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**if it's diesel injection or turbo Denco DO IT.**

## **FITTING INSTRUCTIONS**

### **TOYOTA HZJ 75-78-79**

1. Drain oil and disconnect and remove oil level sender from sump
2. Remove the complete exhaust system.
3. Remove exhaust manifold and fit two new manifold gaskets.
4. Fit turbo and manifold assembly using original 2 cylinder manifold but ***without inner sleeve.***
5. Mark sump for oil return pipe, then remove sump from vehicle. Drill and weld pipe into sump in alignment with turbo oil drain. Re-fit sump and connect oil drain to turbo using small piece of  $\frac{3}{4}$  hose and clamps provided. Refill the sump with oil. Fit oil lie support bracket and clamp to rear bolt on air crossover pipe flange. Fit large clamp to breather tube to locate oil hose.
6. Remove oil sender near starter motor and replace with items 18,19 and 20. Refit oil sender to top of T but backing back slightly. Now connect oil to turbo with flex oil hose.
7. Connect turbo outlet to engine crossover pipe using 2 and 2  $\frac{3}{4}$  turbo hoses and cast HZ001 turbo air pipe.
8. Remove engine breather rubber pipe from rocker cover and crossover pipe and discard. Blank crossover pipe breather with 5/8 cap plug and hose clamp.
9. Fit 2  $\frac{3}{4}$ " turbo hose 2" long to inlet of the turbocharger then fit HZ03 cast elbow with the short end facing convoluted hose to HZ03 casting and HZ2A casting and fit 2  $\frac{3}{4}$ " turbo hose 2" long to Air Cleaner.
10. Connect rocker cover breather to the fitting in the lower elbow HZ03
11. Connect turbo exhaust dump pipe to turbine using V-clamp. Fit mandrel exhaust system in sequence.

**(The new system follows the line of the old system with the new muffler in the same position). Please note-  
RELOCATE WIRING LOOM AWAY FROM EXHAUST BEHIND THE CAB.**

12. Prime turbo with oil and reconnect oil hose.
13. Fit boost gauge and pyrometer
14. Start engine and allow to idle for 5 minutes after oil pressure has been attained and check for leaks.

15. Open fuel 2 segments of the clock inwards (ie from 12 o'clock to 2 o'clock.)
16. Road test and adjust maximum boost to 55 KPA and exhaust gas temperature maximum 500°C under full power load. Set maximum boost to 50KPA (7.5PSI) and set maximum pyrometer reading to 500°C with clean fuel and air filters.

**NOTE:** Maximum exhaust temperature will not be attained until at least two minutes of full throttle operation on dyno or road tests. If road testing, brakes or trailer may have to be used to keep within state speed laws.

### **WARNING TO ALL FITTING STATIONS**

INSTALLATION OF DIESEL TURBOCHARGER EMISSION CONTROL SYSTEMS SHOULD NOT BE UNDERTAKEN UNLESS YOU HAVE A BOOST GAUGE AND A PYROMETER.

**ALL DENCO DIESEL SYSTEMS RUN AT 60 KPA BOOST MAXIMUM AND A MAXIMUM OF 500° UNDER POWER LOAD UNLESS OTHERWISE STATED.**

REMEMBER: OVER FUELLING NOT ONLY CAUSES BLACK SMOKE, IT ALSO GENERATES EXCESS HEAT. EXCESS HEAT CAN ALSO BE CAUSED BY AIR AND EXHAUST RESTRICTIONS SO CHECK ALL AIR CLEANERS AND DUCTING TO THEM FOR RESTRICTIONS BEFORE TESTING. EXHAUST BRAKES AND EXHAUST SYSTEMS SHOULD ALSO BE CHECKED FOR CORRECT OPERATION AND RESTRICTION.

EXCESS HEAT CAUSES MANY PROBLEMS INCLUDING HIGH N<sup>o</sup>X EMISSIONS, LAMINATION OF TURBINE HOUSING AND MANIFOLD, STUD STRETCH AND PREMATURE ENGINE FAILURE.

