	Posizioni di montaggio - Mounting Positions Einbaulagen - Positions de montage
<b>A 102, A 202-A 203, A 302-A 303</b>	B3 - B8 - B6 - B7 - VA
<b>A 403, A 504, A 604, A 704, A 804, A 904</b>	VA
<b>C 102, C 202-C 203, C 302-C 303, C 402-C 403, C 502-C 503</b>	B3 - B8 - B6 - B7 - V5 - V1 - B5 - B51 - B52 - B53
<b>C 603, C 704, C 804, C 904, C 1004</b>	V5 - V1
<b>F 102, F 202-F 203, F 302-F 303-F 304</b>	H1 - H3 - H4 - H5
<b>F 404, F 504, F 604, F 704, F 804, F 904</b>	H5
<b>S 101, S 201, S 301, S 401</b>	B3 - B6 - B7 - B8 - V5 - B5 - B52 - V1 - B51 - B53
<b>S 501</b>	V1 - V5

In tutti gli altri casi mantenere il tappo chiuso.

In all the other cases leave the closed plug into position.

In allen anderen Fällen, den Verschluss geschlossen lassen.

Dans les autres cas, garder le bouchon fermé.



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**!** S (integr. motor), P (IEC motor interface), or HS (free shaft) input kits are to be fitted onto the main gear housings or to the additional gear module. Should fasteners engage into through holes, the threads of the former must be "DRILOC" treated for sealing purposes. If such screws are not available locally, we recommend to apply Loctite 574, or an equivalent product, on the threads before connecting the parts.

**!** Sollten die Antriebe S,P,HS an den Gehäusen oder den zusätzlichen Einheiten befestigt werden, muß auf die Gewinde der Schrauben 5002, 5027, und 5047, falls sie in den durchgehenden Bohrungen angeordnet sein sollten, "DRILOC" aufgetragen werden. Sollte dieses Mittel nicht erhältlich sein, muß bei der Montage durch das Auftragen eines geeigneten Produkts (Loctite 574) auf das Gewinde, eine haltbare Sicherung gewährleistet werden.

**!** Lorsque les entrée S,P,HS doivent être fixées aux carter ou aux modules additionnels, les vis de fixation, l'orsq'elles se trouvent en face des orifices passants, doivent être traitées avec "DRILOC" au niveau du filetage. Si ce produit n'est pas disponible, au moment du montage, il est indispensable d'effectuer un scellement efficace en appliquant un produit spécifique (Locuite 574) sur le filetage.

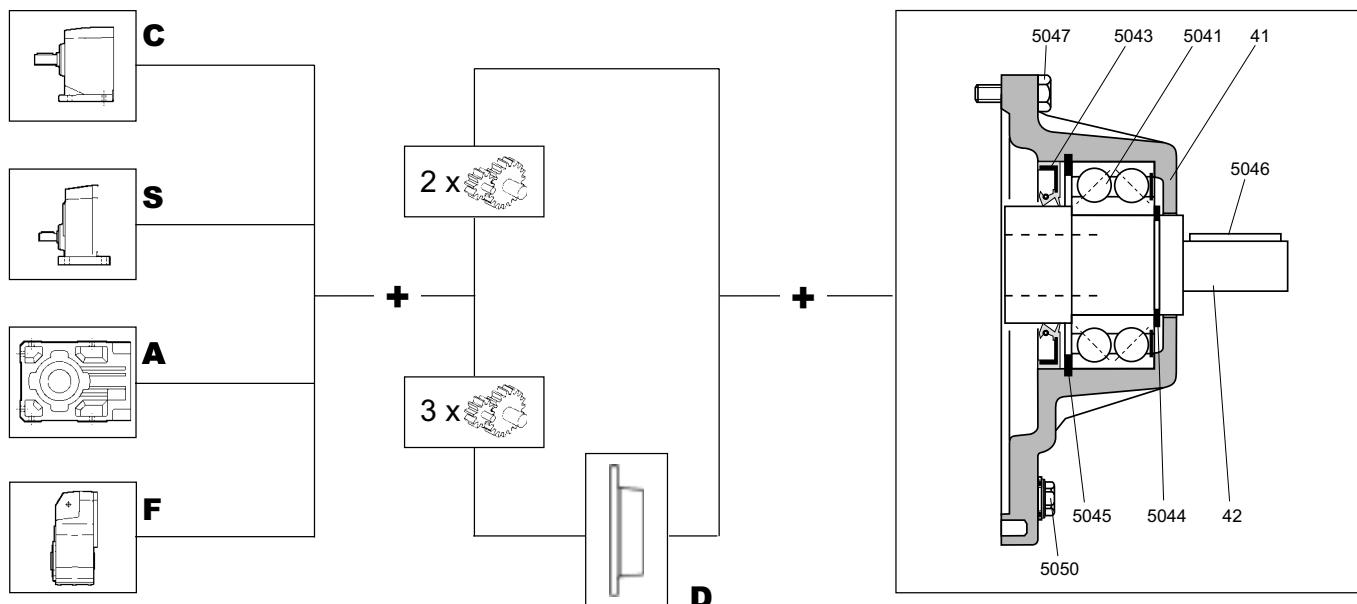
<b>P_ (C_, S_, A_, F_)</b>	<b>ref.</b>					
<b>P160 ... P280</b>	21	Flangia motore	Main motor flange	Motorflansch	Bride moteur	
	23	Albero veloce	Input shaft	Antriebswelle	Arbre d'entrée	
<b>P200 - P250 - P280</b>	24	Controflangia IEC	IEC interface	Flansch	Bride	
<b>P160 ... P280</b>		5021 Cuscinetto	Bearing	Kugellager	Roulement	
		5022 Cuscinetto	Bearing	Kugellager	Roulement	
		5023 Anello di tenuta	Oil seal	Simmerring	Bague d'étanchéité	
		5024 Anello seeger	Circlip	Seegerring	Seeger	
		5025 Anello seeger	Circlip	Seegerring	Seeger	
		5026 Anello seeger	Circlip	Seegerring	Seeger	
		5027 Vite di fissaggio	Fixing screw	Befestigungsschraube	Vis de fixation	
		5031 Tappo olio	Oil plug	Ölverschluß	Bouchon d'huile	
		5033 Vite di fissaggio	Fixing screw	Befestigungsschraube	Vis de fixation	
		5034 Dado	Nut	Mutter	Ecrou	
<b>P160 - P180</b>	5037	Ralla	Washer	Scheibe	Butée	
<b>P200 - P250 - P280</b>	5038	Vite di fissaggio	Fixing screw	Befestigungsschraube	Vis de fixation	
<b>P160 ... P280</b>	5035	Vite di fissaggio	Fixing screw	Befestigungsschraube	Vis de fixation	
<b>P160 ... P280</b>		5036 Tappo olio	Oil plug	Ölverschluß	Bouchon d'huile	
		5040 Anello seeger	Circlip	Seegerring	Seeger	
<b>P160 ... P250<sup>(*)</sup></b>	33	Boccolla	Bushing	Buchse	Douille	
	5052	Tappo olio	Oil plug	Ölverschluß	Bouchon d'huile	
	5054	Anello O-ring	O-ring seal	O-ring	Bague O-ring	
	5055	Anello O-ring	O-ring seal	O-ring	Bague O-ring	

<sup>(\*)</sup> Solo per installazioni con motore disposto in verticale.

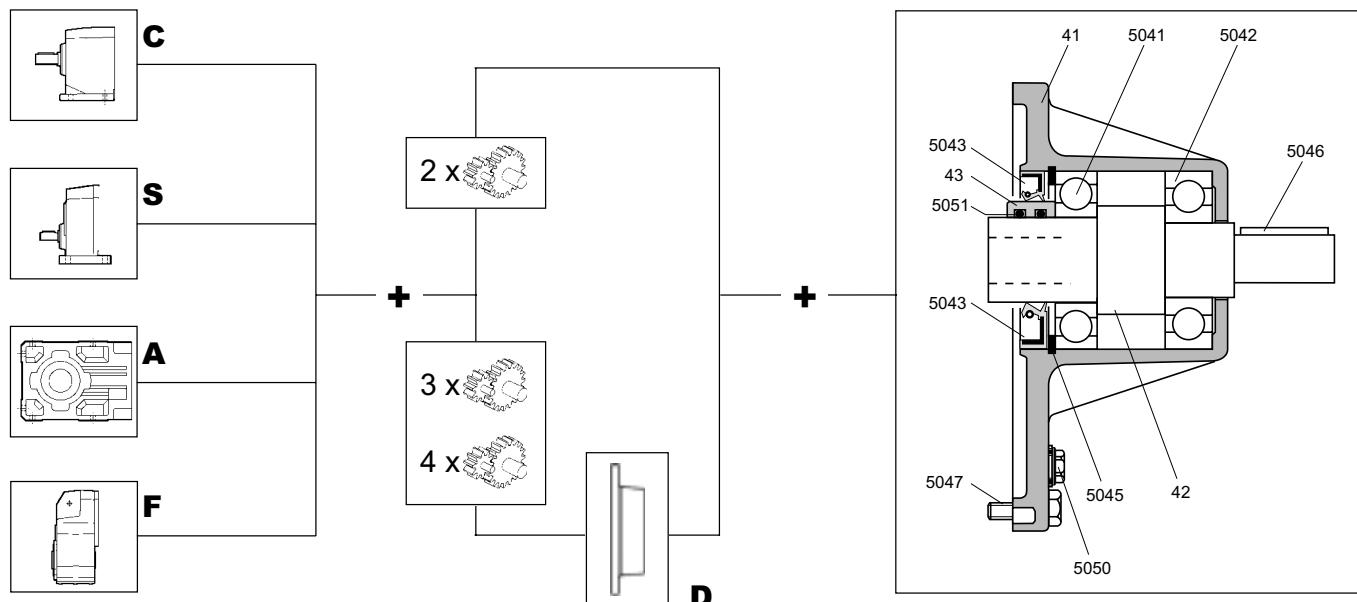
<sup>(\*)</sup> Only for mounting positions with motor sitting vertically.

<sup>(\*)</sup> nur für Installationen mit senkrecht ausgerichtetem Motor

<sup>(\*)</sup> Uniquement pour les installations équipées de moteur en position verticale



HS	ref.				
C102 - 203 - 303	41	Coperchio	Cover	Deckel	Couvercle
	42	Albero veloce	Input shaft	Antriebswelle	Arbre d'entrée
S101	5041	Cuscinetto	Bearing	Kugellager	Roulement
	5043	Anello di tenuta	Oil seal	Simmerring	Bague d'étanchéité
A102 - 203 - 303	5045	Anello seeger	Circlip	Seegerring	Seeger
	5046	Linguetta	Key	Paßfeder	Clavette
F102 - 203 - 304	5047	Vite di fissaggio	Fixing screw	Befestigungsschraube	Vis de fixation
	5044	Anello seeger	Circlip	Seegerring	Seeger
	5050	Tappo olio	Oil plug	Ölverschluß	Bouchon d'huile



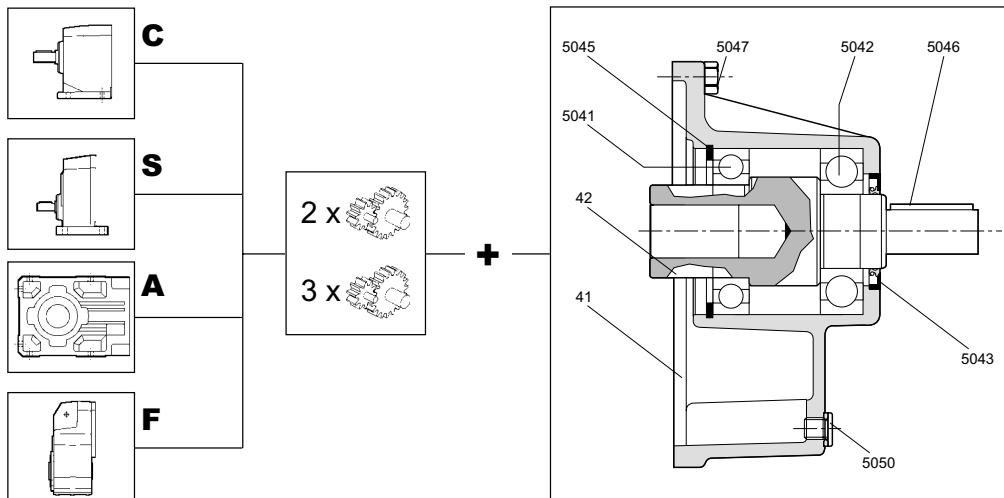
HS	ref.				
C202 - 302 - 402 - 502	41	Coperchio	Cover	Deckel	Couvercle
	42	Albero veloce	Input shaft	Antriebswelle	Arbre d'entrée
	43	Boccolla per anello di tenuta	Oilseal sleeve	Buchse für Dichtungsringe	Douille pour joint d'étanchéité
S201 - 301 - 401 - 501	5041	Cuscinetto	Bearing	Kugellager	Roulement
	5042	Cuscinetto	Bearing	Kugellager	Roulement
A202 - 302 - 412 - 502 - 503	5043	Anello di tenuta	Oil seal	Simmerring	Bague d'étanchéité
	5045	Anello seeger	Circlip	Seegerring	Seeger
	5046	Linguetta	Key	Paßfeder	Clavette
F202 - 302 - 303 - 402	5047	Vite di fissaggio	Fixing screw	Befestigungsschraube	Vis de fixation
403 - 502 - 503	5044	Anello seeger	Circlip	Seegerring	Seeger
	5050	Tappo olio	Oil plug	Ölverschluß	Bouchon d'huile
	5051	Anello O-ring	O-ring seal	O-Ring	Bague O-ring

**!** Quando le entrate S,P,HS devono essere fissate alle casse o ai moduli addizionali, le viti di fissaggio, nel caso in cui si trovino in corrispondenza di fori passanti devono avere il trattamento "DRILOC" sul filetto. Se non è possibile reperirle, è indispensabile effettuare un'efficace sigillatura applicando un adeguato prodotto (Loctite 574) sul filetto all'alto del montaggio.

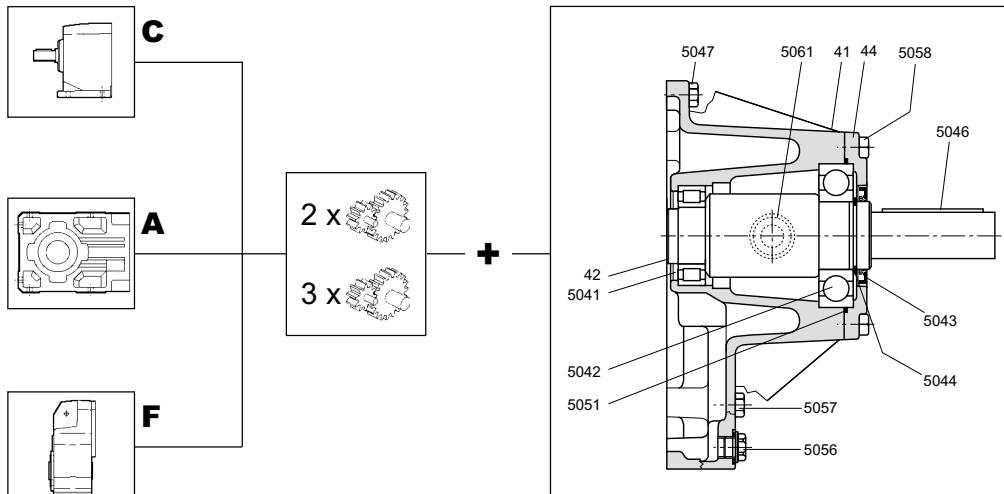
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**!** Sollten die Antriebe S,P,HS an den Gehäusen oder den zusätzlichen Einheiten befestigt werden, muß auf die Gewinde der Schrauben 5002, 5027, und 5047, falls sie in den durchgehenden Bohrungen angeordnet sein sollten, "DRILOC" aufgetragen werden. Sollte dieses Mittel nicht erhältlich sein, muß bei der Montage durch das Auftragen eines geeigneten Produkts (Loctite 574) auf das Gewinde, eine haltbare Sicherung gewährleistet werden.

**!** Lorsque les entrées S,P,HS doivent être fixées aux carter ou aux modules additionnels, les vis de fixation, lorsqu'elles se trouvent en face des orifices passants, doivent être traitées avec "DRILOC" au niveau du filetage. Si ce produit n'est pas disponible, au moment du montage, il est indispensable d'effectuer un scellement efficace en appliquant un produit spécifique (Loc-tite 574) sur le filetage.



HS	ref.			
	41	Coperchio	Cover	Deckel
	42	Albero veloce	Input shaft	Antriebswelle
<b>C602</b>	5041	Cuscinetto	Bearing	Kugellager
<b>A602 - 603</b>	5042	Cuscinetto	Bearing	Kugellager
	5043	Anello di tenuta	Oil seal	Simmerring
<b>F603</b>	5045	Anello seeger	Circlip	Seegerring
	5046	Linguetta	Key	Paßfeder
	5047	Vite di fissaggio	Fixing screw	Befestigungsschraube
	5050	Tappo olio	Oil plug	Ölverschluß



HS	ref.			
	41	Coperchio	Cover	Deckel
	42	Albero veloce	Input shaft	Antriebswelle
	44	Cappellotto	Cap	Deckel
<b>C702 - 703 - 802 - 803</b> <b>902 - 903 - 1002 - 1003</b>	5041	Cuscinetto	Bearing	Kugellager
	5042	Cuscinetto	Bearing	Kugellager
	5043	Anello di tenuta	Oil seal	Simmerring
<b>A703 - 803 - 903</b>	5044	Anello seeger	Circlip	Seegerring
	5046	Linguetta	Key	Paßfeder
<b>F703 - 803 - 903</b>	5047	Vite di fissaggio	Fixing screw	Befestigungsschraube
	5051	Anello O-ring	O-ring seal	O-ring
	5056	Tappo olio	Oil plug	Ölverschluß
	5057	Tappo olio	Oil plug	Ölverschluß
	5058	Vite di fissaggio	Fixing screw	Befestigungsschraube
	5061	Tappo olio	Oil plug	Ölverschluß

11.0 LUBRIFICAZIONE	11.0 LUBRICATION	11.0 SCHMIERUNG	11.0 LUBRIFICATION
<p>Un sistema misto bagno d'olio-sbatimento garantisce di regola la lubrificazione dei riduttori.</p> <p>Per alcune posizioni di montaggio, generalmente caratterizzate da uno dei due assi verticali, opportune precauzioni vengono adottate al fine di garantire una adeguata lubrificazione anche agli organi più sfavoriti.</p>	<p><i>Lubrication of gear units is usually provided through a combination of oil bath and oil-splash patterns. For some mounting positions, typically those featuring a vertical shaft, provisions are made to guarantee lubrication of even the least favourably located drive components.</i></p>	<p>Normalerweise sorgt ein kombiniertes System aus Ölbad-Ölumlauf für die Gewährleistung der Schmierung der Getriebe.</p> <p>In einigen Montagepositionen, die im Allgemeinen von einer der beiden senkrechten Achsen gegeben wird, werden, um auch an den ungünstig liegenden Organen eine geeignete Schmierung zu gewährleisten entsprechende Vorsichtsmaßnahmen getroffen.</p>	<p><i>Normalement, un système mixte bain d'huile-barbotage garantit la lubrification des réducteurs.</i></p> <p><i>Pour certaines positions de montage, généralement caractérisées par un des deux axes verticaux, des précautions opportunes sont adoptées afin de garantir une lubrification adéquate, même des organes les plus mal placés.</i></p>
<p>In alcune grandezze di riduttore il particolare lubrificante adottato, cosiddetto "long life" non richiede alcuna sostituzione per tutto l'arco di vita del riduttore stesso il quale pertanto viene fornito privo dei tappi di carico, scarico e livello.</p> <p>Il primo riempimento viene effettuato da tutti gli stabilimenti Bonfiglioli esclusivamente con lubrificanti sintetici di marca <b>SHELL</b>.</p>	<p><i>Smallest gear units are filled in at the factory with a "long life" polyglycol-based lubricant, virtually maintenance-free and thus not requiring oil changes all throughout the operating life of the gearbox. In such a case gear units do not feature oil fill, level and drain plugs.</i></p> <p><i>Original filling is provided by all Bonfiglioli assembly facilities exclusively with synthetic-base <b>SHELL</b> oil.</i></p>	<p>Bei einigen Getriebegrößen muß das verwendete Schmiermittel, das sogenannte "Long-Life"-Schmiermittel, während der gesamten Lebensdauer des Getriebes nicht mehr gewechselt werden. Aus diesem Grund werden sie auch ohne jeglichen Einfüll- sowie Ablaßverschluß und ohne Pegelanzeige geliefert. Die Füllung erfolgt direkt in den Bonfiglioli-Werken, dabei werden ausschließlich nur synthetische Schmiermittel der Marke <b>SHELL</b> verwendet.</p>	<p><i>Sur certaines tailles de réducteur, le lubrifiant particulier adopté, de type "ong life", ne nécessite aucun remplacement au cours de la durée de vie du réducteur, par conséquent, ce dernier est fourni sans bouchon de remplissage, de vidange et de niveau.</i></p> <p><i>Le premier remplissage est effectué par tous les établissements Bonfiglioli, exclusivement avec des lubrifiants synthétiques de marque <b>SHELL</b>.</i></p>
<p>Funzionamenti a temperature ambiente ta comprese fra -15 °C e +50°C sono in questo caso ammessi. Per temperature inferiori a -15 °C consigliamo di contattare il ns. Servizio Tecnico.</p>	<p><i>Under these conditions operation at ambient temperatures in the range of -15 °C to +50 °C is allowed. Should the unit operate at temperatures well below -15 °C please contact Bonfiglioli's Technical Service for specific directions.</i></p>	<p>In diesem Fall ist der Getriebeeinsatz unter Umgebungstemperaturen zwischen -15°C und +50°C zulässig. Bei Temperaturen unter -15°C empfehlen wir, sich mit unserem Technischen Kundendienst abzustimmen.</p>	<p><i>Dans ce cas, des fonctionnements à des températures ambiantes comprises entre -15°C et + 50°C sont admis. En cas de températures inférieures à -15°C, il est conseillé de contacter notre service technique.</i></p>
<p>Riduttori delle taglie superiori sono invece forniti "a secco" e sarà pertanto cura dell'utilizzatore riempirli di lubrificante prima della messa in opera. A questo scopo tali riduttori sono provvisti di tappi di carico, scarico e livello disposti in funzione della posizione di montaggio specificata in fase di ordinativo (illustrata nella specifica sezione del catalogo).</p>	<p><i>Larger size units are instead supplied dry and it will be the customer care to fill them with lubricant prior to putting them into operation. Consequently such units feature oil plugs properly located according to the particular mounting position specified at the ordering stage (coding shown in the specific catalogue section).</i></p>	<p>Die größeren Getriebe werden "trocken" geliefert, d.h. der Anwender muß vor der Inbetriebnahme das entsprechende Schmiermittel zugeben. Zu diesem Zweck sind diese Getriebe mit Einfüll- sowie Ablaßschrauben und mit einer Pegelanzeige ausgestattet, die der, bei der Auftragsgebung angegebenen Montageposition (im entsprechenden Abschnitt des Katalogs angegeben) entsprechend angeordnet sind.</p>	<p><i>Au contraire, les réducteurs de tailles supérieures sont fournis "à sec", par conséquent, l'utilisateur doit se charger de les remplir avec du lubrifiant avant leur mise en service.</i></p> <p><i>Dans ce but, ces réducteurs sont équipés de bouchon de remplissage, de vidange et de contrôle du niveau situés en fonction de la position de montage spécifiée au moment de la commande (voir chapitre spécifique dans le catalogue).</i></p>
<p>A garanzia di un funzionamento ottimale Bonfiglioli consiglia di eseguire il primo ed i successivi riempimenti ricorrendo sempre alle elevate prestazioni dei lubrificanti <b>SHELL</b>.</p>	<p><i>For a long lasting and trouble-free operation Bonfiglioli recommends that the first fill as well as following replacements are only made using <b>SHELL</b> lubricants.</i></p>	<p>Um den optimalen Betrieb gewährleisten zu können, empfiehlt die Bonfiglioli sowohl die Erstbefüllung als auch die nachfolgenden Füllungen mit den stark belastungsfähigen Schmiermitteln der <b>SHELL</b> vorzunehmen.</p>	<p><i>Afin de garantir un fonctionnement optimal, nous vous conseillons d'effectuer le premier remplissage, ainsi que les suivants, en utilisant toujours des lubrifiants <b>SHELL</b>, dont les performances sont élevées.</i></p>
<p>Confezioni da 4 l di Shell Tivela Oil SC 320 sono disponibili e possono essere ordinate presso la rete di vendita Bonfiglioli.</p>	<p><i>4 l cans of Shell Tivela Oil SC 320 are available and can be sourced through Bonfiglioli Riduttori's sales network.</i></p>	<p>Die 4-Liter-Behälter des "Shell Tivela Oil SC 320" können bei den Verkaufsstellen der Bonfiglioli angefordert werden.</p>	<p><i>Des bidons de 4 l de Shell Tivela Oil SC 320 sont disponibles et peuvent être commandés dans les points du réseau de vente Bonfiglioli.</i></p>
<p>Lubrificante di fornitura originale Bonfiglioli Riduttori / Original Bonfiglioli's supply Schmiermittel der Orginalfüllung – Bonfiglioli Riduttori / Lubrifiants de fourniture originale Bonfiglioli Riduttori</p>		<p><b>SHELL Tivela Oil SC 320</b></p>	

