



Napier Turbochargers Limited
NA307 Service Manual

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NAPIER 307

Turbocharger Service Manual

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NAPIER
TURBOCHARGERS

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4.10 Speed probe removal

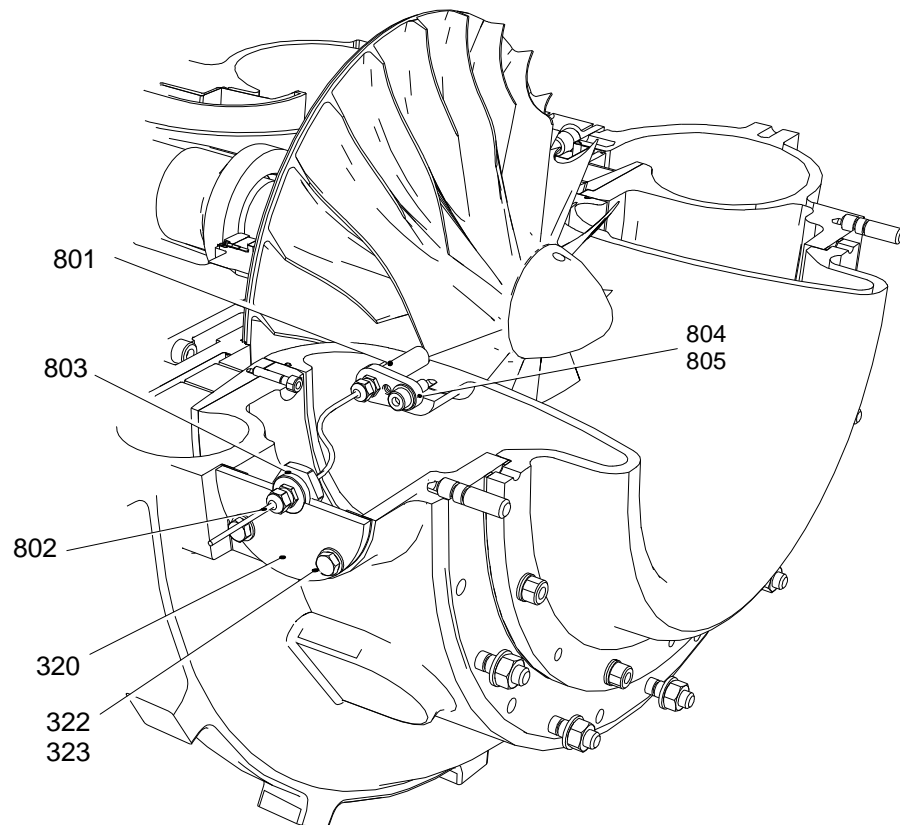


Fig. 13 Location of the speed probe

320	Cover plate	802	Gland nut
322	Setscrew	803	Reducer
323	Washer	804	Speed probe retaining screw
800	Speed probe assembly	805	Washer
801	Inductive pulse sensor/cable		

- Step 1 Undo the cable connector from the in-line speed probe amplifier.
- Step 2 Undo and remove the speed sensor gland nut (802) and grommet.
- Step 3 Remove and remove the four screws (322) retaining the cover plate (320).
- Step 4 Remove the cover plate to gain access to the speed probe sensor (801).
- Step 5 Undo and remove the M8 speed probe retaining screw (804) and washer.
- Step 6 Fit an M8 jacking screw to the threaded hole and use to remove the speed probe.
- Step 7 Withdraw the speed probe taking care not to pull on the cable.
- Step 8 Ensure that the speed probe and cable are stowed safely.

4.11 Dismantling the cartridge - compressor insert removal

The next sequence describes the dismantling of the cartridge assembly. (Refer to Fig. 18).

