

# HE & HP Service Data Sheet 1 of 13

## ⚠ WARNING

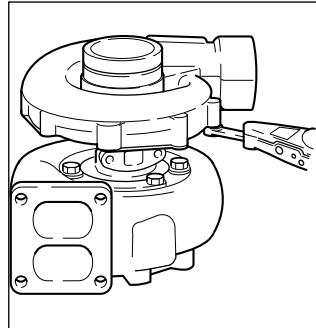


Turbochargers can be hazardous when not used as specified by the manufacturer. To prevent damage and personal injury:

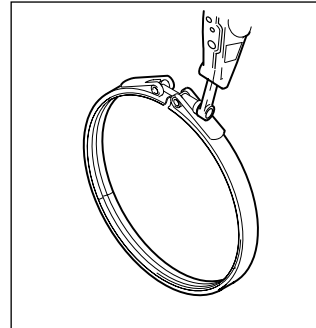
- Always use the turbocharger part number specified by the engine manufacturer.
- Use only in applications approved by the engine manufacturer.
- Do not touch before checking surface temperatures.
- Do not work on a running turbocharger or engine.
- Do not modify the turbocharger in any way.
- Disassemble and re-assemble using the engine manufacturer's instructions.
- Use only approved spare parts.

**For advice on the safe use of turbochargers contact [www.holset.com](http://www.holset.com)**

### Bolt, Compressor Housing (Item 59)



### Locknut, V-Band Compressor (Item 29)



## Turbo Model

## Nm (lb. in)

## Nm (lb. in)

Aluminium  
Housing

Cast Iron  
Housing

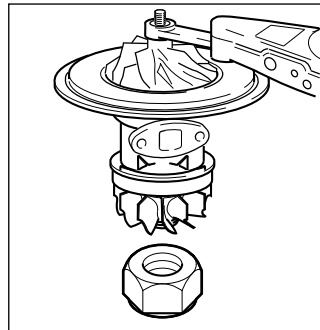
HE201W	N/A	N/A	N/A
HE211W	N/A	N/A	N/A
HE221W	N/A	N/A	N/A
HE300W	N/A	N/A	N/A
HE351CW	N/A	N/A	N/A
HE431/W	N/A	N/A	N/A
HE451/W	N/A	N/A	N/A
HE551/M/W/WM	N/A	8.5 (75)	N/A
HE851	N/A	N/A	12 (106)
HP72	N/A	N/A	N/A
HP82	N/A	N/A	N/A
HP841	N/A	N/A	N/A

## ⚠ CAUTION

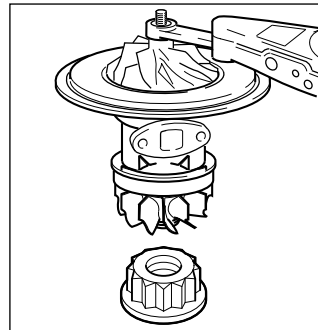
Always refer to [Service Notes](#) before using this service data.

# HE & HP Service Data Sheet 2 of 13

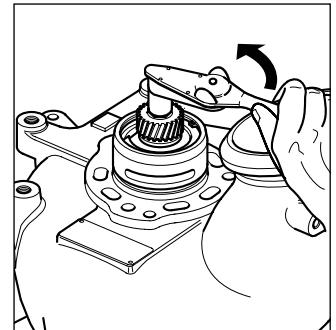
Locknut, Compressor  
Wheel (Item 61)



Locknut, Compressor  
Wheel (Item 61)



Locknut, Gear  
(Item 61)



## Turbo Model

Nm (lb. in)

6 pt.  
Hexagon

Nm (lb. in)

12 pt.  
Hexagon

Nm (lb. in)

