



TOPAIRE

WATER-COOLED PACKAGED

• **Cleanable Shell & Tube Condenser** •



Buatan Malaysia

WATER-COOLED PACKAGE UNITS

GENERAL DESCRIPTION

The TWCPS/R, FB & CH series with new features is suitable for hotel, office, hospital, factory and supermarket applications. The low noise and compact series are completely leak tested, evacuated, dehydrated and precharged with refrigerant so that it is ready for connection when reached the site.

Scroll Compressor(s) (TWCPs Series)

Reliability

- No contact scroll design that minimizes friction, increases volumetric efficiency and reduces vibration, thus longer service life.
- Suction gas cooled motor.

Low Power Consumption:

- High EER.
- No crankcase heater required.



Tandem Compressor (TWCPs 480B to 1520B)

For model with 3 compressors system and above, two compressors are connected in tandem, thus reducing the number of condenser water inlet/outlet connection.



Large Reciprocating Compressor (TWCPs 540B to 1280B)

- A combination of 2 to 4 reciprocating compressors to reduce the condenser piping connection. Also, this will reduce the quantity of electrical starter components.

Multiple Compressor

- TWCPs 220B to 1520B & TWCPs 540B to 1280B)

By cycling off compressor(s) operation to match building load, no energy is being wasted when room load requires lesser cooling

- capacity.
- No total shut down when servicing or repairing a faulty compressor.



Cleanable Shell and Tube

Condenser

Multiple 3/4" O.D. copper finned tubes with 25 to 30% more surface area ensure better heat transfer.

- Integral subcooling circuit to maximize efficiency.
- Provided with fusible plug for safety purpose.
- Leak and pressure tested to 450 psig.

Fully Leak Tested Refrigerant Circuit

- Leak and pressure tested at 450 psig.
- Pressure ports are provided on the discharge, liquid and suction line.
- Evacuated, dehydrated and charged with refrigerant.

Safety Components

- High-low pressure cutout to protect compressor from high discharge pressure and system leakage.
- Liquid line sight glass and filter drier for refrigerant line components.

Efficient Evaporator Coil

- Independent thermal expansion valve with external equalizer for better refrigerant control and wider load condition.
- Leak and pressure tested to 450 psig
- Evacuated, dehydrated and charged with refrigerant.

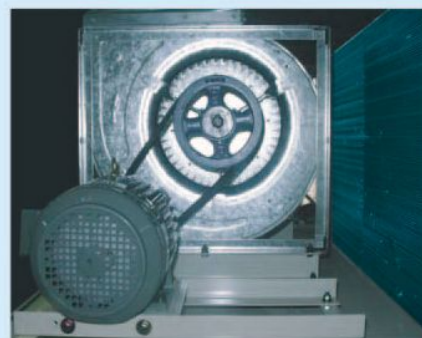
Drive Package and Blowers

(TWCPs 125B to 1520B & TWCPs 540B to 1280B)

- Belt driven drive package offers flexibility on various air flow rate and various static pressure applications.
- Single large diameter double inlet double width blowers (AMCA certified) reduce the noise level and eliminates the need for common transition and eliminates air unbalance.

Casing

- Constructed of heavy gauge steel sheet and insulated with 1/2" thick x 1 1/2 lb per cu.ft linacoustic fiberglass.
- Aesthetically coated with powder paint to provide excellent finish, weatherability and corrosion resistance.
- Removable panels on the left and right hand side of the unit to provide access to critical parts and components.



Filters

- 1" thick washable filters.

Optional Accessories Features

- Hydrophilic aluminium fins, copper fins or tinned coated copper fins for better corrosion resistance.
- Hot gas by pass for low load conditions.
- Decorative discharge plenum.
- Hot water heating coils.
- R407C refrigerant instead of R22.

