



Parts Manual

Proportioning Pumps

Vertical Units

Issue 2.0 04/11/25
Ref. NR-00032-ENG



Before installing the unit and starting it up, carefully read all the technical and safety documentation included in the Manual Service. Pay special attention to the information to know and understand the handling and the conditions of use of the unit. All of the information is aimed at enhancing User Safety and avoiding possible breakdowns derived from the incorrect use of the Unit.



WARRANTY

HI-TECH SPRAY EQUIPMENT, S. A. (hereinafter "HI-TECH") grants this Limited Guarantee to the original buyer (hereinafter the "Client") for the unit and the original accessories given with the unit (hereinafter the "Product") against any fault in the design, materials or manufacture of the Product at the time of the first purchase by the user and for a duration of two (2) years thereafter, except in the case of hoses and TSU's, which will have a warranty period of one (1) year. Additionally, for any other product manufactured by external suppliers, the warranty period will be as specified by the manufacturer.

If during the guarantee period and under normal conditions of use, the Product should fail to work correctly due to defects of design, material or manufacture, the authorised distributor of the country where the HI-TECH Product or technical assistance service has been purchased shall repair or replace the Product in accordance with what is established in the following:

CONDITIONS

- a) The validity of this guarantee will be subject to the presentation of the original invoice issued by the HI-TECH authorised distributor for the sale of the Product along with the Product handed over for repair or replacement, which must show the date of purchase and the serial number. HI-TECH reserves the right to refuse to give the guarantee service when the indicated data fail to appear on the invoice or have been modified after the purchase of the Product.
- b) The repaired or replaced Product will continue to maintain the original guarantee for the time remaining until the end of the guarantee or for three (3) months from the repair date, if the remaining period of the original guarantee were shorter.
- c) This guarantee will not be applied to the faults in the Product caused by its faulty installation, the natural wear and tear of the components, any use other than that considered normal for this Product or which should fail to strictly comply with the instructions of use provided by HI-TECH; due to accident, carelessness, adjustments, alterations or modifications of the Product not authorised by HI-TECH or due to the use of accessories, heating devices, pumping equipment and/or dispensers that have not been approved or manufactured by HI-TECH.
- d) The guarantee applicable to the components and accessories forming part of the Product and which have not been made by HI-TECH will be limited to the guarantee offered by the original manufacturer thereof.
- e)

HI-TECH WILL NOT RECOGNISE ANY EXPRESS ORAL OR WRITTEN GUARANTEES OTHER THAN THIS PRINTED LIMITED GUARANTEE. ALL IMPLICIT GUARANTEES, INCLUDING, WITHOUT LIMIT, ADAPTATION FOR A SPECIFIC USE, ARE SUBJECT TO THE DURATION OF THIS WRITTEN GUARANTEE. HI-TECH DOES NOT ASSUME ANY KIND OF COMMITMENT OR RESPONSIBILITY FOR ALL POSSIBLE DAMAGE OR EXPENSE CAUSED BY FAULTS IN THE OUTPUT OF THE PRODUCT, ITS WORKING OR THE DISPENSING OF MATERIAL THROUGH THE PRODUCT, INCLUDING, WITHOUT LIMITATION, ALL EXPENSES CAUSED BY DAMAGE TO PEOPLE OR PROPERTY. EQUALLY, HI-TECH WILL IN NO CASE ACCEPT LIABILITY FOR THE LOSS OF SPECULATIVE PROFITS OR COMMERCIAL LOSSES. ALL REPAIRS OR REPLACEMENT OF FAULTY PRODUCTS WILL CONSTITUTE THE COMPREHENSIVE FULFILMENT OF HI-TECH'S OBLIGATIONS WITH RESPECT TO THE CLIENT. HI-TECH DOES NOT IN ANY WAY GUARANTEE THE SUITABILITY OR APTITUDE OF ITS PRODUCT FOR ANY PARTICULAR PURPOSE OR APPLICATION.

All of the information provided on components which have not been manufactured by HI-TECH and which is based on reports received from the original manufacturer, though considered precise and reliable, is provided without any guarantee or responsibility of any explicit or implicit kind.