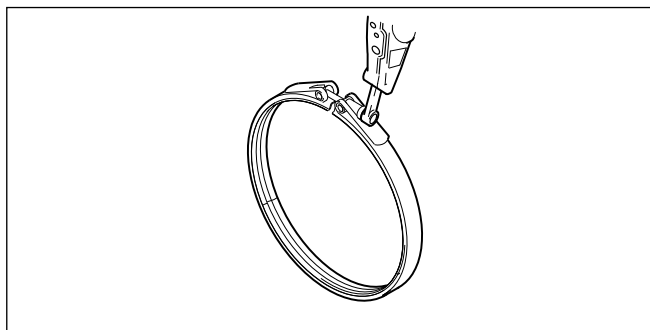
<b>HE201W</b>	T1: 3.9 (35)T2: 4.9 (44) see note 10	N/A	N/A
<b>HE211W</b>	T1: 3.9 (35)T2: 4.9 (44) see note 10	N/A	N/A
<b>HE221W</b>	T1: 3.9 (35)T2: 4.9 (44) see note 10	N/A	N/A
<b>HE300W</b>	N/A	17 (150) see note 13	N/A
<b>HE351CW</b>	N/A	N/A	N/A
<b>HE431/W</b>	N/A	17 (150) see note 12	N/A
<b>HE451/W</b>	N/A	17 (150) see note 12	N/A
<b>HE551/M/W/WM</b>	N/A	21(185)	N/A
<b>HE851</b>	N/A	N/A	N/A
<b>HP72</b>	N/A	N/A	45.2 (400)
<b>HP82</b>	N/A	N/A	50 (443)
<b>HP841</b>	N/A	N/A	45.2 (400)

### CAUTION

Always refer to **Service Notes** before using this service data.

# HE & HP Service Data Sheet 3 of 13

## Locknut, V-Band Turbine (Item 28)



### Turbo Model

Nm (lb. in)

Part No 3539458

Part No 2839329

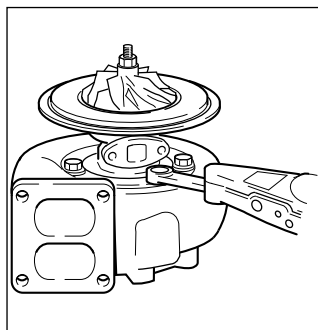
<b>HE201W</b>	8.3+/-0.5(74 +/- 4) (See note 11)	N/A	N/A
<b>HE211W</b>	8.3+/-0.5(74 +/- 4) (See note 11)	N/A	N/A
<b>HE221W</b>	8.3+/-0.5 (74 +/- 4) (See note 11)	N/A	N/A
<b>HE300W</b>	N/A	N/A	N/A
<b>HE351CW</b>	N/A	N/A	N/A
<b>HE431/W</b>	8.5 (75)	N/A	N/A
<b>HE451/W</b>	8.5 (75)	N/A	N/A
<b>HE551/M/W/WM</b>	8.5 (75) (See note 14)	11.3 (100) (See note 14)	15 (133) (see note 14)
<b>HE851</b>	N/A	N/A	N/A
<b>HP72</b>	N/A	N/A	N/A
<b>HP82</b>	N/A	N/A	N/A
<b>HP841</b>	N/A	N/A	N/A

### CAUTION

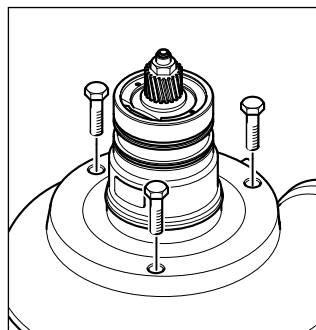
Always refer to [Service Notes](#) before using this service data.

# HE & HP Service Data Sheet 4 of 13

HE Bolt, Turbine  
Housing (Item 57)



HP Bolt, Turbine  
Housing (Item 57)



**Turbo Model**

**Nm (lb. in)**

**Nm (lb. in)**

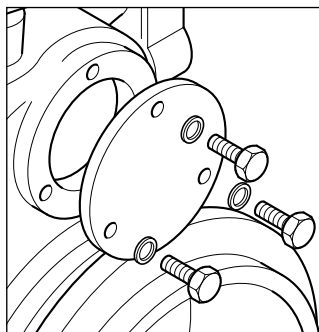
<b>HE201W</b>	N/A	N/A
<b>HE211W</b>	N/A	N/A
<b>HE221W</b>	N/A	N/A
<b>HE300W</b>	26 (230)	N/A
<b>HE351CW</b>	N/A	N/A
<b>HE431/W</b>	31.6 (280)	N/A
<b>HE451/W</b>	31.6 (280)	N/A
<b>HE551/M/W/WM</b>	20.3 (180)	N/A
<b>HE851</b>	20.3 (180)	N/A
<b>HP72</b>	N/A	N/A
<b>HP82</b>	N/A	T1 20 (180) - T2 45 (400)
<b>HP841</b>	N/A	N/A

