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ESPA Hydro Pneumatic Systems

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Advanced Solutions in Automatic Pumping Systems

Water supply booster sets, fire fighting units and special solutions in pumping systems.

ESPA offers a large range of solutions to provide the best solutions to the more challenging applications in pumping requirements for water supply in housing, service buildings, hotels, hospitals, agricultural and industrial process.

ESPA evaluates, designs, and manufactures booster sets for the automatic supply of water. The **ESPA** range of products can be adapted to the installation requirements. The **ESPA** Applications Engineering Department adjusts the standard range of **ESPA** booster sets to the specific requirements in every installation.

The standard range of **ESPA** booster sets offers several possibilities of mechanical configuration and various operational systems: fixed speed DOL, variable speed, duty assist in cascade operation or duty pumps with stand-by, all of them ready to give the best solution to the pumping needs in every installation.

The standard range of booster sets in variable speed or fixed speed present twin pumps booster sets, 3 or 4 pumps in duty –assist configuration or duty assist– stand-by pumps. A part form the standard range of 4 pumps the **ESPA** control panels are designed to control the operation up to 8 pumps, variable speed and fixed speed in any operation system required.

The standard range includes horizontal and vertical multi-stage pumps. These pumps are manufactured in stainless steel materials (AISI 304 or AISI 316 optional). All wet components in the booster sets (valves, fittings, manifolds and expansion vessels) are made in suitable materials for drinking water, brass or stainless steel, and the joints and seals composed with materials accepted for the WRAS requirements.

ESPA offers the best solutions in energy saving using variable speed pump Controllers. The target of these Controllers is to drive the booster set at the BEP (Best Efficient Point in the performance curve) for any flow demand in the installation.

According with the technical specifications. **ESPA** can assemble different mechanical configuration of booster sets. Also available other hydraulic performances (larger flows or higher pressures). If any other operational system is needed, **ESPA** can provide different types of booster sets; for example, constant flow booster sets using variable speed devices and proportional flow-meters instruments for special applications as for example golf course irrigation.

The **ESPA** Applications Engineering Department offers the assistance service for booster set selection and sizing, also analysis the best option in LCC (Life Cycle Cost). The **ESPA** after Sells Service offers, on request, the commissioning and the aid for the maintenance to keep the booster set and the installation in the best point of efficiency and reliability.

ESPA has also a standard range of fire fighting booster set designed manufactured and tested according with the EEUU rules (EN- BS 12845) and other European fire organizations as APSAD or CEPREVEN. The standard range includes duty stand-by and jockey pump, electric motor or engine driven pumps.









Tecnoplus 25 Pressurization

A horizontal, multistage, centrifugal pump with frecuency converter

Limitations

Equipment

of failure.

installations.

with foot valve.

Applications

Compact unit with constant pressure for domestic applications, without fluctuations and electrical saving. Easy to install and plug&pump design.

Materials

Pump body and impellers in stainless steel AISI 304. Mechanical seal in graphite and ceramic. O'rings in NBR and EPDM.

Motor

Asynchronous two poles 50/60 Hz. IP55 Protection. Insulation class F. Built-in with thermal protector inside the windings. Continuous operation. Three-phase motor 230 V and single-phase supply 230 V.

Dimensions and weights

 Model
 A
 B
 C
 D
 E
 F
 G
 H
 I
 J
 K
 Kg

 Tecnoplus 25 4M
 277.5
 221
 467.5
 107
 190
 1"
 1^{1/4}
 148.5
 216
 88
 Ø.9
 15.5





Hydraulic performance table

Madal	I (A)	P1 (kW)	Р	2		l/min	45	60	75	90	105	120
model	1~ 230 V	1~	(kW)	(HP)	μΓ	m³/h	2.7	3.6	4.5	5.4	6.3	7.2
Tecnoplus 25 4M	6.8	1.5	0.92	1.25			40	37	33	28	22	15



Maximum suction 5 m. for installation

Maximum intake pressure 2 bar.