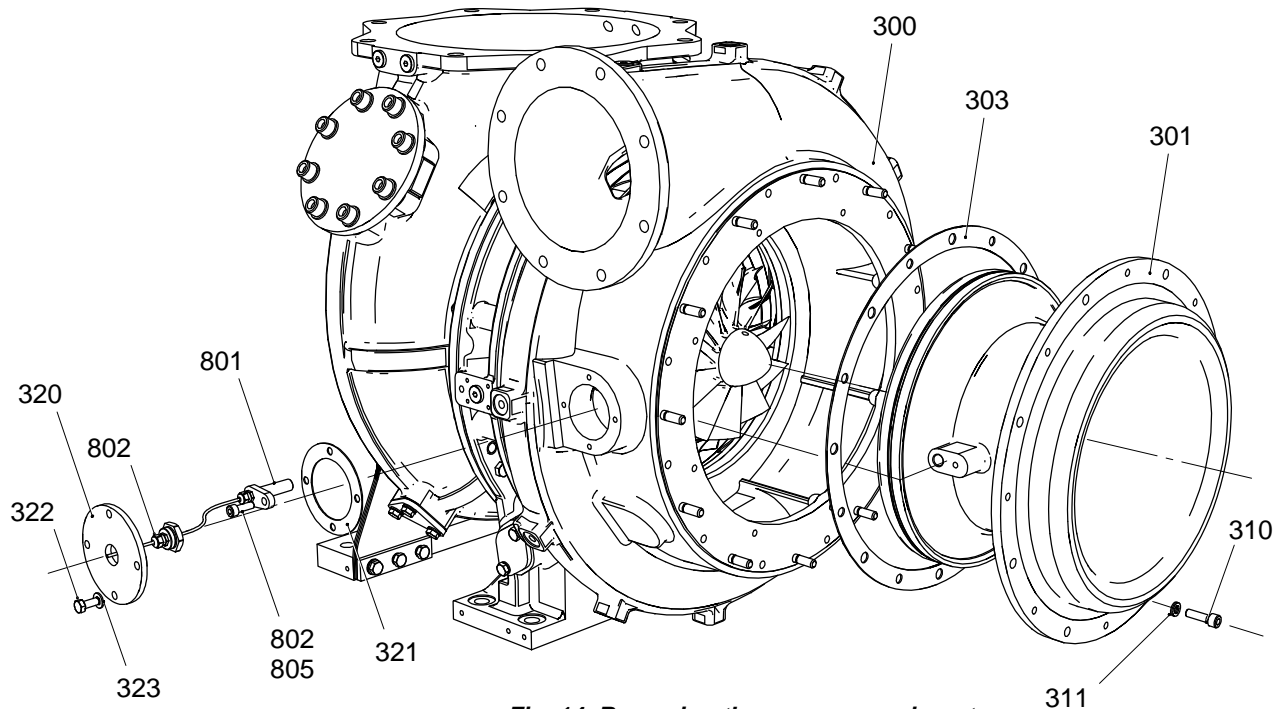


Fig. 14 Removing the compressor insert

300	Compressor outlet casing	323	Flat washer
301	Compressor insert	800	Speed probe assembly
303	Peelable shim	801	Inductive pulse sensor
310	Capscrew	802	Gland nut
311	Disc-lock washer	803	Reducer
320	Cover plate	804	Speed probe retaining screw
321	Cover plate joint	805	Washer
322	Setscrew		



Caution: Ensure that the cartridge assembly is mounted securely before attempting to dismantle it.

NOTE: Before removing the compressor insert, mark the position on the insert and the compressor casing.

- Step 1 Remove two capscrews (310) and disc-lock washers (311) from the compressor insert (301).
- Step 2 Fit the two guide bars to the compressor insert (301).
- Step 3 Remove the speed sensor and cable. Refer to 4.10



Caution: Ensure that the compressor insert remains level during removal or severe damage will occur to the impeller.

- Step 4 Fit the lifting bracket to the compressor insert.
- Step 5 Remove the remaining six caphead screws (310) and disc-lock washers (311) from the compressor insert.

NOTE: If required three jacking screws may be used if the insert is tight.

- Step 6 Carefully withdraw the compressor insert (301) from the compressor outlet casing (300) taking care not to damage the peelable shim (303).

Step 7 Mark the position and orientation of the shim and store carefully.

Step 8 Remove the guide bars which were fitted at Step 2.

NOTE: The torque on the impeller must be broken at this stage before the compressor outlet casing is removed as the casing is required to mount the tooling.