DENCO DIESEL WILL NOT ACCEPT LIABILITY FOR ANY PARTS RETURNED FOR WARRANTY THAT SHOW ANY OF THE ABOVE SIGNS.

WARRANTY WILL NOT BE CONSIDERED IF REPAIRS ARE CARRIED OUT WITHOUT DENCO DIESEL'S AUTHORISATION.

ALL KITS NOW HAVE DUMP PIPES WITH THE PROVISION FOR VDO PYROMETERS.

REMEMBER: IF SET CORRECTLY OUR PRODUCT IS ENVIRONMENTALLY FRIENDLY AND SAFER TO THE ENVIRONMENT THAN PETROL ENGINES.

### CHECK LIST FOR HZJ75 LANDCRUISER UTE

ITEM	QTY	PART NO.	BIN	DESCRIPTION	CHECK
<b>PRE- ASSEMBLY OF FOLLOWING</b>					
1	1	318276-51		Schwitzer S2A turbocharger with Hi-Flow turbine housing.	
	1	TDM312		Turbo Dynamics twin pulse manifold	
	4	000-106 3667	X30	1 x 10mm studs 1 x 10mm lock nuts	
	4	3LD1	X6	Bronze oil in fitting	
	1	SP8-450504	X21	¼ BSP x 5/16 fitting	
	1	TDM106	S8	1HZ oil out pipe	
	1	6020-002	H19	V clamp (exhaust out)	
2	2	DSF82	S7	Manifold gasket	
<b>AIR IN</b>					
3	1	670BLK-275	V5	2" x 2 ¾ " Turbo hose	
4	2	HSO44P	HCB12	No 44 Hose clamp	
5	2	HSO44P	HCB12	No 44 Hose clamp	
6	1	HZ03	S13	Cast elbow with breather fittings-TDM318	
7	1	TDHZ002A	S14	Cast elbow	
8	1	670BLK-275	V5	2" of 2 ¾ " Turbo hose	
9	1	17881-54420		Convolutted hose	
10	2	HSO44P	HCB12	No 44 Hose Clamp	
<b>AIR OUT</b>					
11	1	670BLK-200	V2	2 1/2" X 2" turbo hose	
12	2	HS032P	HCB9	No 32 hose clmap	
13	1	670BLK-275	V5	2 ½" x 2 ¾" turbo hose	
14	2	HSO44P	HCB12	No 44 hose clamp	
15	1	HZ001A	S12	Cast turbo air out pipe-TDM198	
16	1	A64-02	T13	Boost gauge plug	
<b>OIL IN</b>					
17	1	TDM005	B12	Oil line support brackets	
18	1	A35-02	T14F	1/8 BSP brass T piece	
19	1	A8-0502	T16F	5/16 x 1/8 BSP flare male elbow	

20	1	A27-02	T15F	1/8 x 1/8 BSP hex union	
21	1	HOS32	H19	Oil supply hose	
22	2	542 12 15	H4	12 x 15 pipe clamps	
23	1	542 18 15	H4	18 x 15 Pipe clamps	
24	1	57612	B13	13 x 5mm bolt	
25	1	36805	B13	5mm Nyloc nut	
26	1	826 0602	447	6mm x 20 bolt	
27	1	826 6034	447	6mm Nyloc nut	
<b>OIL OUT</b>					
28	1	TDM107	S2	IHZ oil out elbow stump	
29	1	LOL-12	HOOK	6" x 3/4 " oil hose	
30	2	HSO10P	HCB5	NO 10 hose clamp	
<b>ENGINE BREATHER</b>					
31	1	RBP-5/8	B12	5/8 Cap plug	
32	3	HS010P	HCB5	No 10 hose clamp	
33	1	LOL-10	HOOK	5/8" oil hose x 17" long	
<b>EXHAUST</b>					
34	1	TDM071		Turbo exhaust dump pipe	
35	1	TDM072 TDM302		2 1/2 x 45° pipe with flex 2 1/2 x 45° pipe with flex 2" longer	
36	1	DDHZJ75- 3MB		Pipe	
37	1	DDHZ5-4MB DDHZJ78/79- 4MB		Pipe Pipe	
38	1	TR616CC250 -GP		2 1/2 muffler	
39	1	DDHZJ75- 5MB		Tail pipe	
40	6	C12		Exhaust clamp	
41	1	TDM 452		No 1 Exhaust Clamp	
42	1	TDM 453		No 2 Exhaust clamp	
43	1	TDM 114		Exhaust Clamp	
<b>EXTRAS</b>					
44	1	TDSTI	Z6	Stickers and instructions	

