



OWNER'S MANUAL

Wetblast system W-92
with water pump and
wetblast head KB-25 or KB-52 / KB-52-1

Clemco

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1 Scope of manual

This owner's manual covers operation and maintenance of the wetblast system W-92 consisting of:

- Water pump with pressure regulator and transport basket.
- Wetblast head KB-52 / KB-52-1, or KB-25
- High pressure water hose and suction hose.

Additionally the owner's manual for the blast machine should be considered.

2 Application and restrictions

The wetblast system W-92 is an air driven device for a blast machine, and is intended for one operator. Water is directly injected into the nozzle and atomized (volume exactly adjustable through a needle valve and nozzles (KB-52-1)). The water mist covers the dust normally emitted during blasting. The water pump can be supplied either from a water tank or directly from city water supply.

For combining a wetblast system W-92 with a blast machine the following components are necessary (CLEMCO or other brands):

- CLEMCO nozzle holder with 25 or 50 mm contractor thread (depends on wetblast head used).
- Corresponding CLEMCO nozzles.

3 General description

3.1 Components

The water pump with transport basket (see figure 1) has the following dimensions:

Width	Height	Depth	Weight
450 mm (without hoses)	600 mm	380 mm	25 kg

Table 1 Dimensions.

For wetblasting with the wetblast system W-92 the following components are necessary:

- Sufficient air supply for the blast machine and the water pump.
- Water supply (city water supply line or water tank).
- Blast machine with remote controls
- Blast hose with nozzle holder.
- Wetblast system W-92 consisting of:
 - ⇒ Water pump with transport basket.
 - \Rightarrow Wetblast head.
 - ⇒ High pressure water hose, suction- and water hose.

Table 2 shows different procedures available with the wetblast system W-92:

Procedure	without W-92	with W-92
Dry blasting (air and abrasive)	Х	X
Wash down (air and water)	-	Х
Wetblasting (air, water and abrasive)	-	X
Air drying	X	X

Table 2 Procedures.

3.2 How the system works

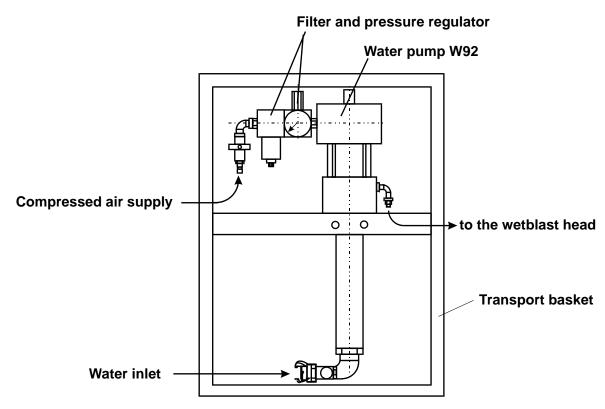


Figure 1 Water pump and transport basket.

The blast machine and the wetblast system W-92 (see figure 1) share the same air supply line. Compressed air enters the filter where it is cleaned and then drives the water pump via an air motor. The water is set under pressure and is guided to the wetblast head (high pressure water hose) where it is injected (via a steel ring) into the stream of abrasive / air and later atomized (ball valve opened). Abrasive and dust are covered by a water mist and therefore a dustfree blasting is achieved. The needle valve and the nozzles of the wetblast head guarantee a water metering dependent on different blasting parameters.

4 Set-up and operation

4.1 Requirements

For operation the following technical data of the water pump have to be considered:

Max. air inlet pressure = 8 bar

Pressure ratio (water pressure versus air pressure) = 4:1

Output per cycle = **75 cm**³

Max. water volume = 15 l/min.

Air consumption water pump at 8 bar = $0,15 \text{ m}^3 / \text{min.}$

Table 2 Technical data.

4.2 Set-up for initial installation or reinstallation

(1) Install blast machine.	– Air supply.
	Blast hose with nozzle and nozzle holder.
	Remote control hoses.
	See corresponding owner's manual.
(2) Place the wetblast system.	- Even ground.
	Near the blast machine or the air supply line.
(3) Install the wetblast head.	Remove the nozzle from the nozzle holder.
	Connect the wetblast head to the nozzle holder.
	Connect the nozzle to the wetblast head (check the steel ring for
	correct seat and all gaskets have to be in place).
	Connect the high pressure water hose to the wetblast head.
(4) Air and water supply for	- Water supply
water pump (see figure 1).	⇒ water hose Ø > = 19mm (city water supply) or
	\Rightarrow suction hose (water tank).
	- Air supply (adjust pressure regulator to 8 bar).
	High pressure water hose (for wetblast head).
	Lay out hoses in straight lines (no bends)!
(5) Remove air from the system.	Turn on compressed air supply for water pump (open ball valve).
	Adjust pressure regulator to 3 bar.