4.12 Removal of the impeller

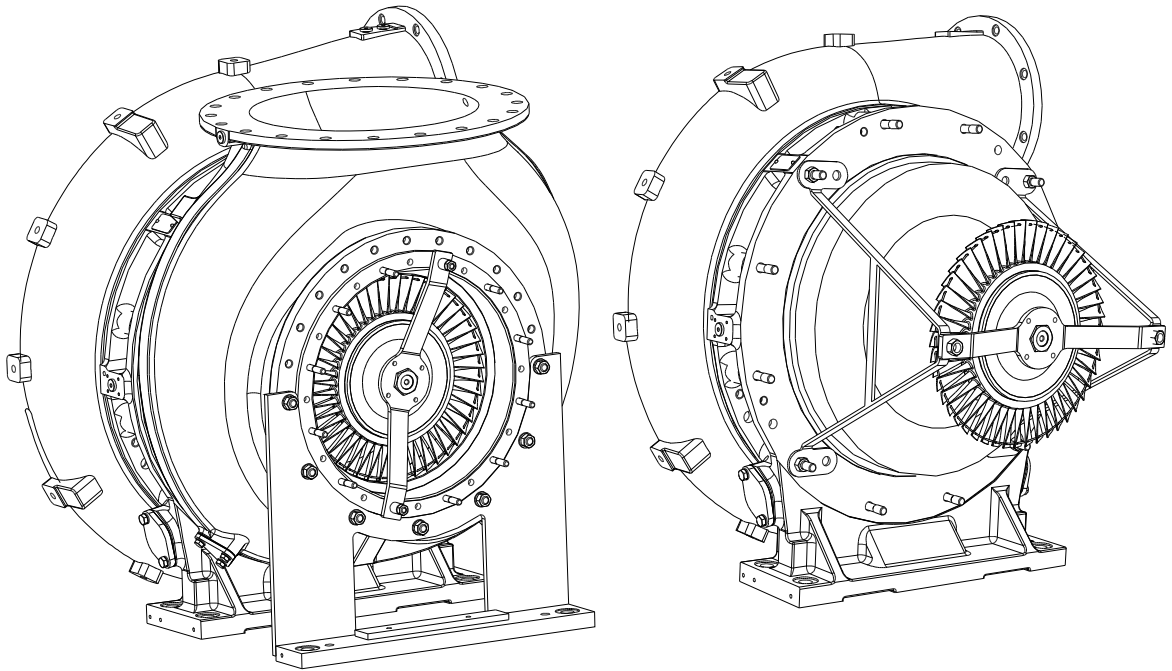


Fig. 15 Two methods of locking the turbine rotor shaft

NOTE: For loosening of the impeller, the turbine rotor shaft must be locked.

There are two methods of locking the turbine rotor shaft. Method 1 uses the locking plate (1008) attached to the turbine outlet casing. Method 2 should be used if working on a cartridge and it requires the pair of shaft locking stays (1011) to be fitted to the main casing (see Fig. 15)

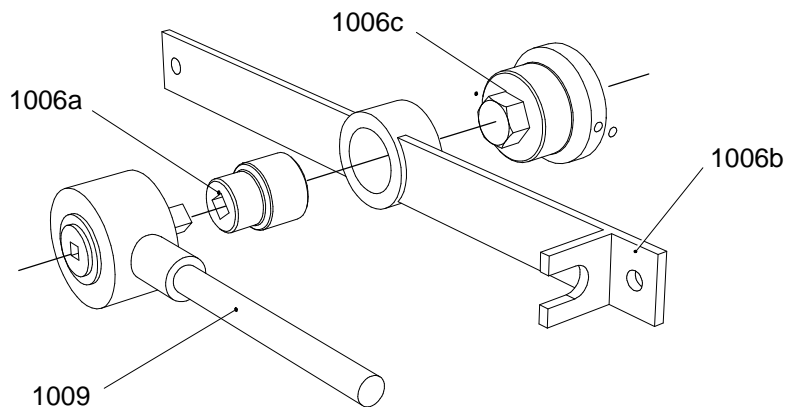


Fig. 16 Impeller removal tool (1006)

1006a Socket

1006b Torque amplifier bracket

1006c Hexagon sleeve and locking screw

1009 Torque multiplier

Chapter 10

Napier 307 spare parts list

10.1 Genuine NAPIER parts

We hold an extensive range of NAPIER spare parts, for all NAPIER products.

All parts are manufactured to OEM drawings, processes and material specifications.

All parts are supplied with a certificate of conformity and authenticity and carry a full OEM warranty.



Caution: Use only genuine NAPIER parts manufactured by Napier Turbochargers Limited. Failure to observe this instruction could result in damage to the turbocharger and engine.

10.2 Procedure for ordering spare parts

When ordering spare parts please specify the following information:

- Turbocharger frame size
- Turbocharger serial number: If this is not visible, please include: engine type and engine serial number
- Installation details: Location and application of the unit including geographical details.
- Parts required. These should be referred to from the parts list.

