Small traction motive power

NexSys®

POWER WHEN YOU NEED IT

NexSys® Technical Manual

Designed to change the way you work

EnerSys®

Power/Full Solutions

CONTENTS

INTRODUCTION

Since their introduction in the early 1990s, thin plate pure lead (TPPL) blocs have been established as a premium high performance bloc suitable for a wide range of demanding applications. Today, the TPPL technology can be found in applications as diverse as emergency power, avionics, medical, military and consumer equipment.

NexSys® blocs use the principles of advanced thin plate pure lead technology, to achieve exceptionally high performance, energy density and cycling capability. These characteristics make the NexSys range ideal for use in motive power applications such as Floor-care, Pallet Trucks, AGV's, Personnel Carriers and Utility Vehicles.

This manual describes the NexSys bloc range, physical characteristics and the basic information on storage operation and maintenance.

SAFETY PRECAUTIONS

Motive Power blocs for small traction Valve Regulated Lead Acid (VRLA) NexSys series: TPPL technology.

NexSys blocs are designed using proven gas recombination technology, which removes the need for regular water addition. The use of gas recombination technology for lead acid blocs has completely changed the concept for motive power. This new technology gives the user greater freedom to use valve regulated lead acid blocs in a much wide range of applications.

The minimal level of gas emissions from this type of bloc allows the bloc to be used in applications where previous restrictions might have been enforced. The NexSys range is considered to be maintenance free, therefore there is no need for any routine water refilling to be carried out on the bloc.

- Pay attention to the operating instructions and keep them close to the bloc.
- Work on blocs must only be carried out by skilled personnel!

- Use protective glasses and wear safety clothing when working on blocs.
- Adhere to the current accident prevention rules in the country where the blocs is used or DIN EN 50272-3, DIN EN 50110-1.

- Keep children away from batteries!

- No smoking!
- Do not expose blocs to naked flames, glowing embers or sparks, as it may cause the battery to explode.
- Avoid sparks from cables or electrical apparatus as well as electrostatic discharges.

- Acid splashes into the eyes or on the skin must be washed immediately with an abundance of clean water. After abundant flushing consult a doctor immediately!
- Clothing contaminated by acid should be washed in water.

- Risk of explosion and fire
- Avoid short circuits: do not use non-insulated tools, do not place or drop metal objects on top of the battery. Remove rings, wristwatches and articles of clothing with metal parts that might come into contact with the battery terminals.

- Electrolyte is highly corrosive.
- In the normal operation of this battery, contact with acid isn't possible. If the cell containers are damaged, the immobilised electrolyte (absorbed in the separator) is corrosive like liquid electrolyte.

- Batteries and monoblocs are heavy. Ensure secure installation! Use only suitable handling equipment.
- Lifting hooks must not damage the blocs, connectors or cables.
- Do not place batteries in direct sunlight without protection. Discharged batteries can freeze. For that reason, always store in a frost–free zone.

- Dangerous electrical voltage!
- Avoid short circuits: NexSys batteries are capable of high short circuit currents.
- Caution — metal parts of the batteries are always live: do not place tools or other objects on the battery!

- Pay attention to the hazards that can be caused by batteries.

Warning: Do not use any type of oil, organic solvent, alcohol, detergent, strong acid, strong alkali or petroleum based solvent or ammonia solution to clean the monoblocs. Such materials may cause permanent damage to the monobloc casing.

RECOMBINATION TECHNOLOGY

How gas recombination works:

When a charge current flows through a fully charged conventional lead acid cell, electrolysis of water occurs to produce hydrogen from the negative electrode and oxygen from the positive electrode. This means that water is lost from the cell and regular topping up is needed.

However, evolution of oxygen gas and hydrogen gas does not occur simultaneously, because the efficiency of recharge of the positive electrode is not as good as the negative electrode. This means that oxygen is evolved from the positive plate before hydrogen is evolved from the negative plate.

At the same time that oxygen is evolved from the positive electrode, a substantial amount of highly active spongy lead exists on the negative electrode before it commences hydrogen evolution.