All concession, sale or financial leasing of the Product by HI-TECH in no case explicitly or implicitly constitutes any authorisation, acceptance or concession for the use of any rights or patents, nor does it encourage, nurture or back their infringement.

The restrictions on the guarantee suppose no limitation on the legal rights of the consumer established in applicable national legislation, nor do they affect any rights derived from the bargain and sale agreement between the consumer and supplier.

Proportioning Pump Vertical Units



Parts Manual

All of the information provided in this manual has been included in the confidence that it is true, although it does not constitute any responsibility or implicit or explicit guarantee. HI-TECH reserves the right at any time and without prior warning to make all improvements and modifications necessary to this manual, in order to rectify any possible typographical errors, increase the information contained or insert the changes caused to the characteristics and performance of the unit.

SAFETY AND HANDLING

The equipment described in this manual has been designed and manufactured in compliance with the following European Directives, following as application guide the harmonized standards detailed and in conformity with the relevant UK Statutory Instruments (and their amendments):

2006/42/EC Machinery Directive

2014/35/EU Low Voltage Directive

2014/30/EU EMC Directive

2011/65/EU RoHS Directive with amendment 2015/863

2012/19/EU Directive on waste electrical and electronic equipment

Standards used:

EN ISO 12100:2010

EN 60204-1:2018

EN IEC 61000-6-4:2019

EN IEC 61000-6-2:2019

EN IEC 63000:2018



Electrical products cannot be thrown out with the rubbish. They must be taken to a dedicated collection point for an environmentally sound disposal in accordance with local regulations. You must contact your local collective or retailer for information about recycling. Before leaving WEEE at appropriate collection facilities, batteries must be removed and disposed of separately for proper recycling. The packaging materials are recyclable. Dispose of packaging materials in an environmentally sound manner and place them at the disposal of recycling sectors.

TRANSPORT AND STORAGE

Proper precautions must be taken so that the equipment can withstand the effects of transport and storage temperatures between -25°C and $+55^{\circ}\text{C}$ or up to $+70^{\circ}\text{C}$ for short periods that do not exceed 24 hours. Also, appropriate means to prevent damage from moisture, vibrations or shocks must be foreseen.



PROPORTIONING PUMP, VERTICAL UNITS



Figure 1. Proportioning Pump, Vertical Units

Table 1. Proportioning Pump Size, Parts List

Pump SIZE	HI-TECH-I
2.9	PU-02015-ESG
3.2	
4.5 (#)	PU-02001-ESG
4.7	
5.1	
5.7	
6.3	PU-02003-ESG
6.7	PU-02006-ESG
7.2	
7.6	PU-02000-ESG
9.0	
11.8	PU-02016-ESG
13.5	PU-02014-ESG

(#) The standard proportioning pump size for HI-TECH-I is #4.5, different sizes are available under order. For delivery time, please consult with Marketing department.

The Isocyanate & Resin pumps are equal.

The input and output accessories are not supplied with the pump. The final assembly depends of the machine on which they are mounted (see specific manual of each machine).