A horizontal, multistage, centrifugal pump with frecuency converter with keyboard. Built-in pressure sensor. Built-in dry running control, pressure gauge and dry running control with sequential re-starts in the case

Reduce the water hamer effect on the

With two meter cable HO7RNF 3 x 1 mm² and Schuko plug. Optional: pressure vessel.







Prisma 15/25/35N/45N Surface Horizontal

Quit running horizontal centrifugal multi-stage pump

Applications

To work with clean water in domestic applications, irrigation, and hydropneumatic sets.

Materials

Pump body and impellers in stainless steel AISI 304. Motor shaft in stainless steel AISI 420. Suction and discharge mountings cast iron. Mechanical seal in graphite and alumine. Motor housing in aluminium. O-rings in EPDM and NBR.

Dimensions

Prisma 15







Asynchronous, two poles. Class F insulation. Continuous operation. Single-phase with built-in thermal protection.





Weights

Prisma 15

Model	А	В	С	D	E	F	G	Н	Т	J	Kg
Prisma 15 2	163	213	202	110	74	162	121	102	1"	1"	8.3
Prisma 15 3	187	237	202	110	74	162	121	102	1"	1"	9.2
Prisma 15 4	211	261	202	110	74	162	121	102	1"	1"	10
Prisma 15 5	235	285	202	110	74	162	121	102	1"	1"	11

Prisma 35N

Model	A	В	С	D	E	F	G	н	I	J	K	Kg
Prisma 35 3	221.1	187.3	1 ^{1/4} "	147	1 ^{1/4} "	281.5	158	125.3	90	60	12	18.5/18.2
Prisma 35 4	246.6	211.8	1 ^{1/4} "	147	1 ^{1/4} "	281.5	158	125.3	90	60	12	20.5/18.6
Prisma 35 5	271.1	236.3	1 ^{1/4} "	147	1 ^{1/4} "	281.5	158	125.3	90	60	12	23.5/20.6
Prisma 35 6	295.6	260.8	11/4"	147	1 ^{1/4} "	281.5	158	125.3	90	60	12	23.7

Prisma 45

Prisma 25

Model	А	В	С	D	E	F	G	Н	T	J	К	Kg
Prisma 25 2	175.5	127	226	82	75	109.5	218	59	138	8		12.5
Prisma 25 3	202	127	252.5	82	75	109.5	218	59	138	8		13.5
Prisma 25 4	228.5	127	279	82	75	109.5	218	59	138	8		14.6
Prisma 25 5	255	127	328	82	75	109.5	240.5	59	138	8		17.2
Prisma 25 6	281	142	304	20	89,5	122	286	69	154	10	178	20

Prisma 45N

Model	A	В	C	D	E		F	G	Н	I	J	Kg
Prisma 45 3	245.9	211.6	1 ^{1/2} "	152	1 ^{1/4} "	281.5	158	125.3	90	60	12	22.6/18.6
Prisma 45 4	276.6	242.3	1 ^{1/2} "	152	1 ^{1/4} "	281.5	158	125.3	90	60	12	23.7/21.2
Prisma 45 5	307.3	273	1 ^{1/2} "	152	1 ^{1/4} "	281.5	158	125.3	90	60	12	25.3