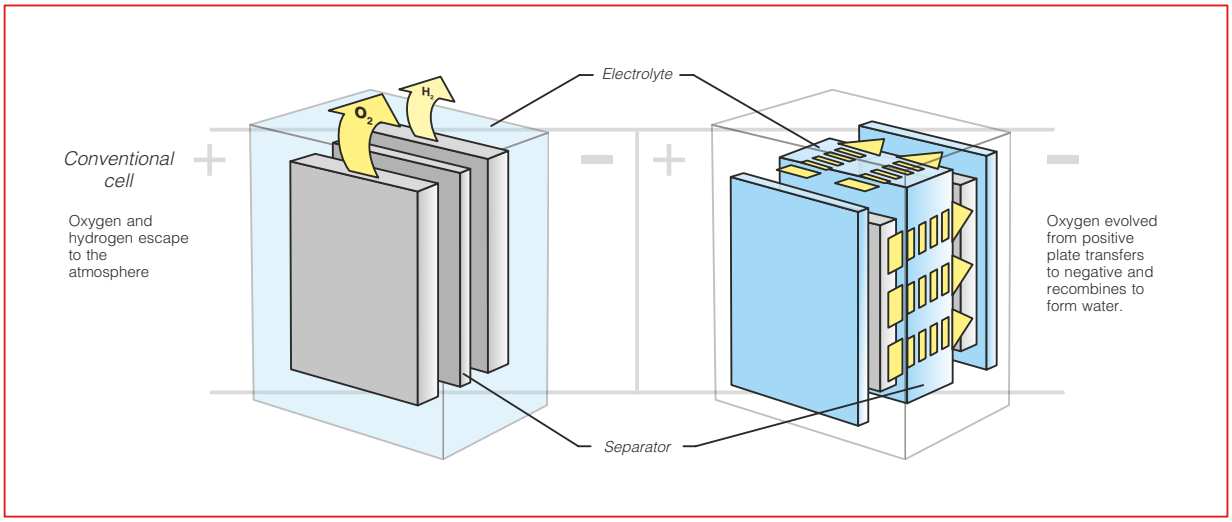
Therefore, provided oxygen can be transported to the negative electrode, conditions are ideal for a rapid reaction between lead and oxygen:

i.e. This oxygen is electrochemically reduced on the negative electrode according to the following scheme,→
$2e^- + 2H^+ + 1/2\ O_2 \quad H_2O$
and the final product is water…….

The current flowing through the negative electrode drives this reaction instead of hydrogen generation which would occur in a flooded cell.

This process is called gas recombination. If this process was 100% efficient no water would be lost from the cell. By careful design of the constituents within the cell, gas recombination up to 99% is achieved.

Principle of the oxygen Reduction Cycle



RECOMBINATION EFFICIENCY

Recombination efficiency is determined under specific conditions by measuring the volume of hydrogen emitted from the bloc and converting this into its ampere hour equivalent. This equivalent value is then subtracted from the total ampere hours taken by the bloc during the test period, and the remainder is the blocs recombination efficiency and is usually expressed as a percentage.

As recombination is never 100%, some hydrogen gas is emitted from NexSys® blocs through the self-regulating valve; the Igas value for this technology of bloc is 1.5A/100 Ah C5/C6.

BLOC SUMMARY

RANGE SUMMARY

Table 1 – NexSys specifications

NexSys® Bloc	Voltage (V)	Nominal Capacity C_5 [Ah] 1.70vpc @ 30°C/86°F	Nominal Capacity C_6 [Ah] 1.75vpc @ 25°C/77°F	Dimensions								Weight		Standard Terminals	Terminal Adapters	Terminal Layout
				Length		Width		Height		Terminal Height		lbs	Kg			
				in	mm	in	mm	in	mm	in	mm					
12NXS26	12	26	26	9.84	250	3.82	97	5.79	147	5.67	144	21.10	9.60	M6 Female	A	1
12NXS36	12	36	36	9.84	250	3.82	97	7.76	197	7.64	194	29.00	13.20	M6 Female	A	1
12NXS38	12	38	38	7.74	197	6.50	165	6.69	170	6.37	162	38.40	17.40	M6 Female	A	1
12NXS50	12	50	50	8.66	220	4.72	120	9.92	252	9.76	248	41.00	18.60	M6 Female	A	1
12NXS61	12	61	61	11.02	280	3.82	97	10.39	264	9.76	248	42.00	19.10	M8 Female	—	2
12NXS62	12	62	62	12.95	329	6.53	166	6.85	174	6.53	166	53.10	24.10	M6 Female	A	1
12NXS85	12	85	85	15.55	395	4.13	105	10.39	264	9.76	248	60.00	27.20	M8 Female	—	2
12NXS86	12	86	86	12.99	330	6.79	172	8.43	214	8.62	219	77.40	35.10	3/8 - 16" Female	A	1
12NXS90	12	90	90	11.89	302	6.89	175	8.78	223	8.94	227	69.45	31.50	M6 Female	A	3
12NXS120	12	120	120	13.31	338	6.81	173	10.71	272	10.75	273	94.80	43.00	M6 Female	A	3
12NXS137	12	137	137	17.00	432	6.97	177	9.36	238	9.36	238	105.00	47.60	M6 Female	B	2
12NXS157	12	157	157	17.00	432	6.97	177	10.75	273	10.80	274	117.00	53.10	M6 Female	B	2
12NXS166	12	166	166	22.09	561	4.92	125	11.14	283	10.35	263	113.30	51.20	M8 Female	B	2
12NXS186	12	186	186	22.09	561	4.92	125	12.78	317	11.69	297	131.10	59.40	M8 Female	B	2

Table 1

Option A: SAE post

Option B: M6 male front terminal adapter

Terminal layout 1

Terminal layout 2

Terminal layout 3

Flexible connectors must be used for all monobloc connections.
EnerSys® approved fasteners must be used.

