Ammonia vaporizer:
safe and long-lasting

For a demand of 5–660 kg/h NH_3



With more than 50 years of experience in the construction of vaporizers for a wide variety of media, we also offer you proven and reliable devices for the vaporization of ammonia. All our ammonia vaporizers are heated indirectly, either via a solid body (aluminium), such as the ETA dry vaporizers, or via a water-based heat transfer medium, such as the units from the ESA and WA series.

The dry-type vaporizers of the ETA series are ideal for evaporation of smaller quantities between 5 and 30 kg/h NH_3 at saturation conditions. The devices from the ESA series and WA series are suitable for larger requirements, operating conditions beyond the saturation conditions or increased requirements for control or evaluation of operating parameters.

All vaporizers are available as individual units or as a vaporizer system, with a customized scope of delivery. The following table allows a simple pre-dimensioning for operation in saturation mode. Please contact us for systems.



Overview TORPEDO ammonia vaporizers

Connection value [kW]	2	4	6	12	18	36	54	72	90	90	113	113	225	300
Type ETA8TO	electrically heated: aluminium core				cylindric shape									
	voltage: 230 V		voltage: 400 V											
Capacity [kg/h]	5	10	15	20	30									
Fuse protection [A]	16	25	16	25	32									
					35	80	100	125	160	160	200	200		

All pressure devices are designed for a pressure rating of 25 bar.
Other, higher pressures on request.

Type ESA	electrically heated: water bath									
	voltage: 400 V									
Capacity [kg/h]	20	30	60	100	130	160	200	260	320	

All pressurised parts are made of the materials P235GHTC2, P265 and P250 as standard. The devices in the ETA series are also available in 1.4571 as standard. Other devices in 1.4571 on request

Type WA	Hot water heated circulation system 90-70 °C						cylindric shape	
	control connection value: 2 kW					voltage: 230 V fuse protection: 10 A		
Capacity [kg/h]	100	130	160	200	260	320	500	660
heating water flow [L/h]	2.325	3.100	3.870	3.940	5.120	6.300	9.675	12.900



Dry-type-vaporizer:

Type ETA8TO



The solid-state or dry-type-vaporizers of the ETA series are electrically heated and available for vaporization rates of 5, 10, 15, 20 and 30 kg/h under saturation conditions. They are characterized by their small footprint, simple operating parameters and low maintenance requirements. Evaporation takes place in a vaporizer register, which is encapsulated in an aluminium block together with the heating system. Neither the heating nor the pipe register can be replaced.

Built according	DGRL 2014/68/EU AD2000 HP 801 Nr. 34 for Ex-Zone 2



Sample images show special versions

Type	Capacity NH_3	Connection value
ETA8TO 12	5 kg/h	2 kW
ETA8TO 24	10 kg/h	4 kW
ETA8TO 32	15 kg/h	6 kW
ETA8TO 60	20 kg/h	12 kW
ETA8TO 100	30 kg/h	18 kW

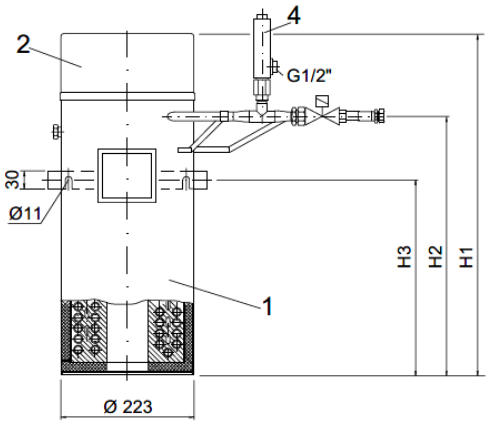
FienemannTORPEDO GmbH
Friedrich-List-Straße 9
25451 Quickborn
Tel.: 04106-6277-0
Fax.: 04106-627722