Prisma 15



Prisma 35N



Hydraulic performance table

Model - Prisma 15 2 Prisma 15 3	1~ 230 V 2	I (A) 230 V	~	P1 (I	kW)	P	2		l/min	10	20	30	35	40	50	60	65
Prisma 15 2 Prisma 15 3	1~ 230 V 2	3 230 V	~														
Prisma 15 2 Prisma 15 3	2		400 v	1~	3~	(kW)	(HP)	μr	m³/h	0.6	1.2	1.8	2.1	2.4	3.0	3.6	3.9
Prisma 15 3				0.45		0.24	0.33	12		21	20	16.5	16	14	10.5	7	5
	2.74	2.1	1.21	0.61	0.61	0.37	0.5	12	SC SC	32	30	26	24	22	17	10.5	7
Prisma 15 4	3.53	2.3	1.3	0.79	0.7	0.55	0.75	12	É	43	39	35	32	27	21.5	14	9
Prisma 15 5	4.13	3.3	1.9	0.95	0.95	0.75	1.0	12		51	47	42	38	34	25	17	12
		I (A)		P1 (kW)	P	2		l/min	15	30	45	60	75	90	105	120
Model	1~ 230 V	3 230 V	~ 400 V	1~	3~	(kW)	(HP)	μF	m³/h	0.9	1.8	2.7	3.6	4.5	5.4	6.3	7.2
Prisma 25 2	4.3			0.9		0.55	0.75	16		22	21	20.5	19	17	15	12	8
Prisma 25 3	5.5	3.5	2	1.2	1	0.75	1	16	0	33	32	30.5	28	26	22	17	12
Prisma 25 4	6.8	4.3	2.5	1.5	1.4	0.92	1.25	16	3Mm	43	42	40	37	33	28	22	15
Prisma 25 5	7.4	5.2	3	1.7	1.7	1.1	1.5	25		56	55	52.5	48	43	37	29	20
Prisma 25 6	9.8	6.7	3.9	2.2	2	1.5	2	30		72	68	65	58	50	40	32	24
Model		I (A)		P1 (I	kW)	P	2	чE	l/min	20	40	60	80	100	120	140	150
Model	1~ 230 V	3 230 V	~ 400 V	1~	3~	(kW)	(HP)	μг	m³/h	1.2	2.4	3.6	4.8	6.0	7.2	8.4	9.0
Prisma 35 3 N	6.7	4.5	2.6	1.5	1.4	0.8	1	25		41	39	36	34	31	27	22	18
Prisma 35 4 N	8.4	5.3	3.1	1.8	1.8	1.1	1.5	25	MC	54	51	48	44	39	33	27	23
Prisma 35 5 N	10.2	6.9	4	2.3	2.2	1.5	2	30	E	68	64	60	55	49	41	34	30
Prisma 35 6 N		8.3	4.8		2.7	2.2	3			81	78	74	67	60	52	42	37
Model		I (A)		P1 (I	kW)	P	2	-	l/min	25	50	75	100	125	150	200	250
model	1~ 230 V	3 230 V	~ 400 V	1~	3~	(kW)	(HP)	μr	m³/h	1.5	3.0	4.5	6.0	7.5	9.0	12	15
Prisma 45 3 N	7.9	5.2	3	1.8	1.7	1.1	1.5	25	0	37	36	35	33	30	27	18	8
Prisma 45 4 N	10	6.9	4	2.2	2.2	1.5	2	30	2Mm	48	47	45	42	39	36	24	11
Prisma 45 5 N		8.6	5		2.8	2	3			61	59	56	54	50	45	31	15



ESPAEfficientEngineering

Prisma 25



Prisma 45N





Multi Surface Vertical

Quiet-running vertical multi-stage centrifugal pumps, supplied with flanges

Applications

Spray irrigation systems, hydropneumatic sets and industrial installations.

Materials

Pump body and impellers in stainless steel AISI 304. Mechanical seal in graphite and alumine. Motor housing in aluminium L-2521. Flanges, suction and discharge mountings in cast iron. Motor shaft in stainless steel AISI 420. Multi35 N 8 and 10 / Multi55 N 6 and 7: in stainless steel AISI 303.

Dimensions and weights

Multi25

Мо	del	А	В				F	GΕ	Η	DI	J C	Κ	L	Kg
Mu	ti25 3	398	194	170	42	182	191	1 ^{1/4} "	1 ^{1/4} "	125	197	193	125	16.2
Mu	ti25 4	422	205	170	42	182	191	1 ^{1/4} "	1 ^{1/4} "	125	197	193	125	17.3
Mu	ti25 5	441	226	170	42	182	191	1 ^{1/4} "	1 ^{1/4} "	125	197	193	125	17.9