ORIENTATION

NexSys® blocs can be mounted in any orientation except inverted.

BLOC CONFIGURATIONS

NexSys blocs may be configured into a bloc comprising series/parallel strings, with the maximum number of parallel strings limited to 3. It is paramount that the cable lengths within each string are equal.

Only EnerSys® approved components/parts must be used in conjunction with NexSys product.

STATE OF CHARGE

The open circuit voltage of the individual NexSys bloc prior to installation can be used as an approximate guide to the state of charge (SOC) of the bloc. Figure 1 also shows the influence of storage temperature on the charge retention characteristics.

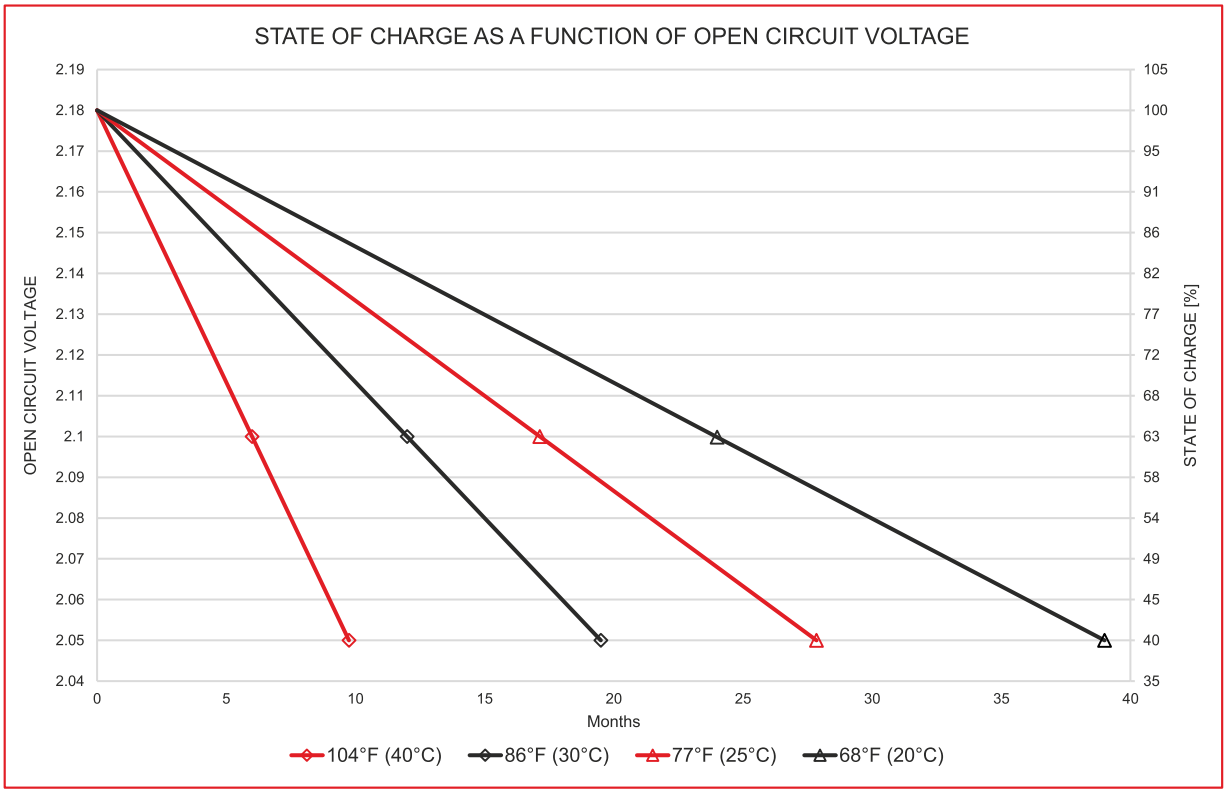


Figure 1

STORAGE – INDIVIDUAL NEXSYS BLOCS

This data in this section only apply to blocs in storage not fitted to equipment.

Batteries are dispatched from the manufacturer in a fully charged condition. The state of charge will decrease with storage. All batteries lose their stored energy when allowed to stand open-circuit, due to parasitic chemical reactions.

Self- discharge is also strongly influenced by temperature; high temperatures greatly reduce storage life (Figure 1, as above). It is recommended that the fully charged battery should be stored in a cool dry place, ideally below 20°C/68°F.

STORAGE – NEXSYS® BLOCS INSTALLED IN EQUIPMENT

Some equipment will continue to draw very low power loads from the bloc when not in service. This results in bloc self discharge rates greater than shown in Figure 1 and described in the previous section. Consequently, all sources of electrical power drain must be removed from the bloc whilst in transit, storage or extended periods of time out of service. This includes disconnecting the Wi-iQ® (if fitted) & LVA from the bloc.

Failure to comply with the above will result in premature bloc failure and will render the warranty void

Also refer to comments in opportunity charging section relating to short storage periods between equipment usage.