PROPORTIONING PUMPS

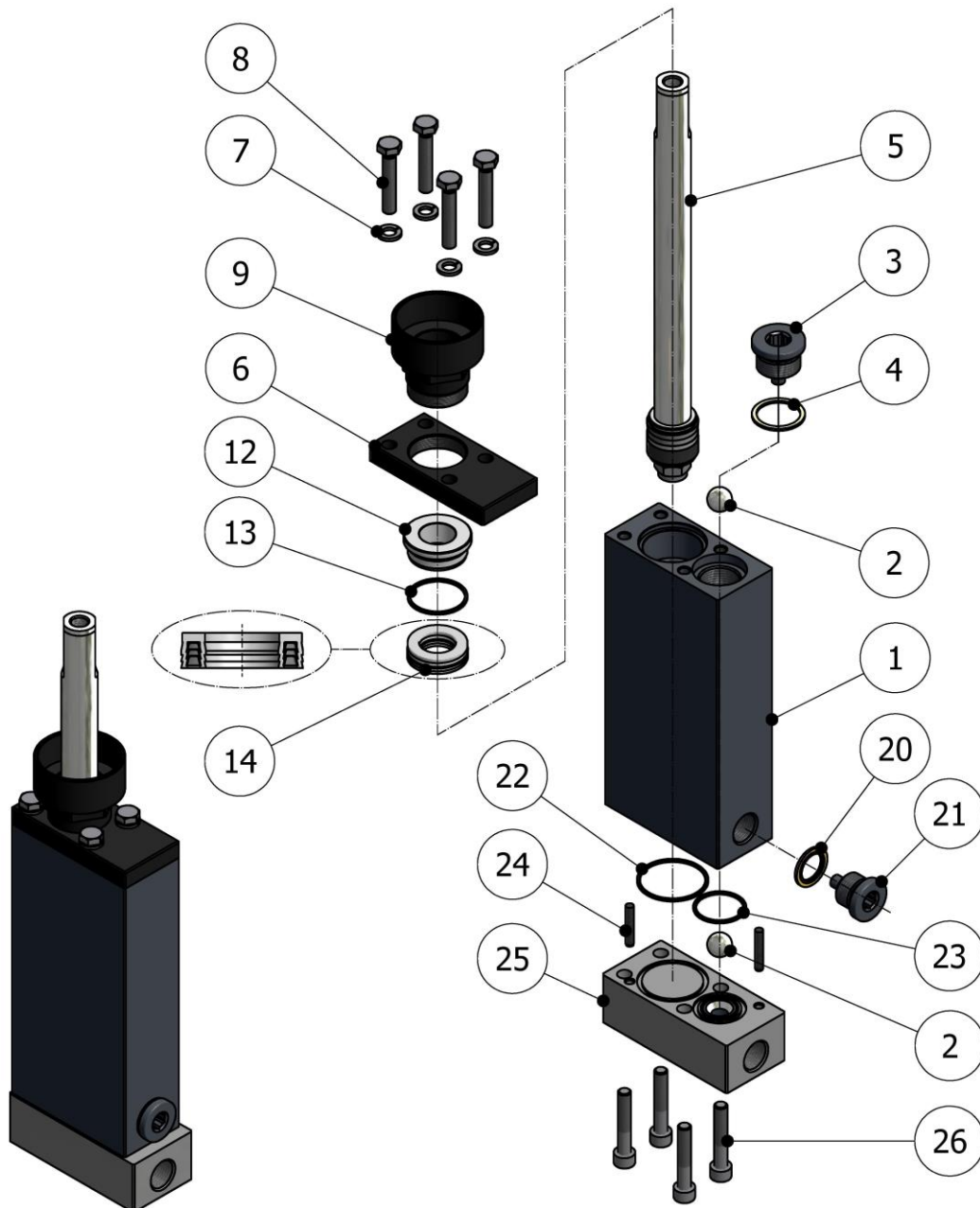


Figure 2. Proportioning Pump, Exploded View



**Proportioning Pump
Vertical Units**

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Table 2. Proportioning Pumps, Parts List

Ref.	Description	Part Number	Qty.
1	Pump Body With Check Valve Assembly	See Table 3	1
1.1	Pump Body	See Table 3	1
1.2	Check Valve Assembly	PU-02000-09	1
2	Valve Ball	TN-00012	2
3	Plug	PU-02000-21	1
4	Seal	PU-02000-27	1
5	Piston Rod Assembly	See pg.9	1
6	Packing Retainer	See Table 3	1
7	Lock Washer	TN-00028	4
8	Socket Head Cap Screw	TN-00051	4
9	Parking Nut W/Lube Cup	See Table 3	1
12	Bearing (▲)	See Table 3	1
13	O-Ring (▲)	See Table 3	1
14	Cylinder Seal (▲)	See Table 3	1
20	O-Ring	OR-00023	1
21	Plug	PU-02000-10	1
22	O-Ring	See Table 3	1
23	O-Ring	OR-00014	1
24	Dowel Pin	TN-00042	2
25	Pump Base With Check Valve Assembly	See Table 3	1
25.1	Check Valve Assembly	PU-02000-09	1
25.2	Base Plate	See Table 3	1
26	Socket Head Cap Screw	TN-00046	4
27	Dowel Pin (no indicated in Fig,2)	TN-00055	2

Note:

(▲) Parts included in the Repair Seal kit that containing the units for 1 pump set (see Table 6).