## **⚠ CAUTION**

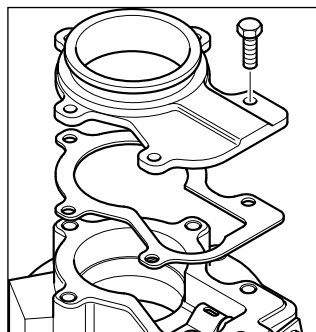
Always refer to **Service Notes** before using this service data.

# HE & HP Service Data Sheet 5 of 13

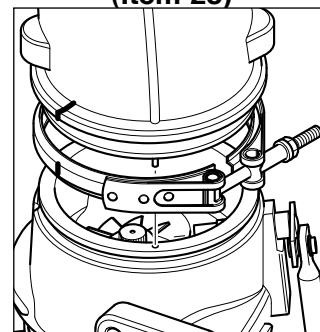
**Bolt, Cover Plate  
(item 67)**



**Bolt, Exhaust Adapter  
(item 67)**



**Locknut, V-band  
discharge pipe  
(Item 28)**



## Turbo Model

Nm (lb. in)

Nm (lb. in)

Nm (lb. in)

<b>HE201W</b>	N/A	N/A	N/A
<b>HE211W</b>	N/A	N/A	N/A
<b>HE221W</b>	N/A	N/A	N/A
<b>HE300W</b>	N/A	25 (220)	N/A
<b>HE351CW</b>	N/A	N/A	8.5 (75)
<b>HE431/W</b>	N/A	25 (220)	N/A
<b>HE451/W</b>	N/A	25 (220)	N/A
<b>HE551/M/W/WM</b>	8.5 (75)	M8: 25 (220) M10: 55 (487)	N/A
<b>HE851</b>	N/A	N/A	N/A
<b>HP72</b>	N/A	N/A	N/A
<b>HP82</b>	N/A	N/A	N/A
<b>HP841</b>	N/A	N/A	N/A

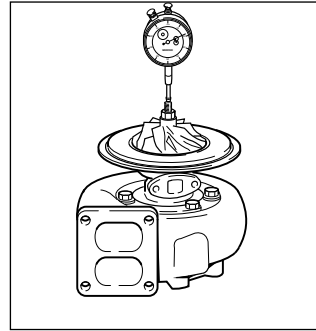
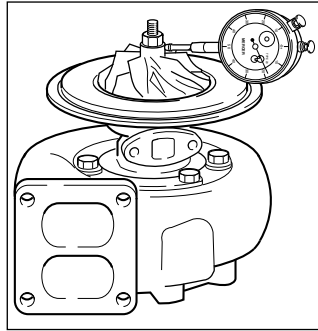
## **⚠ CAUTION**

Always refer to **Service Notes** before using this service data.

# HE & HP Service Data Sheet 6 of 13

**Radial Movement  
(TIR)**

**Axial Clearance**



**Turbo Model**

**mm (in)**

**mm (in)**

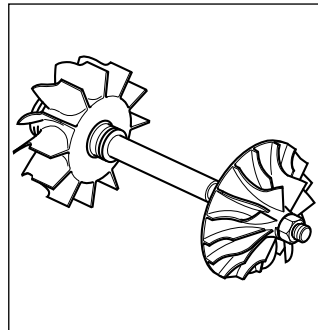
<b>HE201W</b>	0.394 - 0.602 (0.016 - 0.024)	0.010 - 0.076 (0.0004 - 0.003)
<b>HE211W</b>	0.394 - 0.602 (0.016 - 0.024)	0.010 - 0.076 (0.0004 - 0.003)
<b>HE221W</b>	0.394 - 0.602 (0.016 - 0.024)	0.010 - 0.076 (0.0004 - 0.003)
<b>HE300W</b>	0.330 - 0.508 (0.013 - 0.020)	0.025 - 0.127 (0.001 - 0.005)
<b>HE351CW</b>	0.330 - 0.508 (0.013 - 0.020)	0.025 - 0.127 (0.001 - 0.005)
<b>HE431/W</b>	0.330 - 0.508 (0.013 - 0.020)	0.025 - 0.127 (0.001 - 0.005)
<b>HE451/W</b>	0.330 - 0.508 (0.013 - 0.020)	0.025 - 0.127 (0.001 - 0.005)
<b>HE551/M/W/WM</b>	0.483 - 0.711 (0.019 - 0.028)	0.051 - 0.127 (0.002 - 0.005)
<b>HE851</b>	0.254 - 0.787 (0.010 - 0.031)	0.025 - 0.152 (0.001 - 0.006)
<b>HP72</b>	0.23 - 0.40 (0.009 - 0.016)	0.05- 0.18 (0.002 - 0.007)
<b>HP82</b>	0.23 - 0.40 (0.009 - 0.016)	0.05- 0.18 (0.002 - 0.007)
<b>HP841</b>	0.33 - 0.51 (0.013 - 0.020)	0.25-0.125 (0.001 - 0.005)