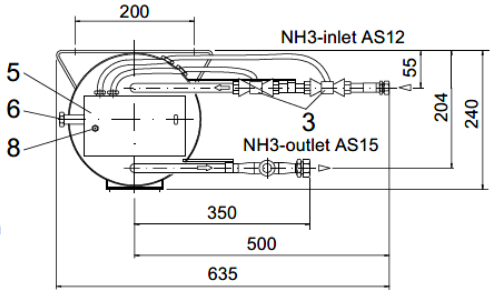
ammonia dry-type vaporizer

standard configuration
type: ETA8TO 12-32
capacity: 5-15 kg/h

MZ 804 625 a

capacity kg/h NH3	5	10	15
size	12	24	32
article no.	10505	10510	10515
H1 mm	487	559	559
H2 mm	370	442	442
H3 mm	265	337	337
voltage V/ frequence Hz	230/50	230/50	400/50
consumption kW	2	4	6
content l	1,0	1,3	1,3
weight kg	27	34	34





1 ammonia vaporizer
2 cover
3 solenoid valves W21,8x1/14"
4 safety valve G1/2"
5 control box vapour-proof
6 cable gland for net connection M 25x1,5 for cable diameterØ 9-16 mm use only temperture-proof cabel surface temperature +80°C
8 test connection vapour-proof for pipe diameter Ø 4-8 mm

	inside pipes
max. operating pressure bar	25
design temperature °C	120
max. operating pressure °C	100
test pressure (20°C) bar	36

coating: standard blue, structured

bearb.: 27.02.2018 St
gepr.: 27.02.2018 Ed

Final equipment according order acknowledgment!
All dimensions are approximate measures and are only for information!

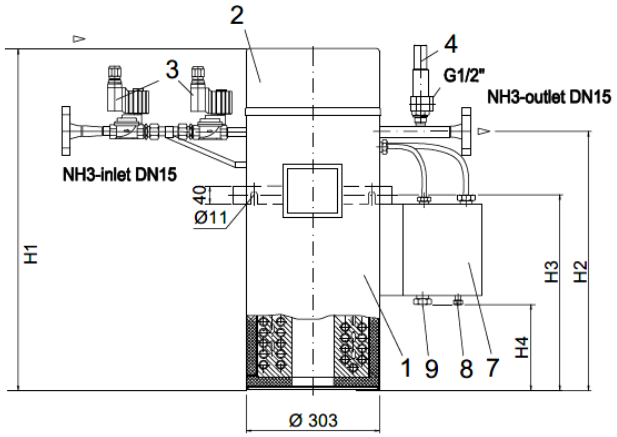
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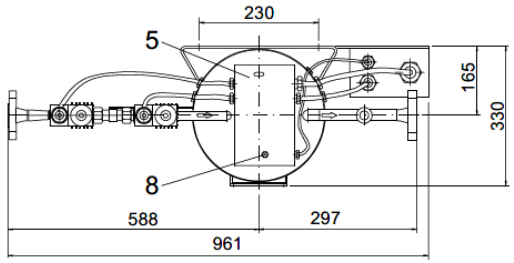
ammonia dry-type vaporizer

standard configuration
type: ETA8TO 60-100
capacity: 20-30 kg/h

MZ 805 466

capacity kg/h NH3	20	30
size	60	100
article no.	10520	10530
H1 mm	688	912
H2 mm	553	777
H3 mm	443	667
H4 mm	140	325
voltage V/ frequence Hz	400/50	400/50
consumption kW	12	18
content l	3,2	5,3
weight kg	76	105





1 ammonia vaporizer
2 cover
3 solenoid valves G1/2"
4 safety valve G1/2"
5 control box vapour-proof
7 control box vapour-proof
8 test connection vapour-proof for pipe diameter Ø 4-8 mm
9 cable gland for net connection M 25x1,5 for cable diameterØ 13-18 mm

	inside pipes
max. operating pressure bar	25
design temperature °C	120
max. operating pressure °C	100
test pressure (20°C) bar	36

coating: standard blue, structured

ed.: 18.11.2024 Br
appr.: 19.11.2024 Le

Final equipment according order acknowledgment!
All dimensions are approximate measures and are only for information!