Quantities for 1 unit Pump.



Table 3. Components Variable SIZE, Parts List

Ref.	Standard Size 4.5 (*)
1	PU-02001-02A
1.1	PU-02001-02
6	PU-02000-03
9	PU-02001-31
12 ▲	PU-02001-30G
13 ▲	OR-00125
14 ▲	OR-00117G
25	PU-02000-01A
25.2	PU-02000-01
22	OR-00013

Ref.	Size 13.5	Size 11.8	Size 9.0	Size 7.6	Size 7.2
1	PU-02014-02A	PU-02016-02A	PU-02012-02A	PU-02000-02A	PU-02013-02A
1.1	PU-02014-02	PU-02016-02	PU-02012-02	PU-02000-02	PU-02013-02
6	PU-02014-03	PU-02014-03	PU-02012-03	PU-02000-03	PU-02000-03
9	PU-02014-31	PU-02014-31	PU-02012-31	PU-02000-31	PU-02000-31
12 ▲	PU-02014-30G	PU-02016-30G		PU-02000-30G	
13 ▲	OR-00169	OR-00169		OR-00021	
14 ▲	OR-00168G	OR-00183G		OR-00116G	
25	PU-02014-01A	PU-02014-01A	PU-02000-01A	PU-02000-01A	PU-02000-01A
25.2	PU-02014-01	PU-02014-01	PU-02000-01	PU-02000-01	PU-02000-01
22	OR-00170	OR-00170	OR-00013	OR-00013	OR-00013

(▲) Parts included in the Repair Seal kit that containing the units for 1 pump set (see Table 6).



Proportioning Pump Vertical Units

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Ref.	Size 6.7	Size 6.3	Size 5.7	Size 5.1	Size 4.7
1	PU-02006-02A	PU-02003-02A	PU-02002-02A	PU-02005-02A	PU-02009-02A
1.1	PU-02006-02	PU-02003-02	PU-02002-02	PU-02005-02	PU-02009-02
6	PU-02000-03	PU-02000-03	PU-02000-03	PU-02000-03	PU-02000-03
9	PU-02000-31	PU-02000-31	PU-02000-31	PU-02000-31	PU-02001-31
12▲	PU-02006-30G	PU-02003-30G			
13▲	OR-00021	OR-00021			
14▲	OR-00174G	OR-00179G			
25	PU-02000-01A	PU-02000-01A	PU-02000-01A	PU-02000-01A	PU-02000-01A
25.2	PU-02000-01	PU-02000-01	PU-02000-01	PU-02000-01	PU-02000-01
22	OR-00013	OR-00013	OR-00013	OR-00013	OR-00013

Ref.				Size 2.9	Size 3.2
1				PU-02015-02A	PU-02011-02A
1.1				PU-02015-02	PU-02011-02
6				PU-02000-03	PU-02000-03
9				PU-02001-31	PU-02001-31
12▲				PU-02015-30G	
13▲				OR-00125	
14▲				OR-00173G	
25				PU-02000-01A	PU-02000-01A
25.2				PU-02000-01	PU-02000-01
22				OR-00013	OR-00013

N.B.: (*) Standard Pump for HI-TECH-I is 4.5 SIZE. Different sizes are available under order. For delivery time, please consult with Marketing department.

(▲) Parts included in the Repair Seal kit that containing the units for 1 pump set (see Table 6).