## **⚠ CAUTION**

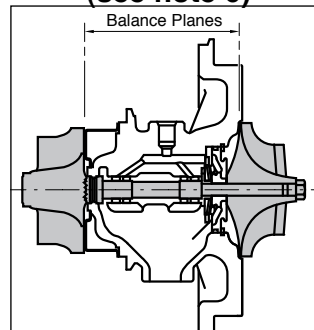
Always refer to **Service Notes** before using this service data.

# HE & HP Service Data Sheet 7 of 13

**Rotor Balance**  
(see note 8)



**Core Balance at 4000 rev/min**  
(see note 9)



## Turbo Model

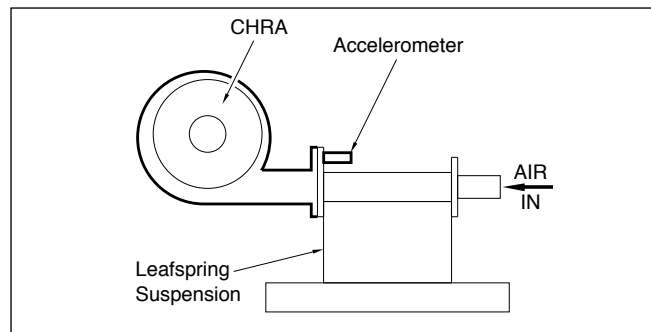
	g. mm (oz. in)		g. mm (oz. in)	
	Turbine End	Compressor End	Turbine End	Compressor End
<b>HE201W</b>	N/A	N/A	N/A	N/A
<b>HE211W</b>	N/A	N/A	N/A	N/A
<b>HE221W</b>	N/A	N/A	N/A	N/A
<b>HE300W</b>	N/A	N/A	N/A	N/A
<b>HE351CW</b>	N/A	N/A	1.3 (0.0017)	1.3 (0.0017)
<b>HE431/W</b>	1.4 (0.0019)	1.4 (0.0019)	1.5 (0.0020)	1.8 (0.0025)
<b>HE451/W</b>	1.4 (0.0019)	1.4 (0.0019)	1.5 (0.0020)	1.8 (0.0025)
<b>HE551/M/W/WM</b>	2.2 (0.003)	4.4 (0.006)	N/A	N/A
<b>HE851</b>	N/A	N/A	N/A	N/A
<b>HP72</b>	N/A	N/A	N/A	N/A
<b>HP82</b>	N/A	N/A	N/A	N/A
<b>HP841</b>	N/A	N/A	N/A	N/A

### **⚠ CAUTION**

Always refer to [Service Notes](#) before using this service data.

# HE & HP Service Data Sheet 8 of 13

## Vibration Level on VSR rig



### Turbo Model

	g-force peak		g-force peak	
	At speeds up to 100,000 rev/min	At speeds between 100,000 and 130,000 rev/min	At speed between 35,000 and 55,000 rev/min	At speed of 100,000 rev/min
<b>HE201W</b>	N/A	1 g see note 6	N/A	N/A
<b>HE211W</b>	N/A	1 g see note 6	N/A	N/A
<b>HE221W</b>	1 g see note 6	2 g see note 6	N/A	N/A
<b>HE300W</b>	N/A	N/A	2 g see note 6	3.5 g see note 6
<b>HE351CW</b>	N/A	N/A	N/A	N/A
<b>HE431/W</b>	N/A	N/A	2 g see note 6	3.5 g see note 6
<b>HE451/W</b>	N/A	N/A	2 g see note 6	3.5 g see note 6
<b>HE551/M/W/WM</b>	N/A	N/A	N/A	N/A
<b>HE851</b>	N/A	N/A	N/A	N/A
<b>HP72</b>	N/A	N/A	N/A	N/A
<b>HP82</b>	N/A	N/A	N/A	N/A
<b>HP841</b>	N/A	N/A	N/A	N/A