	Open water supply (open water tap or put suction hose into the water tank).
	Open ball valve on the wetblast head.
	Let the water pump run until only water comes out the nozzle (no more air present in the system).
(6) Put on the protective	Abrasive - resistant clothing.
equipment.	 Airfed helmet with connection to the breathing air supply (air filter) and adjustment of the air volume with an air control valve attached to the belt.
	 Leather gloves and boots.
(7) Blast machine.	Ready for operation (see corresponding owner's manual).

4.3 Daily set-up

Not necessary if an initial installation or reinstallation was performed (see section 4.2).

(4) Air and water supply for water pump (see figure 1).	- Water supply
	⇒ water hose Ø > = 19mm (city water supply) or
	\Rightarrow suction hose (water tank).
	- Air supply (adjust pressure regulator to 8 bar).
	High pressure water hose (for wetblast head).
	Lay out hoses in straight lines (no bends)!
(2) Remove air from the system.	Turn on compressed air supply for water pump (open ball valve).
	Adjust pressure regulator to 3 bar.
	Open water supply (open water tap or put suction hose into the water tank).
	Open ball valve on the wetblast head.
	 Let the water pump run until only water comes out the nozzle (no more air present in the system).
(3) Put on the protective	Abrasive - resistant clothing.
equipment.	 Airfed helmet with connection to the breathing air supply (air filter) and adjustment of the air volume with an air control valve attached to the belt.

	 Leather gloves and boots.
(4) Blast machine.	Ready for operation. (see corresponding owner's manual).

4.4 Operation

(1) Wet blasting.	Start blast process with air only (depress deadman handle).	
	Open (ball valve on wetblast head) and regulate water supply (needle valve), until a mist of water comes out the nozzle. Increase air pressure if necessary (pressure regulator).	
	Open media metering valve and regulate water and abrasive supply.	
(2) Wash down of blasted parts.	Close media metering valve.	
(3) Drying of blasted parts.	Additionally close ball valve on wetblast head (no more water supply).	
(4) Interruption of blast process.	Close media metering valve.	
	 After 10 seconds of blasting without abrasive, close ball valve on wetblast head (no water supply). 	
	Interrupt air supply (release deadman handle).	

4.5 Shut-down

(1) Empty and dry the blast hose.	Close media metering valve.
	 Continue blasting for 10 seconds with compressed air and water only.
	Close the ball valve on the wetblast head.
	 Continue blasting until only air but no water mist comes out the nozzle.
(2) Close water and air supply.	 Water supply.
	Compressed air supply.

4.6 Shut-down when moving equipment

(1) Empty and dry the blast hose.	Close media metering valve.
	 Continue blasting for 10 seconds with compressed air and water only.
	Close the ball valve on the wetblast head.
	Continue blasting until only air but no water mist comes out the nozzle.
(2) Close water and air supply.	- Water supply.
	Compressed air supply.
(3) Disconnect and store hoses.	- Water hose (remove water).
	– Air hose.
	High pressure water hose (remove water).
	Store hoses in the transport basket.

5 Maintenance

5.1 General

The **water pump** of the wetblast system is **maintenance free**. All other components are exposed to wear and have to be maintained in order to ensure safety and a high efficiency.

Prior to maintenance, make sure that all connections are closed and the whole system is depressurized!

5.2 Daily check list

(1) Wetblast head.	Check for wear	
	⇒ Steel ring.	
	\Rightarrow O-ring.	
(2) Air filter (Figure 2, No. 2).	Clean when dirty (sight glass).	

5.3 Weekly check list

Check air filter of the water pump for dirt (sight glass) and clean if necessary. Remove water from the filter (open drain).

5.4 Monthly check list

Check all hose couplings and hoses for wear or breakage and replace if necessary.