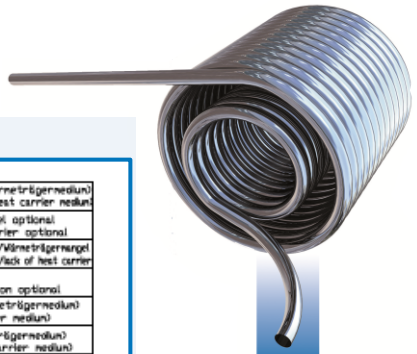


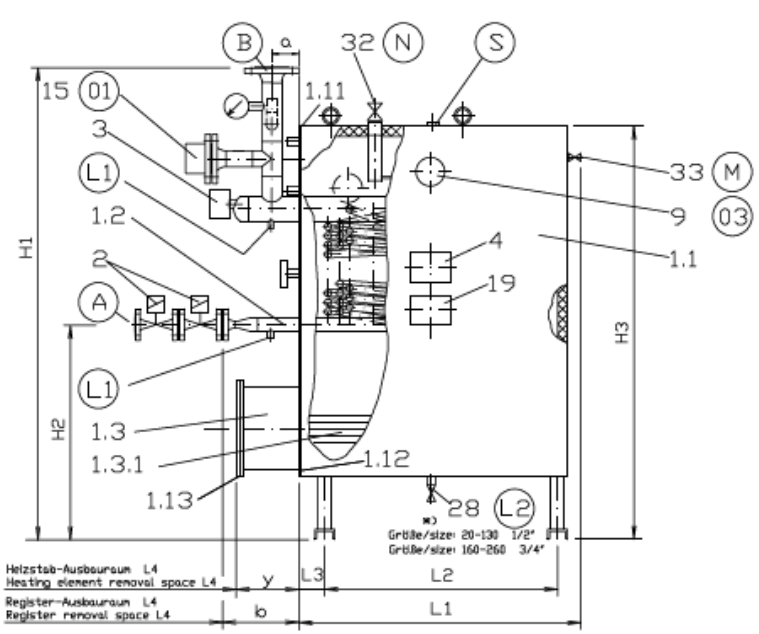
Wet-type vaporizer
Cabinet design
Type ESA

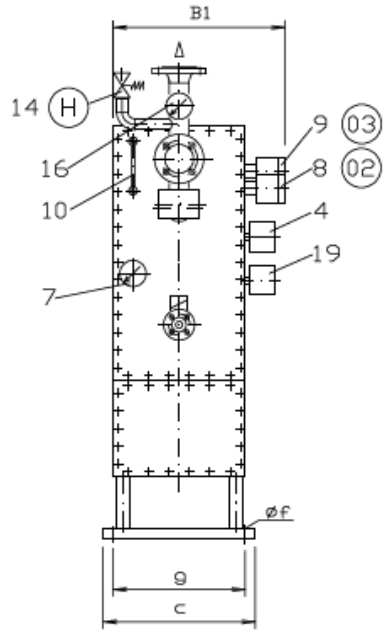
The ESA series is heated electrically with a standing water-based heat transfer medium in bath form. The vaporizer register is immersed in the water bath. The advantage is that heating sizes and heat transfer surfaces are easier to adapt, even for demanding tasks. The pipe register and heating system are separate and fully repairable. The switch cabinet in thermostat/relay technology is easy to maintain and can be adapted to different requirements.

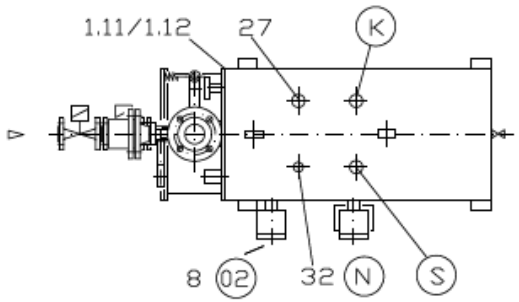


Built according	DGRL 2014/68/EU
	AD2000 HP 801 Nr. 34
	for Ex-Zone 1 and 2









Nur zur Information!
Techn. Änderungen vorbehalten!
Alle Maße sind Circa-Maße!

Maßgeblich für die Ausrüstung ist die jeweilige Auftragsbestätigung!

All dimensions are approximate measures and are only for information!

Final equipment according order acknowledgment!