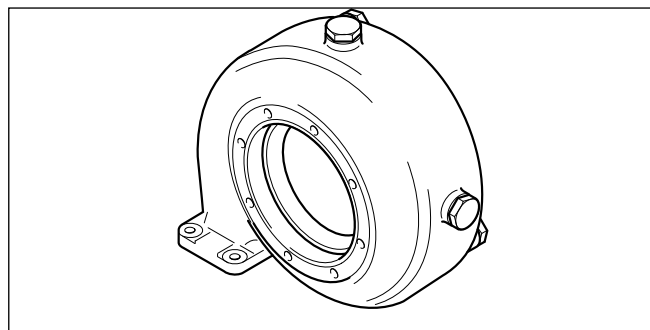
### **⚠ CAUTION**

Always refer to **Service Notes** before using this service data.

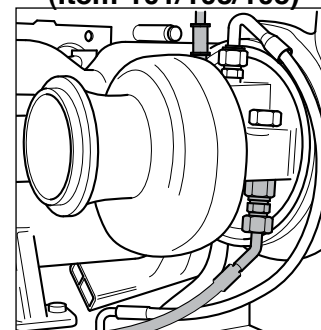


# HE & HP Service Data Sheet 9 of 13

**Turbine Housing Water Fittings**  
**Straight Thread,**  
**(Item 101/102/103)**      **Taper Thread,**  
**(Item 104)**



**Water Fitting,**  
**Bearing Housing**  
**(Item 101/103/105)**



**Turbo Model**

**Nm (lb. in)**

**Nm (lb. in)**

**Nm (lb. in)**

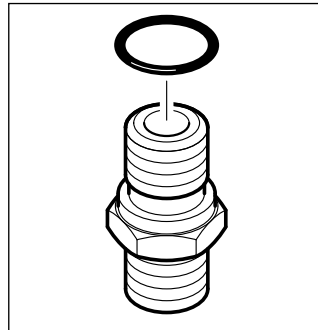
<b>HE201W</b>	N/A	N/A	N/A
<b>HE211W</b>	N/A	N/A	N/A
<b>HE221W</b>	N/A	N/A	N/A
<b>HE300W</b>	N/A	N/A	N/A
<b>HE351CW</b>	N/A	N/A	N/A
<b>HE431/W</b>	N/A	N/A	N/A
<b>HE451/W</b>	N/A	N/A	N/A
<b>HE551/M/W/WM</b>	67.8 (600)	N/A	40 (354)
<b>HE851</b>	74.6 (660)	N/A	N/A
<b>HP72</b>	N/A	N/A	N/A
<b>HP82</b>	N/A	N/A	N/A
<b>HP841</b>	N/A	N/A	N/A

## **⚠ CAUTION**

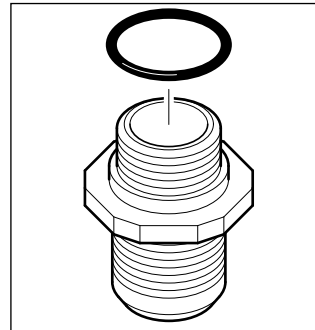
Always refer to **Service Notes** before using this service data.