Following these instructions will enable the unit to be easily identified and so simplify the ordering process.

10.3 Service support

We employ a team of highly skilled and experienced field engineers, trained to operate on all NAPIER products who will attend day or night in response to user requirements.

Furthermore, we can design and operate a planned maintenance schedule, or annual service agreement, to ensure your turbocharger continues to perform at its optimum level.

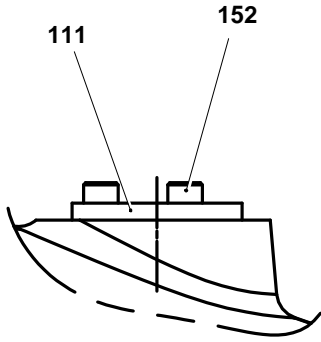
10.4 Factory overhaul

Napier has a dedicated overhaul and remanufacturing facility within its main production facility in Lincoln.

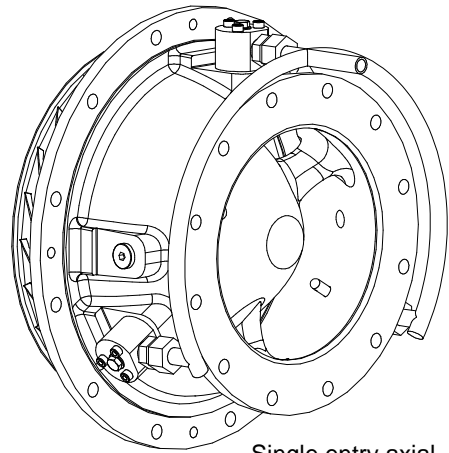
All models of NAPIER turbocharger can be serviced to the highest standard using genuine parts, factory approved quality processes and carrying full OEM warranty.

NOTE: The quantities listed are the maximum required for any combination of build.

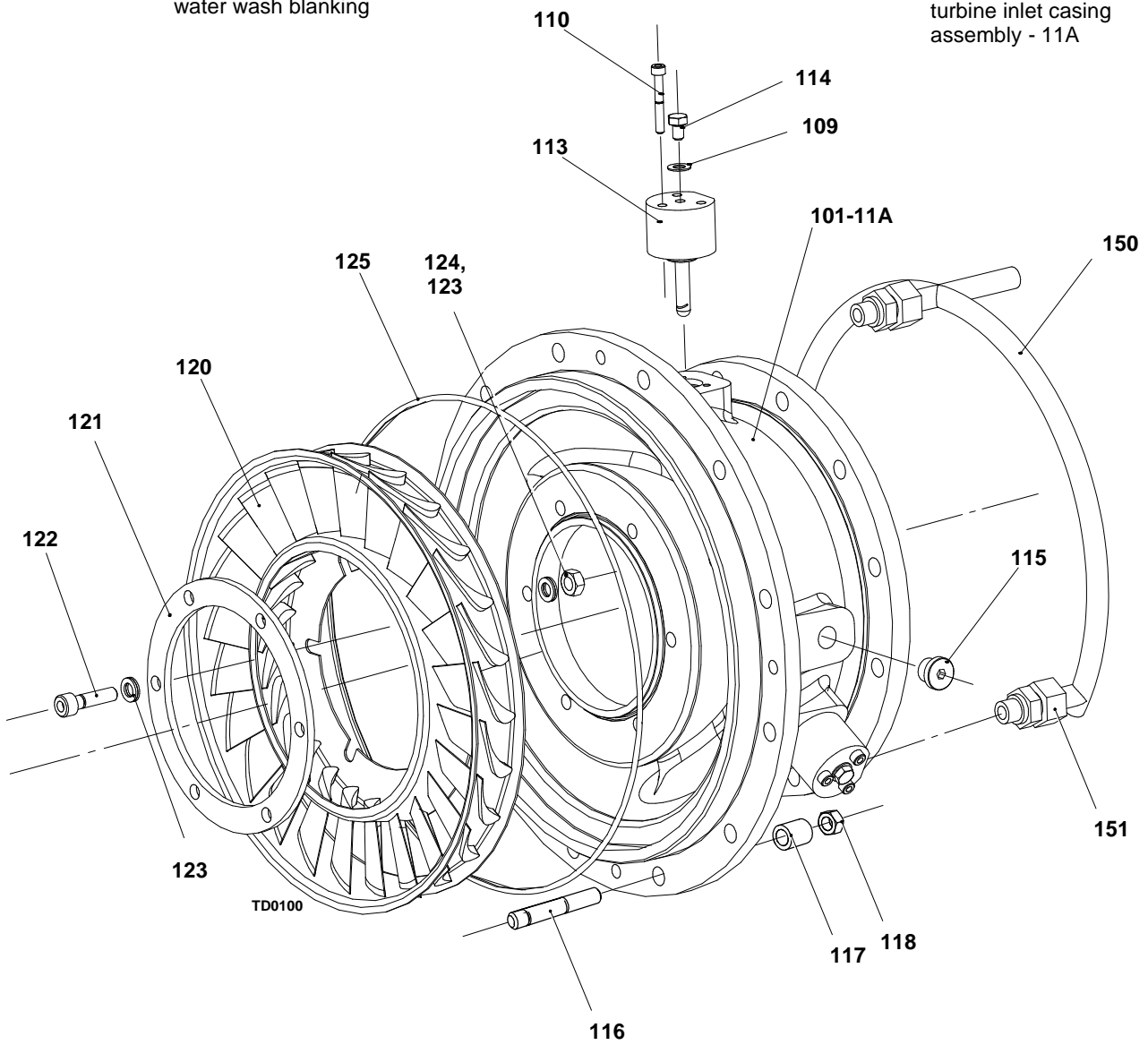
Single entry axial turbine inlet casing - 11A