CAPACITY

The nominal capacity of the NexSys® bloc series is rated in Ah at the 5 hour discharge rate. Table 2 provides these ratings and additional C6 and C20 capacity discharge ratings.

Monobloc Type	C5 Capacity Rating @ 30°C/77°F 1.7VPC	C6 Capacity Rating @ 25°C/77°F 1.75VPC	C20 Capacity Rating @ 25°C/77°F 1.75VPC
12NXS26	26	26	29
12NXS36	36	36	40
12NXS38	38	38	40
12NXS50	50	50	55
12NXS61	61	61	66
12NXS62	62	62	69
12NXS85	85	85	103
12NXS86	86	86	100
12NXS90	90	90	95
12NXS120	120	120	130
12NXS137	137	137	152
12NXS157	157	157	184
12NXS166	166	166	186
12NXS186	186	186	210

Table 2

TRANSPORTATION

NexSys blocs are classified as "non-spillable wet electric storage blocs" and may be shipped by air or ground transportation without restriction.

NexSys blocs are in compliance with requirements of:

1. US Dept of Transportation - 49 CFR Section 173.159 para d
2. ICAO/IATA Packing Instruction 872, Special Provision A67
3. IMDG Class 8, UN ID 2800 special provisions 238
4. ADR 2011 and RID 2011 Special Provisions 238, 295 and 598

and are classified as Non-spillable and exempt from hazardous goods regulations when securely packed and protected against short circuits.

The bloc has a maximum inspection-free storage life of 2 years, if stored at or below 20°C/68°F, after which a refresh charge should be administered. However, it is advisable to conduct an inspection and open circuit voltage check after 12 months. If the open circuit voltage falls below 12.6 volts the bloc should be recharged using an approved EnerSys® NexSys® charger.

COMMISSIONING

The NexSys series monoblocs are supplied in a charged condition. The bloc should be inspected to ensure it is in perfect physical condition.

Check:

1. The bloc cleanliness. Before installing, the bloc compartment has to be cleaned.
2. All cables and crimped connectors are in good condition to support high electrical currents.
3. The bloc and cables have a good contact to terminals and the polarity is correct. Otherwise the bloc, vehicle or charger could be severely damaged.
4. Ensure that all insulation covers are fitted correctly.
5. It is extremely important to ensure the integrity of bloc connections. Soldered connections are preferred for bloc plugs and post clamps. If soldering is not possible, multi-point crimping must be used.

NOTE: Flexible cable or braid connectors must be used for all monobloc connections. Appropriate fastener kits must be used and approved parts. These can be supplied in EnerSys approved accessory kits. Integral to the fasteners system is an appropriate locking washer – spring or flat washers must not be used.

Connectors must be adequately fastened (see Table 3) with the locking washer in place to maintain contact integrity when exposed to operational shock/vibrations.

Monobloc Type	Terminal Torque (Nm or lbf in) Standard Terminal			Terminal Torque (Nm or lbf in) Adapter Terminal		
12NXS26	M6 Female	6.8 Nm	60 lbf in	SAE	6.8 Nm	60 lbf in
12NXS36	M6 Female	6.8 Nm	60 lbf in	SAE	6.8 Nm	60 lbf in
12NXS38	M6 Female	6.8 Nm	60 lbf in	SAE	6.8 Nm	60 lbf in
12NXS50	M6 Female	6.8 Nm	60 lbf in	SAE	6.8 Nm	60 lbf in
12NXS61	M8 Female	9.0 Nm	80 lbf in	Not Applicable		
12NXS62	M6 Female	6.8 Nm	60 lbf in	SAE	6.8 Nm	60 lbf in
12NXS85	M8 Female	9.0 Nm	80 lbf in	Not Applicable		
12NXS86	3/8 — 16" Female	6.8 Nm	60 lbf in	SAE	6.8 Nm	60 lbf in
12NXS90	M6 Female	6.8 Nm	60 lbf in	SAE	6.8 Nm	60 lbf in
12NXS120	M6 Female	6.8 Nm	60 lbf in	SAE	6.8 Nm	60 lbf in
12NXS137	M6 Female	6.8 Nm	60 lbf in	M6 Male Front Terminal	9.0 Nm	80 lbf in
12NXS157	M6 Female	6.8 Nm	60 lbf in			
12NXS166	M8 Female	9.0 Nm	80 lbf in			
12NXS186	M8 Female	9.0 Nm	80 lbf in			

Table 3 – Torque settings

Use special coding systems for maintenance free blocs for the charging plug-and-socket devices to prevent accidental connection to the wrong type of charger. Never directly connect an electrical appliance (for example: warning beacon) to a part of the bloc. This could lead to an imbalance of the cells during the recharge, i.e. a loss of capacity, the risk of insufficient discharge time, damage to the cells and VOIDS THE BLOC WARRANTY.
Charge the bloc before commissioning. Only blocs with the same state of charge should be connected together.
The specified torque loading for the bolts/screws of the end cables and connectors are detailed in the Table 3.