Bez. symbol	Stück piece	DN	PN	Norm standard	Dichtleiste facing	Rohrlg.-Maß pipe size	Benennung description
S	1	1"					Füllanschluss (Wärmeträgermedium) filling connection (heat carrier medium)
03	1	1"					Wärmeträgermangel optional lack of heat carrier optional
02	1	1"					Gasleckagensicherung/Wärmeträgermangel gas leakage protection/lack of heat carrier
01	1	40	40	DIN EN 1092-1			overflow protection optional
N	1	1/4"					Entlüftung (Wärmeträgermedium) vent (heat carrier medium)
M	1	1/4"					Überlauf (Wärmeträgermedium) overflow (heat carrier medium)
L1	1	1/4"					Entleerung (Verdampferregister) drain (vaporizer register)
L2	1	*)					Entleerung (Wärmeträgermedium) drain (heat carrier medium)
K	1	1"					Entlüftung (Wärmeträgermedium) vent (heat carrier medium)
H	1	1/2"					Sicherheitsventil-Austritt safety valve outlet
B	1		40	DIN EN 1092-1	Form C		Gas-Austritt (Gasphase) gas outlet (gaseous phase)
A	1		40	DIN EN 1092-1	Form D		Gas-Eintritt (Flüssigphase) gas inlet (liquid phase)

Stutzentabelle / table of pipe connection

Ausführung nach 3GRL, AD2000/design and construction in accordance with PED, AD2000

	an die Rohre/outside tubes	in den Rohren/inside tubes
zul. Betriebsüberdruck/ max. allow. design pressure	ATM bar	25 bar
zul. Betriebstemperatur/ max. allow. design temperature	120 °C	120 °C
Prüfüberdruck/test pressure (20°)	0,2 bar	36 bar

Abnahme/inspection: Größe 60/300 WAZ / Größe 200-800 TÜV
Schweißung/welding: AD2000-HP0
Schweißspezifikation/welding spezification: 801 055 a BL1-6; 801 150 a BL1-5
Stutzen sind spannungsarm anzuschließen/nozzles local loading have to be negligible
Arbeitsprüfung/production test pieces: AD2000-HP5/2
Ausnutzung der zul. Berechnungsspannung in der Schweißnaht/joint effiency: v = 0,85
Zerstörungsfreie Prüfung/non-destructive testing: AD2000-HP0
Wärmebehandlung/heat treatment: nit/with 25% Auftrags-Nr./order no:
Bau-Nr./manufacturing no.: Baujahr/year of construction:
Materbl und Werkstoff nach Auftrg.-Stückliste/see part list
Anordnung der Schraubenlöcher nach/arrangement of boltholes in accordance with: DIN EN 1092-1
(_) Kontrollmaß/dimensional check

Leistung/capacy kg/h / kgs/h	DN Eing.	DN Ausg.	B1 mm	H1 mm	H2 mm	H3 mm	L1 mm	L2 mm	L3 mm	L4 mm	a mm	b mm	c mm	ØF mm	g mm	y mm	L Inhalt/contens	L connected load	Leergewicht/ weight empty (kg)
320	32	65	535	2200	905	2020	1195	995	130	1150	110	215	480	18	400	145	697	49,3	112,5	3x37,5	640
260	32	65	535	2030	905	1850	1195	995	130	1150	110	215	480	18	400	145	530	44,4	112,5	3x37,5	550
200	32	50	535	1885	905	1705	1195	995	130	1150	82	215	480	18	400	145	489	35,9	90	3x30	470
160	25	50	535	1885	985	1705	1195	995	130	1150	82	215	480	18	400	145	495	31,4	90	3x30	430
130	25	40	535	1660	710	1480	845	705	80	800	82	215	460	18	400	145	284	28,0	72	24/48	320
100	20	40	535	1660	800	1480	845	705	80	800	82	215	460	18	400	145	284	20,3	54	18/36	310
60	15	40	535	1295	565	1115	845	705	80	800	82	215	460	18	400	145	200	15,1	36	12/24	240
30	15	40	435	1280	525	1100	730	590	80	680	82	215	340	14	300	145	119	8,0	18	18/-	110
20	15	40	385	1185	490	1005	590	450	80	540	82	265	290	14	250	145	65	5,9	12	12/-	100

Ind.	Änd.-Mittlg.	Tag	Name
2024		Tag	Name
Gez.	.		Lesnych
Gepr.			
Gen.			