Qualora il lubrificante sintetico, preferibile per le superiori prestazioni, non sia disponibile localmente è consentito, solo per i riduttori ad ingranaggi elicoidali e non per i riduttori a vite senza fine, l'uso di lubrificante a base minerale. In questo caso suggeriamo l'uso di **SHELL Omala 220**.

*Should the synthetic lubricant option, preferred performancewise, not be available locally it is allowed, for helical and bevel helical units only, NOT for worm units, the use of a mineral-base oil. In this case **SHELL Omala 220** must be considered as the preferred option.*

Bonfiglioli infine raccomanda che, qualora il lubrificante venga scelto al di fuori del tipo SHELL consigliato, questo sia di composizione equivalente in merito alla natura sintetica e alla viscosità, inoltre sia dotato degli opportuni additivi con funzione antischiuma.

*Bonfiglioli finally recommends that should the oil type be selected outside the recommended SHELL range the same is at least of equivalent composition as to the synthetic base and viscosity index besides including the appropriate anti-foam additives.*

#### 11.1 LUBRIFICAZIONE RIDUTTORI SERIE C

I riduttori dal tipo C102 al tipo C403 compreso, sono forniti con lubrificazione permanente ad olio sintetico e non necessitano di alcuna manutenzione.

Gli altri tipi sono predisposti per la lubrificazione ad olio e pertanto dotati dei tappi di carico, livello e scarico olio (tabelle S71 e S72); sarà cura dell'utilente immettere il lubrificante avvalendosi delle quantità (litri) indicate in tabella (S70). Evidenziamo però che tali quantità sono indicative, pertanto l'esatto livello dovrà essere valutato osservandolo dall'apposita spia (con il riduttore già installato nella corretta posizione di montaggio).

#### 11.1 LUBRICATION OF HELICAL UNITS, C SERIES

*Gearboxes from C102 to C403 are life lubricated with synthetic oil and do not require any maintenance. The remaining types are designed for oil lubrication and therefore have oil filling, level and drain plugs (tables S71 and S72); users should fill the units with oil, consulting table (S70), with the correct quantity (litres). However, it must be underlined that these quantities are only guidelines, therefore users should check the correct level through the oil level plug (when the gearbox is installed in its correct mounting position).*

Sollte das bei höheren Leistungs-ausbringungen empfohlene synthetische Schmiermittel vor Ort nicht verfügbar sein, kann, nur für die Stirnradgetriebe, Kegelrad-getriebe und auf keinen Fall für die Schneckengetriebe, auch ein Schmiermittel auf Mineralbasis verwendet werden. In diesem Fall empfehlen wir den Einsatz von **SHELL Omala 220**.

*Die Bonfiglioli weist letztendlich darauf hin, daß falls man ein von den empfohlenen SHELL-Typen abweichendes Schmiermittel wählen sollte, daß dieses in bezug auf seine synthetische Herkunft und Viskosität gleichwertig zusammengesetzt und darüber hinaus über geeignete Schaumschutz-stoffe verfügen sollte.*

*Si le lubrifiant synthétique, préférable pour ses performances supérieures, n'est pas disponible sur place, il est possible uniquement en ce que concerne les réducteurs à engrenages hélicoïdaux et non les réducteurs à vis sans fin, d'utiliser un lubrifiant à base minérale. Dans ce cas, nous conseillons d'utiliser **SHELL Omala 220**.*

*Enfin, en cas de choix autre que le type SHELL conseillé, nous vous recommandons de choisir un lubrifiant équivalent, tant du point de vue de la nature synthétique que de la viscosité, de plus, sa composition doit comprendre des additifs anti-mousse appropriés.*

#### 11.1 SERIE C GETRIEBES SCHMIERUNG

Die Getriebe von Typ C102 bis Typ C403 werden mit Dauerschmierung mit Syntheseöl geliefert und sind wartungsfrei. Die anderen sind für die Ölschmierung vorgerüstet und verfügen daher über einen Einfüllverschluß, Ölstands-und Öl-ablaßschrauben (Tabelle S71 und S72). Das Öl muß vom Kunden in der in Tabelle (S70) angegebenen Menge (Liter) einge-füllt werden. Wir weisen jedoch darauf hin, daß es sich bei diesen Angaben nur um Richtwerte handelt und daher der tatsächliche Ölbedarf durch das Schauglas geprüft wer-den muß (das Getriebe muß sich hierzu schon in seiner endgültigen Einbaulage befinden).

*Les réducteurs du type C102 au type C403 compris sont fournis avec lubrification permanente à l'huile synthétique et n'ont besoin d'aucun entretien. Les autres types sont prédisposés pour la lubrification à l'huile et par conséquent dotés de bouchons de remplissage, niveau et vidange d'huile (tableau S71 et S72); l'utilisateur devra introduire le lubrifiant en se conformant aux quantités (litres) indiqués sur le tableau (S70). Ces quantités sont toutefois indicatives et le niveau exact devra être contrôlé par le voyant spécial (avec le réducteur déjà installé dans la position correcte de montage).*

Quantità di lubrificante [l]

Oil quantity [l]

Schmiermittelmenge [l]

Quantité de lubrifiant [l]

(S70a)

	Posizioni di montaggio / Mounting positions / Einbaulagen / Positions de montage																							
	P						UP - UPF						F						U - UF					
	B3	B6	B7	B8	V5	V6	B3	B6	B7	B8	V5	V6	B5	B51	B53	B52	V1	V3	B5	B51	B53	B52	V1	V3
C102 S-HS	0.52	0.52	0.52	0.52	0.52	0.52	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	
C102 P63/71	0.52	0.52	0.52	0.52	0.52	0.72°	0.47	0.47	0.47	0.47	0.47	0.67°	0.47	0.47	0.47	0.47	0.47	0.67°	0.47	0.47	0.47	0.47	0.47	0.67°
C102 P80/112	0.52	0.52	0.52	0.52	0.52	0.82°	0.47	0.47	0.47	0.47	0.47	0.77°	0.47	0.47	0.47	0.47	0.47	0.77°	0.47	0.47	0.47	0.47	0.47	0.77°
C202 S-HS	0.85	0.85	0.85	0.85	0.85	0.85	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	
C202 P63/71	0.85	0.85	0.85	0.85	0.85	1.05°	0.80	0.80	0.80	0.80	0.80	1.00°	0.80	0.80	0.80	0.80	0.80	1.00°	0.80	0.80	0.80	0.80	0.80	1.00°
C202 P80/112	0.85	0.85	0.85	0.85	0.85	1.15°	0.80	0.80	0.80	0.80	0.80	1.10°	0.80	0.80	0.80	0.80	0.80	1.10°	0.80	0.80	0.80	0.80	0.80	1.10°
C203 S-HS	1.30	1.30	1.30	1.30	1.30	1.30	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	
C203 P63/71	1.30	1.30	1.30	1.30	1.30	1.5°	1.25	1.25	1.25	1.25	1.25	1.45°	1.25	1.25	1.25	1.25	1.25	1.45°	1.25	1.25	1.25	1.25	1.25	1.45°
C203 P80/112	1.30	1.30	1.30	1.30	1.30	1.6°	1.25	1.25	1.25	1.25	1.25	1.55°	1.25	1.25	1.25	1.25	1.25	1.55°	1.25	1.25	1.25	1.25	1.25	1.55°
C302 S-HS-P63/112	1.50	1.50	1.50	1.50	1.50	1.50	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45
C303 S-HS-P63/112	1.80	1.80	1.80	1.80	1.80	1.80	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78

(S70b)

	Posizioni di montaggio / Mounting positions / Einbaulagen / Positions de montage																							
	P						UP - UPF						F						U - UF					
	B3	B6	B7	B8	V5	V6	B3	B6	B7	B8	V5	V6	B5	B51	B53	B52	V1	V3	B5	B51	B53	B52	V1	V3
C402 S-HS-(P63...112)	2.80	2.80	2.80	2.80	2.80	2.80	2.15	2.15	2.15	2.15	2.25	2.15	2.80	2.80	2.80	2.80	2.65	2.80	2.15	2.15	2.15	2.15	2.25	2.15
C402 P132°	3.80	3.80	3.80	3.80	2.80	4.40	3.00	3.00	3.00	3.00	2.25	3.80	3.40	3.40	3.40	3.40	2.65	4.20	3.00	3.00	3.00	3.00	2.25	3.80
C403 S-HS-(P63...112)	3.60	3.60	3.60	3.60	3.60	3.60	2.95	2.95	2.95	2.95	2.95	2.95	3.35	3.35	3.35	3.35	3.35	3.35	2.95	2.95	2.95	2.95	2.95	2.95
*C502 S-HS-(P63...112-160/180)	3.40	4.20	2.50	4.30	4.30	3.60	2.60	3.40	1.90	3.60	3.00	2.20	3.00	3.30	2.20	3.90	4.30	2.80	2.60	3.40	1.90	3.60	3.00	2.20
*C502 P132°	4.40	4.40	3.50	5.30	4.50	5.40	3.60	4.40	2.90	4.60	3.20	4.00	4.00	4.30	3.20	4.90	4.50	4.60	3.60	4.40	2.90	4.60	3.20	4.00
*C503 S-HS-(P63...112)	4.00	3.50	3.50	4.90	6.40	4.00	3.20	3.00	2.90	4.10	5.10	3.10	3.60	3.30	3.10	4.50	5.70	3.90	3.20	3.00	2.90	4.10	5.10	3.10
*C602 S-HS-(P63...112-160/180)	4.10	3.90	4.20	4.70	6.10	4.60	2.50	3.00	3.40	4.60	4.40	3.90	3.70	3.50	3.70	4.30	5.50	4.50	2.50	3.00	3.40	4.60	4.40	3.90
*C603 P132°	5.10	4.90	5.20	5.70	6.30	6.40	3.50	4.00	4.40	5.60	4.60	5.70	4.70	4.50	4.70	5.30	5.70	6.30	3.50	4.00	4.40	5.60	4.60	5.70
*C603 S-HS-(P63...112-160/180)	5.00	4.70	4.50	4.20	7.70	5.50	3.10	3.60	3.80	3.70	6.20	4.90	4.70	4.30	4.10	4.20	7.30	5.80	3.10	3.60	3.80	3.70	6.20	4.90
*C702 - C703	6.50	8.50	8.50	7.50	10.5	7.50	—	—	—	—	—	—	—	6.50	—	—	10.5	7.50	6.50	—	—	—	10.5	7.50
*C704	6.50	8.50	8.50	7.50	10.5	7.50	—	—	—	—	—	—	—	6.50	—	—	10.5	7.50	6.50	—	—	—	10.5	7.50
*C802 - C803	10.6	14.1	14.1	12.6	17.5	12.6	—	—	—	—	—	—	—	10.6	—	—	17.5	12.6	10.6	—	—	—	17.5	12.6
*C804	10.6	14.1	14.1	12.6	17.5	12.6	—	—	—	—	—	—	—	10.6	—	—	17.5	12.6	10.6	—	—	—	17.5	12.6
*C902 - C903	18.7	25.0	25.0	22.1	30.8	22.1	—	—	—	—	—	—	—	18.7	—	—	30.8	22.1	18.7	—	—	—	30.8	22.1
*C904	18.7	25.0	25.0	22.1	30.8	22.1	—	—	—	—	—	—	—	18.7	—	—	30.8	22.1	18.7	—	—	—	30.8	22.1
*C1002 - C1003	27.4	36.7	36.7	32.5	45.2	32.5	—	—	—	—	—	—	—	27.4	—	—	45.2	32.5	27.4	—	—	—	45.2	32.5

Lubrificazione permanente

\* = La quantità è indicativa. Controllare il riempimento attraverso il relativo vetro spia.

Life lubricated

\* = Quantity is indicative. Check filling through the sight glass.

Dauerschmierung

\* = Bei der angegebenen Menge handelt es sich um einen Anhaltswert. Den Füllstand über das entsprechende Kontrollglas kontrollieren.

Lubrification permanente

\* = In allen anderen Fällen, den Verschluss geschlossen lassen.

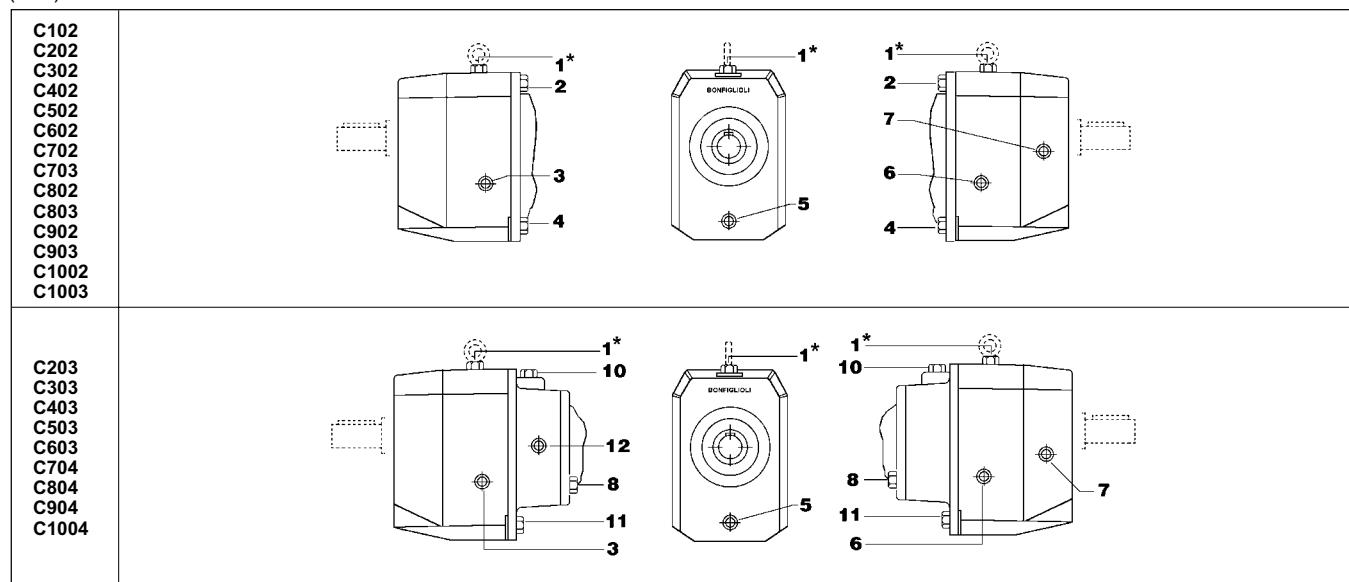
Posizione dei tappi di carico, scarico e livello olio

Positions of oil filling, level and drain plugs.

Anordnung des Einfüllv., Ölstands- und Ölablaßschrauben.

Position des bouchons de remplissage, niveau et vidange d'huile.

(S71)



\* Nel tipo C60\_ i riduttori sono forniti con un golfare al posto del tappo n.1. In fase di installazione, il golfare dovrà essere rimosso e sostituito con il tappo allegato.

\* Gear units type C60\_ are supplied with an eyebolt in lieu of plug ref. 1. After the unit is installed, remove the eyebolt and replace it with the plug provided.

\* Die Getriebetypen C60\_ werden mit einer ÖSENSCHRAUBE anstelle der Schraube 1 geliefert. Bei der Montage muß die ÖSEN-SCHRAUBE entfernt und durch den mitgeliefer-ten Verschluß ersetzt werden.

\* Dans les types C60\_ les réduc- teurs sont équipés d'un anneau à la place du bouchon n.1. En phase d'installation, l'anneau devra être enlevé et remplacé par le bouchon annexé.

Dimensioni e collocazione dei tappi di carico, scarico e livello olio.

*Dimensions and location of oil filling, level and drain plugs.*

Abmessungen und Anordnung des Einfüll-, Ölstands- und Ölablaßschrauben.

*Dimensions et emplacement des bouchons de remplissage, de vidange et niveau d'huile.*

(S72a)

## **Posizioni di montaggio / Mounting positions / Einbaulagen / Positions de montage**

(S72b)

**Posizioni di montaggio / Mounting positions / Einbaulagen / Positions de montage**

•	F - U - UF																			
	B5				B51				B53				B52				V3			
	S-HS-P	P <sub>≤132</sub>	S-HS-P	P <sub>≤132</sub>	S-HS-P	P <sub>≤132</sub>	S-HS-P	P <sub>≤132</sub>	S-HS-P	P <sub>≤132</sub>	S-HS-P	P <sub>≤132</sub>	S-HS-P	P <sub>≤132</sub>	S-HS-P	P <sub>≤132</sub>				
C102	4 T (1/4")	4 T (1/4")	4 T (1/4")	F*	4 T (1/4")	4 T (1/4")	4 F*	4 T (1/4")	4 T (1/4")	4 T (1/4")	4 F*	4 T (1/4")	4 T (1/4")	4 T (1/4")	T*	4 T (1/4")	4 T (1/4")	4 T (1/4")	4 T (1/4")	
C202	4 T (1/4")	4 T (1/4")	4 T (1/4")	F*	4 T (1/4")	4 T (1/4")	4 F*	4 T (1/4")	4 T (1/4")	4 T (1/4")	4 F*	4 T (1/4")	4 T (1/4")	4 T (1/4")	T*	4 T (1/4")	4 T (1/4")	4 T (1/4")	4 T (1/4")	
C203	4 T (1/4")	4 T (1/4")	4 T (1/4")	F*	8 T (1/4")	4 T (1/4")	4 F*	4 T (1/4")	4 T (1/4")	4 T (1/4")	4 F*	4 T (1/4")	4 T (1/4")	4 T (1/4")	T*	4 T (1/4")	4 T (1/4")	4 T (1/4")	4 T (1/4")	
C302	4 T (1/4")	4 T (1/4")	4 T (1/4")	F*	4 T (1/4")	4 T (1/4")	4 F*	4 T (1/4")	4 T (1/4")	4 T (1/4")	4 F*	4 T (1/4")	4 T (1/4")	4 T (1/4")	T*	4 T (1/4")	4 T (1/4")	4 T (1/4")	4 T (1/4")	
C303	4 T (1/4")	4 T (1/4")	4 T (1/4")	F*	8 T (1/4")	4 T (1/4")	4 F*	4 T (1/4")	4 T (1/4")	4 T (1/4")	4 F*	4 T (1/4")	4 T (1/4")	4 T (1/4")	T*	4 T (1/4")	4 T (1/4")	4 T (1/4")	4 T (1/4")	

Fanno eccezione a questa regola le posizioni V3 e V6 (per i riduttori suddetti) le quali dovranno obbligatoriamente essere richieste nella corretta configurazione alla BONFIGLIOLI RIDUTTORI in quanto è indispensabile schermare alcune parti interne.

