TNV series

ELECTRONIC CONTROL MANUAL

YANMAR

FOR EPA TIER3
3TNV84T-Z
4TNV84T-Z
4TNV98T-Z
4TNV98-Z(R80-7A)
4TNV98-E(R55-7A,R55W-7A)

OPTION 3TNV82A-Z 3TNV88-Z, 3TNV88-E 3TNV88-Z, 4TNV88-E

REFERENCE ONLY
- MINI-EXCAVATOR(5~8TON, -7A SERIES)



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Section 1

SPECIFICATIONS

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Atmospheric conditions and engine configuration affect the rated output of a TNV engine. TNV engines are tested using the methods established by the Society of Automotive Engineers (SAE) J1349 and International Organization for Standardization (ISO) 3046/1. These standards state that engine output (net power rating) should be determined under the following atmospheric conditions (called the standard conditions). If the operating environment for your application differs from these standard conditions see Correcting Observed Power

SPECIFICATIONS

DI Series

3TNV82A-B 3TNV82A-Z (Option Electronic Control System)

	Fno	ine mode	1	3TNV82A-B/3TNV82A-Z													
		classifica		CL						VM	_						
1	Туре		_			Ve	ertical, 4	-cycle v	vater-co	oled die	sel engi	ne					
2	Combustic system	on	_					Direc	t injectio	n (DI)							
3	No. of cylin Bore × Stro		n - mm × mm	3 - 82×84													
4	Displaceme	ent	l						1.331								
	Rated engine min ⁻¹						2200	2300	2400	2500	2600	2700	2800		3000		
	Output	Cont. rating	kW			<u>'</u>						l.					
5	(Gross) *1	Rated output	kW				16.5	17.3	18.1	18.9	19.7	20.5	21.3		23.0		
	Output	Cont. rating	kW														
	(NET)	Rated output	kW				16.0	16.8	17.5	18.2	19.0	19.7	20.4		21.9		
6	Maximum i speed	Ü	min ⁻¹ ±25				2375	2485	2570	2675	2780	2890	2995		3180		
7	Specific fue consumption		g/kWh	_	≤245 ≤252									≤258			
8	Exhaust ga	as temp.	°C (°F)				≤580	≤590	≤600	≤610	≤620	≤630	≤640		≤660		
9	Compressi	on ratio	_	1					19.2	L	L		l .				
10	Diesel fuel pressure	injection	MPa (kgf/cm ²)	$19.6_{0}^{+1.0} (200_{0}^{+10})$													
11	Main shaft	side	_					Flywheel side									
12	Rotation di	rection	_							ed from flywheel side)							
13	Governor		_	Mecha	anical gove	ernor (All-spee	-			govern	or (All-s _l	peed gov	/ernor)			
14	Aspiration		_	Natural aspiration													
15	Cooling sys		_						oled Wit								
16	J		_			Force	ed lubrio		ith multi		ochoid p	oump					
	Starting sy		_						ctric sta		,						
18	Charging s		_						or (12 VI								
19	Starting aid Engine oil		_				Sup	ei-quici	k Heatin	y Glow	Jiug						
20	pressure	speed	MPa					0.34±	0.05 (3.	5±0.5)							
21	Oil pan	Full	l	5.5													
	capacity Engine coc	Useful plant	l					4.0./	1.9	L A							
22	capacity Cooling far		l					1.8 (Engine	only)							
23	dia. × No. o	of blades	mm			Ма	de by re	esin, Pu	sher, F	Туре - ф	335(NF))×6					
24	Crank V-pulle		mm/mm	φ120 / φ90					φ	Ι10 / φ1	10						

Note: This table is subject to change for performance improvement.

^{*1:} Gross outputs are theoretical, calculated from cooling fan formula. These are for reference only.