WATER COOLED PACKAGE AIR CONDITIONERS - FLOOR STANDING DUCTED & FREE BLOW TYPE

MODEL		TWCPS & TWCPS - FB																		TWCPS															
		TWCPS 68 B / FB		TWCPS 81 B / FB		TWCPS 95 B / FB		TWCPS 108 B / FB		TWCPS 125 B / FB		TWCPS 145 B / FB		TWCPS 160 B / FB		TWCPS 190 B / FB		TWCPS 220 B / FB		TWCPS 250 B		TWCPS 290 B		TWCPS 320 B		TWCPS 380 B									
COOLING CAPACITY	BTU/HR	68,000		81,000		95,000		108,000		125,000		145,000		160,000		190,000		220,000		250,000		290,000		320,000		380,000									
	KW	19.9		23.7		27.8		31.7		36.6		42.5		46.9		55.7		64.5		73.3		85.0		93.8		111.4									
COMPRESSOR	TYPE	SCROLL																																	
POWER SUPPLY	V/PH/Hz	380 - 415 / 3 / 50																																	
NOMINAL RUNNING CURRENT	AMP	6.8		8.8		10.0		11.1		12.8		16.2		16.3		20.0		10		12.8		12.8		12.8		16.3		16.3		20.0		20.0			
REFRIGERANT CHARGE	KG	3.8		4.5		5.6		6		8		8		10.8		11.5		6		8		8		8		10.8		10.8		10.8		11.5		11.5	
PROTECTION DEVICE		HIGH / LOW PRESSURE SWITCH																																	
CONDENSER	TYPE	CLEANABLE SHELL & TUBE																																	
	TUBE	Ø 3/4 COPPER FINNED TUBE																																	
WATER CONNECTION SIZE	INCH	1 1/4		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		1 1/2		2		1 1/2 X 2		1 1/2 X 2		1 1/2 X 2		1 1/2 X 2		1 1/2 X 2		2 X 2							
WATER FLOW RATE	USGPM	17		21		24		27		32		36		40		48		56		64		72		80		96									
PRESSURE DROP	FT	2.6		3.5		4.7		4.4		4.3		4.6		3.5		4.0		5.6		5.6		5.5		6.4		8.0									
EVAPORATOR COIL	TUBE	SEAMLESS INNER GROOVE COPPER TUBE																																	
	FIN	ALUMINIUM WAVE FIN																																	
ROWS / FIN PER INCH	R / FPI	3 / 12		3 / 12		3 / 12		4 / 12		3 / 12		3 / 12		3 / 12		3 / 13		4 / 12		3 / 12		3 / 14		4 / 12		3 / 14		3 / 13		3 / 14		4 / 12			
FACE AREA	SQ.FT	5.2	5.4	5.7	7.0	6.1	7.0	6.6	9.9	7.6	9.9	7.6	9.9	11.3	9.9	12.0	13.1	15.1	13.1	16.3		19.8		20.9		20.9									
REFRIGERANT	TYPE	R - 22																																	
	CONTROL	THERMAL EXPANSION VALVE																																	
EVAPORATOR FAN MOTOR	TYPE	3 SPEED - PSC						SQUIRREL CAGE INDUCTION																											
POWER SUPPLY	V/PH/Hz	240 / 1 / 50						380 - 415 / 3 / 50																											
RATED POWER	HP	0.50	0.50	0.75	0.50	1.0	0.50	1.5	0.75	2	0.75	3	1	3	1	4	1.5	5.5	1.5	5.5		5.5		7.5		10									
FULL LOAD CURRENT	AMP	3.4	3.4	4.8	3.4	6.5	3.4	2.7	1.7	3.4	1.7	4.85	2.0	4.85	2.0	6.4	2.7	8.0	2.7	8.0		8.0		11.3		14.4									
FAN	TYPE	CENTRIFUGAL / DIRECT DRIVE						CENTRIFUGAL / BELT DRIVEN																											
AIR FLOW	CFM	2,000		2,400		2,800		3,500		3,800		4,000		4,200		5,800		6,400		6,800		7,800		8,400		10,500									
EXTERNAL STATIC PRESSURE	INWG	0.5	FAD	0.5	FAD	0.5	FAD	0.5	FAD	0.5	FAD	0.5	FAD	0.8	FAD	1.1	FAD	1.2	FAD	1.1		1.2		1.2		1.2									
AIR FILTER		1" WASHABLE SYNTHETIC FIBRE FILTER																																	
CASING	MATERIAL	ELECTRO-GALVANIZED MILD STEEL																																	
	FINISH	EPOXY POWDER COATING																																	
		VB	FB	VB	FB	VB	FB	VB	FB	VB	FB	VB	FB	VB	FB	VB	FB	VB	FB	VB		VB		VB		VB									
DIMENSION - Width - Depth - Height	inch	45 1/2	48	45 1/2	48	45 1/2	48	45 1/2	61	45 1/2	61	45 1/2	61	45 1/2	61	57 1/2	72	76	72	76		76		76		76									
	inch	30	22	30	22	30	22	30	24	30	24	30	24	30	30	38	30	38	30	38		38		41 1/2		41 1/2									
	inch	47	79	47	79	47	79	63	81	63	81	63	81	63	81	63	86	63	86	62	86		62		68		68								
WEIGHT	KG	288	298	346	356	381	390	443	453	613	628	621	636	635	660	795	815	855	875	900		1,080		1,228		1,432									