Gli orientamenti delle morsettiere dei motori sono identificati osservando il motore dal lato ventola; l'orientamento standard è evidenziato in nero (**W**) come indicato nella tabella (S73).

*Positions V3 and V6 (for sizes C50 - C100) are an exception to this rule. These must be ordered to BONFIGLIOLI RIDUTTORI in their correct configuration as some internal parts require separate lubrication activities.*

*Orientation of motor terminal boxes can be determined by observing the motor from the fan side; standard orientation is highlighted in black (**W**) as in table (S73).*

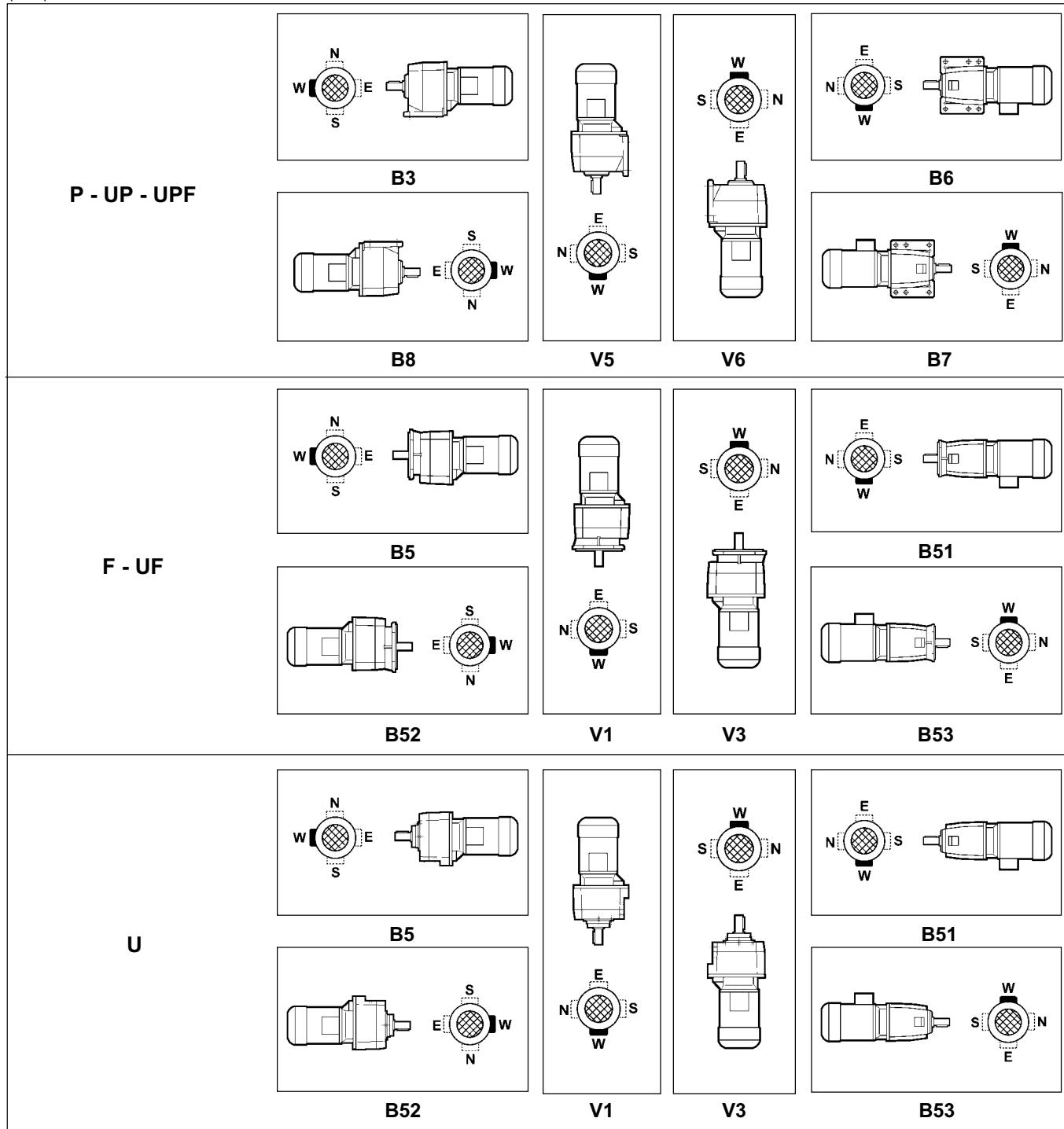
Von dieser Regel ausgenommen sind die Anordnungen V3 und V6 (für die Typen C50 - C100), die obligatorisch mit der gewünschten Konfiguration bei BONFIGLIOLI RIDUTTORI bestellt werden müssen, da einige innere Bauteile zusätzlich abgeschirmt werden müssen.

Die Angaben zur Lage des Klemmenkastens beziehen sich auf das von der Lüfterseite her betrachtete Getriebe. Die Standardorientierung ist schwarz hervorgehoben (**W**), wie in Abbildung (S73) angegeben.

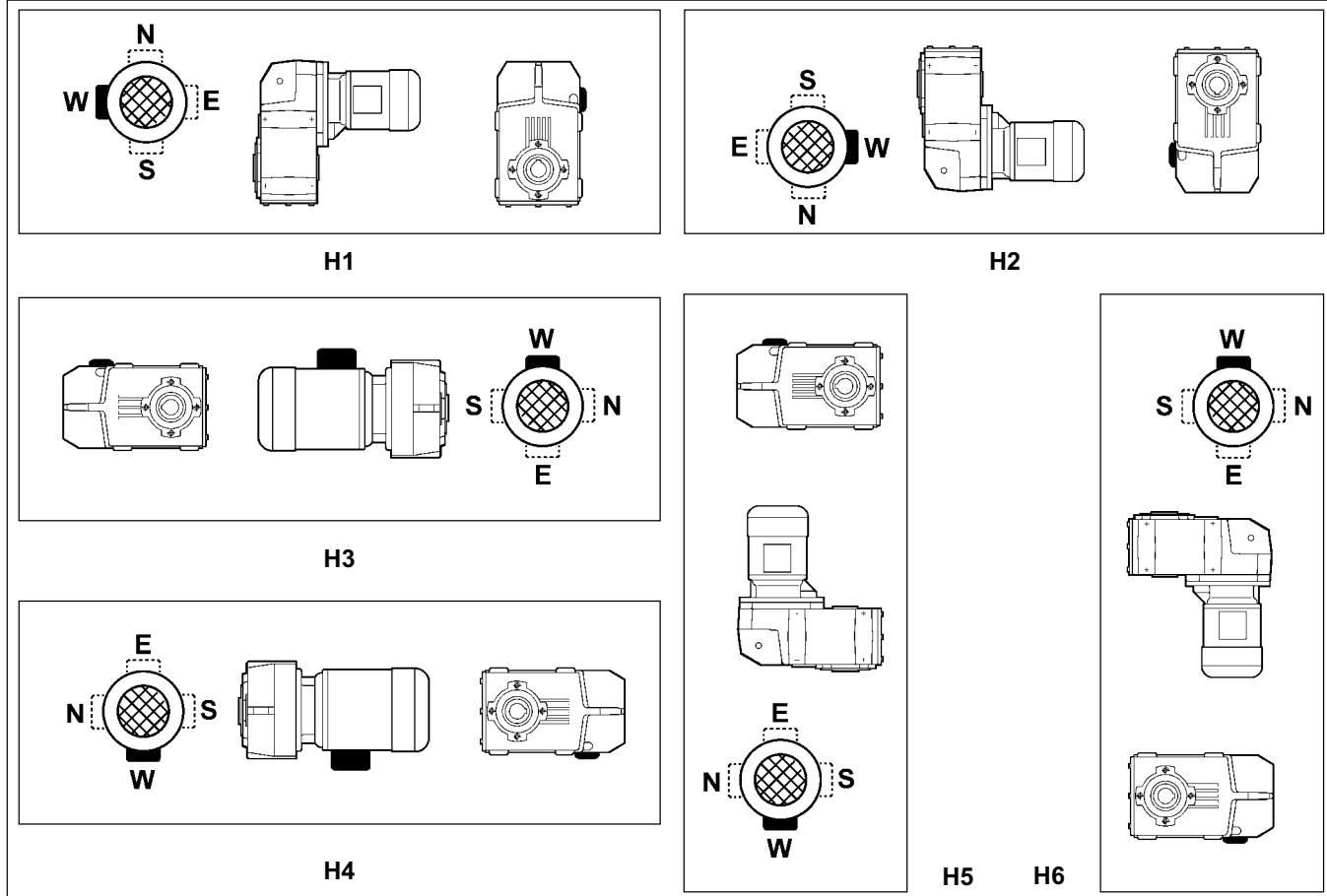
*Les positions V3 et V6 (pour les types C50- C100) ne suivent pas cette règle. Elles devront obligatoirement être demandées dans la configuration correcte à BONFIGLIOLI RIDUTTORI étant donné qu'il est indispensable de protéger certaines parties intérieures.*

*Les orientations des boîtes à bornes des moteurs sont définies en regardant le moteur du côté ventilateur. L'orientation standard est indiquée en noir (**W**) comme d'après le tableau (S73).*

(S73)



(S85)



## 12.0 INFORMAZIONI GENERALI RIDUTTORI

**Avvertenze per l'operatore.**  
Per effettuare una corretta installazione e per prevenire eventuali situazioni di pericolo, è necessario acquisire la conoscenza delle modalità di utilizzo riportate nel presente manuale prima dell'installazione e della messa in moto.

Il presente manuale potrà essere aggiornato con l'integrazione di altri prodotti e di eventuali ulteriori indicazioni. Le pagine che subiranno delle variazioni rispetto all'edizione precedente verranno segnalate con gli appositi indici di modifica (R).

### Riduttori di velocità

Si intende per riduttore solo la parte meccanica composta da una cassa e dagli ingranaggi di qualsiasi tipo in essa contenuti. Il sistema indicato non presenta pericoli fino a che ad esso non sarà applicata una motorizzazione; in tal caso dovranno essere previste protezioni sulle parti rotanti accessibili.

Per quanto concerne i motori e la parte elettrica relativa, si rimanda al paragrafo (13.0) motori elettrici.

## 12.0 GENERAL INFORMATION ON GEARBOXES

**Operator warnings.**  
*For correct installation and prevention of hazardous conditions, it is necessary to know the methods of operation described in this manual before installation and start-up.*

*This manual may be updated with the addition of other products and possible additional instructions. Revised pages will be marked in the index of revisions (R).*

### Gearboxes

*The gearbox is understood to mean only the mechanical part composed of a box containing any type of gears. This system presents no hazard until a drive is attached to it, and in this case guards must be provided for accessible moving parts.*

*With regard to motors and the relative electrical part, see section (13.0) Electric motors.*

## 12.0 ALLGEMEINE INFORMATIONEN ÜBER DIE GETRIEBE

**Warnung an den Betriebsmann.**  
Im Hinblick auf eine einwandfreie Installation und auf die Vermeidung von gefährlichen Situationen muß man dieses Handbuch aufmerksam lesen und so die notwendigen Kenntnisse erwerben, bevor mit der Installation und Inbetriebnahme begonnen wird.  
Dieses Handbuch könnte in Zukunft durch Hinzufügen weiterer Produkte und eventueller weiterer Anweisungen erweitert werden. Die abgeänderten Seiten werden dann mit einem speziellen Zeichen versehen (R).

### Getriebe

Unter einem Getriebe verstehen wir nur den mechanischen Teil, der aus einem Gehäuse und Zahnrädern irgendwelcher Art besteht. Das gezeigte System birgt keine Gefahren, bevor es motorisiert wird, danach müssen vom Kunden auf den zugänglichen Teilen, die sich bewegen, Schutzvorrichtungen gemäß den Sicherheitsgesetzen angebracht werden. Bezuglich Motoren und der entsprechenden Elektrik siehe Abschnitt 13.0, elektrische Motoren.

## 12.0 INFORMATIONS GENERALES SUR LES REDUCTEURS

**Instructions pour l'opérateur.**  
*Pour effectuer une installation correcte et pour éviter tout danger, il est nécessaire d'acquérir la connaissance des modalités d'utilisation exposées dans le présent manuel avant l'installation et la mise en service.*

*Le présent manuel pourra être mis à jour par l'adjonction d'autres produits et d'indications supplémentaires. Les pages qui seront l'objet de variations par rapport à l'édition précédente seront signalées par l'indice de modification (R).*

### Réducteurs de vitesse

*Par réducteur de vitesse, il faut entendre uniquement la pièce mécanique composée d'une caisse et des engrenages qu'elle contient. Le système indiqué ne présente pas de dangers tant qu'on ne lui applique pas de motorisation. Dans ce cas, le client devra prévoir des protections sur les parties en mouvement accessibles, selon les normes de sécurité en vigueur dans son Pays. En ce qui concerne les moteurs et la partie électrique correspondante, on se rapportera au paragraphe (13.0) Moteurs électriques.*

Condizioni di fornitura	Conditions of supply	Lieferbedingungen	Conditions de fourniture
<p>I riduttori vengono forniti da BONFIGLIOLI RIDUTTORI S.p.A. previo superamento delle attività di controllo previste nella documentazione applicabile del proprio sistema di qualità UNI EN ISO 9001, collaudati e già predisposti per essere installati nella posizione di montaggio come definito in fase di ordine del cliente e confermato dalla BONFIGLIOLI RIDUTTORI S.p.A.</p> <p>Il ricevente avrà cura che i prodotti siano soggetti a trasporto e movimentazione utilizzando mezzi e attenzioni tali da assicurare il mantenimento dello stato delle condizioni fornite dalla BONFIGLIOLI RIDUTTORI S.p.A. all'atto della consegna. Per quanto riguarda le caratteristiche di progetto si dovrà fare riferimento al catalogo o alla descrizione contenuta nell'ordine del cliente e confermato dalla BONFIGLIOLI RIDUTTORI S.p.A.</p>	<p>Gearboxes are supplied by BONFIGLIOLI RIDUTTORI S.p.A. after they have passed the controls provided in the applicable documentation for the Company's quality control system UNI EN ISO 9001, inspected and prepared for installation in the mounting position that was specified in the customer's order and confirmed by BONFIGLIOLI RIDUTTORI S.p.A.</p> <p>The customer must transport and handle the products by appropriate means and with suitable care in order to keep them in the state in which they are supplied by BONFIGLIOLI RIDUTTORI S.p.A. at the time of delivery.</p> <p>With respect to unit specifications, refer to the catalogue or to the description in the customer's order as confirmed by BONFIGLIOLI RIDUTTORI S.p.A.</p>	<p>BONFIGLIOLI RIDUTTORI S.p.A. liefert die Getriebe nach erfolgter Prüfung - gemäß den Unterlagen, die diese Kontrollen für ihr Qualitätsystem UNI EN ISO 9001 vor schreiben. Die Getriebe sind bereits kontrolliert und zur Installation in der Enbaulage bereit, die der Kunde bei Erteilung des Auftrags bestimmt und die BONFIGLIOLI RIDUTTORI S.p.A. danach bestätigt hatte.</p> <p>Der Empfänger muß bedenken, daß die Produkte transportiert werden sollen und muß deshalb geeignete Transportmittel wählen sowie Vorsichtsmaßnahmen treffen, damit diese bei ihm so ankommen, wie sie BONFIGLIOLI RIDUTTORI S.p.A. ausgeliefert hat.</p> <p>Bezüglich der Projekteigenschaften muß man den Katalog und die Beschreibungen beachten, die im Auftrag des Kunden enthalten sind und die BONFIGLIOLI RIDUTTORI S.p.A. bestätigt hatte.</p>	<p>Les réducteurs sont fournis par BONFIGLIOLI RIDUTTORI S.p.A. à l'issue des contrôles de la documentation prévus par son système de la qualité UNI EN ISO 9001, testés et déjà prêts pour l'installation dans la position de montage définie dans la commande du client confirmée par BONFIGLIOLI RIDUTTORI S.p.A.</p> <p>Le client veillera à ce que le transport et la manutention des produits se fassent de façon à assurer le maintien des conditions fournies par BONFIGLIOLI RIDUTTORI S.p.A. au moment de la livraison.</p> <p>En ce qui concerne les caractéristiques de projet, on se rapportera au catalogue ou à la description figurant dans la commande du client confirmée par BONFIGLIOLI RIDUTTORI S.p.A.</p>
Ricevimento, trasporto e movimentazione.	Receipt, transport, and handling	Warenempfang, Transport, Auf- und Abladung	Réception, transport et manutention
<p>Al ricevimento del riduttore controllare che non abbia subito danni durante il trasporto ed eventualmente segnalarli allo spedizioniere. Controllare inoltre che le caratteristiche riportate in targa corrispondano a quanto richiesto in ordine e confermato da BONFIGLIOLI RIDUTTORI S.p.A.</p> <p>I riduttori vengono consegnati imballati in contenitori di cartone. In alcuni casi, gli imballi di maggiori dimensioni sono riempiti con dei materiali atti a compensare gli spazi vuoti rispettando la stabilità e le dimensioni dei riduttori.</p> <p>Tutti gli elementi di imballaggio dovranno essere raccolti e smaltiti o riciclati secondo le norme vigenti nel proprio Paese.</p> <p>Gli imballi contenenti più riduttori sono normalmente applicati a bancali in legno per facilitarne la movimentazione tramite carrelli elevatori o transpallets.</p> <p>I riduttori possono essere movimentati individualmente sollevandoli con fasce o cinghie (se il peso lo richiede) applicate agli alberi entrata e uscita.</p> <p>I riduttori di potenza medio alta sono provvisti di un ganciare di sollevamento.</p> <p>Gli alberi dei riduttori sono muniti di protezioni di sicurezza in plastica. Queste protezioni dovranno essere rimosse prima dell'installazione seguendo le norme di sicurezza e prevenzione in vigore nel paese del destinatario.</p> <p>Successivamente, queste protezioni dovranno essere recuperate ed eliminate secondo le norme in vigore nel proprio paese.</p>	<p>Upon receipt of the gearbox, check that it was not damaged during transport; if damage is noted, inform the carrier immediately. In addition, check that the characteristics stated on the plate conform to those ordered and confirmed by BONFIGLIOLI RIDUTTORI S.p.A. The gearboxes are delivered packed in cardboard cartons.</p> <p>In some cases, larger cartons may be filled with polyurethane foam. All packing parts must be collected and disposed of or recycled according to current regulations in the customer's country.</p> <p>Carts containing more than one gearbox are usually attached to wooden boards to facilitate handling by forklifts or transpallets.</p> <p>Gearboxes may be handled individually by lifting them with belts or chains (if required due to weight) attached to input and output shafts.</p> <p>Medium-high power gearboxes are equipped with an eyebolt for lifting.</p> <p>Gear shafts are provided with plastic guards, which must be removed before installation, collected, and disposed of according to safety regulations in customer's country.</p>	<p>Bei Eintreffen des Getriebes kontrolliere man, ob es beim Transport eventuell beschädigt worden ist. Ist dies der Fall, muß die Speditionsfirma sofort benachrichtigt werden. Zudem muß kontrolliert werden, ob die Eigenschaften, die auf dem Schild angegeben sind, denjenigen entsprechen, die im Auftrag verlangt und von BONFIGLIOLI RIDUTTORI S.p.A. bestätigt wurden.</p> <p>Die Getriebe werden in Kartonbehälter oder anders wie im Vertrag vorgesehen verpackt ausgeliefert. In einigen Fällen werden größere Verpackungen mit geeigneten Materialien zur Kompensation der leeren Räumen unter Einhaltung der Stabilität und Erhaltung des Inhalts aufgefüllt.</p> <p>Alle Verpackungselemente müssen nach den im betreffenden Land gültigen Vorschriften entsorgt oder recycelt werden.</p> <p>Verpackungen, die mehrere Getriebe enthalten, werden normalerweise auf Holzverschlägen fixiert, dies vereinfacht ihren Transport auf Hubkarren oder Handgabelhubwagen.</p> <p>Die Getriebe können individuell umplaziert werden, indem man sie, falls dies wegen ihres Gewichts notwendig ist, mit Riemen oder Bändern, die an die Eingangs- und Ausgangswellen befestigt sind, anhebt. Getriebe mit mittel - höherer Leistung weisen eine ÖSENSCHRAUBE auf.</p> <p>Die Wellen der Getriebe weisen einen Plastikschutz auf. Dieser Schutz muß vor der Installation entfernt und entsorgt werden, unter Einhaltung der Sicherheits und Verhütungsrechtlinien gemäß des Gesetzes.</p> <p>Die Sammlung und Entsorgung der Schutzvorrichtungen muß vom Kunde erfolgen, der gemäß den gültigem Gesetzem in seinem Land wirken wird.</p>	<p>À la réception du réducteur, contrôler qu'il n'a pas été abîmé pendant le transport. Le cas échéant, signaler les détériorations au transporteur. Contrôler également que les caractéristiques figurant sur la plaque signalétique correspondent bien à ce qui a été demandé dans la commande et confirmé par BONFIGLIOLI RIDUTTORI S.p.A.</p> <p>Les réducteurs sont livrés emballés dans des emballages en carton ou autre prévu dans le contrat . Dans certains cas, les emballages de dimensions plus grandes sont remplis avec des matériaux aptes à compenser les espaces vides en respectant la stabilité et la dimension des réducteurs.</p> <p>Tous les éléments d'emballage devront être récupérés et éliminés ou recyclés suivant les normes en vigueur dans le pays du destinataire. Les emballages contenant plusieurs réducteurs sont normalement appliqués sur des palettes en bois pour faciliter la manutention au moyen de chariots éléveurs ou de transpalettes.</p> <p>Les réducteurs peuvent être déplacés individuellement en les soulevant avec des bandes ou des courroies (si le poids le nécessite) appliquées aux arbres d'entrée et de sortie.</p> <p>Les réducteurs de puissance moyenne ou haute sont dotés d'une cheville à oeillet.</p> <p>Les arbres des réducteurs sont dotés de protections de sécurité en plastique. Ces protections devront être enlevées avant l'installation suivant les normes de sécurité et prévention en vigueur dans le pays du destinataire.</p> <p>Ensuite, ces protections seront récupérées et éliminées du destinataire suivant les normes en vigueur dans son pays.</p>