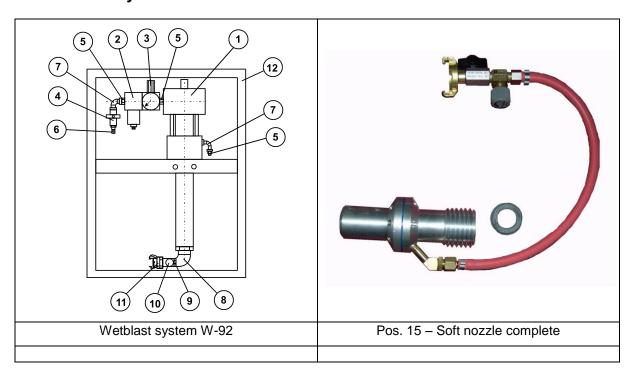
6 Trouble-shooting

This section only refers to potential problems of the wetblast system W-92. See corresponding owner's manual for trouble-shooting for the blast machine.

Problem	Probable cause	Remedy
(1) The water pump doesn't work.	Closed ball valve (Figure 2, No. 4) on wetblast system and / or compressor.	Open ball valve.
	Pressure regulator (Figure 2, No.3) adjusted to "0 bar".	Newly adjust pressure regulator.
(2) The water pump works, but no water comes out the nozzle.	Closed water tap and / or ball valve.	Open.
	Empty water tank.	Refill water tank.
	Blocked dirt trap (figure 2, No. 10) of the water pump W-92.	Open and clean it.
	Closed or blocked needle valve.	Open, disassemble and clean it.

7 Replacement parts

7.1 Wetblast system W-92



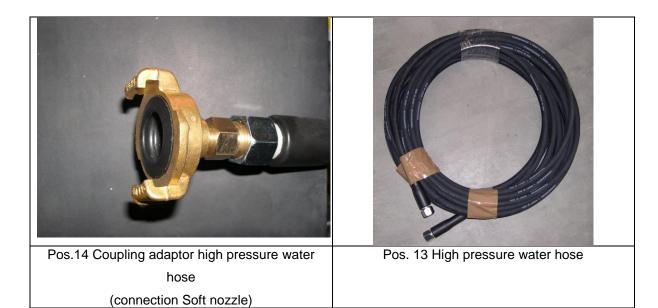


Figure 2 Replacement parts wetblast system W-92.

No.	Stock No.	Description
(-)	99872D	Water pump with transport basket, 20m HD-water hose, suction hose, wetblast head KB-52
(1)	99839D	Water pump alone
(2)	99375D	Filter 1/4" for W-92
(3)	99769D	Pressure regulator 1/4"
(4)	90285D	Ball valve 1/4"
(5)	01019D	Reducing nipple 3/8" - 1/4"
(6)	94263D	Nipple 1/4"
(7)	94273D	Elbow 1/4" Nr. 90 II
(8)	99580D	Elbow 3/4" - 1/2" RG Nr. 90
(9)	02462D	Hexagon nipple 1/2" RG
(10)	99574D	Dirt trap 1/2" for W-92
(11)	99581D	Coupling GKA-12
(12)	90695D	Transport basket
(13)	94279D	High pressure water hose
(14)	24357D	Coupling adaptor high pressure water hose
(15)	100431	Soft nozzle 4/50 complete
	100432	Soft nozzle 5/50 complete
	100433	Soft nozzle 6/50 complete
	100944	Soft nozzle 8/50 complete

7.2 Water pump W-92

Materialpumpe	Serie	Bestell-Nr.	
Material Pump	Serie	Order-No.	
Section fluide	Série	Référence	
Typ ND 75 / 42 - R -	001	0619086	