Maße ohne Toleranzangaben/measures without tolerance

spanend DIN ISO 2768-1		spanlos DIN ISO 2768-1		Brennschnitte DIN 2310-1		Schweißkonstruktion DIN EN ISO 13920	
mittel	☒	mittel	☐	s ≤ 20	s > 20	B ☐	C ☒
grob	☐	grob	☐	B	C		

Schutzvermerk nach DIN ISO 16016 beachten!
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Ansicht(Projection) DIN ISO 128

Maßstab: (Scale) %

torpedo

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Tel.: 04106-6277-0
Fax : 04106-627722

Benennung (Denomination):
Ammoniak-Schrankverdampfer Typ ESA
Ammonia Vaporizer cabinet type ESA
Übersicht/arrangement
mit Anschluß für LS
with connecting branch for LS

Zeichnungs-Nr.(Drawing-No): MZ 805 471

Format Kennz.: A3

Zeichnungs-Zusatzangaben nach | Zeichnung best. aus Blatt | Blatt-Nr.

Ursprz: MZ801892 + MZ801894a | Ers. für: MZ 804 231 d | Ers. durch:

☒ Zutreffendes bitte ankreuzen



Hot water Vaporizer:

Type WA

The WA series vaporizers are the largest models. They work with a heat carrier medium that is externally heated and moves through the system in a closed circuit. The heat carrier circuit is connected to the customer's heating system via a heat exchanger. The advantage is that heating sizes and heat transfer surfaces are easier to adapt, even for demanding tasks. Pipe registers are fully repairable. The switch cabinet with thermostat/relay technology is easy to maintain and can be adapted to different requirements. The heat transfer circuit with heat exchanger and pump is usually installed on site. If the vaporizer is the only consumer in the heating circuit, the heat exchanger can be omitted.

Built according	DGRL 2014/68/EU
	AD2000 HP 801 Nr. 34
	for Ex-Zone 1 and 2



Sample images show special versions



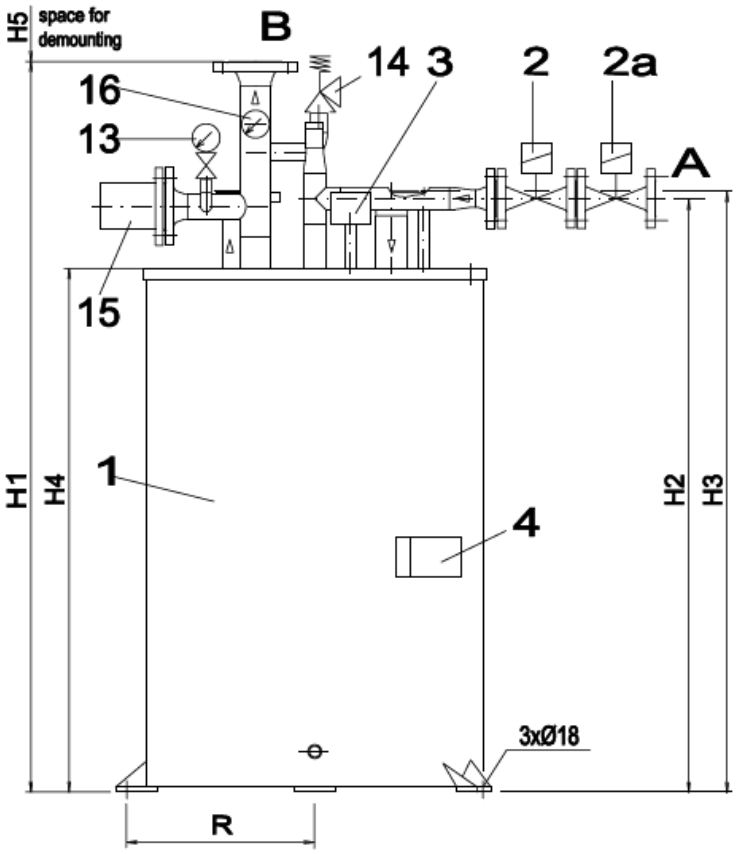
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Ammonia Vaporizer Overview Type WA