12.1 STOCCAGGIO	12.1 STORAGE	12.1 LAGERUNG	12.1 STOCKAGE
<p>Il corretto stoccaggio dei prodotti ricevuti richiede l'esecuzione delle seguenti attività:</p> <ul style="list-style-type: none"> <li>a) Escludere aree all'aperto, zone esposte alle intemperie o con eccessiva umidità.</li> <li>b) Interporre sempre tra il pavimento ed i prodotti, pianali lignei o di altra natura, atti ad impedire il diretto contatto col suolo.</li> <li>c) Per periodi di stoccaggio superiori ai 60 giorni, le superfici interessate agli accoppiamenti quali flange, alberi e giunti, devono essere protette con idoneo prodotto antiossidante (Mobilarma 248 od equivalente).</li> <li>d) Per periodi di stoccaggio previsti superiori ai 6 mesi, i prodotti devono essere oggetto delle seguenti attività:           <ul style="list-style-type: none"> <li>d1) I prodotti forniti con lubrificazione permanente dovranno avere le parti lavorate esterne e quelle di accoppiamento ricoperte di grasso atto ad evitare ossidazioni.</li> <li>d2) I prodotti forniti privi di lubrificante, oltre alle attività descritte al punto d1), dovranno essere posizionati con il tappo di sfato nella posizione più alta e riempiti di olio.</li> <li>I riduttori, prima del loro utilizzo, dovranno essere riempiti con la corretta quantità e tipo di lubrificante previsto.</li> </ul> </li> </ul>	<p>Observe the following instructions to ensure correct storage of delivered products:</p> <ul style="list-style-type: none"> <li>a) Do not store outdoors, in areas exposed to weather or with excessive humidity.</li> <li>b) Always place boards in wood or other material between floor and products, to avoid direct contact with the floor.</li> <li>c) For storage periods of over 60 days, all machined surfaces such as flanges, shafts and couplings must be protected with a suitable anti-oxidation product (Mobilarma 248 or equivalent product).</li> <li>d) The following measures must be taken in respect of products for which the expected storage period exceeds 6 months:           <ul style="list-style-type: none"> <li>d1) For life lubricated products, the external machined and coupled parts must be greased to prevent oxidation.</li> <li>d2) In addition to the measures at point d1), products supplied without oil must be positioned with the breather plug high up, and be filled with oil. Before using the gearboxes, restore the correct quantity of recommended oil.</li> </ul> </li> </ul>	<p>Die korrekte Lagerung der Antriebe erfordert folgende Vorkehrungen:</p> <ul style="list-style-type: none"> <li>a) Die Produkte nicht im Freien lagern und nicht in Räumen, die der Witterung ausgesetzt sind, oder eine hohe Feuchtigkeit aufweisen.</li> <li>b) Die Produkte nie direkt auf dem Boden, sondern auf Unterlagen aus Holz oder einem anderen Material lagern.</li> <li>c) Bei Lagerzeiten von mehr als 60 Tagen die Oberflächen für die Verbindung, wie Flansche, Wellen oder Kupplungen mit einem geeigneten Oxidations-schutzmittel behandeln (Mobilarma 248 oder ein äquivalentes Mittel).</li> <li>d) Bei Lagerzeiten von mehr als 6 Monaten müssen folgende Vorkehrungen getroffen werden:           <ul style="list-style-type: none"> <li>d1) Bei den Produkten mit Dauerschmierung müssen die maschinell bearbeiteten Außenseiten und die Verbindungsflächen mit Fett vor Oxidation geschützt werden.</li> <li>d2) Die Produkte ohne Schmiermittel müssen wie unter Punkt d1) behandelt werden und außerdem mit nach oben gerichteter Entlüftungsschraube gelagert und mit Öl gefüllt werden. Die Getriebe müssen vor ihrer Verwendung mit der angegebenen Menge des vorgesehenen Schmiermittels gefüllt werden.</li> </ul> </li> </ul>	<p>Un correct stockage des produits reçus nécessite de respecter les règles suivantes:</p> <ul style="list-style-type: none"> <li>a) Exclure les zones à ciel ouvert, les zones exposées aux intempéries ou avec humidité excessive.</li> <li>b) Interposer dans tous les cas entre le plancher et les produits des planches de bois ou des supports d'autre nature empêchant le contact direct avec le sol.</li> <li>c) Pour les périodes de stockage supérieures à 60 jours, les surfaces concernées par les liaisons telles que les brides, les arbres et les accouplements doivent être protégées avec un produit antioxydant spécial (Mobilarma 248 ou équivalent).</li> <li>d) Pour les périodes de stockage prévues supérieures à 6 mois, les produits doivent être objet des contrôles suivants:           <ul style="list-style-type: none"> <li>d1) les produits fournis avec lubrification permanente devront avoir les parties externes usinées ainsi que celles de liaison recouvertes de graisse pour éviter les oxydations.</li> <li>d2) les produits fournis sans lubrifiant, outre les opérations décrites au point d1), devront être positionnés avec le bouchon remplaçant dans la position la plus haute et remplis d'huile. Les réducteurs, avant d'être utilisés, devront être remplis avec la juste quantité et type de lubrifiant prévu.</li> </ul> </li> </ul>
<p><b>12.2 INSTALLAZIONE E MESSA IN SERVIZIO</b></p> <p>E' molto importante, per l'installazione del riduttore, attenersi alle seguenti norme:</p> <p>Rimuovere le eventuali protezioni in plastica presenti sugli alberi secondo le indicazioni riportate nel paragrafo.</p> <p>Nei riduttori C602 e C603 rimuovere il golfare di sollevamento sostituendolo con il tappo allegato.</p> <p>Rimuovere eventuali protettivi con solventi seguendo le norme in vigore nel paese del destinatario.</p>	<p><b>12.2 INSTALLATION AND COMMISSIONING</b></p> <p>The following installation instructions for gearboxes must be observed:</p> <p>Remove any plastic guards from the shafts according to paragraph.</p> <p>On gearboxes C602 and C603, remove the eyebolt supplied for lifting and replace it with the plug provided.</p> <p>Remove any protective coatings with solvents according to customer's country rules.</p>	<p><b>12.2 INSTALLATION</b></p> <p>Für die Installation des Getriebes ist es äußerst wichtig, daß folgende Normen beachtet werden:</p> <p>Eventuell vorhandenen Plastikschutz von den Wellen entfernen, gemäß Abschnitt.</p> <p>Bei den Getrieben C602 und C603 die ÖSENSCHRAUBE entfernen und durch den mitgelieferten STÖPSEL ersetzen.</p> <p>Eventuell vorhandene rastbeseitigende Schutzschichten mit einem zulässigen Lösemittel gemäß Landesgesetzen entfernen.</p>	<p><b>12.2 INSTALLATION</b></p> <p>Il est très important, pour l'installation du réducteur, de se conformer aux règles suivantes:</p> <p>Enlever les éventuelles protections en plastique présentes sur les arbres selon les indications au point.</p> <p>Sur les réducteurs C602 et C603, enlever la cheville à œillet de levage en la remplaçant par le bouchon joint.</p> <p>Enlever les éventuelles produits de protection antioxydants au moyen de solvants suivant les normes en vigueur dans le pays du destinataire.</p>
<p></p> <p><b>Evitare che il solvente venga a contatto con il labbro degli anelli di tenuta.</b></p> <p>Assicurarsi che il fissaggio del riduttore sia stabile onde evitare qualsiasi vibrazione e sia effettuato su piani lavorati.</p> <p>Installare (se si prevedono urti, sovraccarichi prolungati o possibili blocaggi) giunti idraulici, frizioni, limitatori di coppia, ecc.</p>	<p></p> <p><b>Do not let the solvent be in touch with oilseal lips.</b></p> <p>Make sure that the gearbox is correctly secured and is fitted onto a machined surface to avoid vibrations.</p> <p>(If shocks, overloading, or the possibility of locking are expected), install hydraulic couplings, clutches, torque limiters, etc.</p>	<p></p> <p><b>Es muß unbedingt vermieden werden, daß Lösemittel mit den Lippen der Dichtungsringe in Kontakt kommt.</b></p> <p>Sicherstellen, daß die Befestigung des Getriebes stabil ist, damit keine Schwingungen entstehen und daß es auf einer bearbeiteten Fläche ohne Positioniertreiben zu liegen kommt.</p> <p>(Wenn es voraussichtlich zu Stößen, längerdauernden Überlasten oder zu Blockierungen kommen kann) sind entsprechende Schutzelemente wie hydraulische Kupplungen, Rutschkupplungen usw. zu installieren.</p>	<p></p> <p><b>Le solvant ne doit pas entrer en contact avec la lèvre des bagues d'étanchéité.</b></p> <p>S'assurer que la fixation du réducteur soit stable afin d'éviter toute vibration et soit sur des surfaces ou sinées sans aucun forcement de positionnement.</p> <p>Installer (en cas de chocs, de surcharges prolongées ou de blocages) des accouplements hydrauliques, des embrayages, des limitateurs de couple, etc.</p>

**!** Nei riduttori ad assi ortogonali serie A è opportuno valutare attentamente il tipo di fissaggio desiderato per effettuare una installazione corretta.

Negli schemi indicati in tabella (S86) vengono riportati i 3 casi possibili per l'installazione dei riduttori serie A alla struttura della macchina da operare.

Per ognuno di questi casi riportiamo nella tabella (S87) le dimensioni delle viti a testa esagonale da utilizzare.

Inoltre, per una facile installazione, suggeriamo di utilizzare il tipo di chiave mostrato in tabella (S86).

**!** With bevel helical units, A series, make sure that the type of fastening to be used will provide correct installation.

Schemes in table (S86) show the 3 possible installation cases for A gear units to the machine frame. For each of these circumstances , table (S87) indicates exagonal head screw sizes to be used. Besides, in order to operate an easy installation , we suggest to use a wrench of the type shown in table (S86).

**!** Vor allem bei den Parallelwellengetrieben der Serie A muß aufmerksam geprüft werden, welche Fixierungsart für eine fachmännische Installation wünschenswert ist.

In Tabelle (S86) sind die 3 Anbaumöglichkeiten des Getriebes Typ A an die zu betreibende Maschine dargestellt. Für jeden dieser Fällen sind in der Tabelle (S87) die Abmessungen der zu verwendenden Sechskantschrauben angegeben. Im übrigen schlagen wir zwecks einfacher Anbaus vor, den Schlosseltyp wie in Tabelle (S86) zu verwenden.

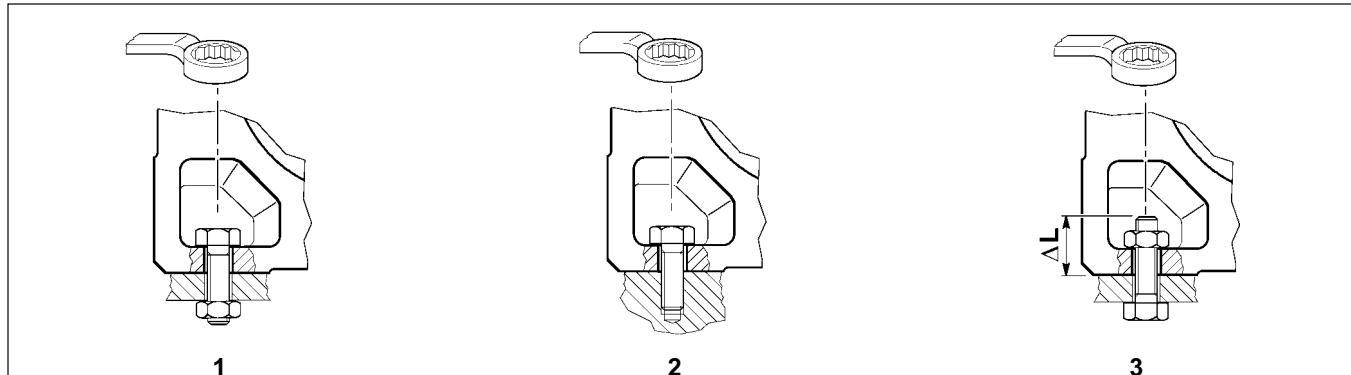
**!** Sur les réducteurs à arbres orthogonaux série A, il convient d'évaluer attentivement le type de fixation souhaité pour effectuer une installation correcte.

Dans les schémas indiqués dans le tableau (S86) l'on a indiqué 3 cas possibles pour le montage des réducteurs type A à la structure de la machine.

Pour tous ces cas l'on doit se référer pour les dimensions des vis à tête hexagonales à employer, au tableau (S87).

Pour un montage plus soigneux nous conseillons l'emploi du type de clé indiquée au tableau (S86).

(S86)



1

2

3

(S87)

	Tipo vite / Screw type / Schraubentyp / Type de vis					Tipo vite / Screw type / Schraubentyp / Type de vis			
	1	2	3	ΔL (mm)		1	2	3	ΔL (mm)
A10	M8 x 25	M8 x 20	M8 x...	20	A60	M16 x 50	M16 x 45	M16 x...	40
A20	M8 x 25	M8 x 20	M8 x...	20	A70	M20 x 60	M20 x 55	M20 x...	45
A30	M10 x 30	M10 x 25	M10 x...	25	A80	M24 x 70	M24 x 65	M24 x...	55
A41	M12 x 35	M12 x 30	M12 x...	30	A90	M24 x 90	M24 x 80	M24 x...	65
A50	M14 x 45	M14 x 40	M14 x...	35					

Se i riduttori verranno riverniciati, si dovranno proteggere i piani lavorati e il bordo esterno degli anelli di tenuta per evitare che la vernice ne essichi la gomma, pregiudicando la tenuta del paraolio stesso. Si consiglia inoltre di proteggere il foro dell'eventuale tappo di sfato per evitare l'occlusione, la targa di identificazione e il tappo di livello olio (dove previsto).

Le superfici di contatto dovranno essere pulite e trattate con adeguati protettivi prima del montaggio, onde evitare l'ossidazione e il conseguente bloccaggio delle parti.

Gli organi che vanno calettati sugli alberi di uscita del riduttore devono essere lavorati con tolleranza ISO H7 per evitare accoppiamenti troppo bloccati che, in fase di montaggio potrebbero danneggiare irreparabilmente il riduttore stesso. Inoltre, per il montaggio e lo smontaggio di tali organi si consiglia l'uso di adeguati tiranti ed estrattori utilizzando il foro filettato posto in testa alle estremità degli alberi.

If the gearboxes are to be paint coated, protect the machined surfaces and the outside face of the oilseals to prevent paint from drying out the rubber and jeopardising the functioning of the seal.

In addition, protect the hole of the breather plug (if present) to prevent clogging, as well as the identification plate and the oil level plug (if present).

Contact surfaces must be cleaned and treated with suitable protective products before mounting to avoid oxidation and, as a result, seizure of parts.

Parts assembled on the gearbox output shafts must be machined to ISO H7 tolerance to prevent interference fits that could damage the gearbox itself during the mounting. Further, to mount or remove such parts, employ suitable pullers or extraction devices using the tapped hole located at the top of the shaft extensions.

Beim Lackieren die bearbeiteten Flächen und die Dichtringe schützen, damit der Anstrichstoff nicht den Kunststoff angreift und somit die Dichtigkeit der Ölabdichtungen in Frage gestellt wird.

Es wird zudem empfohlen, die Öffnung der eventuell vorhandenen Entlüftungsschraube, sowie das Typenschild und (wenn vorhanden) die Ölstandsschraube zu schützen, damit es nicht zu Verstopfungen kommt.

Die Berührungsflächen müssen sauber sein und vor der Montage mit einem geeigneten Schutzmittel behandelt werden, um Oxidierung und die daraus folgende Blockierung der Teile zu verhindern.

Die Organe, die mit einer Keilverbindung auf der Abtriebswelle des Getriebes befestigt werden, müssen mit einer Toleranz ISO H7 gearbeitet sein, um allzu fest blockierte Verbindungen zu vermeiden, die eventuell zu einer irreparablen Beschädigung des Getriebes während des Einbaus führen könnten. Außerdem sind beim Ein- und Ausbau dieser Organe geeignete Zugstangen und Abzieher zu verwenden, wobei die Gewindebohrung an den Stirnseiten der Wellen zu verwenden sind.

En phase de peinture, il faudra protéger les plans usinés et le bord extérieur des bagues d'étanchéité pour éviter que la peinture ne dessèche le caoutchouc, ce qui risque de nuire à l'efficacité du joint.

Nous vous conseillons par ailleurs de protéger le trou du bouchon renflard s'il y en a un, pour éviter qu'il ne se bouche, la plaque signalétique et le bouchon de niveau d'huile (s'il est prévu).

Les surfaces d'accouplement devront être propres et traitées avec des produits de protections appropriés avant le montage afin d'éviter l'oxydation et par suite le blocage des pièces.

Les organes qui sont calés sur les arbres de sortie du réducteur doivent être réalisés avec une tolérance ISO H7 pour éviter les accouplements trop serrés qui, en phase de montage, pourraient endommager irrémédiablement le réducteur. En outre, pour le montage et le démontage de ces organes, nous conseillons d'utiliser un outillage et des extracteurs appropriés en utilisant le trou taraudé situé en extrémité d' arbre.

**!** Non sottoporre gli alberi ad urti che possano danneggiare i cuscinetti interni.

L'accoppiamento all'albero di uscita cavo del riduttore (toleranza G7) viene normalmente eseguito con perni lavorati con tolleranza h6. Dove il tipo di applicazione lo richiede, si può prevedere un accoppiamento con una leggera interferenza (G7 - j6).

#### ISTRUZIONI PER IL CORRETTO SERRAGGIO DEL CALETTATORE-RE

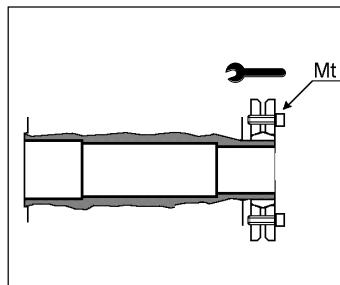
I riduttori serie A ed F sono disponibili a richiesta con albero lento cavo munito di calettatore (forma costruttiva \_S).

E' necessario eseguire le seguenti operazioni per effettuare il montaggio del riduttore sull'albero della macchina da azionare.

- 1) Svitare le viti di bloccaggio gradualmente e in successione rimuovendo il calettatore
- 2) Pulire e sgrassare accuratamente le zone di accoppiamento fra albero lento riduttore e albero della macchina da azionare
- 3) Accoppiare albero condotto e riduttore
- 4) Montare il calettatore sull'albero del riduttore
- 5) Avvitare a fondo tutte le viti del calettatore gradualmente e in successione, facendo uso di una chiave dinamometrica. E' necessario ripetere la sequenza alcune volte al fine di raggiungere la coppia di serraggio Mt indicata in tabella (S87a).

**Attenzione! Non usare bisolfuro di molibdeno o altri grassi, causa di notevoli riduzioni del coefficiente d'attrito.**

(S87)



Prima della messa in funzione della macchina, accertarsi che la posizione del livello del lubrificante sia conforme alla posizione di montaggio del riduttore e che la viscosità sia adeguata al tipo del carico come indicato in tabella (S69).

Nei motoriduttori controllare che fra la calotta posteriore del motore ed eventuali carterature delle macchine vi sia lo spazio sufficiente per garantire il regolare afflusso dell'aria per il raffreddamento.

**!**

**Avoid shocks on the shafts: this may damage internal bearings.**

*Coupling to the gearbox output hollow shaft (G7 tolerance) is usually effected with shafts machined to h6 tolerance. If the type of application requires it, coupling with a slight interference (G7 - j6) is possible.*

#### INSTRUCTIONS FOR FITTING OF SHRINK DISC

*Gearboxes of the A and F series are available upon request with hollow output shaft complete with shrink disc (\_S version). To fit the gearbox onto the customer shaft the procedure described here below must be followed.*

- 1) Unscrew the locking bolts progressively and remove the shrink disc
- 2) Carefully clean and degrease mating surfaces of the hollow shaft and customer shaft
- 3) Fit the gearbox onto the driven shaft
- 4) Fit the shrink disc onto the gearbox shaft
- 5) Tighten all locking bolts of the shrink disc gradually and progressively in circular sequence, using a torque wrench. **Several sequences are necessary until the specified tightening torque Mt is reached. See tab. (87a) for reference.**

**!**

**Die Wellen dürfen nie Stößen ausgesetzt werden, denn diese können die inneren Lager beschädigen.**

*Die Verbindung mit der Abtriebs-hohlwelle des Getriebes (Toleranz G7) wird normalerweise mit Zapfen mit Toleranz h6 hergestellt. Wo die Anwendungsart dies verlangt, kann man die Verbindung mit einem leichten Übermaß ausführen (G7 - j6).*

#### ANLEITUNGEN FÜR DEN KORREKten ANZUG DER SCHRUMPFSCHEIBE

*Die Getriebe der Serie A und F sind auf Anfrage mit einer Abtriebswelle verfügbar, die mit einer Schrumpfscheibe versehen ist (Version \_S). Um ein solches Getriebe auf die Welle der zu betreibenden Maschine montieren zu können, muß man folgendermaßen vorgehen:*

- 1) Die Befestigungsschrauben schrittweise und in entsprechender Reihenfolge lockern und so die Schrumpfscheibe entfernen
- 2) Die Passbereiche zwischen Abtriebswelle des Getriebes und der Welle der anzutreibenden Maschine säubern und entfetten
- 3) Die geführte Welle und das Getriebe aneinander passen
- 4) Die Schrumpfscheibe auf die Getriebewelle montieren
- 5) Alle Schrauben der Schrumpfscheibe schrittweise und in entsprechender Reihenfolge anziehen. Diese Sequenz ist mehrmals zu wiederholen, d.h. so lange bis der in der Tabelle (87a) angegebene Anzugsmoment Mt erreicht wurde.

