

**INTERNATIONAL SEARCH REPORT**

International application No.  
**PCT/KR2018/016068**

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

- 1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
- 2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
- 3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

The invention of group 1: claims 1-5 pertain to a connection structure of a sandblasting nozzle.  
The invention of group 2: claims 6-10 pertain to a connector for connecting a sandblasting nozzle.

- 1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
- 2.  As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
- 3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
- 4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

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## A. CLASSIFICATION OF SUBJECT MATTER

*B24C 5/04(2006.01)i, B05B 13/02(2006.01)i, B05B 15/658(2018.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B24C 5/04; F16L 19/00; F16L 33/20; F16L 33/207; F16L 33/22; B05B 13/02; B05B 15/658

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Korean utility models and applications for utility models: IPC as above  
Japanese utility models and applications for utility models: IPC as aboveElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
eKOMPASS (KIPO internal) & Keywords: hose, connector, sand blast, nozzle, wedge

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	CN 201428882 Y (SHANGYU XINHUA ELECTRICAL APPLIANCE CO., LTD.) 24 March 2010 See page 3, line 8-page 4, line 22 and figures 1-3.	6-9
A		1-5,10
Y	KR 10-0408930 B1 (KIM, Tae Seung) 11 December 2003 See page 3, line 44-page 4, line 46, claim 1 and figures 4-5.	6-9
A	JP 2004-276137 A (KOEI K.K.) 07 October 2004 See paragraphs [0015]-[0024] and figure 1.	1-10
A	US 5036631 A (STOLTZ, Woodrow W.) 06 August 1991 See column 1, line 67-column 2, lines 29, claim 1 and figure 2.	1-10
A	KR 20-0365026 Y1 (LEE, Bang Soo) 19 October 2004 See page 3, lines 27-41, claim 1 and figure 2.	1-10
A	JP 2017-219054 A (ISUZU MOTORS LTD.) 14 December 2017 See paragraphs [0013]-[0023] and figures 1-2.	1-10

 Further documents are listed in the continuation of Box C.
  See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	


Date of the actual completion of the international search

26 AUGUST 2019 (26.08.2019)

Date of mailing of the international search report

26 AUGUST 2019 (26.08.2019)

Name and mailing address of the ISA/KR


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**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International application No.

**PCT/KR2018/016068**

Patent document cited in search report	Publication date	Patent family member	Publication date
CN 201428882 Y	24/03/2010	None	
KR 10-0408930 B1	11/12/2003	KR 10-2001-0067996 A	13/07/2001
JP 2004-276137 A	07/10/2004	JP 4352209 B2	28/10/2009
US 5036631 A	06/08/1991	None	
KR 20-0365026 Y1	19/10/2004	KR 10-2006-0005698 A	18/01/2006
JP 2017-219054 A	14/12/2017	None	