OPERATION

EN 62485-3 "Safety requirements for secondary batteries and battery installations - Part 3 traction batteries" and IEC 62485 Safety requirements for secondary batteries and battery installations – Part 3: Traction batteries are applicable to this product range. The nominal operating temperature is 25°C/77°F. The optimum lifetime of the bloc depends on the operating conditions (temperature and depth of discharge).

The ambient temperature range of use for the bloc is between +5°C/41°F and +45°C/113°F, outside of this range must be approved by the EnerSys Technical Department. Optimal bloc life is obtained with the bloc at a temperature between 25-30°C or 77-86°F. Higher temperatures shorten the life of the bloc (according to IEC 1431 technical report), lower temperatures reduce the available capacity. The upper ambient temperature limit is +45°C/113°F and blocs should not be operated above this temperature. The capacity of the battery changes with temperature and falls considerably under 0°C/32°F. The optimum lifetime of the battery depends on the operating conditions (moderate temperature and moderate depth of discharge – e.g. 40-60% C5/C6). It is mandatory that the depth of discharge does not exceed 80% of the nominal C5 or C6 capacity. Figure 4 and Table 8 show relationship between depth of discharge and cycle life.
The battery obtains its full capacity after about 3 charging and discharging cycles.

OPERATING TEMPERATURE

NexSys® batteries and EnerSys® approved chargers are designed for use within an ambient temperature range of +5°C/41°F and +45°C/113°F. For use outside this range, you should consult with EnerSys APPLICATION ENGINEERING AUTHORITY. Applications outside the recommended temperature range will be considered but it will be mandatory to use an EnerSys charger with communication capability (NexSys+) and the battery must be equipped with Wi-iQ® monitoring device to manage the charge profile in accordance with the battery temperature.

DISCHARGING

The valves on the top of the bloc must not be sealed or covered. Electrical connections (e.g. plugs) must only be made or broken in the open circuit condition. Discharges over 80% of the rated capacity are categorised as deep discharges and are not acceptable as they reduce considerably the life expectancy of the bloc. Discharged blocs MUST be recharged immediately and MUST not be left in a discharged condition.

Note: The following statement only applies to partially discharged blocs.

Discharged blocs can freeze.
Limit the discharge to 80% DOD. The presence of a discharge limiter is mandatory and cut-off voltage must be set at the value detailed in Table 4, when discharging with currents in the range of $I_{0.5}$ to I_5. At lower currents please seek advice from the EnerSys® Application Engineering Authority.

Depth of Discharge	Cut – off Voltage Setting (Vpc)
60%	1.96 V
80%	1.92 V

Table 4 - Cut-off voltage limits

DISCHARGE CHARACTERISTICS

The following table shows discharge characteristic of the NexSys® range to an end point voltage of 1.75Vpc @ 25°C/77°F and 1.70Vpc @ 30°C/86°F. See Table 5 & 6 below.

Constant Current Discharge (A) 1.7VPC @ 30°C/86°F							
Discharge Rate (Hr)	20	10	8	5	3	1	0.5
12NXS26	1.53	2.81	3.41	5.21	8.21	21.28	37.55
12NXS36	2.06	3.83	4.68	7.18	11.34	29.17	50.77
12NXS38	2.10	4.00	4.92	7.59	12.03	31.09	54.39
12NXS50	2.87	5.35	6.54	10.02	15.77	39.86	68.63
12NXS61	3.38	6.41	7.88	12.20	19.45	50.65	87.66
12NXS62	3.55	6.71	8.20	12.42	19.50	49.94	88.73
12NXS85	5.27	9.43	11.37	16.99	26.41	66.25	113.52
12NXS86	5.17	9.47	11.55	17.46	27.95	73.65	130.81
12NXS90	4.97	9.44	11.55	18.02	28.42	72.32	127.60
12NXS120	6.84	12.58	15.55	23.98	38.18	98.98	171.63
12NXS137	7.87	15.31	18.61	27.38	41.25	102.34	174.46
12NXS157	9.43	17.47	21.41	31.40	50.31	126.17	207.83
12NXS166	9.56	17.80	21.74	33.20	51.89	126.87	211.52
12NXS186	10.80	20.04	24.50	37.22	58.28	142.71	236.05

Table 5 – Constant Current discharge table @ 30°C/86°F

Constant Current Discharge (A) 1.75VPC @ 25°C/77°F							
Discharge Rate (Hr)	20	10	8	6	3	1	0.5
12NXS26	1.48	2.72	3.29	4.27	7.88	20.31	35.62
12NXS36	2.04	3.77	4.59	5.97	11.10	28.36	49.10
12NXS38	2.04	3.86	4.75	6.19	11.50	29.63	51.37
12NXS50	2.78	5.21	6.36	8.26	15.20	38.22	65.41
12NXS61	3.33	6.30	7.73	10.10	18.90	48.40	82.62
12NXS62	3.48	6.55	8.00	10.30	18.90	48.14	85.24
12NXS85	5.16	9.20	11.10	14.10	25.50	62.78	106.00
12NXS86	5.02	9.19	11.20	14.40	27.10	71.50	127.00
12NXS90	4.79	9.44	11.50	15.00	28.10	70.52	123.00
12NXS120	6.54	12.40	15.30	20.00	37.40	95.83	164.10
12NXS137	7.61	14.80	18.00	22.80	39.70	96.97	162.80
12NXS157	9.20	17.00	20.80	26.17	48.50	120.00	195.00
12NXS166	9.33	17.30	21.10	27.66	50.00	120.70	198.50
12NXS186	10.50	19.50	23.80	31.00	56.20	135.60	221.60

