



HANSA-TMP
MANUFACTURING YOUR SUCCESS

HT 04 / N / 0223 / E

Variable Displacement Open Loop System Axial Piston Pump



TZH-SERIES

Axial Piston Pump for High-Pressure Applications



Interfaces:

- ▶ Flange: SAE or ISO available
- ▶ Key shaft, metric key shaft

Pressure & Flow:

- ▶ Pmax: 350bar
- ▶ Ppeak: 400bar
- ▶ Q: 8cm³/rev.; 16,5cm³/rev.; 45cm³/rev. and 72cm³/rev.

Benefits:

- ▶ Low noise level: 70dB(A) at full cut-off at 350bar
- ▶ Highly-efficient thanks to energy-saving spherical valve plate
- ▶ Very long lifetime with high load resistant HANSA TMP-Bearings
- ▶ Different pressure compensators available
- ▶ Higher pressure allows compact machine design by reduced cylinder diameters and machining cycle time reduction

Features:

- ▶ Spherical valve plate with self-aligning function has minimised the leakage at high pressure
- ▶ Improved mechanical efficiency by reducing friction losses at high pressure
- ▶ Large port diameter for less internal pressure drop

Specifications

PUMP SPECIFICATIONS

Model No.	Rated pressure [Bar]	Maximum operating pressure [Bar]	Volume [cm ³ /rev]	Pressure adjustment range [Bar]	Rotating speed		Mass [kg]	Auxillary pump code
					Min. [min ⁻¹]	Max. [min ⁻¹]		
TZH-0B	350	400	3~8	20~350	500	2000	11.8	not available
TZH-1B	350	400	5~16.5	20~350	500	2000	16	not available
TZH-2B	350	400	28~45	20~350	500	2000	31	3.5~8
TZH-3B	350	400	45~72	20~350	500	2000	43	3.5~16

- ▶ Hydraulic oil Petroleum based hydraulic oil (ISO VG 46~68)
- ▶ Kinematic viscosity 20~200mm²/s optimal operating range: 20~50mm²/s
- ▶ Oil temperature 5~60°C
- ▶ Suction pressure -0.3Bar and upwards
- ▶ Painting color black

AUXILLERY PUMP SPECIFICATIONS (TZH-2B/3B) SUPPORTED

Auxillary pump code	Pump type	Capacity [cm ³ /rev]	Rated pressure [Bar]	Maximum operating pressure [Bar]
3.5	IPH-2	3.6	210	300
5		5.24		
6.5		6.55		
8		8.18		
10	IPH-3	10.2		
13		13.3		
16		15.8		

Application Examples



Pressure Compensation Control Type


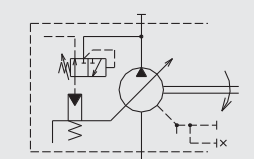
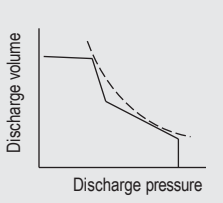
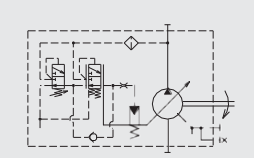
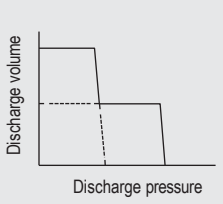
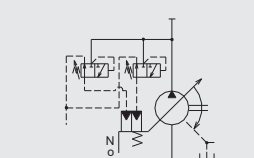
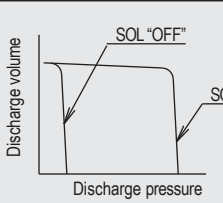
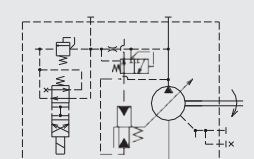
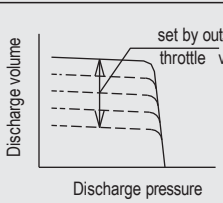
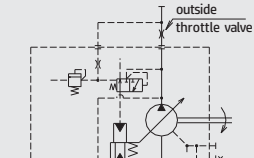
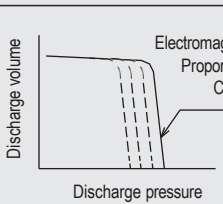
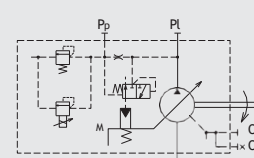
TZH - 3 B - 10 - 72 N 5 - M - 10