3TNV84T-Z (Electronic Control System)

		classifica	tion	3TNV84T-Z												
	_		lion	CL	-						VM					
	Type		_				V	ertical, 4	-cycle v	vater-co	oled die	sel engi	ne			
2	Combustio system		_						Direc	t injectio	on (DI)					
	No. of cylin Bore \times Stro		$\begin{array}{c} n\text{ -}\\ mm\times mm \end{array}$						3	3 - 84×9	0					
4 I	Displaceme	ent	l							1.496						
	Rated engi	ne	min ⁻¹													
	Output	Cont. rating	kW													
5	(Gross) *1	Rated output	kW													
	Output	Cont. rating	kW													
	(NET)	Rated output	kW													
0 8	Maximum id speed		min ⁻¹ ±25													
	Specific fue consumption		g/kWh													_
	Exhaust ga		°C (°F)													
-	Compression		_													
10	Diesel fuel i pressure	njection	MPa (kgf/cm ²)													
11 I	Main shaft	side								wheel s						
12 I	Rotation dir	rection					Co	unterclo	ckwise ((Viewed	from fly	wheel si	ide)			
13 (Governor		_					Electron				overnor	·)			
14	Aspiration		_							rbochar						
15 (Cooling sys	stem						Lic	quid-Co	oled Wit	h Radia	tor				
16 I	Lubricating	system	_				Forc	ed lubric	ation w	ith multi	-stage tr	ochoid p	oump			
	Starting sys		_							ctric sta						
	Charging s		_								DC/40 A	•				
	Starting aid		_					Sup	er-quicl	k Heatin	g Glow _l	olug				
	Engine oil pressure	Rated speed	MPa													
21	Oil pan	Full	l													
(capacity	Useful	l													
22 (Engine coo capacity		l													
23 (Cooling fan dia. × No. c	f blades	mm													
	24 Crank V-pulley dia./ Fan V-pulley dia. mm/mm															

Note: This table is subject to change for performance improvement.

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^{*1:} Gross outputs are theoretical, calculated from cooling fan formula. These are for reference only.

3TNV88-B 3TNV88-Z (Option Electronic Control System)

	Eng	ine mode	l						3TNV8	88-B/3TN	IV88-Z					
		classifica		C	 :L						VM					
1	Туре		_				Ve	ertical, 4	-cycle w	vater-co	oled die	sel engi	ne			
2	Combustic	on	_							t injectio						
3	No. of cylin Bore × Stro		n - mm × mm	3 - 88×90												
4	Displaceme	ent	l	1.642												
	Rated engi	ne	min ⁻¹	1500	1800			2200	2300	2400	2500	2600	2700	2800		3000
	Output	Cont. rating	kW	12.7	15.4											
5	(Gross) *1	Rated output	kW	13.9	16.9			20.3	21.3	22.2	23.2	24.2	25.1	26.0		28.1
	Output Cont. rating		kW	12.3	14.8						1					1
	(NET)	Rated output	kW	13.5	16.3			19.9	20.7	21.6	22.6	23.5	24.3	25.2		27.1
6	Maximum idling speed min ⁻¹ ±25		min ⁻¹ ±25	1600	1895			2400	2510	2590	2690	2810	2920	2995		3210
7	Specific fuel consumption		g/kWh				≤245					≤2	52		≤258	
8	Exhaust gas temp. °C (°C (°F)	≤540	≤560			≤590	≤600	≤610	≤620	≤630	≤640	≤650		≤670
9	Compression	on ratio	_							19.1						
10	Diesel fuel i	injection	MPa (kgf/cm ²)	$19.6_{0}^{+1.0} (200_{0}^{+10})$												
11	Main shaft	side	_	Flywheel side												
12	Rotation di	rection	_	Counterclockwise (Viewed from flywheel side)												
13	Governor		_	Mechanical governor (All-speed governor) / Electronic governor (All-speed governor)												
14	Aspiration		_	Natural aspiration												
15	Cooling sys		_	Liquid-Cooled With Radiator Forced lubrication with multi-stage trochoid pump												
16	Lubricating		_				Force	ed lubrio				ochoid p	oump			
17	Starting sys		_							ctric star		`				
18	Charging s		_							or (12 VI						
19	Starting aid		_					Sup		(Heatin		biug				
20	Engine oil pressure	speed	MPa						0.34±0	0.05 (3.	5±0.5)					
21	Oil pan	Full	l		6.7											
Ľ.	capacity	Useful	l	2.8												
22	Engine coo		ı	2.0 (Engine only)												
23	Cooling fan dia. × No. o	of blades	mm	Made by resin, Pusher, F Type - φ335(NF)×6												
24	Crank V-pu Fan V-pulle		mm/mm	φ120	/ _{\$\phi 90}					φ´	10 / φ1	10				

Note: This table is subject to change for performance improvement.

^{*1:} Gross outputs are theoretical, calculated from cooling fan formula. These are for reference only.