PISTON ROD ASSEMBLY

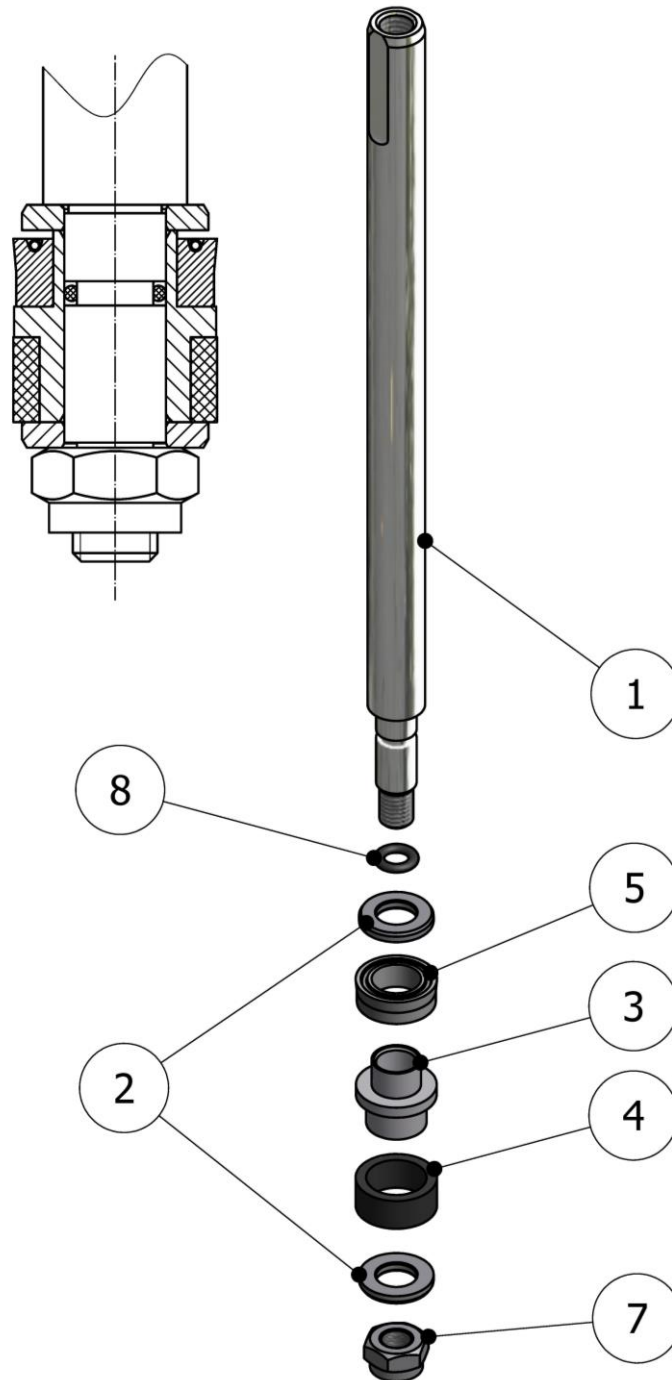


Figure 3. Piston Rod Assembly, Exploded View



Table 4. Piston Rod Assembly, Parts List

Ref.	Description	Part Number	Qty.
1	Pump Piston Rod	See Table 5	1
2	Washer	See Table 5	2
3	Piston Seal Support	See Table 5	1
4	Piston Seal (▲)	See Table 5	1
5	O-Ring (▲)	See Table 5	1
6			
7	Nut	See Table 5	1
8	O-Ring (▲)	See Table 5	1

(▲) Parts included in the Repair Seal Kit. It includes the parts for 1 pump set, (see Table 6 for the Repair Seal Kit).



Table 5. Piston Rod Size, Parts List

Pump	Ref. 1	Ref. 2	Ref. 3	Ref. 4 ▲
13.5	PU-02014-06	PU-02014-08	PU-02014-07R	OR-00167
9.0	PU-02012-06	PU-02012-08	PU-02012-07R	OR-00154
7.6 (*)	PU-02000-06	PU-02000-08	PU-02000-07R	OR-00016
7.2	PU-02013-06	PU-02013-08	PU-02013-07R	OR-00162
6.7	PU-02006-06	PU-02006-08	PU-02006-07R	OR-00086
6.3	PU-02003-06	PU-02003-08	PU-02003-07R	OR-00078
5.7	PU-02002-06	PU-02002-08	PU-02002-07R	OR-00059
5.1	PU-02005-06	PU-02005-08	PU-02005-07R	OR-00080
4.7	PU-02009-06	PU-02009-08	PU-02009-07R	OR-00105
4.5 (*)	PU-02001-06	PU-02001-08	PU-02001-07R	OR-00050
3.2	PU-02011-06	PU-02010-08	PU-02010-07R	OR-00145
2.9	PU-02015-06	PU-02015-08	PU-02015-07R	OR-00172