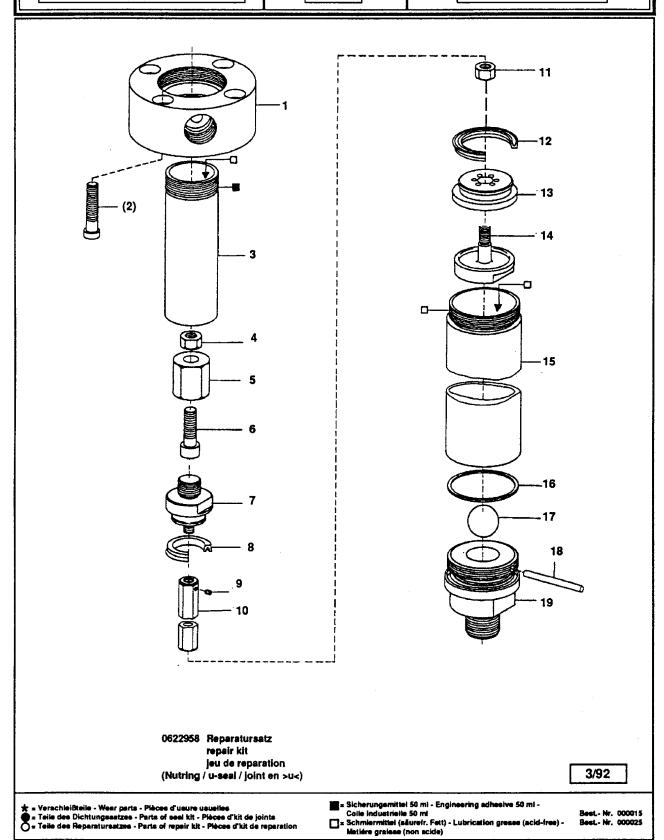
PosNr. PosNo. Code		Stück Pieces Pièce	• 0	Artikelbezeichnung	Part Description	Désignation des articles
01	0618632	1		Hochdruckkopf	pump head	tête de pompe
(02)	0619701	4		Schraube	screw	vis
03	0618624			Druckzylinder	pressure cylinder	cylindre de pression
04	0479608	11		Mutter	nut	écrou
05	0619698	1		Überwurfmutter	swivel nut	écrou-raccord
06	0499242	11		Schraube	screw	vis
07	0622125	1		Kolbenplatte	piston plate	plateau piston
08	0622141	1		Nutring	u-seal	joint en >u<
09	0491799	1	0	Gewindestift	threaded pin	vis-sans-tête
10	0618616	_1	L	Verbindungstange	connecting rod	axe de raccord
11	0485977	1	ļ	Mutter	nut	écrou
12	0622168	1		Nutring	u-seal	joint en >u<
13	0622133	1	О	Ventilkolbenplatte	valve piston plate	plateau vanne à pointeau
14	0618675	1		Ventilschraube	valve screw	ens. soupape
15	0618640	1		Druckzylinder	pressure cylinder	cylindre de pression
16	0486736	1	0	Dichtung	gasket	joint
17	0486760	1	* 0	Kugel	ball	bille
18	0486809	1		Zylindersift	cylindrical pin	goupille cylindrique
19	0618667	1		Gehäuse -BV-	housing	corps
	0622958	1	0	Reparatursatz	repair kit	jeu de reparation

Materialpumpe **Material Pump** Section fluide Typ ND 75 / 42 - R -

Serie Serie Série 001

Bestell-Nr. Order-No. Référence

0619086



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Best.- Nr. 000015 Best.- Nr. 000025