Multi35 N / Multi55 N

Model	А	В	F	E		D	C	Н	ΙG	Kg
Multi35 3 N	487	201.5	184	203	37	133	201	1 ^{1/2} "	1 ^{1/4} "	20.2/20
Multi35 4 N	511.5	226	184	203	37	133	201	11/2"	1 ^{1/4} "	22.4/20.4
Multi35 5 N	536	250.5	184	203	37	133	201	1 ^{1/2} "	1 ^{1/4} "	25.1/22.7
Multi35 6 N	561	275	184	203	37	133	201	1 ^{1/2} "	1 ^{1/4} "	25.7
Multi35 8 N	657.5	323	184	233	37	133	201	1 ^{1/2} "	1 ^{1/4} "	32.6
Multi35 10 N	707.5	373	184	233	37	133	201	1 ^{1/2} "	1 ^{1/4} "	39.4
Multi55 3 N	531	245	184	203	37	133	201	1 ^{1/2} "	1 ^{1/4} "	25.7/23.3
Multi55 4 N	571	285	184	203	37	133	201	1 ^{1/2} "	1 ^{1/4} "	26.6
Multi55 6 N	696	362	184	203	37	133	201	1 ^{1/2} "	1 ^{1/4} "	35-4
Multi55 7 N	736	402	184	203	37	133	201	11/2"	11/4"	39.7

Equipment

Supplied with oval counter flanges DIN 2558.

Motor

Asynchronous, two poles. Class F insulation. Continuous operation. Multi25: Single-phase version up to1.25 HP built-in thermal protection. Multi35N: Without thermal protection.

> Multi25 нÎ С

Multi35 N 3. 4. 5. 6 Multi55 N 3. 4. 5. 6



D





Performance curves at 2900 rpm

Multi25



Multi55 N



Hydraulic performance table

Madal		I (A)		P1 (kW)	P	2	-	l/min	8	17	25	33	42	58	75	92
Model	1~ 230 V	3 230 V	~ 400 V	1~	3~	(kW)	(HP)	μr	m³/h	0.5	1.0	1.5	2.0	2.5	3.5	4.5	5.5
Multi25 3	4.5	3.2	1.9	1.0	0.9	0.55	0.75	16		38.2	38	35.7	33.5	31	25	17	7.2
Multi25 4	5.8	3.9	2.3	1.2	1.1	0.75	1	16	awe M	52.7	51	48.2	45.8	42	33	22	9
Multi25 5	6.4	4.2	2.5	1.4	1.3	0.9	1.25	16		66.5	54	61.2	57.5	52.5	41	27	12
Madal		I (A)		P1 (kW)	P	2	E	l/min	17	33	50	75	100	125	150	175
Model	1~ 230 V	3 230 V	~ 400 V	1~	3~	(kW)	(HP)	μr	m³/h	1.0	2.0	3.0	4.5	6.0	7.5	9.0	10.5
Multi35 3 N	6.7	4.5	2.6	1.5	1.4	0.75	1	25		39	37.5	35.5	31.5	27	21	15	7
Multi35 4 N	8.4	5.3	3.1	1.8	1.8	1.1	1.5	25		54	51	48	44	37	29.5	21	11.8
Multi35 5 N	10.2	6.9	4	2.3	2.2	1.5	2	30	мс	65.4	63.5	60	54.5	46	36	26.2	15
Multi35 6 N		8.3	4.8		2.7	2	3		Σ	82	79.5	76	69	61	49	36.7	23
Multias 8 N		11.0	65		3.6	3	4			108	105	101	03	85	70	53	35

Madal		I (A)		P1 (kW)	P	2		l/min	8	17	25	33	42	58	75	92
Model	1~ 230 V	3 230 V	~ 400 V	1~	3~	(kW)	(HP)	μr	m³/h	0.5	1.0	1.5	2.0	2.5	3.5	4.5	5.5
Multi25 3	4.5	3.2	1.9	1.0	0.9	0.55	0.75	16		38.2	38	35.7	33.5	31	25	17	7.2
Multi25 4	5.8	3.9	2.3	1.2	1.1	0.75	1	16	awa M	52.7	51	48.2	45.8	42	33	22	9
Multi25 5	6.4	4.2	2.5	1.4	1.3	0.9	1.25	16		66.5	54	61.2	57.5	52.5	41	27	12
M. L.I.		I (A)		P1 (kW)	P	2	-	l/min	17	33	50	75	100	125	150	175
Model	1~ 230 V	3 230 V	~ 400 V	1~	3~	(kW)	(HP)	μF	m³/h	1.0	2.0	3.0	4.5	6.0	7.5	9.0	10.5
Multi35 3 N	6.7	4.5	2.6	1.5	1.4	0.75	1	25		39	37.5	35.5	31.5	27	21	15	7
Multi35 4 N	8.4	5.3	3.1	1.8	1.8	1.1	1.5	25		54	51	48	44	37	29.5	21	11.8
Multi35 5 N	10.2	6.9	4	2.3	2.2	1.5	2	30	° ≤	65.4	63.5	60	54.5	46	36	26.2	15
Multi35 6 N		8.3	4.8		2.7	2	3		E	82	79.5	76	69	61	49	36.7	23
Multi35 8 N		11.9	6.5		3.6	3	4			108	105	101	93	85	70	53	35
Multi35 10 N		15.4	8.9		4.9	4	5.5			134	130	125	117	105	90	70	47