# HE & HP Service Data Sheet 10 of 13

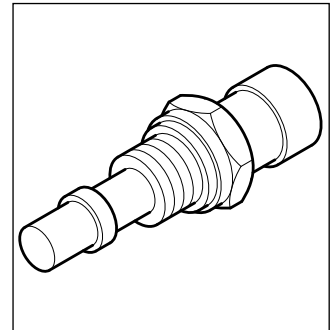
Adapter, Oil  
Inlet (Item 113)



Adapter, Oil  
Drain (Item 116)



Temperature Sensor /  
Blanking Plug  
(Item 158/103)



**Turbo Model**

**Nm (lb. in)**

**Nm (lb. in)**

**Nm (lb. in)**

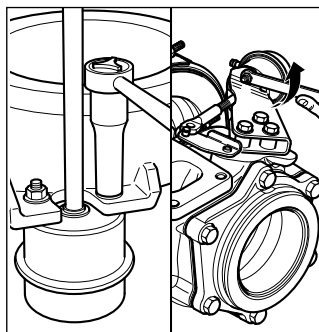
<b>HE201W</b>	24 (212)	N/A	N/A
<b>HE211W</b>	24 (212)	N/A	N/A
<b>HE221W</b>	24 (212)	N/A	N/A
<b>HE300W</b>	35 (310)	N/A	N/A
<b>HE351CW</b>	35 (310)	N/A	N/A
<b>HE431/W</b>	N/A	N/A	N/A
<b>HE451/W</b>	N/A	N/A	N/A
<b>HE551/M/W/WM</b>	N/A	N/A	N/A
<b>HE851</b>	N/A	N/A	N/A
<b>HP72</b>	N/A	N/A	N/A
<b>HP82</b>	N/A	N/A	N/A
<b>HP841</b>	N/A	N/A	N/A

## **⚠ CAUTION**

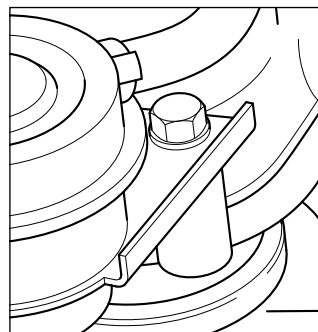
Always refer to **Service Notes** before using this service data.

# HE & HP Service Data Sheet 11 of 13

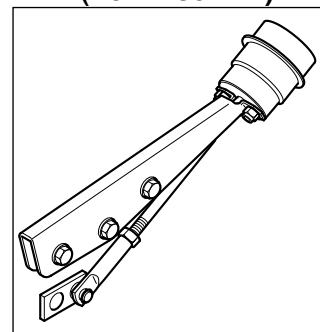
**Nut, Wastegate  
Actuator (Item 83)**



**Screw, Wastegate  
Actuator (Item 106)**



**Screw, Wastegate Brace  
Bracket/ Bracket  
(Item 139/142)**



## Turbo Model

Nm (lb. in)

Nm (lb. in)

Nm (lb. in)

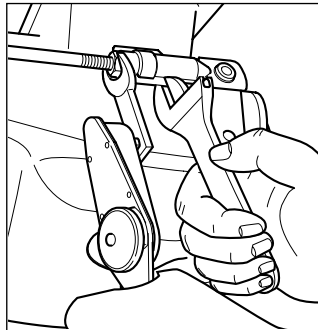
<b>HE201W</b>	8.5 (75)	N/A	N/A
<b>HE211W</b>	8.5 (75)	N/A	N/A
<b>HE221W</b>	8.5 (75)	N/A	N/A
<b>HE300W</b>	8.5 (75)	N/A	25 (220)
<b>HE351CW</b>	8.5 (75)	N/A	N/A
<b>HE431/W</b>	8.5 (75)	N/A	N/A
<b>HE451/W</b>	8.5 (75)	N/A	N/A
<b>HE551/M/W/WM</b>	8.5 (75)	25 (220)	N/A
<b>HE851</b>	N/A	N/A	N/A
<b>HP72</b>	N/A	N/A	N/A
<b>HP82</b>	N/A	N/A	N/A
<b>HP841</b>	N/A	N/A	N/A

## ⚠ CAUTION

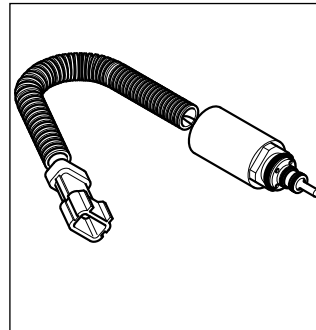
Always refer to **Service Notes** before using this service data.