3TNV88-U 3TNV88-E (Option Electronic Control System)

Ī	Eng	ine mode	l				3TNV8	8-U/3TI	NV88-E						
†		classifica		CL					VM						
1	Туре		_		V	ertical, 4	l-cycle v	vater-co	oled die	sel engi	ne				
2	Combustic system	on	_				Direc	t injectio	on (DI)						
3	No. of cylin Bore × Stro		n - mm × mm	3 - 88×90											
4	Displaceme	ent	l					1.642							
	Rated engi		min ⁻¹		2100	2200	2300	2400	2500	2600	2700	2800		3000	
	Cont. Output rating		kW		•			l .							
5	(Gross) *1	Rated output	kW		17.7	18.6	19.4	20.3	21.2	22.1	23.0	23.9		25.7	
	Output	Cont. Output rating				_									
	(NET)	Rated output	kW		17.3	18.1	18.9	19.7	20.5	21.3	22.2	23.0		24.6	
6	Maximum i speed		min ⁻¹ ±25		2290	2400	2510	2590	2690	2810	2920	2995		3210	
7	consumption				≤245					≤2	!52		≤2	258	
8	Exhaust ga		°C (°F)		≤570	≤580	≤590	≤600	≤610	≤620	≤630	≤640		≤660	
9	Compressi	on ratio	_					19.1							
10	Diesel fuel pressure	injection	MPa (kgf/cm ²)	$19.6_{0}^{+1.0} (200_{0}^{+10})$											
11	Main shaft	side	_				Fly	wheel s	ide						
12	Rotation di	rection		Counterclockwise (Viewed from flywheel side)											
13	Governor			Mechanical governor (All-speed governor) / Electronic governor (All-speed governor)											
14	Aspiration			Natural aspiration											
15	Cooling sys	stem		Liquid-Cooled With Radiator											
16	Lubricating	system	_	Forced lubrication with multi-stage trochoid pump											
17	Starting sys	stem	_				Ele	ctric sta	rting						
18	Charging s	ystem	_				Alternato	or (12 VI	DC/40 A	١)					
19	Starting aid	d device	_			Sup	er-quick	k Heatin	g Glow	plug				_	
20	Engine oil pressure	Rated speed	MPa				0.34±	0.05 (3.	5±0.5)						
21	Oil pan	Full	l		6.7										
۲ ا	capacity	Useful	l	2.8											
22	Engine coo		l	2.0 (Engine only)											
23	Cooling far dia. × No. o	of blades	mm Made by resin, Pusher, F Type - φ335(NF)×6												
24 Crank V-pulley dia./															

Note: This table is subject to change for performance improvement.

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4TNV84T-Z

4 1-	Engine	alaacie.	-	4TNV84T-Z												
4		ciassifica	tion	CL	-						VM					
1 1	Туре		_			•	V	ertical, 4	-cycle v	vater-co	oled die	sel engi	ne			
	Combustio system	n	_						Direc	t injectio	on (DI)					
	No. of cylin Bore × Stro		n - mm × mm						4	4 - 84×9	0					
4	Displaceme	ent	l							1.995						
	Rated engi	ne	min ⁻¹													
	Output	Cont. rating	kW													
5	(Gross) *1	Rated output	kW													
	Output	Cont. rating	kW				ı	T		T	T	ı	1	1		1
	(NET)	Rated output	kW													
6	Maximum id speed		min ⁻¹ ±25													
′ (Specific fue consumption	n	g/kWh													
	Exhaust ga		°C (°F)													
	Compression		_													
10	Diesel fuel i pressure	-	MPa (kgf/cm ²)													
	Main shaft		_	Flywheel side												
	Rotation di	rection	_	Counterclockwise (Viewed from flywheel side)												
	Governor		_					Electron		rnor (All-		overnor	·)			
	Aspiration		_							ırbochar						
	Cooling sys		_						•	oled Wit						
	Lubricating	_	_				Forc	ed lubric		ith multi		ochoid _l	oump			
	Starting sys		_							ctric sta		`				
	Charging s		_							or (12 VI						
	Starting aid		_					Sup	er-quici	k Heatin	y GIOW	piug				
20	pressure	Rated speed	MPa													
I 21 ⊢	Oil pan	Full	l													
		Useful	l			П	1	П				1			ı	
22	Engine coo capacity		l													
23	Cooling fan dia. × No. c	of blades	mm													
	Crank V-pu Fan V-pulle		mm/mm													

Note: This table is subject to change for performance improvement.

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