### Picking list for Landcruiser Ute HZJ75

ITEM	QTY	PART NO.	BIN	DESCRIPTION					
<b>PRE- ASSEMBLY OF FOLLOWING</b>									
1	1	318276-51		Schwitzer S2A turbocharger with Hi-Flow turbine housing.					
	1	TDM312		Turbo Dynamics twin pulse manifold					
	4	000-106 3667	X30	1 x 10mm studs 1 x 10mm lock nuts					
	4	3LD1	X6	Bronze oil in fitting					
	1	SP8-450504	X21	¼ BSP x 5/16 fitting					
	1	TDM106	S8	1HZ oil out pipe					
	1	6020-002	H19	V clamp (exhaust out)					
2	2	DSF82	S7	Manifold gasket					
<b>AIR IN</b>									
3	1	670BLK-275	V5	2" x 2 ¾ " Turbo hose					
4	2	HSO44P	HCB 12	No 44 Hose clamp					
5	2	HSO44P	HCB 12	No 44 Hose clamp					
6	1	HZ03	S13	Cast elbow with breather fittings-TDM318					
7	1	TDHZ002A	S14	Cast elbow					
8	1	670BLK-275	V5	2" of 2 ¾ " Turbo hose					
9	1	17881-54420		Convuluted Hose					
10	4	HSO44P	HCB 12	No 44 Hose Clamp					
<b>AIR OUT</b>									
11	1	670BLK-200	V2	2" X 2" turbo hose					
12	2	HS032P	HCB 9	No 32 hose clmap					
13	1	670BLK-275	V5	2 ½" x 2 ¾" turbo hose					
14	2	HSO44P	HCB 12	No 44 hose clamp					
15	1	HZ001A	S12	Cast turbo air out pipe-TDM198					
16	1	A64-02	T13	Boost gauge plug					

<b>OIL IN</b>									
17	1	TDM005	B12	Oil line support brackets					
18	1	A35-02	T14F	1/8 BSP brass T piece					
19	1	A8-0502	T16F	5/16 x 1/8 BSP flare male elbow					
20	1	A27-02	T15F	1/8 x 1/8 BSP hex union					
21	1	HOS32	H19	Oil supply hose					
22	2	542 12 15	H4	12 x 15 pipe clamps					
23	1	542 18 15	H4	18 x 15 Pipe clamps					
24	1	57612	B13	13 x 5mm bolt					
25	1	36805	B13	5mm Nyloc nut					
26	1	826 0602	447	6mm x 20 bolt					
27	1	826 6034	447	6mm Nyloc nut					
<b>OIL OUT</b>									
28	1	TDM107	S2	IHZ oil out elbow stump					
29	1	LOL-12	HOO K	6" x 3/4 " oil hose					
30	2	HSO10P	HCB 5	NO 10 hose clamp					
<b>ENGINE BREATHER</b>									
31	1	RBP-5/8	B12	5/8 Cap plug					
32	3	HS010P	HCB 5	No 10 hose clamp					
33	1	LOL-10	HOO K	5/8" oil hose x 17" long					
<b>EXHAUST</b>									
34	1	TDM071		Turbo exhaust dump pipe					
35	1	TDM072 TDM302		2 1/2 x 45° pipe with flex 2 1/2 x 45° pipe with flex 2" longer					
36	1	DDHZJ75-3MB		Pipe					
37	1	DDHZ5-4MB DDHZJ78/79- 4MB		Pipe Pipe					
38	1	TR616CC250- GP		2 1/2 muffler					
39	1	DDHZJ75-5MB		Tail pipe					
40	6	C12		Exhaust clamp					
41	1	TDM 452		No 1 Exhaust Clamp					