**!**

**Ne pas soumettre les arbres à des chocs pouvant endommager les roulements internes.**

*L'accouplement à l'arbre de sortie creux du réducteur (tolérance G7) est habituellement réalisé avec des arbres exécutés à la tolérance h6. Lorsque le type d'application le demande, on peut prévoir un accouplement avec une légère interférence (G7 - j6).*

#### INSTRUCTIONS POUR LE BLOCAGE CORRECT DE LA FRETTE DE SERRAGE

*Les réducteurs série A et F sont disponibles sur demande avec un arbre de sortie creux équipé de frette de serrage (version S).*

*Il est nécessaire d'exécuter les opérations suivantes pour effectuer le montage du réducteur sur l'arbre de la machine à actionner:*

- 1) Dévisser graduellement et l'une après l'autre les vis de blocage et enlever la frette de serrage
- 2) Nettoyer et dégraisser soigneusement les zones d'accouplement entre arbre de sortie réducteur et arbre de la machine à actionner
- 3) Accoupler l'arbre mené et le réducteur
- 4) Monter la frette de serrage sur l'arbre réducteur
- 5) Visser à fond graduellement et l'une après l'autre toutes les vis de la frette de serrage. Il est nécessaire de répéter la séquence plusieurs fois afin d'atteindre le couple de serrage Mt indiqué dans le Tableau (87a).

**Warning! Do not use molybdenum disulfide or any grease whatsoever because of consequent reduction in the friction coefficient.**

**Achtung! Niemals Molybdändisulfid oder andere Fettarten verwenden, da sie zu erheblichen Reduzierungen des Reibkoeffizienten führen würden.**

**Attention! Ne pas utiliser de bisulfure de molybdène ou autres graisses, susceptibles de provoquer d'importantes réductions du coefficient de frottement.**

	A10	A20	A30	A41	A50	A60	A70	A80	A90
Mt [Nm]	14.5	14.5	14.5	14.5	35	35	35	69	69
	F10	F20	F30	F40	F50	F60	F70	F80	F90
Mt [Nm]	8.5	14.5	14.5	14.5	14.5	35	35	69	69

*Before starting up the machine, make sure that oil level conforms to the reduction unit mounting position, and that viscosity is suitable for the load involved as indicated in the table (S69).*

*In gearmotors, check that there is sufficient space to guarantee a regular flow of cooling air between the rear motor cover and any machine frame.*

*Vor Inbetriebnahme der Maschine sicherstellen, daß die Anordnung der Füllstandschraube der Einbaulage entspricht und die Viskosität des Schmiermittels der Belastungsart entspricht, wie dies in Tabelle (S69) angegeben wird.*

*Bei den Getriebemotoren muß kontrolliert werden, ob zwischen der hinteren Lüfterraddeckel und eventuell vorhandenen Rahmen der Maschine genügend Platz ist, damit die Kühlungsluft gut hineinströmen kann.*

*Avant la mise en marche de la machine, s'assurer que la position du niveau du lubrifiant soit conforme à la position de montage du réducteur et que la viscosité soit appropriée au type de charge, voir tableau (S69).*

*Sur les motoréducteurs, contrôler qu'entre la calotte arrière du moteur et les éventuels carters de la machine il y ait assez d'espace pour garantir l'arrivée régulière de l'air pour le refroidissement.*

Nelle installazioni all'aperto o in ambienti umidi o corrosivi, si consiglia di adottare tutte le precauzioni necessarie a preservare la funzionalità della macchina nel tempo.

*For outdoor installations or in damp or corrosive conditions, use all of the precautions needed to maintain machine operation over an extended period of time.*

Bei Installationen im Freien oder in feuchten oder korrosionsfördernden Räumen empfehlen wir, alle notwendigen Vorkehrungen zu treffen, damit der Maschine eine lange Lebensdauer garantiert werden kann.

*Dans les installations en extérieur ou dans des milieux humides ou corrosifs, nous vous conseillons d'adopter toutes les précautions nécessaires pour préserver le bon fonctionnement de la machine dans le temps.*

Tutte le operazioni descritte dovranno essere eseguite da personale qualificato.

*All of the operations described above must be performed by qualified personnel only.*

Alle Eingriffe müssen von geschultem Personal vorgenommen werden.

*Toutes les opérations décrites devront être effectuées par du personnel qualifié.*

### 12.3 USO E MANUTENZIONE

Nei riduttori previsti con lubrificazione permanente non è necessario ripristinare il livello del lubrificante. Il o i tappi presenti su questi riduttori dovranno essere del tipo chiuso. Negli altri riduttori, provvisti dei tappi di carico, livello e scarico si dovrà effettuare un controllo periodico del livello del lubrificante e se necessario ripristinarlo aggiungendo la quantità necessaria.

*It is not necessary to top up the oil in gearboxes with permanent lubrication.*

*The plug seals on these gearboxes must be closed type.*

*On other gearboxes with filler, level, and drain plugs, check oil level periodically and top up if necessary.*

Bei den Getrieben mit einer Dauerschmierung muß kein Schmiermittel nachgefüllt werden.

Der oder die Stöpsel auf diesen Getrieben müssen so gestaltet sein, daß keine Öffnung vorgesehen ist.

Bei den anderen Getrieben, die Einfüll-, Ölstand- und Ölablaß-schrauben aufweisen, muß eine periodische Kontrolle des Ölstands durchgeführt werden. Wenn nötig nachfüllen.

### 12.3 USE AND MAINTENANCE



Si raccomanda di non miscelare oli a base minerale con oli sintetici e viceversa.

*Never mix mineral oils with synthetic oils and vice versa.*

*Es wird empfohlen, nie Mineralöle mit synthetischen Ölen (oder umgekehrt!) zu vermischen.*

*Ne pas mélanger des huiles à base minérale avec des huiles synthétiques et inversement.*

La sostituzione del lubrificante potrà essere effettuata indicativamente agli intervalli (h) indicati nella tabella (S88).

*Oil change may be performed in the approximate hourly intervals (h) shown in table (S88) below.*

Das Schmiermittel wird ungefähr in den in Tabelle (S88) angegebenen Zeitabständen aus gewechselt.

*Le renouvellement du lubrifiant devra être effectué indicativement aux échéances (en h) indiquées dans le tableau (S88).*

(S88)

Temperatura olio / Oil temperature Öltemperatur / Température huile [°C]	Intervallo di lubrificazione / Lubrication interval Schmierfrist / Intervalle de lubrification [h]	
	olio minerale / mineral oil Mineralöl / huile minérale	olio sintetico / synthetic oil Syntheseöl / huile synthétique
< 65	8000	25000
65 - 80	4000	15000
80 - 95	2000	12500

Si consiglia di effettuare, sistematicamente, una accurata pulizia esterna del riduttore per rimuovere eventuali sedimenti che limiterebbero la capacità di dissipazione termica.

*We advise you to carefully clean the exterior of the gearbox on a regular basis to remove any sediments that might limit heat dissipation.*

*In gearmotors, check that the grid of the fan cowl is not blocked by foreign bodies or dirt.*

Es wird empfohlen, das Getriebe systematisch und sorgfältig außen zu reinigen, damit eventuelle Ablagerungen entfernt werden, die die Wärmeabstrahlung einschränken könnten.

Bei den Getriebemotoren muß kontrolliert werden, ob das hintere Motorengrid nicht durch Fremdkörper oder Staub verstopft ist.

*Nous vous conseillons d'effectuer systématiquement un nettoyage externe soigneux du réducteur, pour enlever d'éventuels sédiments, qui limiterait la capacité de dissipation thermique.*

*Sur les motoréducteurs, s'assurer que la grille arrière du moteur n'est pas obstruée par des corps étrangers ou de la poussière.*

Nei motoriduttori verificare che la griglia posteriore del motore non sia ostruita da corpi estranei o da polvere.



**Attenzione!!**  
Alcuni riduttori, in particolari condizioni ambientali e applicative possono raggiungere temperature di funzionamento superiori a 50 °C sulle parti esterne. Il contatto con tali parti senza l'ausilio di adeguate protezioni può provocare ustioni.

Il controllo del livello del lubrificante e l'eventuale rabbocco devono essere effettuati a macchina ferma e al ripristino delle condizioni della temperatura ambiente.



**Warning!!**  
*Under certain ambient and operating conditions, the external parts of certain gearmotors may reach temperatures exceeding 50 °C. Touching such parts without adequate protection may cause injury.*

*Checking of oil level and any topping up must be performed with the machine stopped and at ambient temperature.*



**Achtung!!**  
Einige Getriebe können unter speziellen Umwelt oder Einsatzbedingungen auf den äußeren Teilen Betriebstemperaturen von über 50 °C erreichen. Berührt man diese Teile ohne Körperschutz, kann dies zu Verbrennungen führen.

Die Kontrolle des Ölstandes und das eventuelle Nachfüllen müssen bei stillstehender Maschine erfolgen, nachdem die Getriebetemperatur auf Umgebungstemperatur gefallen ist.



**Attention!!**  
Certains réducteurs, dans des conditions extérieures et d'application particulières, peuvent atteindre des températures de fonctionnement supérieures à 50 °C sur les parties externes. Le contact avec ces parties sans protections appropriées peut provoquer des brûlures.

Le contrôle du niveau de lubrifiant et l'éventuelle mise à niveau doivent être effectués quand la machine est à l'arrêt, une fois rétablies les conditions de température ambiante.

In caso di attività di manutenzione del riduttore, accertarsi che:	When performing maintenance on the gearbox, make sure that:	Bei Wartungsarbeiten am Getriebe kontrolliere man:	Pour l'entretien du réducteur, s'assurer que :
<ul style="list-style-type: none"> <li>- non ci siano nelle vicinanze organi in movimento</li> <li>- non ci siano carichi sospesi o instabili nelle vicinanze; in caso affermativo provvedere al loro bloccaggio,</li> <li>- non ci siano sorgenti di calore elevate o fiamme libere nelle vicinanze se si usano solventi per la pulizia esterna,</li> <li>- l'alimentazione del motore sia staccata.</li> </ul>	<ul style="list-style-type: none"> <li>- there are no moving elements in the nearby</li> <li>- there are no suspended or unstable loads in the vicinity; if there are, secure them</li> <li>- there are no sources of intense heat or open flame in the vicinity if solvents are to be used for external cleaning</li> <li>- power has been disconnected to the motor.</li> </ul>	<ul style="list-style-type: none"> <li>- daß keine sich bewegenden Maschinenkomponenten in der Nähe sind,</li> <li>- daß keine aufgehängten oder unstabilen Lasten in der Nähe sind; falls dies trotzdem der Fall ist, müssen diese blockiert werden,</li> <li>- daß keine starken Wärmequellen oder freie Flammen in der Nähe sind, falls Lösemittel für die Reinigung der Außenteile verwendet worden ist,</li> <li>- daß die Stromzufuhr des Motors unterbrochen ist.</li> </ul>	<ul style="list-style-type: none"> <li>- il n'y a pas à proximité d'organes en mouvement;</li> <li>- il n'y a pas de charges suspendues ou instables à proximité; si c'est le cas, les bloquer;</li> <li>- il n'y a pas de sources de chaleur élevées ou de flammes libres à proximité si l'on utilise des solvants pour le nettoyage externe;</li> <li>- l'alimentation du moteur est coupée.</li> </ul>

### 13.0 INFORMAZIONI GENERALI MOTORI ELETTRICI

#### Campo di applicazione

Le seguenti istruzioni si applicano ai motori elettrici asincroni trifasi prodotti dalla BONFIGLIOLI RIDUTTORI S.p.A. della serie:

- BN

- M

nella versione base.

Esecuzioni costruttive speciali come descritto nei cataloghi e/o nelle relative offerte, applicazioni particolari (p.e. alimentazione da inverter) necessitano di informazioni aggiuntive.

Per i tipi autofrenanti si applicano le istruzioni supplementari riportate nella specifica documentazione.

### 13.0 GENERAL INFORMATION ELECTRIC MOTORS

#### Field of application

The following instructions apply to the three-phase asynchronous electric motors manufactured by BONFIGLIOLI RIDUTTORI S.p.A., series:

- BN

- M

basic version.

Special versions as described in the catalogues and/or in offers, or special applications (for example, power supply from inverter) will require additional information.  
For brake motors, refer to the supplementary instructions, given in the specific documentation.

### 13.0 ALLGEMEINE INFORMATIONEN ÜBER DIE ELEKTROMOTOREN

#### Verwendungsbereich

Die folgenden Anweisungen betreffen die asynchronen, dreiphasigen Elektromotoren, die von BONFIGLIOLI RIDUTTORI S.p.A. hergestellt wurden und zu folgenden Serien gehören:

- BN

- M

in der Grundausführung.

Für Elektromotoren mit Sonderbauform, wie sie in den Katalogen und/oder Angeboten beschrieben werden, sowie für spezielle Anwendungen (wie z.B. Stromzufuhr aus einem Inverter) sind zusätzliche Informationen notwendig. Für die Bremsmotore müssen die zusätzlichen Anweisungen bezogen werden.

### 13.0 INFORMATIONS GÉNÉRALES MOTEURS ÉLECTRIQUES

#### Domaine d'application

Les instructions suivantes s'appliquent aux moteurs électriques asynchrones triphasés produits de BONFIGLIOLI RIDUTTORI S.p.A. de la série :

- BN

- M

dans la version de base.

Les exécutions spéciales décrites dans les catalogues et/ou dans les offres correspondantes ainsi que les applications particulières (alimentation par convertisseur par exemple), requièrent des informations supplémentaires.

Pour les types freins, on se rapportera aux instructions supplémentaires figurant à la documentation relative.

#### Informazioni generali sulla sicurezza

I motori elettrici descritti nelle seguenti istruzioni sono previsti per impiego in installazioni industriali e destinate ad essere utilizzate da personale qualificato.

 Durante il funzionamento questi motori presentano parti sotto tensione o in movimento e pertanto la rimozione delle necessarie protezioni elettriche e meccaniche, l'uso improprio o la non adeguata manutenzione possono causare gravi danni a persone o cose.

#### General safety information

The electric motors described in the following instructions are designed to be used in industrial installations and must be operated by qualified personnel only.



**When in operation, motors have live or moving parts. Therefore, removal of necessary electrical or mechanical guards, improper use, or inadequate maintenance may cause serious damage to persons or property.**

#### Allgemeine Sicherheitsinformationen

Die in den folgenden Anweisungen beschriebenen Elektromotoren sind für eine Verwendung durch geschultes Personal in Industriebetrieben vorgesehen.



**Während ihres Betriebs stehen Teile dieser Motoren unter Spannung oder bewegen sich. Deshalb kann die Entfernung der notwendigen elektrischen oder mechanischen Schutzvorrichtungen, eine nicht sachgerechte Verwendung oder eine falsche Wartung schwere Schäden an Personen und Objekten verursachen.**

 Deve essere assicurato che ogni operazione sui motori venga eseguita da personale qualificato che abbia conoscenza delle istruzioni e dati tecnici relativi al prodotto e sia stato autorizzato dal responsabile della sicurezza all'intervento.



**All interventions on the motors must be performed only by qualified personnel who have thorough knowledge of the instructions and technical data for the product and who have been authorised to perform such intervention by the safety supervisor.**



**Es muß unbedingt sichergestellt werden, daß alle Operationen an den Motoren von qualifiziertem Personal vorgenommen werden, das die Anweisungen und technischen Daten des Produktes zur Kenntnis genommen hat und vom Verantwortlichen für Sicherheitsfragen die entsprechende Erlaubnis erhalten hat.**



**Veiller à ce que chaque opération sur les moteurs soit effectuée par du personnel qualifié connaissant le mode d'emploi et les caractéristiques techniques du produit et ayant reçu l'autorisation du responsable de la sécurité pour l'intervention.**

Le presenti istruzioni devono essere integrate con quanto previsto dalle disposizioni legislative vigenti nel luogo di installazione nonché da quanto prescritto dalle Norme tecniche, specifiche di impianto ed altre regolamentazioni ai fini della sicurezza.

Altre informazioni e chiarimenti possono essere richiesti agli uffici commerciali BONFIGLIOLI RIDUTTORI S.p.A.

#### Condizioni di fornitura

I motori vengono forniti dalla BONFIGLIOLI RIDUTTORI S.p.A. previo superamento delle attività di controllo previste nella documentazione applicabile nel proprio sistema qualità, collaudati e già predisposti per essere installati.

Il ricevente avrà cura che i prodotti siano soggetti a trasporto e movimentazione utilizzando mezzi e attenzioni tali da assicurare il mantenimento dello stato delle condizioni fornite dalla BONFIGLIOLI RIDUTTORI S.p.A. all'atto della consegna.

Per quanto riguarda le caratteristiche di progetto si dovrà fare riferimento al catalogo o alla descrizione contenuta in ordine del cliente e confermato dalla BONFIGLIOLI RIDUTTORI S.p.A.

*These instructions must be integrated with current legislation in the country of installation, as well as with technical norms and specifications regarding layout and with safety norms.*

*For additional information and explanations, contact the sales office of BONFIGLIOLI RIDUTTORI S.p.A.*

#### Supply conditions

*Motors are supplied by BONFIGLIOLI RIDUTTORI S.p.A. after they have passed the controls provided in the applicable documentation for the Company's quality control system, inspected and prepared for installation.*

*The customer must transport and handle the products by appropriate means and with suitable care in order to keep them in the state in which they are supplied by BONFIGLIOLI RIDUTTORI S.p.A. at the time of delivery.*

*With respect to product specifications, refer to the catalogue or to the description in the customer's order as confirmed by BONFIGLIOLI RIDUTTORI S.p.A.*

Diese Anweisungen müssen im Hinblick auf die Sicherheit durch die gesetzlichen Vorschriften, die im betreffenden Land gelten, ergänzt werden, sowie durch die technischen Vorschriften, die Spezifikationen der Anlagen und andere Regelungen.

Weitere Informationen und Erklärungen erhalten Sie bei den Handelsvertretungen von BONFIGLIOLI RIDUTTORI S.p.A.

#### Lieferbedingungen

BONFIGLIOLI RIDUTTORI S.p.A. liefert ihre Motoren nach erfolgter Prüfung - gemäß den Unterlagen, die diese Kontrollen für ihr Qualitätssystem vorschreiben. Sie sind bereits kontrolliert und zur Installation bereit.

Der Empfänger muß bedenken, daß die Produkte transportiert werden sollen und muß deshalb geeignete Transportmittel wählen sowie Vorsichtsmaßnahmen treffen, damit diese bei ihm so ankommen, wie sie BONFIGLIOLI RIDUTTORI S.p.A. ausgeliefert hat.

Bei den Produkteigenschaften muß man den Katalog und die Beschreibungen beachten, die im Auftrag des Kunden enthalten sind und die BONFIGLIOLI RIDUTTORI S.p.A. bestätigt hatte.

*Ces instructions doivent être complétées par les obligations prévues par les dispositions législatives en vigueur dans l'endroit d'installation, ainsi que par les prescriptions des normes techniques, spécifications d'installation et autres réglementations de sécurité.*

*Pour tout autre renseignement, veuillez vous adresser aux services commerciaux de BONFIGLIOLI RIDUTTORI S.p.A.*

#### Conditions de fourniture

*Les moteurs sont fournis par BONFIGLIOLI RIDUTTORI S.p.A. à l'issue des contrôles de la documentation prévue par son système de la qualité, testés et déjà prêts pour l'installation.*

*Le client veillera à ce que le transport et la manutention des produits se fassent de façon à assurer le maintien des conditions fournies par BONFIGLIOLI RIDUTTORI S.p.A. au moment de la livraison. En ce qui concerne les caractéristiques de projet, on se rapportera au catalogue ou à la description figurant dans la commande du client confirmée par BONFIGLIOLI RIDUTTORI S.p.A.*

**! Etant donné que le moteur électrique n'a pas une fonction intrinsèque pour l'utilisateur final et est accouplé mécaniquement à une autre machine, il appartiendra au responsable de l'installation et de l'assemblage d'adopter toutes les mesures de sécurité nécessaires pendant le fonctionnement.**



**Dato che il motore elettrico non ha una funzione intrinseca per l'utilizzatore finale e viene meccanicamente accoppiato ad altra macchina, sarà responsabilità di chi esegue l'installazione e assemblaggio garantire che vengano presi tutti i provvedimenti necessari alla sicurezza durante il funzionamento.**



**Since the electric motor does not have an intrinsic function for the final user and is mechanically coupled to another machine, it is the responsibility of the installer and assembler to guarantee that all provisions for safe operation have been taken.**



**Da der Elektromotor keine eigenleitende Funktion für den Endbenutzer hat und mechanisch an eine andere Maschine angeschlossen wird, ist derjenige, der Installation und Zusammenbau vornimmt dafür verantwortlich, daß alle zur Betriebssicherheit notwendigen Maßnahmen getroffen werden.**

#### Ricevimento, trasporto e movimentazione

Al ricevimento del motore controllare che non abbia subito danni durante il trasporto ed eventualmente segnalarli allo spedizioniere. Controllare inoltre che le caratteristiche riportate in targa corrispondano a quanto richiesto in ordine e confermato da BONFIGLIOLI RIDUTTORI S.p.A.

I motori elettrici vengono consegnati imballati in contenitori di cartone.

Tutti gli elementi di imballaggio dovranno essere raccolti e smaltiti o riciclati secondo le norme vigenti nel proprio Paese.

Gli imballi contenenti più motori sono normalmente applicati a bancali in legno per facilitarne la movimentazione tramite carrelli elevatori o transpallets.

#### Receipt, transport, and handling

*Upon receipt of the motor, check that it was not damaged during transport; if damage is noted, inform the carrier immediately. In addition, check that the characteristics stated on the plate conform to those ordered and confirmed by BONFIGLIOLI RIDUTTORI S.p.A. The motors are delivered packed in cardboard cartons.*

*All packing parts must be collected and disposed of or recycled according to current regulations in the customer's country.*

*Cartons containing more than one motor are usually attached to wooden boards to facilitate handling by forklifts or transpallets.*

#### Warenempfang, Transport, Auf- und Abladung

Beim Eintreffen des Motors kontrolliere man, ob er beim Transport eventuell beschädigt worden ist. Ist dies der Fall, muß die Speditionsfirma sofort benachrichtigt werden. Zudem muß kontrolliert werden, ob die Eigenschaften, die auf dem Schild angegeben sind, denjenigen entsprechen, die im Auftrag verlangt und von BONFIGLIOLI RIDUTTORI S.p.A. bestätigt wurden. Alle Verpackungsgegenstände müssen eingesammelt und nach den im betreffenden Land gültigen Vorschriften entsorgt oder recycelt werden.