Model		I (A)		P1 (kW)	Р	2	ωE	l/min	20	50	75	100	150	200	250	300
Model	1~ 230 V	3 230 V	~ 400 V	1~	3~	(kW)	(HP)	μr	m³/h	1.2	3.0	4.5	6.0	9.0	12	15	18
Multi55 3 N	9.6	6.6	3.8	2.1	2.1	1.5	2	30		37	35	33	31	28	24	18	10
Multi55 4 N		8.3	4.8		2.8	2	3		κc	50	47	45	43	39	33	26	16
Multi55 6 N		12.1	7		4.2	3	4		E	77	73	70	66	60	52	43	29
Multi55 7 N		15.6	9		4.9	4	5.5			90	86	82	78	70	60	50	35





- 300
- 250
- 200
- 150
- 100



Improved quality in water supply: constant pressure

The most efficient system for adjusting a pump's hydraulic performance to the pressure and flow requirements of supplying water is through the use of variable-speed technology. In the case of supplying water to a building that requires a constant pressure regardless of the water **n**ow requested, with a variable-speed system, in addition to improved efficiency, a high-quality, oscillation-free service is obtained, guaranteeing greater durability of the equipment and the installation.

The ESD unit receives a proportional signal from a pressure transducer fitted on the discharge pipeline. The ESD processes this signal and regulates the motor speed in order to keep the pressure constant at the established level, regardless of the variations in now demand.

With this pump set the pump's operation can be adapted to the different **n**ow demands, constantly setting the consumption that is strictly necessary for the demand at any given moment. The energy consumption will be proportional to the water consumption. In comparison to the same system running at a fixed speed, this translates directly into energy savings.

Performance area with one pump



Performance area with sets of 4 pumps in parallel





Operating modes

Adjustable operating parameters Language: options ES, EN, DE, IT, FR.

The ESD has a backlit display and a 5-button keypad for displaying the user parameters. The installer can easily regulate and modify the basic operational parameters through the same interface. It also includes a reset option to recover the default factory parameters.

Adjustable operating parameters

- ---> Language: options ES, EN, DE, IT, FR.

- ---> Differential pressure: hysteresis or difference in the set pressure that marks the start-up of the pump
- --> Maximum motor intensity: to regulate motor protection.
- Pump sleep frequency: sleep frequency: this can be set manually or automatically

ESD has a system for automatically calculating the pump's sleep frequency on the basis of the specific characteristics of each installation and the set pressure point.

---> Pump stop temporisation

- --> Nominal motor frequency: 50 Hz 60 Hz.
- ---> Motor rotation reversal
- ---- ON-OFF auxiliary pump: auxiliary pump in fixed-speed DOL operation.
- ---> Auxiliary pump in variable speed mode by ESD at variable speed.

Configuration in auxiliary pumps

- -----> Activation frequency: activation frequency of auxiliary pumps.
- ---> Auxiliary pump maximum intensity.

Parameters displayed

- Set pressure.
- ---> Differential pressure.
- ---> Maximum motor intensity
- ---> Stoppage frequency.
- ---> Pump stop temporisation.
- ---> Module temperature.
- ---- Alarm display: power surge, short-circuit, power failure and module temperature.