Pump	Ref. 5 ▲	Ref. 6	Ref. 7	Ref. 8 ▲
13.5	OR-00166		TN-00342	OR-00011
9.0	OR-00152		TN-00030	OR-00015
7.6 (*)	OR-00156		TN-00030	OR-00015
7.2	OR-00161		TN-00030	OR-00015
6.7	OR-00175		TN-00165	OR-00049
6.3	OR-00180		TN-00165	OR-00049
5.7			TN-00165	OR-00049
5.1			TN-00165	OR-00049
4.7			TN-00165	OR-00049
4.5 (*)	OR-00151		TN-00165	OR-00049
3.2	OR-00165		TN-00283	OR-00024
2.9	OR-00171		TN-00283	OR-00024

N.B.: (*) Standard Pump for HI-TECH-I is 4.5 SIZE. Different sizes are available under order. For delivery time, please consult with Marketing department.

(▲) Parts included in the Repair Seal kit that containing the units for 1 pump set (see Table 6).



Table 6. Repair Seal Kit SIZE, Parts List

SEAL KIT REF.	From pg.5			From pg.9		
	Ref. 12	Ref. 13	Ref. 14	Ref. 4	Ref. 5	Ref. 8
KT-00166 (2.9)	PU-02015-30G	OR-00125	OR-00173G	OR-00172	OR-00171	OR-00024
- (3.2)	-	-	-	OR-00145	-	OR-00024
KT-00153 (*4.5)	PU-02001-30G	OR-00125	OR-00117G	OR-00050	OR-00151	OR-00049
- (4.7)	-	-	-	OR-00105	-	OR-00049
- (5.1)	-	-	-	OR-00080	-	OR-00049
- (5.7)	-	-	-	OR-00059	-	OR-00049
KT-00185 (6.3)	PU-02003-30G	OR-00021	OR-00179G	OR-00078	OR-00180	OR-00049
KT-00176 (6.7)	PU-02006-30G	OR-00021	OR-00174G	OR-00086	OR-00175	OR-00049
- (7.2)	-	-	-	OR-00162	OR-00161	OR-00015
KT-00129 (7.6)	PU-02000-30G	OR-00021	OR-00116G	OR-00016	OR-00156	OR-00015
- (9.0)	-	-	-	OR-00154	OR-00152	OR-00015
KT-00187 (11.8)	PU-02016-30G	OR-00169	OR-00183G	OR-00182	OR-00184	OR-00011
KT-00164 (13.5)	PU-02014-30G	OR-00169	OR-00168G	OR-00167	OR-00166	OR-00011

N.B.: (*) Standard Pump for HI-TECH-I is 4.5 SIZE. Different sizes are available under order. For delivery time, please consult with Marketing department.

The Repair Seal Kit includes the parts for 1 pump set.



ASSEMBLY OF SMALLER PUMPS THAN #4.5 SIZE

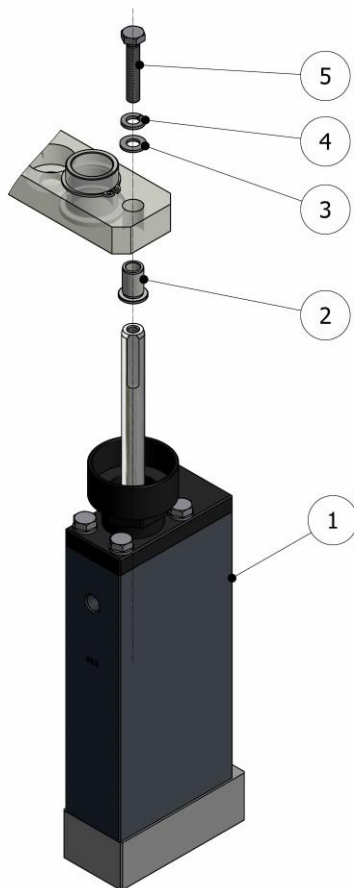


Figure 4. Assembly of Smaller Pumps than #4.5 Size

Table 7. Assembly of Smaller Pumps than #4.5 Size, Parts List

Ref.	Description	Reference	Qty.
1	Pump Assembly	See Table 1	1
2	Bushing	MQ-18005-01	1
3	Fender Washer	TN-00456	1
4	Lock Washer	TN-00028	1
5	Hex. Screw	TN-00051	1

Note: From size # 4.5 to size # 9.0 (inclusive), corresponds the standard assembly.