Verpackungen, die mehrere Motoren enthalten, werden normalerweise auf Holzverschlägen fixiert, dies vereinfacht ihren Transport auf Hubkarren oder Handgabelhubwagen.

#### Réception, transport et manutention

*A la réception du moteur, contrôler qu'il n'a pas été abîmé pendant le transport. Le cas échéant, signaler les déteriorations au transporteur. Contrôler également que les caractéristiques figurant sur la plaque signalétique correspondent bien à ce qui a été demandé dans la commande et confirmé par BONFIGLIOLI RIDUTTORI S.p.A.*

*Les moteurs électriques sont livrés emballés dans des emballages en carton.*

*Tous les éléments d'emballage devront être récupérés et éliminés ou recyclés suivant les normes en vigueur dans le pays du destinataire. Les emballages contenant plusieurs moteurs sont normalement appliqués sur des palettes en bois pour faciliter la manutention au moyen de chariots éléveurs ou de transpalettes.*

I motori possono essere movimenti individualmente sollevandoli con fasce o cinghie (se il peso lo richiede). I motori  $\geq 100$ ,  $\geq M3$  sono provvisti di un golfare di sollevamento. Gli alberi dei motori sono muniti di protezioni di sicurezza in plastica. Esse dovranno essere rimosse prima dell'installazione seguendo le norme di sicurezza e prevenzione in vigore nel paese del destinatario. Successivamente, queste protezioni dovranno essere recuperate ed eliminate secondo le norme in vigore nel proprio paese.

*Motors may be handled individually by lifting them with belts or chains (if required due to weight) attached to input and output shafts. Motors  $\geq 100$ ,  $\geq M3$  are fitted with a hoisting eye bolt. Motor shafts feature plastic safety protections. They shall be removed before assembly according to the safety standards in force in the country of destination. These protections shall then be disposed of according to the standards in force in the country considered.*

Die Motoren können individuell umplaziert werden, indem man sie, falls dies wegen ihres Gewichts notwendig ist, mit Riemen oder Bändern anhebt. Die Motoren  $\geq 100$ ,  $\geq M3$ , sind mit einer Transportöse ausgestattet. Die Motorwellen sind mit einem Sicherheitsschutz auf Kunststoff versehen. Letztere müssen vor der Installation unter Berücksichtigung der im jeweiligen Anwenderland gültigen Sicherheits- und Unfallvorsorgelnormen abgenommen werden. Diese Schutzabdeckungen müssen aufbewahrt und den im jeweiligen Land geltenden Normen gemäß entsorgt werden.

*Les moteurs peuvent être déplacés individuellement en les soulevant avec des bandes ou des courroies (si le poids le nécessite). Les moteurs  $\geq 100$ ,  $\geq M3$  possèdent un piton de levage. Les arbres des moteurs sont munis de protections de sécurité en plastique. Avant l'installation il est nécessaire de les démonter selon les normes de sécurité et prévention en vigueur dans le pays du destinataire. Par la suite, il faut récupérer ces protection et les éliminer de la façon indiquée par les lois en vigueur dans le pays considéré.*



I golfari sono adatti per il sollevamento del solo motore.



The eyebolts are suitable for lifting the motor only.

Assicurarsi che il motore venga appoggiato in modo stabile e sia impedito il rotolamento nel caso di motori con flangia.

Make sure that the motor rests in a stable manner and will not roll (in the case of motors with flange).



Die Ösen schrauben sind nur für die Anhebung des Motors vor gesehen.



Les chevilles à oeillet sont adaptées uniquement pour le levage du moteur.

### 13.1 STOCCAGGIO

Il corretto stoccaggio dei prodotti ricevuti richiede l'esecuzione delle seguenti attività:

a) Escludere aree all'aperto, zone esposte alle intemperie o con eccessiva umidità.

b) Interporre sempre tra il pavimento ed i prodotti, pianali lignei o di altra natura, atti ad impedire il diretto contatto col suolo.

c) Per periodi di stoccaggio superiori ai 60 giorni, le superfici interessate agli accoppiamenti quali flange e alberi, devono essere protette con idoneo prodotto antiossidante (Mobilarma 248 od equivalente).

d) Per periodi di stoccaggio previsti superiori ai 6 mesi, sarà buona norma ruotare periodicamente, ogni 1-2 mesi, il rotore e prevedere misure adeguate di protezione contro la corrosione e l'umidità.

### 13.1 STORAGE

Observe the following instructions to ensure correct storage of delivered products:

a) Do not store outdoors, in areas exposed to weather or with excessive humidity.

b) Always place boards in wood or other material between floor and products, to avoid direct contact with the floor.

c) For storage periods exceeding 60 days, all coupling surfaces such as flanges and shafts must be protected with a suitable anti-oxidation product (Mobilarma 248 or equivalent).

d) For storage periods exceeding 6 months, it is a good rule to turn the rotor every 1-2 months and to take adequate measures against corrosion and humidity.

### 13.1 LAGERUNG

Die korrekte Lagerung der Antriebe erfordert folgende Vorkehrungen:

a) Die Produkte nicht im Freien lagern und nicht in Räumen, die der Witterung ausgesetzt sind, oder eine hohe Feuchtigkeit aufweisen.

b) Die Produkte nie direkt auf dem Boden, sondern auf Untergestelle aus Holz oder einem anderen Material lagern.

c) Bei Lagerungen, die länger als 2 Monate dauern, müssen die Oberflächen wie Flansche und Wellen, die an andere Geräte angeschlossen werden, mit einem geeigneten Antioxydierungsmittel (Mobilarma 248 oder ein gleichwertiges Produkt) geschützt werden.

d) Ist eine Lagerung von mehr als 6 Monaten vorgesehen, muß von Zeit zu Zeit, alle 1-2 Monate der Läufer gedreht werden, zudem müssen vorbeugende Schutzmaßnahmen gegen Rost und Feuchtigkeit getroffen werden.

### 13.1 STOCKAGE

Un correct stockage des produits reçus nécessite de respecter les règles suivantes:

a) Exclure les zones à ciel ouvert, les zones exposées aux intempéries ou avec humidité excessive.

b) Interposer dans tous les cas entre le plancher et les produits des planches de bois ou des supports d'autre nature empêchant le contact direct avec le sol.

c) Pour des périodes de stockage supérieures à 60 jours, les surfaces d'accouplement (brides et arbres) doivent être protégées au moyen d'un produit antirouille approprié (Mobilarma 248 ou équivalent).

d) Pour des périodes de stockage supérieures à 6 mois, il convient de tourner le rotor périodiquement, tous les mois ou les deux mois, et de prévoir des mesures appropriées de protection contre la rouille et l'humidité.

### 13.2 INSTALLAZIONE E MESSA IN SERVIZIO

Controllare che le condizioni di alimentazione, montaggio e servizio corrispondano a quanto indicato in targa e descritto nella documentazione tecnica.

È molto importante, per l'installazione del motore, attenersi alle seguenti norme:

### 13.2 INSTALLATION AND START-UP

Check that power supply, assembly and service conditions comply with the information on the plate and described in the technical documentation.

The following instructions must be observed when installing the motor:

### 13.2 INSTALLATION UND IBETRIEBSETZUNG

Man kontrolliere, ob die Stromversorgungs-, Montage- und Betriebsbedingungen denjenigen entsprechen, die auf dem Typenschild angegeben sind und den technischen Unterlagen entsprechen.

Bei der Installation des Motors müssen unbedingt folgende Regeln beachtet werden:

### 13.2 INSTALLATION ET MISE EN SERVICE

S'assurer que les conditions d'alimentation, de montage et de service correspondent bien aux indications figurant sur la plaque signalétique et dans la documentation technique.

Il est important, pour l'installation du moteur, de se conformer aux règles suivantes:

Rimuovere le eventuali protezioni in plastica presenti sugli alberi seguendo le norme di sicurezza e prevenzione in vigore nel paese del destinatario.

Rimuovere eventuali protettivi di protezione antiossidanti per mezzo di solventi seguendo le norme in vigore nel paese del destinatario.

**Evitare che il solvente venga a contatto con il labbro degli anelli di tenuta.**

Assicurarsi che il motore sia ben ventilato, non vi siano impedimenti alla libera circolazione dell'aria e in generale, che non insorgano situazioni che compromettano il regolare smaltimento del calore.

L'installazione dovrà inoltre consentire l'esecuzione della manutenzione ordinaria del motore e, se previsto, del freno.



**Non sottoporre l'albero motore ad urti che possono danneggiare i cuscinetti.**

Nel caso di motori con montaggio verticale ed albero in basso, l'ingresso aria dovrà essere protetto da un tettuccio.

Nelle installazioni all'aperto, proteggere il motore dall'irraggiamento diretto e, se possibile, dalle intemperie.

Accoppiando motori elettrici con flangia IEC B5 o B14 ai riduttori, e prima di introdurre l'albero del motore nell'albero cavo del riduttore stesso, assicurarsi che la linguetta del motore sia perfettamente stabile. Spalmare su tutta la lunghezza dell'albero del motore appositi componenti (es. Loctite Antiseize 767) per prevenire fenomeni di usura superficiali, meglio conosciuti come "fretting corrosion" o "polveri rosse". Ogni 6 - 12 mesi è opportuno scollegare il motore dal riduttore, pulire la zona di accoppiamento albero/foro e ripristinare la protezione antiusura sopra descritta.

Assicurarsi che il fissaggio del motore sulla flangia del riduttore avvenga in modo stabile per non dare luogo a vibrazioni.

Nel caso che i motori debbano essere verniciati è opportuno proteggere la targa di identificazione.

Nei motori flangiati il centreggio è previsto con tolleranza  $j_6 \leq 132$ ,  $h_6 \geq 160$ .

*Remove any plastic guards from the shafts according to safety regulations in customer's country.*

*Remove any protective coatings with solvents according to safety regulations in customer's country.*

**Do not let the solvent be in touch with oilseal lips.**

*Make sure that the motor is well-ventilated, that there is nothing to block the free circulation of air, and that no situation will arise that could block the regular dissipation of heating.*

*The installation must also allow the ordinary maintenance on the motor and, if provided, of the brake.*

**Avoid shocks on the motor shafts: this may damage the bearings.**

*In case of motors with vertical assembly and shaft below, fan cover must be protected by a canopy.*

*In outdoor installations, protect the motor from direct sunlight and, if possible, from inclement weather.*

*When coupling electric motors with flange IEC B5 or B14 to gearboxes, and before inserting the motor shaft in the hollow shaft of the gearbox, make sure that the motor key is perfectly stable.*

*Spread a suitable substance (such as Loctite Antiseize 767) over the entire length of the shaft to prevent surface wear, better known as fretting corrosion or red dust.*

*It is a good rule to disconnect the motor from the gearbox every 6-12 months, clean the shaft/hole coupling zone, and restore the above-described anti-wear conditions.*

*Make sure that the motor is secured to the gearbox flange in a stable manner and does not cause vibrations.*

*If the motors must be painted, it is advisable to protect the name plate.*

*Pilot diameter on flanged motors have a  $j_6 \leq 132$ ,  $h_6 \geq 160$  tolerance.*

Eventuell vorhandenen Plasticschutz von den Wellen entfernen, unter Einhaltung der Sicherheits- und Vorrüttungsrichtlinien gemäß des Gesetzes.

Anhaftende Schutzschichten mit einem Lösemittel entfernen.

**Es muß unbedingt vermieden werden, daß das Lösemittel mit den Lippen der Dichtungsringe in Kontakt kommt.**

Sicherstellen, daß die Lüftung des Motors gut funktioniert und daß die Luft frei strömen kann. Ganz allgemein darf es nicht zu Situationen kommen, die die normale Abkühlung verhindern.

Die Installation muß zudem so erfolgen, daß die normalen Wartungsarbeiten des Motors und, wenn vorgesehen, der Bremse ohne Behinderung vorgenommen werden können.

**Die Motorenwelle darf keine Stöße bekommen, denn diese könnten die Lager beschädigen.**

*Enlever les éventuelles protections en plastique présentes sur les arbres suivant les normes de sécurité et prévention en vigueur dans le pays du destinataire.*

*Enlever les éventuelles produits de protection antioxydants au moyen de solvants suivant les normes en vigueur dans le pays du destinataire*

**Le solvant ne doit pas entrer en contact avec la lèvre des bagues d'étanchéité.**

*S'assurer que le moteur est bien aéré, qu'il n'y a pas d'empêchements à la libre circulation de l'air et, en général, qu'il ne se produit pas de situations compromettant la dissipation régulière de la chaleur.*

*L'installation devra en outre permettre l'entretien ordinaire du moteur et, s'il est prévu, du frein.*

**Ne pas soumettre l'arbre à des chocs pouvant endommager les roulements.**

*Sur les moteurs à montage vertical et avec arbre en bas, l'entrée de l'air doit être protégée par un capot de protection parapluie.*

*Sur les installations en extérieur, protéger le moteur du rayonnement direct et, si possible, des intempéries.*

*Pour l'accouplement de moteurs électriques aux réducteurs au moyen d'une bride IEC B5 ou B14, avant d'introduire l'arbre du moteur dans l'arbre creux du réducteur, s'assurer que la clavette du moteur soit parfaitement stable.*

*Appliquer sur toute la longueur de l'arbre du moteur un produit prévu à cet effet (par exemple, Loctite Antiseize 767), pour empêcher les phénomènes d'usure superficielle, mieux connus sous le nom de "fretting corrosion" ou "poudres rouges". Tous les 6-12 mois, il convient de déconnecter le moteur du réducteur, de nettoyer la zone d'accouplement arbre/trou, et d'appliquer de nouveau la protection anti-usure décrite ci-dessus.*

*S'assurer que la fixation du moteur sur la bride du réducteur se fasse de façon stable, sans possibilité de vibrations.*

*Si les moteurs doivent être peints, nous vous conseillons de protéger la plaque signalétique.*

*Sur les moteurs bridés, le centrage est prévu avec une tolérance  $j_6 \leq 132$ ,  $h_6 \geq 160$ .*

Bilanciamento	Balancing	Auswuchtung	Equilibrage
Il rotore è bilanciato dinamicamente con mezza linguetta. Il montaggio dell'eventuale organo di trasmissione dovrà avvenire con l'utilizzo di strumenti adeguati e dopo opportuna equilibratura evitando colpi che danneggierebbero i cuscinetti. Particolare attenzione dovrà essere posta per evitare l'avviamento del motore senza avere fissato opportunamente la linguetta non utilizzata (motori con due estremità d'albero).	<b>Balancing</b> <i>The rotor is dynamically balanced with full key.</i> <i>The assembly of an external transmission must be performed with adequate instruments after suitable balancing, avoiding knocks which could damage the bearings. Be especially careful not to rotate the motor without having properly secured the key not being used (motors with two shaft ends).</i>	<b>Auswuchtung</b> Der Läufer wird dynamisch mit der Feder ausgewuchtet. Die Montage der eventuell notwendigen Antriebskomponente muß unter Verwendung geeigneter Instrumente und erst nach der Auswuchtung erfolgen, dabei darf es nicht zu Stößen kommen, die die Lager beschädigen könnten. Man muß speziell aufpassen, daß der Motor sich nicht dreht, ohne daß die nicht benutzte Feder richtig fixiert worden ist (Motoren mit Doppelwellenenden).	<b>Equilibrage</b> Le rotor est équilibré dynamiquement avec une clavette entière. Le montage de l'éventuel organe de transmission devra se faire au moyen d'instruments appropriés et après équilibrage, en évitant les coups qui pourraient abîmer les roulements. Veiller en particulier à éviter la rotation du moteur sans avoir fixé la clavette non utilisée (moteurs avec deux extrémités d'arbre).

	<b>Adottare le misure appropriate per prevenire il contatto accidentale con parti nude in tensione o in movimento.</b>		<b>Adopt adequate measures to avoid accidental contact with exposed live or moving parts.</b>		<b>Es müssen entsprechenden Maßnahmen getroffen werden, um zufälligen Kontakt spannungstragender oder rotierender Teile mit Personen zu verhindern.</b>		<b>Adopter les mesures appropriées pour empêcher le contact accidentel avec des parties vives sous tension ou en mouvement.</b>
	Dovrebbe inoltre essere evitato il contatto con la cassa motore dato che nel normale funzionamento la temperatura può raggiungere valori superiori a 50°C.		<b>Avoid contact with the motor case, since the temperature under normal operating conditions may exceed 50 °C.</b>		<b>Zudem sollte der Kontakt mit dem Motorengehäuse vermieden werden, da bei normaler Betrieb die Temperatur auf über 50° C steigen kann.</b>		<b>Eviter également le contact avec la carcasse du moteurs : en fonctionnement normal, la température peut atteindre des valeurs supérieures à 50 °C.</b>
<b>Prova di isolamento</b>	<b>Insulation test</b>	<b>Isolationstest</b>	<b>Test d'isolation</b>				
Prima della messa in servizio o dopo lunghi periodi di giacenza a magazzino (o fermata), controllare la resistenza di isolamento verso massa con Megger da 500V in c.c. Il valore misurato a temperatura di +25 °C per avvolgimenti nuovi ed in buone condizioni deve essere superiore a 10 MΩ. Nel caso in cui questo valore non sia raggiunto è necessario l'essicciamento in forno per eliminare l'umidità presente.	Before start-up, or after long storage (or idle) periods, check insulation resistance to mass with Megger at 500V DC. The level measured at 25 °C for new windings in good condition should exceed 10 MΩ. If this level is not reached, oven drying will be required to eliminate humidity.	Vor der Inbetriebsetzung oder nach langen Ruhepausen kontrolliere man mit einem 500 V-Megger mit Gleichstrom den Isolationswiderrand gegenüber der Erdung. Der Wert, der bei einer Temperatur von + 25 °C (für neue Wicklungen) und unter guten Bedingungen gemessen wird, muß mehr als 10 MΩ betragen. Wird dieser Wert nicht erreicht, muß die Feuchtigkeit durch Trocknen im Ofen eliminiert werden.	Avant la mise en service ou après de longues périodes de stockage (ou d'arrêt), contrôler la résistance d'isolation vers la masse au moyen d'un Megger 500 Vcc. La valeur mesurée à une température de +25 °C pour des enroulements neufs et en bon état doit être supérieure à 10 MΩ. Si ce n'est pas le cas, sécher au four pour éliminer l'humidité.				

## Collegamento elettrico

Utilizzare cavi di alimentazione di sezione adeguata alla corrente assorbita ed idonei alle condizioni di installazione previste evitando eccessivi riscaldamenti e/o cadute di tensione. Il collegamento in morsettiera deve essere eseguito secondo gli schemi riportati nella tabella (S89) o come indicato nelle istruzioni all'interno della scatola coprimorsetti utilizzando le apposite piastrine, dadi e rondelle. Eseguire la messa a terra secondo le disposizioni vigenti prima di procedere alla connessione alla rete. Oltre ai morsetti principali, la scatola coprimorsettiera può contenere le connessioni per le protezioni termiche, dei riscaldatori anticondensa o del freno. Eseguire le connessioni secondo gli schemi contenuti all'interno della scatola morsetti verificando il tipo di sonda installato (termistore o bimetallico).

Per le connessioni al freno vedi istruzioni supplementari.

## Electrical connection

Use power cables with suitable section for absorbed current and for installation conditions, avoiding excessive heating and/or voltage drops. Connection at the terminal board must be performed according to the diagrams shown in table (S89) or according to the instructions contained in the terminal box, using the appropriate plates, nuts, and washers. Earth according to current norms before connecting to the mains. In addition to the main terminals, the terminal box may contain thermal protection, anti-condensation heaters, and brake connections. Make the connections according to the diagrams contained in the terminal box. Check the type of thermal protection installed (theristor or bimetallic).

See the supplemental instructions for connections to the brake.

## Elektrischer Anschluß

Der Querschnitt der Stromkabel muß der aufgenommenen Strommenge entsprechen und sich für die vorgesehenen Installationsbedingungen eignen. Allzu hohe Erwärmungen und/oder Spannungsabfälle müssen verhindert werden. Der Anschluß an das Klemmenbrett erfolgt unter Beachtung der Tabelle (S89) oder der Anweisungen, die im Deckel des Klemmenbrettschäßes angegeben werden. Dabei werden die dazu vorgesehenen Plättchen, Muttern und Rondellen verwendet. Die Erdung erfolgt entsprechend den im betreffenden Land geltenden Vorschriften, und erst dann wird der Netzanschluß vorgenommen. Außer den Hauptklemmen kann das Klemmenbrettschäuse Anschlüsse für den Wärmeeschutz, die Heizgeräte zur Verhütung von Kondenswasser oder die Bremse enthalten. Die Anschlüsse müssen nach den Zeichnungen, die sich im Innern des Klemmenbrettschäßes befinden, vorgenommen werden, wobei man kontrollieren muß, welcher Schutzschalte installiert worden ist (Thermistor oder Bimetall).

Für die Anschlüsse an die Bremse beachte man die zusätzlichen Anweisungen.