Access to advanced parameter settings, the deletion of the operational register and of the alarm history is password protected

Electric motors account for 70 % of the energy used worldwide. Of these, 35 % are used to power hydraulic pumps. It could be said that 25 % of world electrical consumption is used to pump fluids. The introduction of VFD technologies has the potential to save up to 50 % of this energy.

Conventional flow control methods, using fixed-speed pressurisation, involve recirculating part of the flow via a **by-pass**, or restricting the flow with valves. These systems waste an enormous amount of energy: fixed-speed groups operate at maximum energy consumption whenever they operate independently of the flow demand required at each instant.

Variable-speed systems regulate energy consumption on the **basis of the flow demand** (Fig. 1). They are undoubtedly the most efficient and reliable systems for adjusting the hydraulic performance of pumps to variable demand in flow. In addition, a group controlled by **Speedrive** makes installation easier, as it does away with the need for mechanical flow regulation systems and for large hydropneumatic tanks. A **Speedrive**-controlled pressurisation system provides added convenience in water supply, **reducing the noise level and** eliminating vibrations and water hammers during the startup a and shutdown cycles. The motor always starts up at low speed, thus **eliminating peaks of high consumption** due to

The reduction in speed gives rise to new efficiency curves, which run below the maximum speed curve, virtually parallel to it; nonetheless, the curves flatten out, since their height is reduced in a proportion great than that of the flow.

the acceleration of the motor.

Another highly important aspect is that performance at equivalent points is maintained at different speeds (speed reductions of up to 50 % on the maximum velocity), thus achieving lower consumption while maintaining optimal efficiency.

Differential of energy consumption in pumps with VFD



Curve for the installation: constant pressure + load losses



Energy saving









Configurations & Options

1 The ESPA Speedrive (ESD) variable-frequency driver has been designed to be integrated with the following ESPA pumps: MULTI-ESD, PRISMA-ESD and XVM-ESD. With this electronic unit (employing advanced VFD technology) the pump and driver set extends the hydraulic range for each model, guaranteeing efficient service at each point in the performance area, beyond working at one point on a curve.

The ESD module can be adapted to the three-phase motors of these ESPA pumps, even in existing installations, thus improving the service quality and extending the unit's performance range. What is more, the large acumulation tank, needed for fixed speed operation, can be replaced by a small expansion vessel. The variable-speed system does away with fluctuations in the water flow.



- 1. Use of latest micro-controller technology ensures high degree of reliability and accuracy.
- 2. Alternate operation of pumps to ensure even wear and tear of prime mover.
- 3. Faulty pump is operated 3 times, with 30 min difference in every attempt, before being stopped permanently. (Till assisted)
- 4. Faulty pump is easily detected by flashing display.
- 5. If one pump develops fault, all load is automatically transferred to other good working pump.
- 6. All parts are plug-in type and hence very easy to maintain.
- 7. Digital display of motor current, set parameters and faults. Display gives more reliable indications than simple LEDs.
- Complete pump protection including: Short Circuit Protection Lock rotor Protection Over Load Protection Dry Run Protection (level + current based) Tank Level Guard
- Direct reading on display: Actual motor current (only one phase) Set Motor Current-Upper Limit Set Motor Current-Lower Limit Faults as given below

- 2 The ESPA factory assembled hydro pneumatic pump sets comes fully integrated with pumps, control panel with VFD/ standard panel with different options of interconnecting pipes and valves. The standard configuration however is with Stainless steel piping and chrome plated brass/bronze valves and fittings. The pumps are individually tested and also as a system and comes with factory test certificate with different warranty options
- **3** The ESPA DIGITAL control panel is a latest introduction and customers can choose between the conventional and these high spec models.





- Increase in safety.
- Ease of maintenance
- Increased reliability



- Fault Indications
 Over Load protection displayed as OC.
 Under Current or Dry Run protection displayed as UC.
 In case of water transfer panel, overflow protection as
 - UTF. Lower tank Empty as LTE. Short Circuit as SC.
- 11. All the system parameters are code-locked.
- 12. Auto / manual mode of operation separate for both the pumps.
- 13. Protections are not bypassed even in manual mode.
- Highly reliable digital, current based protection instead of voltage based or mechanical protections. This ensures complete protection of pumps in all possible conditions.
- 15. IP 66, enclosure.
- 16. Settable pump switch off delay after the pressure switch is open to ensure proper maintenance of pressure.
- 17. Guarantee of performance in very hot (up to 70 deg. C) and very cold (sub zero) climatic conditions.