Scrap view showing water wash blanking



Single entry axial turbine inlet casing assembly - 11A



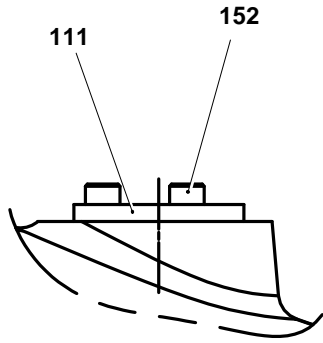
Single entry radial turbine inlet casing - 11A

Code No	Item Description	Quantity
100-11A	Single entry axial turbine inlet casing assembly	1
101-11A	Single entry axial turbine inlet casing	1
109	Washer	3
110	Capscrew (Turbine wash) #	9
111	Water wash blanking plate #	3
113	Water wash injector #	3
114	Setscrew (Water wash injector) #	3
115	Plug	2
116	Stud (Turbine inlet / outlet casing)	12
117	Spacer	12
118	Nut (Turbine inlet / outlet casing)	12
120	Nozzle *	1
121	Clamping ring	1
122	Capscrew (clamping ring)	6
123	Disc-lock washer	12 pairs
124	Nut (to 122)	6
125	'C' seal (Turbine inlet / outlet casing)	1
150	Water wash ring #	1
151	Male stud fitting #	3
152	Capscrew (water wash blanking plate) #	9

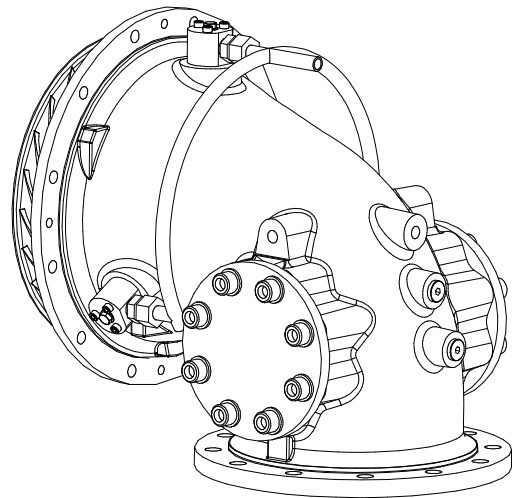
* Details for item 120 are identified in the specification of build found on the turbocharger data plate