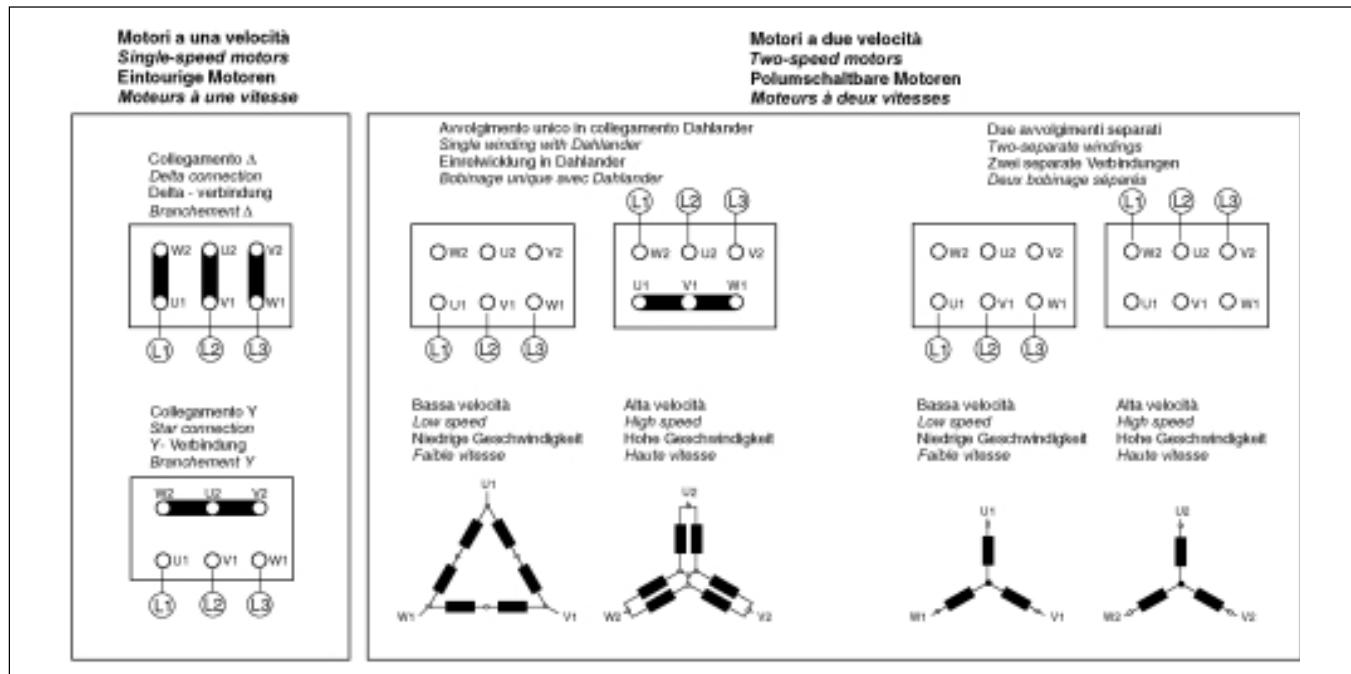
## Branchement électrique

Utiliser des câbles d'alimentation d'une section appropriée au courant absorbé et adaptés aux conditions d'installation prévues, en évitant les surchauffages excessives ou les chutes de tension. Le branchement au bornier doit être effectué selon les schémas figurant au tableau (S89) ou de la façon indiquée dans les instructions fournies à l'intérieur de la boîte à bornes, en utilisant les plaques, les écrous et le rondelles appropriés. Effectuer la mise à la terre selon les dispositions en vigueur avant de procéder à la connexion au réseau. En plus des bornes principales, la boîte à bornes peut contenir les connexions pour les protections thermiques, des réchauffeurs anti-condensation ou du frein.

Effectuer les connexions selon les schémas figurant à l'intérieur de la boîte à bornes, en vérifiant le type de sonde installée (theristor ou bimétal).

Pour les connexions au frein, voir instructions supplémentaires.

(S89)



**!** L'alimentazione delle scaldiglie deve essere separata e deve sempre essere esclusa durante il funzionamento del motore.

Chiudere il coperchio interponendo la guarnizione, avvitare correttamente il bocchettone e la sua vite pre-micava e chiudere le aperture d'ingresso non utilizzate.

Nel caso di motori con ventilazione assistita, l'avviamento del motore dovrà avvenire solo con ventilatore in funzione. Per questa applicazione prevedere sempre protezioni

**!** Power for the heaters must be separate and must always be disconnected when the motor is running.

Insert the gasket and close the cover. Carefully tighten the cable entry and cable gland and close the openings not used.

In the case of motors with servo ventilation, the motor must be started only with the fan running. Always provide incorporated thermal protections for this application. The motors must be equipped with

**!** Die Stromzufuhr der Heizvorrichtungen muß getrennt erfolgen und bei funktionierendem Motor immer ausgeschaltet sein.

Deckel schließen, indem man eine Dichtung dazwischenlegt. Den Stutzen und seine Kabelhalteschraube richtig anschrauben, dann die nicht verwendeten Eingänge schließen. Bei Motoren, die eine Fremdbelüftung aufweisen, darf der Motor nur angelassen werden, wenn die Ventilation in Betrieb ist.

**!** L'alimentation des réchauffeurs doit être séparée et doit toujours être désactivée pendant le fonctionnement du moteur.

Fermer le couvercle en interposant le joint, visser correctement le bouchon et sa vis presse-étoupe et fermer les ouvertures d'entrée non utilisées.

Pour les moteurs à ventilation assistée, le démarrage du moteur ne doit se faire que lorsque le ventilateur est en fonction. Pour cette application, prévoir toujours des

termiche incorporate. I motori devono essere previsti di adeguate protezioni contro i cortocircuiti, sovraccarichi e sovratensioni di manovra.

*adequate protections against short circuits, overloads, and overvoltages.*

Für diese Verwendung muß immer ein Wärmeschutz eingebaut sein. Die Motoren müssen angemessene Schutzaufbauten gegen Kurzschluß, Überlastung und übermäßige Spannung beim Manövrieren aufweisen

*protections thermiques incorporées. Les moteurs doivent être dotés de protections appropriées contre les courts-circuits, les surcharges ou les surtensions de manœuvre.*



Durante le fermate può essere presente tensione per l'alimentazione delle scaldiglie o del freno. Accertarsi che manchi ogni connessione alla rete. Si deve inoltre evitare che possono verificarsi riavviamenti automatici tali da creare situazioni pericolose e/o danneggiamenti.



*During stops, there may be voltage to feed the heaters or the brake. Make sure that all connections to the mains have been cut. In addition, be sure to prevent any automatic restarts that could create hazardous and/or destructive situations.*



Wenn der Motor nicht in Betrieb ist, kann Spannung für die Wärmer oder für die Bremse vorhanden sein. Man kontrolliere, ob kein Anschluß ans Stromnetz vorhanden ist. Zudem muß vermieden werden, daß es erneut zu automatischem Motorstart kommt, diese Situation könnte gefährlich sein und/oder Beschädigungen verursachen.



*Pendant les arrêts, de la tension peut être présente pour l'alimentation des réchauffeurs ou du frein. S'assurer qu'il n'y a pas de connexion au réseau. Eviter que ne se produisent des redémarrages automatiques, qui peuvent créer des situations de danger et/ou des dommages.*

## Senso di rotazione

Se la rete di alimentazione con sequenza di fase L1, L2, L3 viene collegata ai morsetti U, V, W come indicato nella tabella (S89), il senso di rotazione del motore risulta orario visto dal lato comando. Se vengono scambiati tra loro due terminali qualsiasi, il senso di rotazione risulta antiorario.

Per i motori unidirezionali, sarà prevista una targhetta con indicato il senso di rotazione e la sequenza di fase da applicare (p.e. U, V, W). Questa indicazione è presente soltanto quando il motore in funzione delle proprie caratteristiche di progetto prevede un unico senso di rotazione (p.e. dispositivo antiritorno installato).

Particolare attenzione dovrà porsi nei casi in cui l'unidirezionalità sia imposta dalle specifiche di macchina o impianto.

## Direction of rotation

*If the mains with phase sequence L1, L2, L3 is connected to terminals U, V, W as shown at table (S89), the direction of rotation of the motor will be clockwise as seen from the drive end. If any two terminals are switched, the direction of rotation will be counter-clockwise.*

*For single direction motors, a plate will be provided to indicate the direction of rotation and the phase sequence to be applied (for example, U, V, W). This indication is present only when the motor, as a function of project characteristics, requires only one direction of rotation (for example, anti run-back device installed). Pay special attention when single direction status is imposed by machine or plant specifications.*

## Drehrichtung

Wenn das Stromnetz mit Phasenfolge L1, L2, L3 wie in der Tabelle (S86) gezeigt an die Klemmen U, V, W angeschlossen wird, erfolgt die Drehrichtung des Motors - von der Antriebswelleseite her gesehen - im Uhrzeigersinn. Werden zwei beliebige Kabelenden untereinander vertauscht, ist die Drehrichtung im Gegenuhrzeigersinn.

Für Motoren, die nur eine Drehrichtung haben ist ein Typenschild vorgesehen, auf dem die richtige Drehrichtung und die Phasenfolge (z.B.: U, V, W) angegeben sind. Diese Angaben stehen nur auf Motoren, die aufgrund ihrer Bauweise eine einzige Drehrichtung haben (z.B. installierte Rücklaufsperrre). In den Fällen, wo die einzige Drehrichtung durch Eigenheiten der Maschine oder der Anlage bedingt ist, muß speziell vorsichtig vorgegangen werden.

## Sens de rotation

*Si le réseau d'alimentation avec séquence de phase L1, L2, L3 est relié aux bornes U, V, W de la façon indiquée au tableau (S89), la rotation du moteur se fait dans le sens horaire vu du côté arbre d'entrée. Si l'on intervertit deux bornes quelconques, la rotation se fait dans le sens anti-horaire.*

*Pour les moteurs unidirectionnels, on prévoira une plaque indiquant le sens de rotation et la séquence de phase à appliquer (par exemple, U, V, W).*

*Cette indication est présente uniquement quand le moteur, en fonction de ses caractéristiques, prévoit un sens de rotation unique (par exemple, dispositif anti-retour installé).*

*Faire particulièrement attention si la direction unique est imposée par les spécifications de la machine ou de l'installation.*

## Avviamento

Prima della messa in servizio si consiglia di eseguire le seguenti operazioni e controlli:

- 1) verificare che tutte le misure di sicurezza siano applicate;
- 2) alimentare il motore a vuoto alla tensione nominale;
- 3) controllare che l'eventuale servoventilatore sia inserito;
- 4) controllare che il funzionamento sia regolare e senza vibrazioni;
- 5) in caso di funzionamento soddisfacente applicare il carico controllando i relativi valori di tensione e corrente.

## Commissioning

*Perform the following operations and checks before start-up:*

- 1) check that all safety measures have been applied;
- 2) power up the motor unloaded at rated voltage;
- 3) check if the servoventilator (if any) is on;
- 4) check that operation is normal and vibration-free;
- 5) if operation is satisfactory, apply the load and check voltage, current, and power.

## Anlassen

Bevor der Motor in Betrieb genommen wird, führe man folgende Kontrollen durch:

- 1) sicherstellen, daß alle Sicherheitsmaßnahmen getroffen worden sind;
- 2) den Motor bei Leerlauf und Nennspannung laufen lassen,
- 3) kontrollieren, ob der eventuell vorhandene Servoventilator eingeschaltet ist;
- 4) kontrollieren, ob der Motor gleichmäßig läuft und nicht vibriert;
- 5) falls man mit dem Betrieb des Motors zufrieden ist, kann er belastet werden, wobei die Spannungs-, Strom- und Leistungs-werte kontrolliert werden müssen.

## Démarrage

*Avant la mise en service, nous vous conseillons d'effectuer les opérations et les contrôles suivants:*

- 1) vérifier que toutes les mesures de sécurité sont appliquées;
- 2) alimenter le moteur à vide à la tension nominale;
- 3) contrôler que l'éventuel servo-ventilateur est bien installé;
- 4) contrôler que le fonctionnement est régulier et sans vibrations;
- 5) en cas de fonctionnement satisfaisant, appliquer la charge en contrôlant les valeurs correspondantes de tension, de courant et de puissance.

Per i motori autoregolanti vedi istruzioni supplementari.

*See the supplemental instructions for brake motors.*

Für Bremsmotoren beachte man die zusätzlichen Anweisungen.

*Pour les moteurs freins, voir informations supplémentaires.*

 Un funzionamento anomalo quale assorbimento oltre i limiti di targa, riscaldamento eccessivo, rumore, vibrazioni possono causare seri danneggiamenti o condizioni di pericolo. In questi casi interrompere l'alimentazione ed avvertire il personale preposto alla manutenzione.

 *Malfunctions such as over current, overheating, noise, or vibrations, may cause serious damage or dangerous conditions. In these cases, cut power and notify maintenance personnel immediately.*

 Funktioniert der Motor nicht normal, d.h. nimmt er mehr Strom auf, als auf dem Schild angegeben ist, erhitzt er sich übermäßig, macht er zu viel Geräusch oder vibriert er, kann dies zu schweren Beschädigungen oder gefährlichen Situationen führen. In diesen Fällen muß man die Stromzufuhr unterbrechen und das Wartungspersonal benachrichtigen.

 *Un fonctionnement anormal (absorption au-delà des limites indiquées sur la plaque, réchauffement excessif, bruit, vibrations) peut entraîner des dommages et des dangers. Dans ce cas, couper l'alimentation et avertir le personnel chargé de l'entretien.*

### 13.3 MANUTENZIONE

 Prima di eseguire qualsiasi intervento il motore, i circuiti ausiliari e/o accessori devono venire correttamente scollegati dalla rete di alimentazione. In particolare:

controllare l'isolamento dalla rete elettrica  
prevedere le opportune protezioni da eventuali parti nude in tensione  
accertarsi che non si verifichino riavviamimenti accidentali.

Si raccomanda di osservare frequentemente il funzionamento del motore e prevedere periodiche ispezioni.  
Osservare inoltre quanto previsto nelle istruzioni aggiuntive per i motori con freno.  
In generale si consiglia di operare come segue:

- 1) controllare che il funzionamento sia regolare e gli assorbimenti entro i valori riportati in targa;
- 2) mantenere il motore pulito e verificare che non vi siano ostruzioni alla ventilazione;
- 3) controllare le condizioni degli anelli di tenuta sull'albero;
- 4) controllare che le connessioni elettriche e le viti di fissaggio siano strette;
- 5) i cuscinetti utilizzati nell'esecuzione standard sono del tipo pre-lubrificati e non necessitano di manutenzione; è comunque buona norma sostituirli dopo circa 3 anni.

Per le normali ispezioni non è necessario smontare il motore se non per la sostituzione dei cuscinetti. In questo caso le operazioni dovranno essere eseguite dal personale specializzato e con strumenti idonei.

### 13.3 MAINTENANCE

 *Before any intervention, the motor, auxiliary circuits and/or accessories must be disconnected from the mains. In particular:*

*check insulation from the electrical mains  
provide suitable protections from exposed live parts  
make sure to prevent accidental restarts.*

*Be sure to frequently observe the operation of the motor. Inspect periodically.  
In addition, follow the additional instructions for motors with brake.  
In general, we advise you to do as follows:*

- 1) *check that operation is normal and that absorbed current is within rated limits;*
- 2) *keep the motor clean and check that ventilation is not obstructed;*
- 3) *check the condition of the seals on the shaft;*
- 4) *check that all electrical connections and fastening screws are tight;*
- 5) *the bearings used in the standard version are pre-lubricated and do not require maintenance. Nevertheless, it is a good rule to replace them after approximately 3 years.*

*The motor does not have to be removed for normal inspections unless the bearings need to be replaced. In this case, the operations should be performed by specialised personnel and with appropriate tools.*

### 13.3 WARTUNG

 Bevor irgendwelche Wartungsarbeiten vorgenommen werden, muß beim Motor, sowie auf den Hilfs- und Nebenkreisen die Stromversorgung fachmännisch unterbrochen werden. Vor allem muß man:

*die Isolation des Stromnetzes geeignete Schutzvorrichtungen kontrollieren,  
gegen unbeabichtigten Kontakt mit spannungstragenden Teilen tragen,  
sicherstellen, daß es nicht zu unvorhergesehenen Motorstarts kommt.*

Es wird empfohlen, häufig den Betrieb des Motors zu beobachten und von Zeit zu Zeit eine Inspektion durchzuführen.  
Bei Motoren mit Bremse beachte man zudem die zusätzlichen Anweisungen.  
Im Allgemeinen empfehlen wir, wie folgt vorzugehen:

- 1) kontrollieren, ob der Motor richtig funktioniert und die Stromaufnahme den Angaben auf dem Typenschild entspricht
- 2) den Motor sauber halten und regelmäßig nachsehen, ob die Belüftung nicht verstopft ist;
- 3) die Dichtungsringe auf der Welle regelmäßig kontrollieren;
- 4) kontrollieren, ob die elektrischen Anschlüsse und die Befestigungsschrauben gut fixiert sind;
- 5) die Lager, die auf dem Standard modell verwendet wurden, sind vorgeschiert und wartungsfrei; wir empfehlen aber trotzdem, diese nach zirka 3 Jahren zu ersetzen.

Für normale Inspektionen muß der Motor nicht abmontiert werden, außer wenn die Lager ausgewechselt werden sollen. In diesem Fall sollten die Operationen jedoch von geschultem Personal und mit geeignetem Werkzeug vorgenommen werden.

### 13.3 ENTRETIEN

 *Avant toute intervention, le moteur ainsi que les circuits auxiliaires et/ou accessoires doivent être déconnectés du réseau. En particulier:*

*contrôler l'isolation par rapport au réseau électrique  
prévoir des protections appropriées contre les éventuelles parties vives sous tension.  
s'assurer qu'il ne puisse pas se produire de redémarrages accidentels*

*Nous vous recommandons d'observer fréquemment le fonctionnement du moteur et de prévoir des inspections périodiques.  
Se conformer aux instructions supplémentaires pour les moteurs à frein.  
En général, nous vous conseillons de procéder comme suit:*

- 1) contrôler que le fonctionnement est régulier et que les absorptions sont comprises à l'intérieur des valeurs indiquées sur la plaque;
- 2) maintenir le moteur propre et vérifier que rien ne gêne la ventilation;
- 3) contrôler l'état des joints d'étanchéité sur l'arbre;
- 4) contrôler que les branchements électriques et les vis sont bien serrés;
- 5) les roulements utilisés dans l'exécution standard sont du type pré-lubrifié et ne nécessitent aucun entretien. Il convient toutefois de les changer tous les 3 ans environ.

*Pour les inspections normales, il n'est pas nécessaire de démonter le moteur, sauf pour le remplacement des roulements. Dans ce cas, les opérations devraient être effectuées par du personnel spécialisé et avec des instruments appropriés.*

Motori autofrenanti con freno tipo FD e FA.	Brake motors with brake FD and FA type.	Bremsmotoren Gleichstrom-bremung Mod. FD und FA	Moteurs freins avec frein type FD et FA
<b>Regolazione del traferro</b>	<b>Air gap adjustment</b>	<b>Einstellung des Luftspalts</b>	<b>Reglage de l'entrefer</b>
Allentare i dadi 6. Regolare il traferro T agendo sulle viti 5 portandolo al valore Min. indicato in tabella (S90). A regolazione ultimata bloccare a fondo i dadi 6 mantenendo in posizione le viti 5. Il traferro deve essere verificato periodicamente e il suo valore deve essere compreso tra i valori min. e Max. indicati nella tabella (S90).	Unloosen nut No. 6 Set the air gap T to min. value shown in the table (S90) adjusting the screws No. 5. When reached the air gap value lock the nuts No. 6 keeping the screws in positions No. 5. The air gap value must be checked periodically and the value must be between the min. and max. value shown in the table (S90).	Muttern 6 lösen. Luftspalt T einstellen, indem man die Schraube 5 dreht, bis sie auf dem kleinsten Wert der Tabelle (S90) sind. Nach dieser Einstellung die Muttern 6 gut blockieren, wobei die Schrauben 5 in ihrer Position bleiben müssen. Der Luftspaltwert muß von Zeit zu Zeit kontrolliert werden; die Spaltöffnung muß zwischen dem Mindest- und dem Höchstwert, die in der Tabelle (S90) angegeben sind, liegen.	Desserrer les écrous 6. Régler l'entrefer T en amenant la vis 5 à la valeur min. indiquée dans le tableau (S90). Une fois le réglage terminé, bloquer à fond les écrous 6 en maintenant en position les vis 5. La valeur de l'entrefer doit être vérifiée périodiquement; elle doit être comprise entre les valeurs min. et max. indiquées dans le tableau (S90).
Valori di traferro superiori al valore Max. determinano un aumento della rumorosità e possono impedire lo sbloccaggio del freno. In presenza della leva di sblocco, l'aumento eccessivo del traferro può portare ad un annullamento della coppia frenante dovuto alla ripresa del gioco dei tiranti della leva di sblocco. La distanza X (gioco leva) deve essere superiore ai valori indicati in tabella (S90).	Air gap higher than the max. value increase the brake noise and may prevent from brake releasing. When the brake release lever is fitted, the excessive air gap may annul the brake torque due to the play in the brake release screw. Dimension x (lever play) must respect the value shown in the table (S90).	Luftspaltwerte, die höher als der Maximalwert liegen, führen dazu, daß das Bremsgeräusch stärker wird und die Bremse eventuell nicht entsperrt wird. Ist der Bremsentsperrungshebel vorhanden, kann eine zu starke Öffnung des Luftspaltes dazu führen, daß das Bremsdrehmoment wegen der Wiederaufnahme des Zugstangenspieles des Entspannungshebels gleich Null wird. Der Wert X (Hebelspiel) muß den in der Tabelle (S90) angegebenen Werten entsprechen.	Les valeurs d'entrefer supérieures à la valeur max. ont pour effet de rendre le frein plus bruyant, et peuvent en empêcher le déblocage. En présence du levier de déblocage, l'augmentation excessive de l'entrefer peut entraîner une annulation du couple de freinage, du fait de la reprise du jeu des tirants du levier de déblocage. La dimension X (jeu levier) doit correspondre aux valeurs indiquées dans le tableau (S90).