Table 6 – Constant Current discharge table @ 25°C/77°F

KILOWATT HOUR RATINGS

The following table show kilowatt hour ratings at different discharge rates of the NexSys range to an end point voltage of 1.75Vpc @ 25°C/77°F
See Table 7 below.

Kwh Rating 1.75VPC — C5 @ 30°C/86°F or C6 @ 25°C/77°F								
Discharge Rate (Hr)	0.5	1	3	5	6	8	10	20
12NXS26	0.214	0.244	0.283	0.301	0.307	0.316	0.326	0.356
12NXS36	0.295	0.341	0.398	0.422	0.430	0.442	0.452	0.490
12NXS38	0.308	0.355	0.415	0.438	0.445	0.456	0.463	0.488
12NXS50	0.392	0.458	0.548	0.583	0.594	0.611	0.625	0.668
12NXS61	0.496	0.581	0.680	0.714	0.725	0.742	0.756	0.799
12NXS62	0.511	0.577	0.682	0.725	0.742	0.768	0.786	0.835
12NXS85	0.636	0.754	0.917	0.989	1.015	1.064	1.104	1.238
12NXS86	0.762	0.858	0.977	1.027	1.038	1.076	1.103	1.204
12NXS90	0.738	0.846	1.010	1.070	1.082	1.104	1.133	1.148
12NXS120	0.984	1.150	1.346	1.415	1.440	1.472	1.489	1.570
12NXS137	0.977	1.164	1.428	1.584	1.643	1.726	1.774	1.826
12NXS157	1.170	1.440	1.746	1.809	1.884	1.997	2.040	2.208
12NXS166	1.190	1.448	1.801	1.952	1.992	2.028	2.078	2.239
12NXS186	1.330	1.627	2.022	2.117	2.232	2.284	2.338	2.531

Table 7– kilowatt hour rating

CHARGING

Charging the NexSys® blocs correctly is a critical factor to their life expectancy and performance, failure to do so will result in premature failure. To ensure that the NexSys blocs are correctly charged, EnerSys® has developed a fast charge algorithm for cyclic applications to rapidly and safely charge this technology of blocs. EnerSys has a full range of chargers available that can be purchased to be used with your NexSys bloc.

Charging must only be carried out where adequate ventilation is available and must not be carried out in confined spaces. Refer to EN 62485-3 section 6.

NexSys blocs can be quickly charged with approved EnerSys NexSys & NexSys+ chargers. Figures 2 and 3 below show their exceptional fast charge characteristics at varying levels of DOD and inrush currents.