Our referances..... to name a few

NO	PROJECT NAME	CONTRACTOR	CONSULTANT
1	Green Lake Tower	Bilt Midle East	ARCH Group
2	1240 Villas Project, Al Barsha	Efeco	Arif & Bintoak
3	940 Villas Project- OUD AL MUTINA	Efeco	Arif & Bintoak
4	AL Marmum – Provision of Infrastructure		
	and Service for Event Arena	Engineer's Office	Engineer's Office
5	6511/ Stable Complex	Engineer's Office	Engineer's Office
6	Marina 9VV Tower	Bilt Midle East	Norr consultant
7	88 Villas Arabian Ranches Hattan	Efeco	Al Burj Consultant
8	594 Villas Arabian Ranches Palmera	Efeco	Style Consultant
9	G + 1, 23 Luxury Villas	Frayland	Frayland Construction
10	Jumeirah Beach Residence		
	Additional Building (A,B,C,D- Block, 152 Villas)	E.T.A	IAN BANHAM
11	G + 12 residential building	Target Electrical and Sanitary Cont. Co.	Incorporated consultants
12	23 Luxury Villas at Emirates Hill	Freyland in Association	City space Engineering Consultant
13	G+12 Residential Bldg.	Traget Electrical Cont. L.L.C	Incorporated Consultant
14	G+2 Labor Accommodation at Al Goze	Belco Electro Mechanical	Al Jassim Engineering
15	100 Villa at Jabel Habit AL Ain	Abu Dhabi Defense Project.	
16	G+10 Building Ajman	Al Tawar Building	Al Hosan Consultant
17	G+7 Sharafi Building	Trinity Engg.	Al Hashemi
18	G+2 Luxury Villa 3 numbers	ETA	Power Choice
19	G+M+3 Building at Al Wasl	Al Oroba Contractor	Development Cunsultant
20	B+G+10 Mankool Tower at Bur Dubai	Bilt Middle East	Archon
21	Community Park at EMAAR Springs & Medows	Al Futtaim Engg.	Al Gurg Consultant
22	92 Villas at Dubai Golf Club	Convrgnt	RPW Consultant
23	Fujairah Academy	Radiant	Horizon/ Torontec
24	B+G+6 Building at Al Barsha	International Electro Mechanical	Al Hashemi
25	Bu Haleeba 2B+G+10+ Pent House Building	International Electro Mechanical	Torontec
26	Lexus Building at City Centre	ETA	SPP
27	School & Other Projects in Dubai		
	& North Emirates	Various	Ministry of Public Works & Housings
28	Labor Camp at AL Ghusais	Bilt Middle East	Dubai Municipality
29	Dubai Police Complex	Bilt Middle East	Arif Bintok
30	Sharjah Civil Aviation Building	GECO	Torontec
31	Rashid Pediatric Centre	Power Point	Torontec
32	17 Luxury Villa (Bur Dubai Zoo)	Bilt Middle East	SPP
33	Al Khaimah Building	Bilt Middle East	SPP
34	AL Maha Resort	ETA	SPP
35	EMAAR Towers at Clock Tower	Bilt Middle East	NORR
36	FORAT Villas of EMAAR	Bilt Middle East	SPP
37	EMAAR Luxurious Villas	Efeco	Arabtec
38	EMAAR Neighborhood Villa (Deema I, II)	Bilt Middle East	Archon
39	Water features at Knowledge Village	Bilt Middle East	DAR/ Al Khatib Crack Nell
40	Media city Phase 3	Bilt Middle East	SPP
41	271 Villa under Department		
	of Private Housing & Finance	Thermo	ARENCO
42	223 Villa under Department		
	of Private Housing & Finance	Arabtec	Winner

SESPA