Luftmotor **Air Motor** Moteur pneumatique

Typ D 70 / 42 - 02

Serie Serie Série

004

Bestell-Nr. Order-No. Référence

0470414

PosNr. PosNo. Code	BestNr. Order-No. Référence	Stück Pieces Pièce	• •	Artikelbezeichnung	Part Description	Désignation des articles
01	0460370	2		Schraube	screw	vis
02	0460508	2	!	Schraube	screw	vis
ļ	0473820	1	ļ	Deckei komplett	cover assembly	couverde complet
			<u> </u>	Position3-5		
03	0470309	1	 	Deckel	cover	couverde
	- 17		ļ	ohne Abbildung	not illustrated	non illustré
	0470236	1		Buchse	bush	boîte
04	0470252	1		Dämpfungsscheibe	dampening spacer	rondelle
05	0473162	1		Zackenring	washer serregated	rondelle elastique
06	0470279		* 0	Dämpfungsscheibe	dampening spacer	rondelle
07	0470201	1		Zapten	bolt	boulon rondelle
08	0470147	1	_	Scheibe	spacer	
09	0473111		*	Mitnehmer komplett	carrier assembly	toc d'entraînement complet
10	0470287			Dämpfungsscheibe	dampening spacer	rondelle
11	0473170	1	* 0	Steuerkolben komplett	control piston assembly	piston de contrôle complet vis
12	0468894	4	 	Schraube	screw	
13	0473189	2	L	Zylinderstift	cylindrical pin	goupille cylindrique
14	0460591	4		U-Scheibe	washer	rondelle
15	0470368	1		Dämmolatte	dampening plate	silencieux
(16)	0473200	1		Bügelgriff	handle	poignée de transport
17	0460184	2		Mutter	nut	écrou
18	0473812	2		Gewindestift	threaded pin	vis-sans-tête
19	0492701	1-1-		Oberteil komplett	cylinder head assembly	partie supérieur complet
20	0484989	1		Reduziernippel	reducing nipple	raccord de reduction
21	0470120	1	-	Belüftungsrohr	air inlet pipe	tube d'air
22	0470392	2	•	O-Ring Sicherheitsventil	o-ring	joint torique
(23)		1		Bundbuchse	safety valve shoulder bush	vanne de sécurité frette
24	0470155	+		Sicherungsring		circlip
25 26	0470384			Scheibe	retaining ring	rondelle
27	0476137		* ● O		spacer u-seal	ioint en >u<
,	0310204 0310190		* • 0		o-ring	ioint torique
28 29	0610623	1	X • •	Kolbenplatte	piston plate	plateau piston
			* • O			ioint torique
30 31	0310174 0610631			Führungsring	o-ring auide rina	baque de quidage
	0610658	+		Scheibe		rondelle
32 33	0470325	_	*	Schnepper	spacer toggie	bascule
34	0470325		*	Schnepperlager	toggie toggie bearing	roulement
35	0617709		*	Druckfeder	spring	ressort
36	0470171	2	<u> </u>	Lagerbuchse	bearing bush	coussinet
37	0473065		* 0	Umsteuerachse komplett	quide axle assembly	axe de contrôle complet
38	0470104		*	Motorachse	motor axle	axe de moteur
39	0310514	1		O-Ring	o-ring	joint torique
40	0470139	$\overline{}$	*	Zytinder	cylinder	cylindre
41	0310514			O-Ring	o-ring	ioint torique
42	0473251	+	౼ᅔ	Sicherungsring	retaining ring	circlip
43	0482625	1 1	₹ • ਨੋ	Führungsbuchse komplett	quide bush assembly	coussinet complet