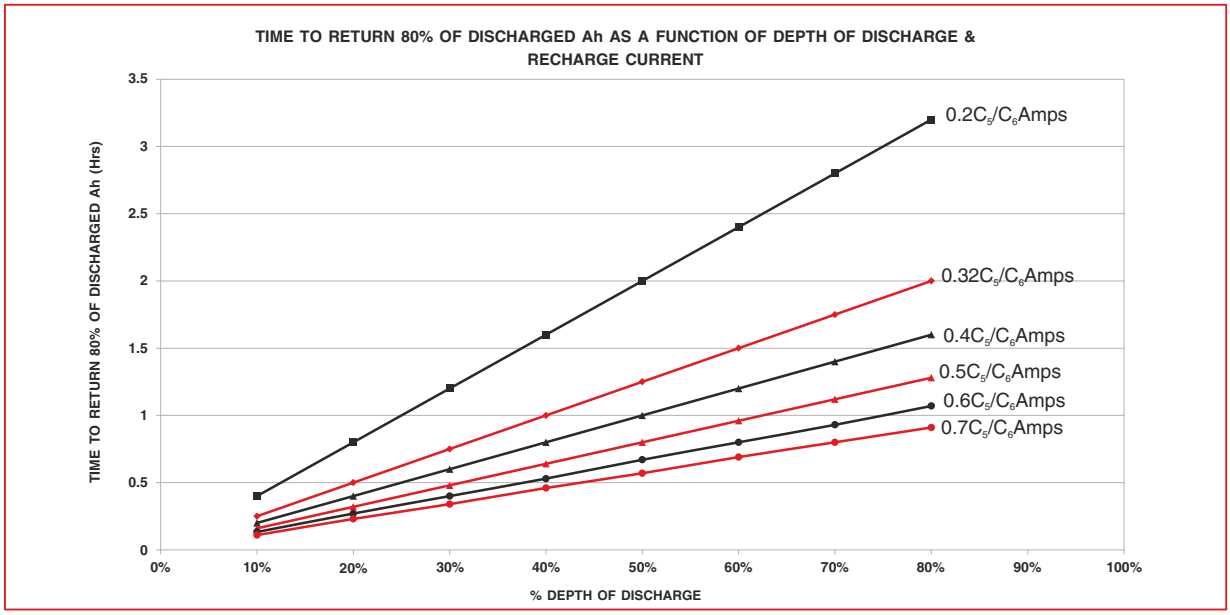


Figure 2 – Recharge time - return 80% of discharged Ah's

As an example, consider a 100Ah bloc discharged by 60Ah (to 60% Depth of Discharge), leaving residual capacity of 40Ah. 48Ah will be returned after 0.8hrs of charge with inrush current 0.6C5A.

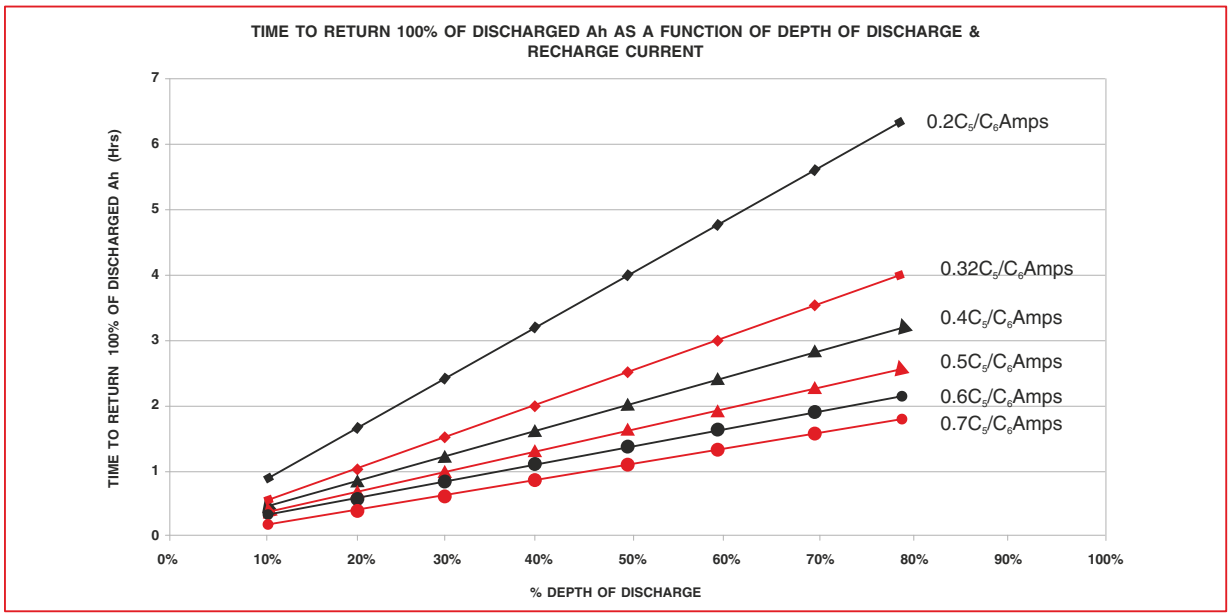


Figure 3 – Recharge Time – return 100% of discharged Ah's

Note: NexSys® blocs are designed to be charged with charging rates in range 0.32C5/C6 to 0.7C5/C6. Charging at rates outside this range can affect the performance and life expectancy of the bloc. 0.2C5/C6 charging current can be used but only in conjunction with a specific algorithm which is available in a matched NexSys or NexSys+ charger. Contact EnerSys® before using rates outside this range.

As another example, consider a 100Ah bloc discharged by 80Ah (to 80% Depth of Discharge), then recharged with a 0.5C5/C6 inrush current, 100% of the discharged Ah (80Ah) will be returned after approximately 2.5h recharge. Increasing inrush current to 0.7C5/C6 reduces this to 1.8 hours recharge. The recharge process is not 100% efficient and the bloc will achieve approximately 97% state of charge following the above recharge procedure. A short absorption phase after recharging the 100% discharged Ah's is required to ensure full bloc recovery. NexSys chargers are programmed to achieve such recovery and deliver the recharge capabilities shown in Figures 2 and 3.

OPPORTUNITY CHARGING

NexSys blocs are suitable for partial state of charge operation, however the depth of discharge must not exceed 80% of the rated C5/C6 capacity and opportunity charging must be applied whenever the blocs are not being discharged i.e. break / lunch times, shift handover etc.

Equipment may continue to draw low power loads when not in service, which will reduce available bloc capacity. To counter this, EnerSys recommend that the bloc/charger remain connected to the main power supply between equipment usage periods. EnerSys approved chargers are designed to counter low power draw and preserve bloc state of charge.