Part is not applicable for every turbocharger build

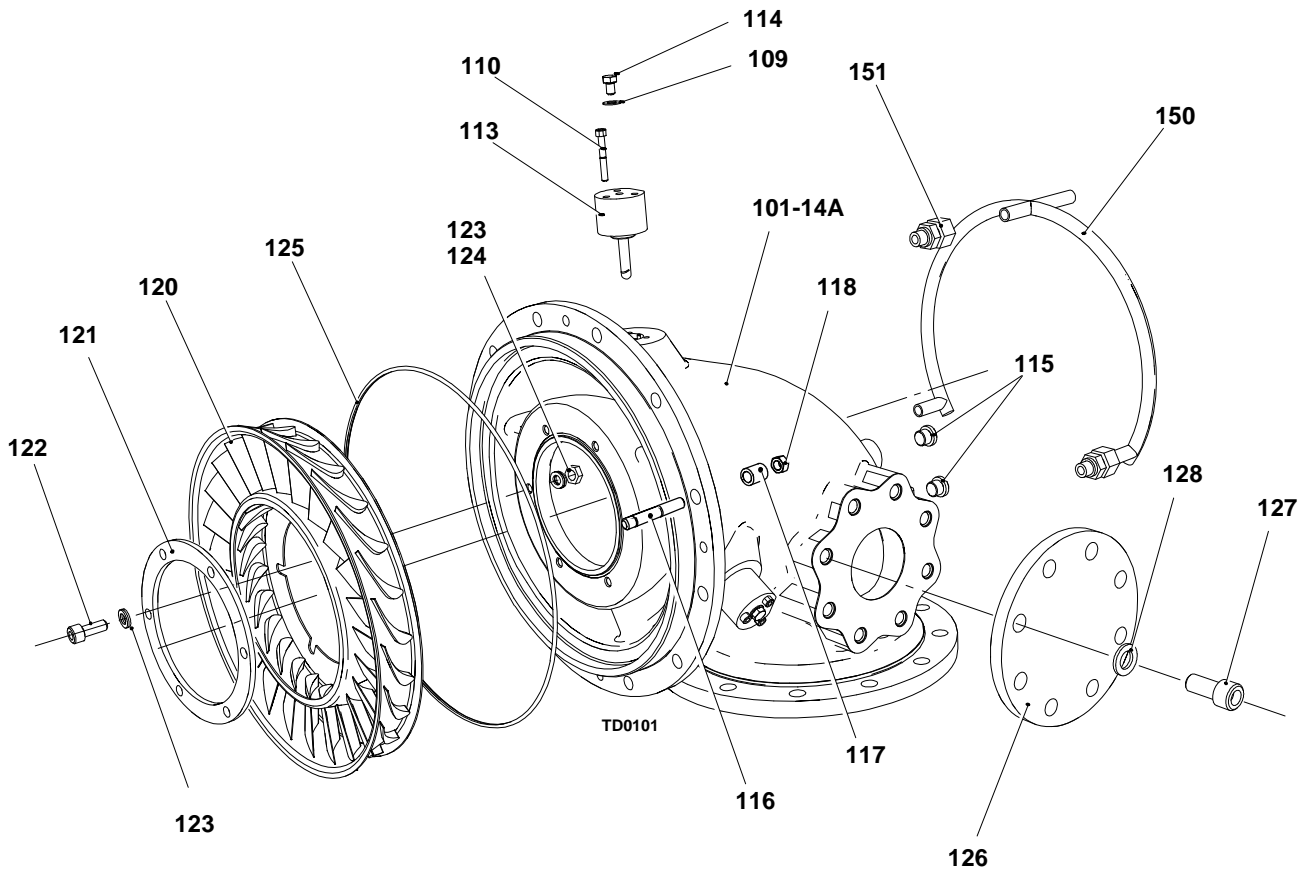
Single entry radial turbine inlet casing - 14A



Scrap view showing water wash blanking



Single entry radial turbine inlet casing assembly - 14A



Single entry radial turbine inlet casing - 14A

Code No	Item Description	Quantity
100-14A	Single entry radial turbine inlet casing assembly	1
101-14A	Single entry radial turbine inlet casing	1
109	Washer	3
110	Capscrew (Turbine wash) #	9
111	Water wash blanking plate #	3
113	Water wash injector #	3
114	Setscrew (Water wash injector) #	3
115	Plug	2
116	Stud (Turbine inlet / outlet casing)	12
117	Spacer	12
118	Nut (Turbine inlet / outlet casing)	12
120	Nozzle *	1
121	Nozzle clamping ring	1
122	Capscrew (clamping ring)	6
123	Disc-lock washer	12 pairs
124	Nut (to 122)	6
125	'C' seal (Turbine inlet / outlet casing)	1
126	Port cover	2
126A	Joint (not illustrated)	2
127	Capscrew	16
128	Washer	16
150	Water wash ring #	1
151	Male stud fitting #	3
152	Capscrew (water wash blanking plate) #	9

* Details for item 120 are identified in the specification of build found on the turbocharger data plate

Part is not applicable for every turbocharger build