44	0485268	1		Unterteil komplett	bottom assembly	partie inférieur complet
	V-00200			One ten romplett	COMPIN GOODING	pares sileness complet
	0484334	1	•	Dichtungssatz	seal kit	jeu de joints
 	0604364	1		Reparatursatz	repair kit	ieu de reparation
	~~~~~	<del></del>	<u>-</u> -	· · · · · · · · · · · · · · · · · · ·		127 72 127 227
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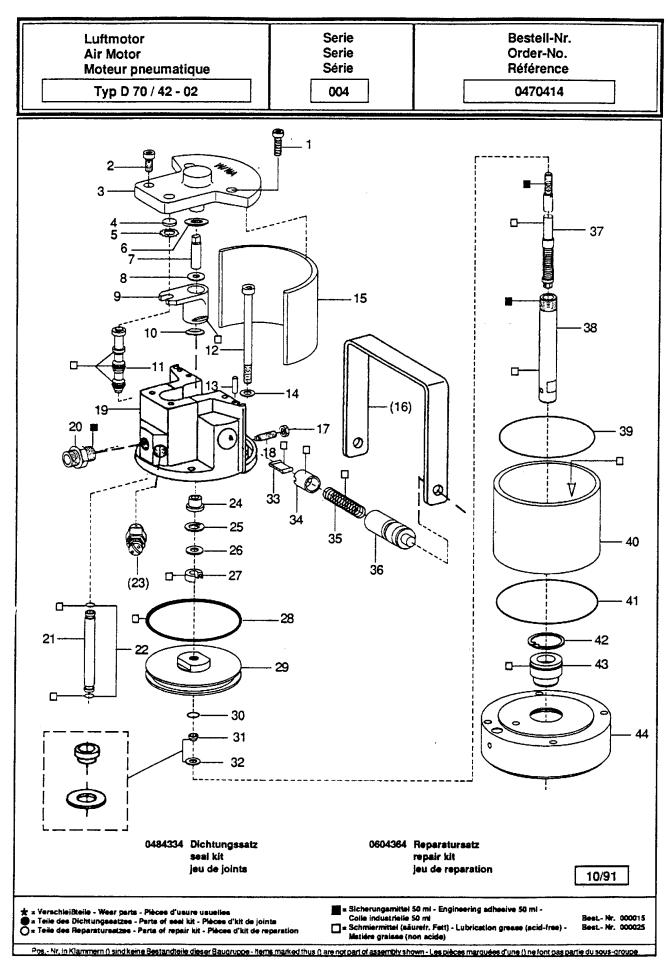
*** Bestell-Nummer für Sicherheitsventil siehe Maschinenkarte Order number for safety valve see card of machines Référence de soupape de sûreté voir carte machine

★ s Verschieißteile - Wear perts - Plèces d'usure usuelles ■ s Teile des Dichtungssatzes - Parts of seal kit - Plèces d'kit de joints □ s Teile des Reparatursatzes - Parts of repair kit - Plèces d'kit de reparation

Sicherungamittel 50 ml - Engineering adhesive 50 ml Colle industrielle 50 ml
 Schmiermittel (säurefr. Fett) - Lubrication greese (acid-free) Matière graisse (non acide)

Best.- Nr. 000015 Best.- Nr. 000025

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### 7.3 Wetblast head KB 25, KB 52 and KB-52-1

### 7.3.1 Wetblast head KB-25 (for blast hose 13 x 7)

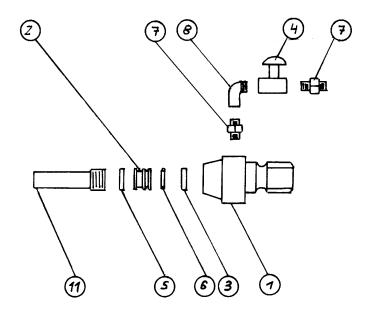


Figure 3 Wetblast head KB 25.

No.	Stock No.	Description		
(-)	94286D	Wetblast head KB-25 complete with needle valve – 25 mm contractor thread		
(1)	94286A	Body for wetblast head KB-25		
(2)		Steel ring for KB-25		
(3)		Gasket		
(4)	90608D	Needle valve 1/4" for KB-25		
(5)		Gasket		
(6)		O-ring for steel ring		
(7)	02808D	Double nipple ¼ » brass		
(8)	02027D	Elbow ¼" IA		
(11)		Blast nozzle with 25mm coarse thread		

## 7.3.2 Wetblast head KB-52 and KB-52-1 (for blast hose greater than 19 x 7)



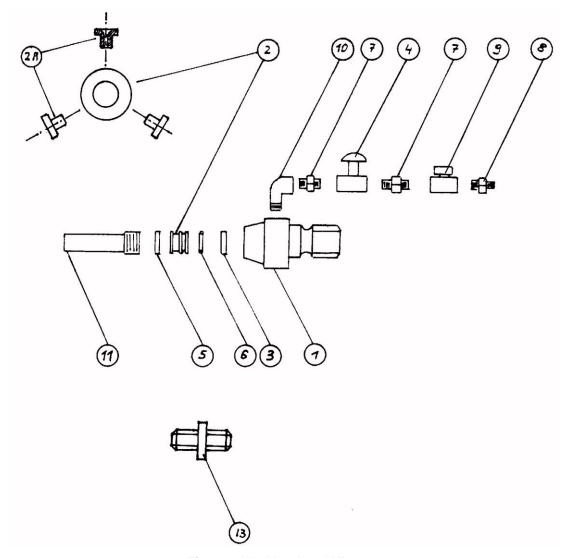


Figure 4 Wetblast head KB 52-1.

No.	Stock No.	Description
(-)	90629D	Wetblast head KB-52 complete with ball valve and needle valve - 50 mm contractor thread
(-)	90369D	Wetblast head KB-52-1 complete with 3 nozzles
(1)	93129D	Body for wetblast head KB-52, KB-52-1
(2)	90630D	Steel ring for KB-52
	90371D	Steel ring for KB-52-1
(2A)	100036	Water nozzle KB-52-1 with hole
	90372D	Water nozzle KB-52-1 without hole (2 pieces are necessary)
(3)	00854D	Gasket (media hose side)
(4)	94322D	Needle valve for KB-52
(5)	94349D	Gasket (nozzle side)
(6)	90631D	O-ring for steel ring KB-52
(7)	90115D	Hexagon nipple 3/8" brass
(8)	01019D	Hexagon reducing nipple 3/8" - 1/4" brass
(9)	99917D	Ball valve 3/8" 50 bar
(10)	90061D	Elbow 3/8" IA
(11)		Nozzle with 50 mm contractor thread
(13)	99639D	Double nipple, 2" contractor thread (for installation of the wetblast head between two blast hoses)