The electrochemistry of the NexSys series allows the bloc to be recharged in a relatively short period of time with high inrush currents with no detrimental effect. This is possible as a result of its low internal impedance and exceptional charge acceptance.

The SOC of the NexSys bloc can be maintained at almost 100% throughout the working day, making the equipment always available for use 24/7.

CYCLE LIFE

The life expectancy of the NexSys® bloc series depends on the application and its duty cycle.

While several factors affect the life of a bloc, cycle life depends primarily on the depth of discharge (DOD).

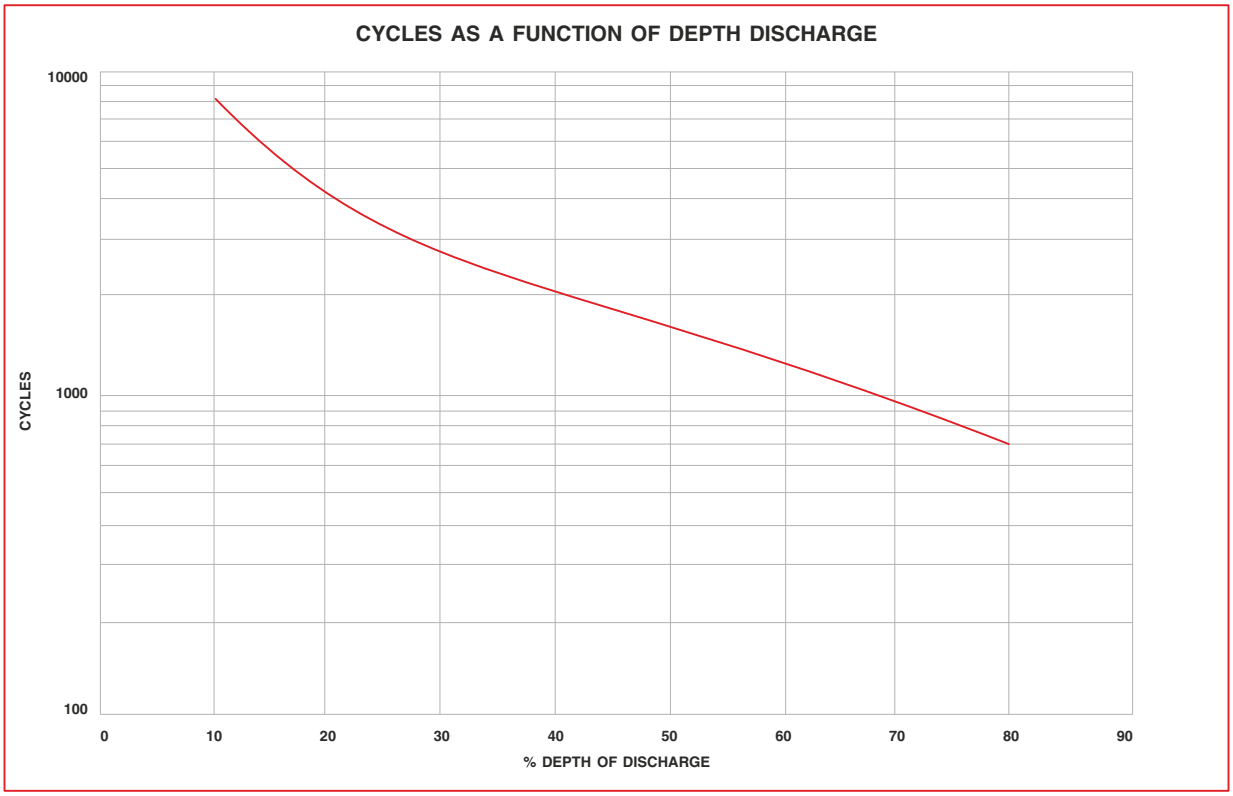


Figure 4 – CYCLE LIFE AS A FUNCTION OF DEPTH OF DISCHARGE 10%-80% (C5/C6 RATE)

Depth of Discharge	No. of Cycles
10%	8200
20%	4096
30%	2700
40%	2000
50%	1500
60%	1200
70%	900
80%	700

Table 8 illustrates this relationship between DOD and cycle life from full state of charge.

DISPOSAL

NexSys® blocs are recyclable. Scrap blocs must be packaged and transported in accordance with prevailing transportation rules and regulations. Scrap blocs must be disposed of in compliance with local and national laws by a licensed or certified lead acid bloc recycler with these attributes.

Note: It is imperative that the bloc receives a complete charge (returning the bloc to 100% of its rated C5/C6 capacity) at least once per week. Failure to do so will have a detrimental effect on the performance and cycle life of the bloc.

There are 2 approved charging profiles for the NexSys blocs:

a) Standard bloc profile which has charging rates of 0.32 – 0.70 C5/C6

b) NXBLOC profile which has charging rates of 0.20 – 0.70 C5/C6

Only these 2 profiles will enable NexSys blocs to achieve the cycle life quoted in this manual.

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