42	1	TDM 453		No 2 Exhaust clamp							
43	1	TDM 114		Exhaust Clamp							
EXTRAS											
44	1	TDSTI	Z6	Stickers and instructions							

## **HZJ75 – 80 WATERCOOLED TURBO ASSEMBLY INSTRUCTIONS**

1. Prepare .52 turbine housing and actuator bracket, leave bolts out of actuator bracket at this stage.
2. Fit 18mm ¼ BSP adaptor nut to 432277 – T3 core with copper washer. Don't tighten yet.
3. fit turbine housing to manifold and T3 core to turbine housing with lock plates and tabs.
4. Tighten 18mm fitting in cor. Loctite and tighten 5/16 x ¼ BSP flare male elbow pointing up.
5. Align position of core and tighten bolts bend lock tabs over.
6. Fit compressor cover and gasket with bolts and lock plates. Align and tighten.
7. Fit 18mm banjo with ¼ BSP 5/16 flare male union. Align clear of oil out position and tighten.
8. Position actuator bracket, fit bolts, tighten check blow off pressure. Fit circlip.
9. Fit oil out pipe and 3 LD oil in fittings.
10. Fit actuator hose and fittings.
11. Add water hoses, clamps bolts, adaptors, banjos etc. Check off all parts.
12. Number and pack.

**HZJ75 LANDCRUISER USTE  
Labour Content**

<b>Part No</b>	<b>Part Description</b>	<b>Work Process</b>	<b>Hours</b>
	Turbo charger assembly		
	Turbine Housing assembly		
	Actuator Bracket		
HZJ75-1	Dump pipe		
TDM	Oil drain		
TDM			
TDM403	Cast elbow with breather fitting		
HZ001	Cast elbow with boost fitting		

# **TURBO DYNAMICS WATERCOOLED TURBO SYSTEM TURBO SYSTEM HZJ75-HZJ80 FITTING INSTRUCTION SUPPLEMENT**

Do **NOT** release radiator cap or drain cooling system when hot. Personal injury (scalding) may result and engine damage may occur if pressure is released from a hot cooling system.

1. Drain coolant from engine and radiator into a clean container for re-use.
2. Install water-in line by removing water temp sender from front LH side of engine. Fit 16 mm banjo bolt with 2 dowdy washers and banjo to sender position. Refit sender to top of banjo bot and seal all threads with loctite or similar.
3. Connect 1200mm line to banjo. Run line down block, across the front of sump and along sump rail right hand side locating with W12-15 hose clamps. Line runs up to inner side of turbo (engine side)
4. Water out line runs from fitting on outside of turbo to heater hose right hand rear of block. Cut heater hose and fit adapter. Align water hose line clear of heat source(turbine housing and Manifold)
5. When turbo system is fitted fill cooling system with collected coolant check for leaks. Start run and check top up cooling system if required

HZJ75-78-80-100  
WATERCOOLED PARTS

PART NO	DESCRIPTION	QUANTITY
TUR103	18mm x ¼ BSP adaptor nut	
4601824	18mm copper washer	
A7-0504	Flare union 16mm Dowdy washer	
MH006	No 6 Hose clamp	
TUR105	5/8 Heater Pipe adaptor 16mm x 1/8 BSP Banjo- Temp sender	
TUR104	16mm Banjo Bolt	
A8-0504		
W12-15		
826.0604		