MZ 804 309 b

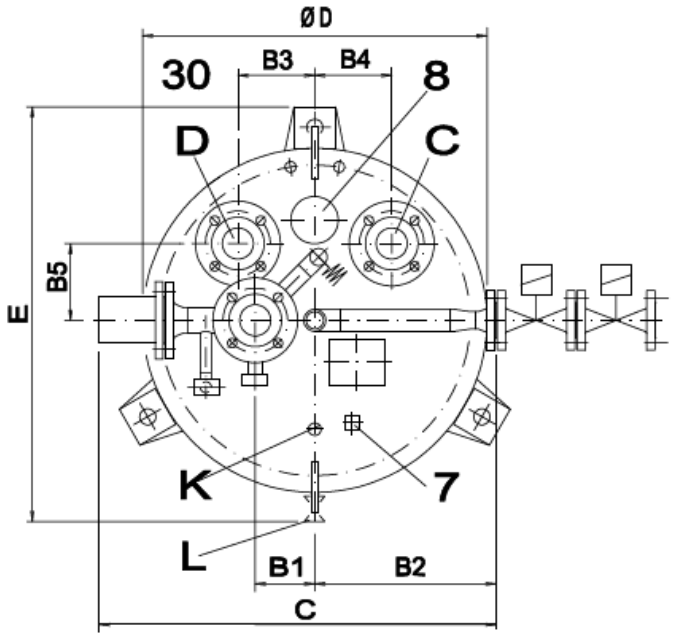
page: 1 from: 1

TORPEDO-order.-no.:



1 ammonia vaporizer
2 solenoid valve
2a solenoid valve optional
3 double thermostat (gas phase)
4 double thermostat
(temperature limiter;
low temperature limiter)
7 thermometer (heat carrier)
8 gas leakage control,
level control heat carrier (Liquiphant) optional
13 manometer with shut-off valve
(gas phase)
14 safety valve
15 overflow control (Liquiphant) optional
16 thermometer (gas phase)
30 pressure switch
A liquid phase inlet
B gas outlet
C water inlet
D water outlet
K ventilation (heat carrier)
L filling and draining (heat carrier)

	inside the tubes	inside the shell
allowed operating pressure bar	25	5
allowed operating temperature °C	-10/+120	-10/+120
test pressure (20°C) bar	36	8



dimens. / type/size	WA 300 /100	WA 400 /130	WA 500 /160	WA 600 /200	WA 800 /260	WA 1000 /320	WA 1500 /500	WA 2000 /660
gas inlet	DN20	DN25		DN32		DN40	DN50	DN100
gas outlet heat carrier in/out	DN40		DN50		DN65		DN80	DN100
H1(mm)	1245	1375	1421	1506	1676	1926	1805	~2000
H2(mm)	965	1095	1156	1241	1421	1671	1580	~1550
H3(mm)	995	1125	1171	1256	1426	1676	1550	~1600
H4(mm)	839	969	1017	1102	1272	1522	1404	1380
H5(mm)	800	950	950	1050	1250	1500	1350	1250
B1(mm)	95		115				146	
B2(mm)	290		410				470	
B3-5(mm)	117		148		157		205	
C(mm)	700		840				910	
ØD(mm)	560		775				865	1045
E(mm)	690		870				1000	
R(mm)	317		425				470	580
content (L) in the pipes	85	102	198	217	255	310	350	546
content (L) in the shell	12	16	33	36	44	55	80	135
weight (kg)	170	210	400	420	460	550	620	1150



Our devices are

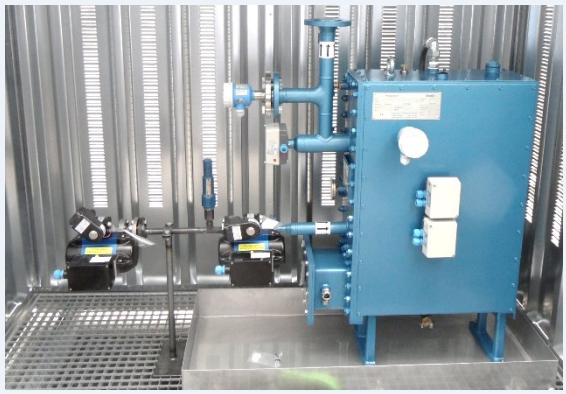
- Durable and sustainable: 20 years and more service life
- Easy to install, low-maintenance and fully automatic operation
- Safe and reliable: ATEX, PED, PTB, SIL2
- Made in Germany: manufactured according to German industry standards

We offer individual solutions and build the system to suit your needs!













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