

WE CLAIM:

1. A connector for connecting an impeller (1) to a shaft (2), wherein the connector is formed as a unitary body having:
 - a sleeve portion (14) which is frictionally connected on a radially outer surface of a shaft-side hub extension (H) of the impeller, and
 - a threaded portion (12) carrying a thread which screws onto a corresponding threaded portion (7) of the shaft, such that the connector provides a rotationally fixed connection between the impeller and the shaft; andwherein:
 - the hub extension has a central recess, and a part (3) of the connector is inserted into the recess; and
 - the frictional connection between the sleeve portion and the radially outer surface of the hub extension transmits, in use, substantially all of the torque between the shaft and the impeller.
2. A connector according to claim 1, wherein the connector is configured to contact the impeller only on the radially outer surface of the hub extension.
3. A connector according to claim 1, wherein the hub extension has an end face (22), and the connector has an abutment portion (21) which bears against the end face.
4. A connector according to claim 3, wherein the connector is configured to contact the impeller only on the radially outer surface of the hub extension and the end face of the hub extension.
5. A connector according to any one of the previous claims, wherein the part of the connector inserted into the recess includes the threaded portion of the connector.
6. A connector according to any one of the previous claims, wherein the connector is formed of a material having a greater strength than the material of the impeller and having a lower coefficient of thermal expansion than the material of the impeller.
7. A connector according to any one of the previous claims, wherein the sleeve portion extends over at least 50% of the axial length of the hub extension.

8. A connector according to any one of the previous claims, wherein the connector and/or the impeller has one or more centring portions (10; 10a, 10b; 10a, 10b') having respective engagement surfaces which engage with one or more corresponding centring portions (5; 5a, 5b) of the shaft, the threaded portion of the connector and the centring portions of the connector and/or the impeller being distributed along the impeller axis.
9. A connector according to any one of the previous claims, wherein the impeller has a casing and the sleeve portion forms a seal with a section (15) of the casing.
10. A connector according to any one of the previous claims, wherein the sleeve portion is formed with or carries a circumferential oil thrower formation (R) at its radially outer surface.
11. A connector according to any one of the previous claims, wherein a clearance is provided between the part of the connector inserted into the recess and the side surface of the recess.
12. An impeller having a shaft-side hub extension and fitted with a connector according to any one of the previous claims, the sleeve portion of the connector being frictionally connected on a radially outer surface of the hub extension.
13. The impeller fitted with a connector of claim 12, wherein the impeller is a metal impeller.
14. The impeller fitted with a connector of claim 12 or 13, which impeller is connected to a shaft having a corresponding threaded portion, the thread of the threaded portion of the connector screwing onto the corresponding threaded portion of the shaft.
15. A turbocharger having the connected impeller and shaft of claim 14.

Dated this 14th day of July 2014.



DR. SANCHITA GANGULI
of S. MAJUMDAR & CO.
Applicant's Agent