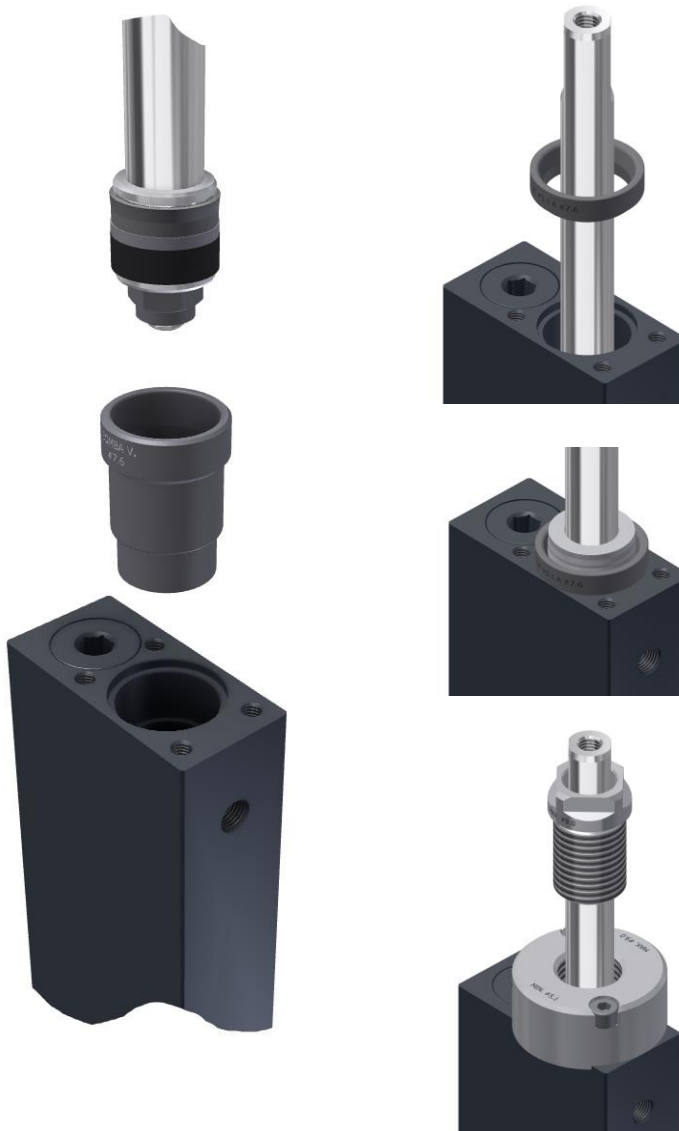


ASSEMBLY OF SEALS

To assemble the pump, there are specific tools that prevent damage to the seal lips of both the piston and the cylinder head.

First, assemble the rod set with the piston and all its components. Ensure that the piston seal lips are facing upwards.

Insert the assembled piston set inside the sleeve with the specific tool (1) (see Table 8 on page 15).



Once you have inserted the piston into the sleeve, you must assemble the cylinder head seal. First place the seal funnel tool (2).





Next, place the cylinder head seal with the lips facing downwards.

Subsequently, you must place and fasten the tool (3) to the sleeve and insert the plunger (4) inside the rod. Screw as far as it will go.

Remove all the tools and finish the pump assembly by placing the guide with its joint, and fastening the piston and the nut with the bowl.



Table 8. Tools List

	Tool (1)	Tool (2)	Tool (3)	Tool (4)
SIZE				
#2,9	HT-00134	HT-00116	HT-00119	HT-00121
#3,2				
#4,5	HT-00034			
#4,7	-	HT-00117	HT-00120	HT-00122
#5,1	-			
#5,7	HT-00033			
#6,3	HT-00032			
#6,7	HT-00133			
#7,2	-			
#7,6	HT-00031	HT-00118	HT-00128	HT-00129
#9,0	HT-00130			
#11.8	HT-00139	HT-00127	HT-00128	HT-00129
#13.5	HT-00126			

NOTE: These tools are not supplied with the machine, they are optional upon request.



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