Explanation of Model Code

- Design Number: 10 (0B/1B/3B), 11(2B)
- Symbol for pump mounting:
 - Blank: SAE mounting
 - M: ISO mounting
- Pressure Adjustment Range:
 - 5: 20 – 350bar
- Variable control mechanism
 - N: Pressure compensation control
 - L: Constant horsepower control
 - NQ: 2 pressure 2 flowrate control
 - RS: Solenoid cutoff control
 - R: Load sensing control
 - EPR: Electromagnetic proportional pressure control
- Pump Volume:
 - 0B: 8 cm³/rev
 - 1B: 16.5 cm³/rev
 - 2B: 45 cm³/rev
 - 3B: 72 cm³/rev
- Optional – Auxillary fixed discharge pump capacity:
 - 0B/1B not available
 - 2B: 3.5 – 8
 - 3B: 3.5 – 16
- Mounting method
 - B: Flange type mounting
- Pump size:
 - 0, 1, 2, 3
- PZH Series: High-Pressure Variable Piston Pump

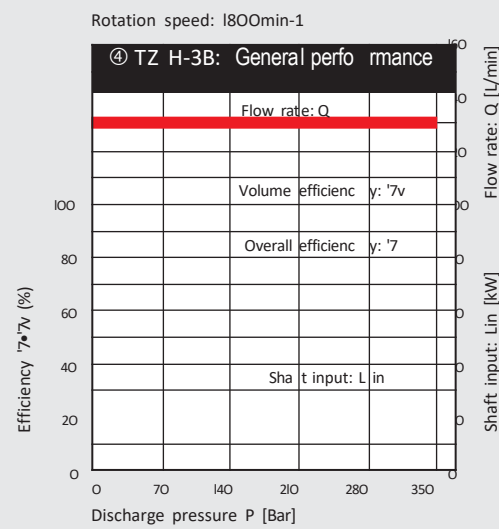
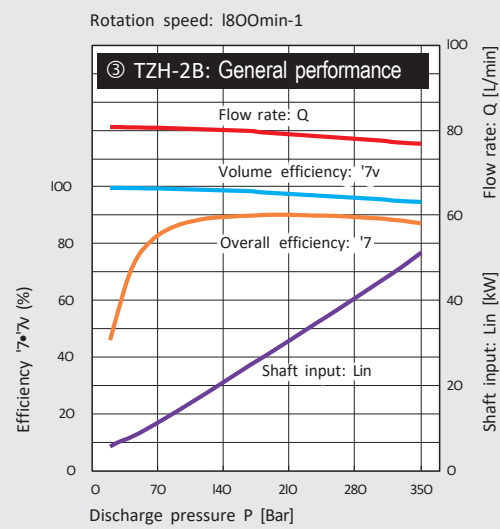
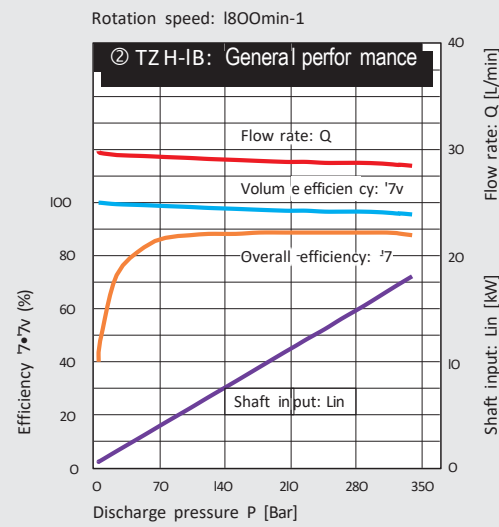
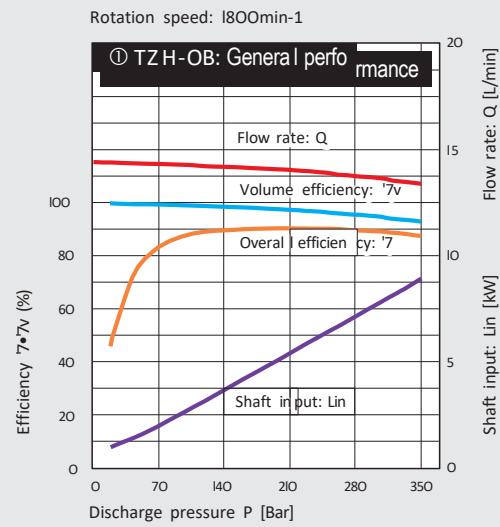
CONTROLLER MECHANISM CHART						
Pump Size	Controller Control Structure					
	N	L	NQ	RS	R	EPR
0B	•	◇	△	△	△	△
1B	•	◇	•	•	•	•
2B	•	•	◇	•	•	•
3B	•	•	◇	•	•	•

• Available. ◇ Not supported. △ Under development please contact our sales department for details.
 Others: Please contact our sales department for the product type and compatibility of the control mechanism.