# HE & HP Service Data Sheet 12 of 13

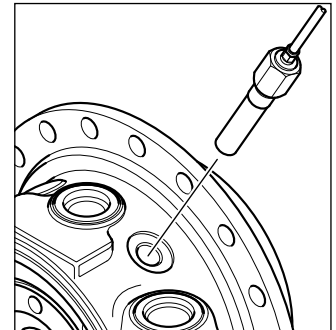
**Jam Nut, Wastegate  
Actuator (Item 128)**



**Command valve  
(Item 169)**



**Speed Sensor  
(Item 112)**



**Turbo Model**

**Nm (lb. in)**

**Nm (lb. in)**

**Nm (lb. in)**

<b>HE201W</b>	8.5 (75)	N/A	N/A
<b>HE211W</b>	8.5 (75)	N/A	N/A
<b>HE221W</b>	6.9 +/- 1.9 (61 +/- 17)	N/A	N/A
<b>HE300W</b>	8.5 (75)	N/A	N/A
<b>HE351CW</b>	8.5 (75)	33.9 (300)	N/A
<b>HE431/W</b>	8.5 (75)	N/A	N/A
<b>HE451/W</b>	8.5 (75)	N/A	N/A
<b>HE551/M/W/WM</b>	8.5 (75)	N/A	N/A
<b>HE851</b>	N/A	N/A	12 (106)
<b>HP72</b>	N/A	N/A	N/A
<b>HP82</b>	N/A	N/A	N/A
<b>HP841</b>	N/A	N/A	N/A

## **⚠ CAUTION**

Always refer to **Service Notes** before using this service data.

# HE & HP Service Data Sheet 13 of 13

## Service Data Sheet Notes

1. The list of turbocharger models represents the majority of current specifications. If your model does not appear in the Service Data Sheets please refer to your nearest distributor for guidance.
2. Service data is sourced from engineering specifications and drawings.
3. All permissible service allowances are included in this data set.
4. Where nominal torque is quoted always aim to achieve this mid-point value during turbocharger assembly processes. To avoid ineffective clamp loading or plastic deformation of components through under or over tightening respectively, nominal torque must be applied using a calibrated torque wrench with not less than +/- 1 Nm (+/- 10 lbf.in) capability. For low torque joints, use equipment that can achieve the specified calibration accuracy. Never use breakaway torque to check clamping efficiency as this can vary up to 40% from nominal.
5. For latest Service Data Sheets and Bulletin Board information refer to [www.holsetaftermarket.com](http://www.holsetaftermarket.com).
6. VSR pass/ fail limits are rig specific and advisory. Refer to repairer to warrant durability, noise and vibration of repair.
7. All fasteners must be visually clean and be lubricated with light oil prior to torque tightening except where the Service Repair Manual instructs to the contrary.  
Exceptions are:
  - HX20W / HX25/25W/27W / HE201W/211W/221W Compressor Wheel Locknut, (61) / V-Band Locknut, (28) - apply molycote.
  - All other V-Band Locknut (28) (29) and Wastegate Valve Body Screw (79) - fit dry.
  - All fasteners treated with a thread locking patch - fit dry and within 5 minutes of insertion. Use slow tightening feed rate to prevent activation of locking patch prior to full thread engagement.
8. Use core balance process when facilities are available.
9. Use VSR process if facilities are available.
10. HE201W/211W/221W compressor wheel nut (61) is tightened in 2 stages. Always use a new nut. Apply Molycote to nut and shaft thread. Torque to T1, loosen and re-torque to T2.
11. Refer to HE201W/211W/221W Service Repair Manual for V- Band tightening procedure.
12. Torque tightening is non preferred alternative. Shaft extension of 0.152 mm - 0.228 mm (0.006 in - 0.009 in) is required for HE451W specifications with 7 mm shaft and 92 mm compressor wheel.
13. Torque tightening is non preferred alternative. Shaft extension of 0.13 mm - 0.20 mm (0.005 in - 0.008 in) is required for HE300W specifications
14. V-band Part nos. 3595763 (11.3 Nm) or 2839329 (15 Nm with c ring seal) are used as alternatives to Part no. 3535399 or equivalents (8.5 Nm). Check part number to ensure correct torque setting is used during reassembly. If in doubt refer to your nearest Holset Distributor for guidance.

### CAUTION

Always refer to **Service Notes** before using this service data.