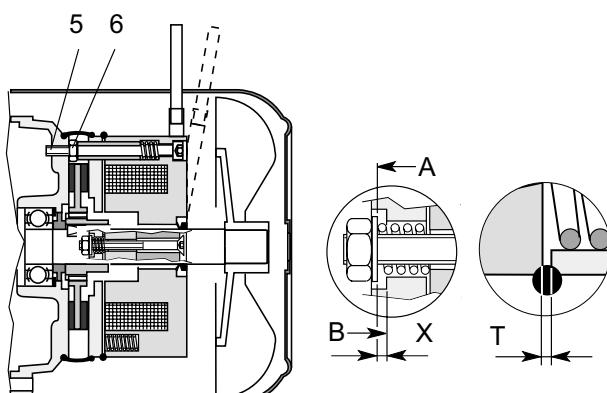
(S90)

TIPO DI FRENO / BRAKE TYPE BREMSTYP / TYPE DE FREIN								
	02FD	03FD 53FD	04FD 14FD	05FD 15FD 55FD	06SFD	06FD 56FD	07FD	08FD
T min.	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5
T Max.	0.4	0.4	0.45	0.45	0.55	0.55	0.6	0.7
X min.	0.6	0.8	1.0	1.0	1.2	1.2	1.2	1.3

TIPO DI FRENO / BRAKE TYPE BREMSTYP / TYPE DE FREIN								
	02FA	03FA	04FA 14FA	05FA 15FA	06SFA	06FA	07FA	08FA
T min.	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5
T Max.	0.4	0.4	0.45	0.45	0.55	0.55	0.6	0.8
X min.	0.6	0.8	1.0	1.0	1.2	1.2	1.2	1.2

**T** = Traferro (mm) / Air gap (mm) / Luftspalt / Entrefer  
**X** = Distanza (mm) fra il piano B e il piano della rosetta piana A  
**X** = Distance (mm) between the surface B and the plan washer surface A  
**X** = Distanz (mm) zwischen der Fläche B und der Scheibenfläche A  
**X** = Distance (mm) entre la surface B et la surface de la rondelle A



#### Parti di ricambio

Per richiedere eventuali parti di ricambio, precisare il tipo di motore e il codice indicato in targa.

Le parti commerciali unificate sono reperibili direttamente in commercio.

#### Spare parts

*When ordering spare parts, specify the motor type and the code shown on the plate.*

*Standard commercial parts may be purchased directly on the market.*

#### Ersatzteile

Will man Ersatzteile bestellen, muß die Art des Motors und die auf dem Typenschild angegebene Codenummer angegeben werden. Die vereinheitlichten handelsüblichen Teile findet man direkt im einschlägigen Handel.

#### Pièces détachées

*Pour commander les pièces détachées, on devra préciser le type de moteur et le code indiqué sur la plaque.*

*Les pièces commerciales unifiées se trouvent directement dans le commerce.*

#### Manutenzione

In occasione della manutenzione:

- verificare che lo spessore minimo della guarnizione d'attrito non sia inferiore a 1mm;
- verificare il gioco fra disco freno e mozzo trascinatore;
- verificare che non vi sia alcun gioco fra la linguetta e la sua sede sul mozzo;
- verificare che non vi sia alcun gioco fra mozzo trascinatore e albero motore;
- verificare le parti usurate;
- registrare l'intraferro riportandolo al valore iniziale agendo sulle viti e bloccandolo con i dadi.

#### Maintenance

*During maintenance:*

- check that the friction packing minimum thickness is not lower than 1mm;
- check that the play between the brake disc and the driving hub is not excessive;
- check the absence of play between the tongue and its housing on the hub;
- check the absence of play between the driving hub and the driving shaft;
- replace the worn parts;
- adjust the air-gap, taking it back to its initial value by means of the screws and lock it with the nuts.

#### Instandhaltung

Bei der Instandhaltung:

- Prüfen, dass die Mindeststärke des Reibebelags nicht unter 1 mm liegt;
- Das Spiel zwischen Bremscheibe und Mitnehmernabe prüfen;
- Prüfen, dass keinerlei Spiel zwischen Federkeil und seinem Sitz an der Nabe vorhanden ist;
- Prüfen, dass keinerlei Spiel zwischen Federkeil und Motorwelle vorhanden ist;
- Die verschlissenen Teile prüfen;
- Den Luftspalt einstellen, ihn dabei durch Betätigen der Schrauben auf den anfänglichen Wert bringen und mit den Muttern feststellen.

#### Entretien

*Lors des opérations d'entretien :*

- Vérifier que l'épaisseur minimum du joint de friction n'est pas inférieure à 1mm ;
- vérifier le jeu entre le disque de frein et le moyeu d' entraînement ;
- vérifier l'absence de jeu entre la clavette et son logement sur le moyeu ;
- vérifier l'absence de jeu entre le moyeu d' entraînement et l' arbre moteur ;
- vérifier les pièces usées ;
- régler l'entrefer : le ramener à sa valeur initiale au moyen des vis et le serrer au moyen des vis.



**PARAGRAFO G**

		<b>ROTARY VALVE SPECIFICATION SHEET</b>		Doc. Nr. : <b>2F11-40-154</b> Customer Nr. :
		<b>Comessa / Job:</b> <b>2F11</b> <b>Impianto / Plant:</b> <b>SABIZ PLANT</b>		
1				
2	Item	Service	Item	Service
3	65Z1	DEDUSTING FILTER ROTARY VALVE		
4				
5				
6				
7	<b>PROCESS DATA</b>			
8	TYPE: SERVICE TYPE: DISCONT.		Nr. of RUNNING UNITS/SPARE: 1 / 0	
9	PROCESS DATA			
10	TREATED SOLIDS TYPE	MIN DENSITY	MAX DENSITY	
11	SOLID R.M. :	200	600	
12	WEIGHT FLOW RATE : 50 KG/H			
13				
14				
15				
16				
17				
18	WEIGHT FLOW RATE : 50 KG/H			
19				
20	UTILITIES DATA			
21	ELECTRICAL DATA: 415V, 50Hz, 3 Ph. MOTOR PRT. : IP55 . TROPICALIZATION: YES			
22	AUXILIARY POWER			
23				
24				
25				
26	GENERAL DATA			
27	MATERIAL			
28	CASING : CAST IRON			
29	ROTOR : CAST IRON			
30	FILLING COEFFICIENT : by manufacturer			
31	SPEED : by manufacturer			
32				
33				
34	OPERATING PRESSURE : -0,035/0 BARG			
35	OPERATING TEMPERATURE : 45°C			
36				
37	The rotary valve to be installed on dedustig filter discharge (item 65F1)			
38	foresee motor group and accessories			
39				
40				
41	Make request for spare parts offer:		For Nr.	years
42	When ordering make request for Nr.		manuals in	language, and Nr. in italian language
43	<b>NOTES:</b>			
44				
45				
46				
47	<b>PURCHASING INFORMATION</b>			
48	Manuf.:	Model:	Delivery:	R.d.A.:
49	Order nr.:	Order date:	Weight, Kg:	Sz., AxBxC:
50				
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0	ISSUED FOR BASIC ENGINEERING			12/04/2012 G. Dileo
Rev.	DESCRIZIONE / DESCRIPTION			Data / Date Autore / Author



## ROTARY VALVE SPECIFICATION SHEET

Doc. Nr. : **2F11-40-126**  
Customer Nr. :

**Comessa / Job:** 2F11  
**Impianto / Plant:** SABIZ

1	Item	Service	Item	Service
2	64Z2	ZEOLITE ROTARY VALVE		
3				
4	<b>PROCESS DATA</b>			
5				
6				
7	<b>PROCESS DATA</b>			
8	TYPE:	SERVICE TYPE: DISCONT.	Nr. of RUNNING UNITS/SPARE:	1 / 0
9				
10	TREATED SOLIDS TYPE	MIN DENSY	MAX DENSITY	
11	ZEOLITE :	430	600	
12				
13				
14				
15				
16	VOLUME DESIGN FLOW & MAX DENSITY	1.33 M3/H ( AT 600 KG/M3)		
17	VOLUME DESIGN FLOW & MIN DENSITY	1,86 M3/H ( AT 430 KG/M3)		
18	WEIGHT FLOW RATE	800 KG/H		
19				
20				
21	UTILITIES DATA			
22	ELECTRICAL DATA:415V, 50Hz, 3 Ph. MOTOR PRT. : IP55 . TROPICALIZATION: YES			
23	AUXILIARY POWER			
24	COMPRESSED AIR PRESSURE : 6 BAR g			
25	GENERAL DATA			
26	EXTERNAL BEARING: YES			
27	AIR FLOW TYPE : THROUGHOUT AIR FLOW			
28	MATERIAL			
29	CASING : CAST IRON			
30	ROTOR : CAST IRON			
31	FILLING COEFFICIENT : APPROX 0.5 - to be confirmed by manufacturer			
32	SPEED : 25-30 RPM - to be confirmed by manufacturer			
33	PACKING AIR FLUSHING : YES			
34	TRANSPORT AIR FLOW RATE : 500 KG/H			
35	OPERATING PRESSURE : 0,45 BARG ( TRANSPORT AIR SIDE)			
36	OPERATING TEMPERATURE : 80°C ( PNEUM. TRANSP. AIR)/40°C ( POWDER)			
37	OPERATING PRESSURE (POWDER INLET SIDE): ATMOSPHERIC			
38	The rotary valve shall be complete with :blade adjustable plate, base plate, shaft seal flushing system complete with solenoid valve, motor group and accessories			
39				
40				
41	Make request for spare parts offer:	For Nr.	years	
42	When ordering make request for Nr.	manuals in	language, and Nr.	in italian language
43	<b>NOTES:</b> THE MANUFACTURER MUST SPECIFIED :1) ROTARY VALVE PRESS. DROP AT MAX. CAPACITY .			
44	2) TRANSPORT AIR LEAKAGE AT MAX CAPACITY			
45				
46				
47	<b>PURCHASING INFORMATION</b>			
48	Manuf.:	Model:	Delivery:	R.d.A.:
49	Order nr:	Order date:	Weight, Kg:	Sz., AxBxC:
50				
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0	ISSUED FOR BASIC ENGINEERING			01/03/2012
1	REDAZIONE / DESCRIPTION			D.1 / D.1
2	APPROVAZIONE / APPROVAL			A.1 / A.1

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0	ISSUED FOR BASIC ENGINEERING	01/03/2012	G. Dileo
Rev.	DESCRIZIONE / DESCRIPTION	Data / Date	Autore / Author

		ROTARY VALVE SPECIFICATION SHEET		Doc. Nr. : 2F11-40-125 Customer Nr. :
Comessa / Job: 2F11				
Impianto / Plant: SABIZ				
1				
2	Item	Service	Item	Service
3	64Z1	ZEOLITE ROTARY VALVE		
4				
5				
6				
7	PROCESS DATA			
8	TYPE:	SERVICE TYPE: DISCONT.	Nr. of RUNNING UNITS/SPARE:	1 / 0
9	PROCESS DATA			
10	TREATED SOLIDS TYPE	MIN DENSITY	MAX DENSITY	
11	ZEOLITE :	430	600	
12				
13				
14				
15				
16	VOLUME DESIGN FLOW & MAX DENSITY 1.33 M3/H ( AT 600 KG/M3)			
17	VOLUME DESIGN FLOW & MIN DENSITY 1,86 M3/H ( AT 430 KG/M3)			
18	WEIGHT FLOW RATE 800 KG/H			
19				
20	UTILITIES DATA			
21	ELECTRICAL DATA:415V, 50Hz, 3 Ph. MOTOR PRT. : IP55 . TROPICALIZATION: YES			
22	AUXILIARY POWER			
23	COMPRESSED AIR PRESSURE : 6 BAR g			
24	GENERAL DATA			
25	EXTERNAL BEARING: YES			
26	AIR FLOW TYPE : THROUGHOUT AIR FLOW			
27	MATERIAL			
28	CASING : CAST IRON			
29	ROTOR : CAST IRON			
30	FILLING COEFFICIENT : APPROX 0.5 - to be confirmed by manufacturer			
31	SPEED : 25-30 RPM - to be confirmed by manufacturer			
32	PACKING AIR FLUSHING : YES			
33	TRANSPORT AIR FLOW RATE : 500 KG/H			
34	OPERATING PRESSURE : 0,45 BARG ( TRANSPORT AIR SIDE)			
35	OPERATING TEMPERATURE : 80°C ( PNEUM. TRANSP. AIR)/40°C ( POWDER)			
36	OPERATING PRESSURE (POWDER INLET SIDE): ATMOSPHERIC			
37	The rotary valve shall be complete with :blade adjustable plate, base plate, shaft seal flushing system complete with solenoid valve, motor group and accessories			
38				
39				
40				
41	Make request for spare parts offer: For Nr. years			
42	When ordering make request for Nr. manuals in language, and Nr. in italian language			
43	<b>NOTES:</b> THE MANUFACTURER MUST SPECIFIED :1) ROTARY VALVE PRESS. DROP AT MAX. CAPACITY . 2) TRANSPORT AIR LEAKAGE AT MAX CAPACITY			
44				
45				
46				
47	<b>PURCHASING INFORMATION</b>			
48	Manuf.:	Model:	Delivery:	R.d.A.:
49	Order nr.:	Order date:	Weight, Kg:	Sz., AxBxC:
50				
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## ROTARY VALVE SPECIFICATION SHEET

Doc. Nr. : **2F11-40-084**  
Customer Nr. :

Comessa / Job: **2F11**  
Impianto / Plant: **SABIZ**

1																
2	<table border="1"><thead><tr><th>Item</th><th>Service</th><th>Item</th><th>Service</th></tr></thead><tbody><tr><td>62Z1</td><td>ROTARY VALVE</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></tbody></table>				Item	Service	Item	Service	62Z1	ROTARY VALVE						
Item	Service	Item	Service													
62Z1	ROTARY VALVE															
3																
4																
5																
6																
7	<b>PROCESS DATA</b>															
8	TYPE:	SERVICE TYPE: DISCONT.	Nr. of RUNNING UNITS/SPARE:	1 / 0												
9	PROCESS DATA															
10	TREATED SOLIDS TYPE	MIN DENSITY	MAX DENSITY													
11	SODIUM SULPHATE:	1100	1600													
12	SODIUM CARBONATE:	600	700													
13	STPP:	700	1000													
14	ZEOLITE:	600	800													
15																
16	VOLUME DESIGN FLOW & MAX DENSITY 28 M3/H ( AT 1000 KG/M3)															
17	VOLUME DESIGN FLOW & MIN DENSITY 40 M3/H ( AT 700 KG/M3)															
18	WEIGHT FLOW RATE 28000 KG/H															
19																
20	UTILITIES DATA															
21	ELECTRICAL DATA: 415V, 50Hz, 3 Ph. MOTOR PRT. : IP55 . TROPICALIZATION: YES															
22	AUXILIARY POWER															
23	COMPRESSED AIR PRESSURE : 6 BAR g															
24	GENERAL DATA															
25	EXTERNAL BEARING: YES															
26																
27	MATERIAL															
28	CASING : CAST IRON															
29	ROTOR : CAST IRON															
30	FILLING COEFFICIENT : APPROX 0.5 - to be confirmed by manufacturer															
31	SPEED : 25-30 RPM - to be confirmed by manufacturer															
32																
33																
34																
35																
36																
37																
38																
39																
40																
41	Make request for spare parts offer:	For Nr.	years													
42	When ordering make request for Nr.	manuals in	language, and Nr.	in italian language												
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50																

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		VIBRATOR SPECIFICATION SHEET		Doc. Nr. : <b>2F11-40-062</b> Customer Nr. :
		Comessa / Job: <b>2F11</b>		
Impianto / Plant: <b>SABIZ</b>		1		
2	Item	Service	Item	Service
3	62SR1	ZEOLITE BIN ACTIVATOR		
4		(VIBRATING CONE)		
5				
6				
7	<b>PROCESS DATA</b>			
8	TYPE: PNEUMATIC	SERVICE TYPE: DISCONT.	Nr. of RUNNING UNITS/SPARE:	1 / 0
9				
10				
11	PRODUCT: SOLID RAW MATERIAL (ZEOLITE)			
12	PRODUCT DENSITY: 450 KG/M3			
13				
14	Product Des. Flow , m3/h: 26.7		Max weight flow rate, Kg/h: 12000	
15				
16				
17	INSTALLED ON THE BOTTOM OF SILO ITEM 62V4			
18				
19				
20	EL. POWER : 415 V/ 50 HZ / 3 PH.			
21	TROPICALIZATION : YES			
22	INS. CLASS: IP 55			
23				
24				
25				
26				
27				
28				
29				
30				
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33				
34				
35				
36				
37				
38				
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**PARAGRAFO H**



**SOLMEC S.R.L.**  
**IMPIANTI,**  
**MACCHINE**

# **QUALITY CONTROL PLAN ,VISUAL DIMENSIONAL AND RUNNING TEST**

DIS.N. N13512002A  
DRW.N.

CLIENTE: BALLESTRA S.P.A.  
CUSTOMER:

COMMESSA N.: 2F11 ITEM: 62Z1  
JOB:

TIPO MACCHINA: VALVOLA ROTATIVA VPR 350 SET  
MACHINE TYPE: ROTARY VALVE VPR350 SET

MOTORE : BROOK      MATRICOLA:T-DA90LD4  
MOTOR:                  CODE:

POTENZA KW: 1,5 POLI N.: 4 V: 415 HZ: 50  
POWER: POLES N.:

ASSORBIMENTO DI TARGA: 3,3 A  
RATED ABSORPTION POWER:

ASSORBIMENTO RILEVATO A VUOTO (SPUNTO) Y:2.49 A  
TESTED ABSORPTION POWER WITHOUT PRODUCT (START):

ASSORBIMENTO RILEVATO A VUOTO(REGIME):Y:2.46 A  
TESTED ABSORPTION POWER WITHOUT PRODUCT(ST(RUNNING)):

VELOCITA' RILEVATA rpm: 30  
ACTUAL SPEED:

VERIFICA DIMENSIONALE EFFETTUATA : SI: X NO:  
DIMENSIONAL TEST: YES: NO:

**NOTE:**  
**NOTES:**



**SOLMEC S.R.L.**  
**IMPIANTI E**  
**MACCHINE**

# **QUALITY CONTROL PLAN ,VISUAL DIMENSIONAL AND RUNNING TEST**

DIS.N. N13512003A  
DRW.N.

CLIENTE: BALLESTRA S.P.A.  
CUSTOMER:

COMMESSA N.: 2F11 ITEM: 65Z1  
JOB:

TIPO MACCHINA: VALVOLA ROTATIVA RS 180 SET  
MACHINE TYPE: ROTARY VALVE RS 180 SET

MOTORE : BROOK      MATRICOLA:T-DA71D4B  
MOTOR:                  CODE:

POTENZA KW: 0.37 POLI N.: 4 V: 415 HZ: 50  
POWER: POLES N.:

ASSORBIMENTO DI TARGA: 0.96 A  
RATED ABSORPTION POWER:

ASSORBIMENTO RILEVATO A VUOTO (SPUNTO)Y:0.77 A  
TESTED ABSORPTION POWER WITHOUT PRODUCT (START):

ASSORBIMENTO RILEVATO A VUOTO(REGIME):Y:0.77 A  
TESTED ABSORPTION POWER WITHOUT PRODUCTST(RUNNING):

RIDUTTORE TIPO: BONFIGLIOLI C 212 TIPO TRASMISSIONE: A CATENA  
GEAR MOTOR: DRAWING TYPE: CHAIN

VELOCITA' RILEVATA rpm: 25  
ACTUAL SPEED:

VERIFICA DIMENSIONALE EFFETTUATA : SI: X NO:  
DIMENSIONAL TEST: YES: NO:

**NOTE:**



# **QUALITY CONTROL PLAN ,VISUAL DIMENSIONAL AND RUNNING TEST**

DIS.N. N13512004A  
DRW.N.

CLIENTE: BALLESTRA S.P.A.  
CUSTOMER:

COMMESSA N.: 2F11 ITEM: 64Z1-64Z2  
JOB:

TIPO MACCHINA: VALVOLA ROTATIVA SF 180 SET  
MACHINE TYPE: ROTARY VALVE SF 180 SET

MOTORE : BROOK      MATRICOLA:T-DA71D4B  
MOTOR:                  CODE:

POTENZA KW: 0.37 POLI N.: 4 V: 415 HZ: 50  
POWER: POLES N.:

ASSORBIMENTO DI TARGA: 0.96 A  
RATED ABSORPTION POWER:

ASSORBIMENTO RILEVATO A VUOTO (SPUNTO)Y:0.89 A  
TESTED ABSORPTION POWER WITHOUT PRODUCT (START):

ASSORBIMENTO RILEVATO A VUOTO(REGIME):Y: 0.80 A  
TESTED ABSORPTION POWER WITHOUT PRODUCTST(RUNNING):

VELOCITA' RILEVATA rpm: 20  
ACTUAL SPEED:

VERIFICA DIMENSIONALE EFFETTUATA : SI: X NO:  
DIMENSIONAL TEST: YES: NO:

NOTE: DATA : 08/09/12  
NOTES: DATE :



SOLMEC SRL  
IMPIANTI +  
MACCHINE

## QUALITY CONTROL PLAN ,VISUAL DIMENSIONAL AND RUNNING TEST

DIS.N. N13512001A  
DRW.N.

CLIENTE: BALLESTRA S.P.A.  
CUSTOMER:

COMMESSA N.: 2F11            ITEM: 62SR1  
JOB:

TIPO MACCHINA: ESTRATTORE A VIBRAZIONE EV-1250  
MACHINE TYPE: VIBRATING EXTRACTOR EV-1250

MATRICOLA: .....

CODE:

MOTOVIBRATORE : OLI            TIPO:MVE-400/15  
MOTOR VIBRATOR :                TYPE:MVE-400/15

POTENZA WATT: 300            POLI N.: 4                V: 415            HZ: 50  
POWER:                        POLES N.:

ASSORBIMENTO DI TARGA: 0.84 A  
RATED ABSORPTION POWER:

ASSORBIMENTO RILEVATO A VUOTO (SPUNTO)Y:1.94 A  
TESTED ABSORPTION POWER WITHOUT PRODUCT (START):

ASSORBIMENTO RILEVATO A VUOTO (A REGIME)Y:0.25 A  
TESTED ABSORPTION POWER WITHOUT PRODUCT (RUNNING):

VERIFICA DIMENSIONALE EFFETTUATA :    SI: X                NO:  
DIMENSIONAL TEST:                YES:                    NO:

NOTE:  
NOTES:

DATA : 08/09/2012  
DATE :