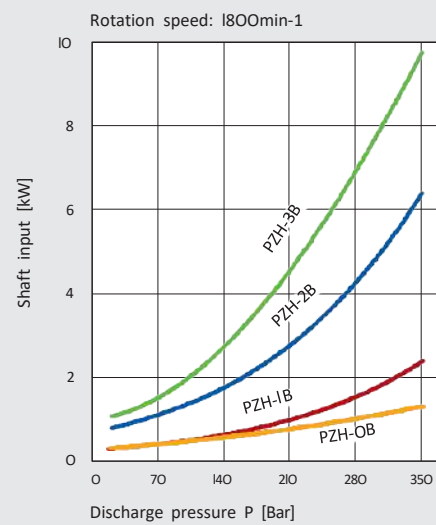
SYMBOL	CHARACTERISTICS / EXPLANATION	HYDRAULIC CIRCUIT
N	 <p>Pressure compensation type (manual system) When the discharge pressure reaches the preset volume set by the pressure compensator, the discharge volume is automatically reduced to hold the pressure at the set pressure</p>	
L	 <p>Constant horsepower control type with pressure compensation (only available for PZH-2B/3B) In addition to pressure compensation control, it dispenses flow according to pressure within a pre-set output range. Energy can be effectively utilized throughout the entire area in accordance with the motor size.</p>	
NQ	 <p>2 pressure 2 flow rate control (only available for PZH-1B) A sequence valve installed in the pump changes the discharge volume in two stages, enabling conventional high/low-pressure control with a single unit and energy saving of the circuit.</p>	
RS	 <p>Solenoid cutoff control type A solenoid valve for unloading is incorporated in the pressure-compensating type to minimize energy loss when pump output is not required. Heat generation can be suppressed during unloading.</p>	
R	 <p>Load sensitive control The pump capacity is controlled so that the differential pressure before and after the externally installed throttle valve is kept constant. The minimum discharge flow rate required for the actuator load saves energy.</p>	
EPR	 <p>Electromagnetic proportional pressure control The compensator's set pressure can be controlled freely by remote control using a solenoid proportional valve, flexibly responding to the machine's load conditions and saving energy.</p>	

Performance Curves

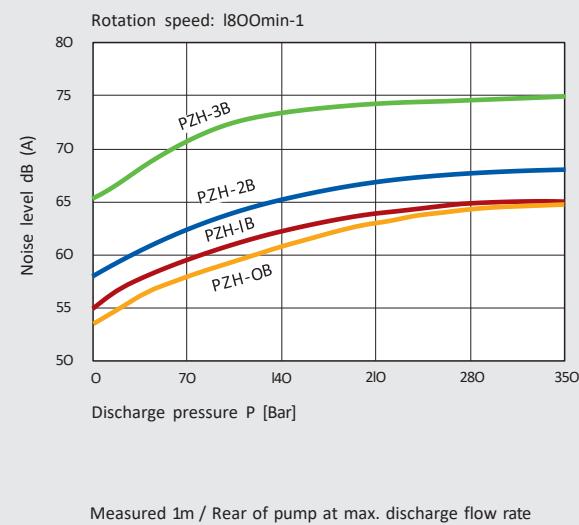
1. General Performance



2. Axial Input At Full Cutoff



2. Noise characteristics



Spare Parts

SEAL KIT											
	TZH-0B		TZH-1B		TZH-2B		TZH-3B				
Seal kit	PHAS-100000		Seal kit	PHAS-101000		Seal kit	PHAS-102000		Seal kit	PHAS-103000	
Oil seal	TCN-254511-V	1	Oil seal	TCN-305011-V	1	Oil seal	TCZ4062910.3-V	1	Oil seal	TCN-456812-V	1
O-ring	NBR-90 G70	1	O-ring	NBR-90 G70	1	O-ring	NBR-90 G70	1	O-ring	NBR-90 G80	1
O-ring	NBR-90 P14	2	O-ring	NBR-90 P14	2	O-ring	NBR-90 P18	2	O-ring	NBR-90 P22.4	1
O-ring	NBR-90 P9	1	O-ring	NBR-90 P9	1	O-ring	NBR-90 P14	2	O-ring	NBR-90 P14	2
Backup ring	RBO-P9	1	O-ring	NBR-90 P5	2	O-ring	NBR-90 P12	1	O-ring	NBR-90 P12	1
			Backup ring	RBO-P9	1	O-ring	NBR-90 P8	1	O-ring	NBR-90 P8	2
						O-ring	NBR-90 P5	2	O-ring	NBR-90 P7	2
						Backup ring	T2-P12	1	Backup ring	T2-P12	1
						O-ring	NBR-90 P9	2	O-ring	NBR-90 G40	1
						O-ring	NBR-90 G75	1	O-ring	NBR-90 P9	2
									O-ring	NBR-90 G85	1

As HANSA-TMP has a very extensive range of products and some products have a variety of applications, the information supplied may often only apply to specific situations.

If the catalogue does not supply all the information required, please contact HANSA-TMP.

In order to provide a comprehensive reply to queries we may require specific data regarding the proposed application.

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