WATER COOLED PACKAGE AIR CONDITIONERS - FLOOR STANDING DUCTED

MODEL		TWCPS																															
		TWCPS 435 B		TWCPS 480 B		TWCPS 510 B		TWCPS 570 B		TWCPS 640 B		TWCPS 700 B		TWCPS 760 B		TWCPS 800 B		TWCPS 860 B		TWCPS 950 B		TWCPS 1140 B		TWCPS 1340 B		TWCPS 1520 B							
COOLING CAPACITY	BTU/HR	435,000		480,000		510,000		570,000		640,000		700,000		760,000		800,000		860,000		950,000		1,140,000		1,340,000		1,520,000							
	KW	127.5		140.7		149.5		167.1		187.6		205.2		222.7		234.5		252.0		278.4		334.1		392.7		445.5							
COMPRESSOR	TYPE	SCROLL		TANDEM SCROLL																													
POWER SUPPLY	V/PH/Hz	380 - 415 / 3 / 50																															
NOMINAL RUNNING CURRENT	AMP	16.3 x 2		16.2		16.3 x 3		16.3 x 2		20.0		20.0 x 3		16.3 x 4		16.3 x 2		20.0 x 2		20.0 x 4		16.3 x 5		16.3 x 3		20.0 x 2		20.0 x 8					
REFRIGERANT CHARGE	KG	10.8 x 2		8		10.8 x 3		10.8 x 2		11.5		11.5 x 3		10.8 x 4		10.8 x 2		11.5 x 2		11.5 x 4		10.8 x 5		10.8 x 3		11.5 x 2		11.5 x 8					
PROTECTION DEVICE		HIGH / LOW PRESSURE SWITCH																															
CONDENSER	TYPE	CLEANABLE SHELL & TUBE																															
	TUBE	Ø 3/4 COPPER FINNED TUBE																															
WATER CONNECTION SIZE	INCH	1 1/2 x 3		1 1/2		2 1/2		2		2 1/2		2		2 1/2		2 1/2 x 2		2 1/2 x 2		2 1/2 x 2		1 1/2		2 1/2 x 2		2 x 3		2 1/2 x 4		2 1/2 x 4		2 1/2 x 4	
WATER FLOW RATE	USGPM	110		120		128		143		160		175		190		200		215		238		285		335		380							
PRESSSURE DROP	FT	6.7		6.4		8		8.5		6.7		6.7		6.4		6.6		7.5		7.6		7.6		6.4		7.6							
EVAPORATOR COIL	TUBE	SEAMLESS INNER GROOVE COPPER TUBE																															
	FIN	ALUMINIUM WAVE FIN																															
ROWS / FIN PER INCH	R / FPI	4 / 12		3 / 13		3 / 14		4 / 12		4 / 12		4 / 12		4 / 12		3 / 12		3 / 12		4 / 10		4 / 12		4 / 11		5 / 10							
FACE AREA	SQ.FT	23.6		30.0		30.0		30.0		36.0		37.9		40.6		50.6		50.6		50.6		70.8		70.8		70.8							
REFRIGERANT	TYPE	R - 22																															
	CONTROL	THERMAL EXPANSION VALVE																															
EVAPORATOR FAN MOTOR	TYPE	SQUIRREL CAGE INDUCTION																															
POWER SUPPLY	V/PH/Hz	380 - 415 / 3 / 50																															
RATED POWER	HP	10		15		15		15		15		20		20		20		25		25		30		40		40							
FULL LOAD CURRENT	AMP	14.4		21.5		21.5		21.5		21.5		29.2		29.2		29.2		33.9		33.9		41.2		55.6		55.6							
FAN	TYPE	CENTRIFUGAL / BELT DRIVEN																															
AIR FLOW	CFM	11,500		13,500		14,500		15,500		17,000		18,000		20,000		22,000		24,000		26,000		28,000		32,000		36,000							
EXTERNAL STATIC PRESSURE	INWG	1.0		1.4		1.5		1.4		1.6		1.6		1.5		1.8		2.0		1.9		2.1		2.1		2.0							
AIR FILTER		1" WASHABLE SYNTHETIC FIBRE FILTER																															
CASING	MATERIAL	ELECTRO-GALVANIZED MILD STEEL																															
	FINISH	EPOXY POWDER COATING																															
DIMENSION - Width	inch	84		84		84		84		90		90		90		108		108		108		138		150		150							
- Depth	inch	52		52		52		52		64		64		64		72		72		72		86		86		86							
- Height	inch	78		78		78		78		84		84		84		92		92		92		99		99		99							
WEIGHT	KG	1,533		1,938		1,938		2,109		2,846		2,864		2,964		3,170		3,400		3,523		3,996		4,147		4,200							

WATER COOLED PACKAGE AIR CONDITIONERS - FLOOR STANDING DUCTED

MODEL		TWCPR							
		TWCPR 540 B	TWCPR 640 B	TWCPR 810 B	TWCPR 960 B	TWCPR 1080 B	TWCPR 1180 B	TWCPR 1260 B	
COOLING CAPACITY	BTUHR	540,000	640,000	810,000	960,000	1,080,000	1,180,000	1,280,000	
	KW	158.3	187.6	237.4	281.4	316.5	345.8	375.1	
COMPRESSOR	TYPE	RECIPROCATING							
POWER SUPPLY	V/PH/Hz	380 - 415 / 3 / 50							
NOMINAL RUNNING CURRENT	AMP	32.4 x 2	38.6 x 2	32.4 x 3	38.6 x 3	32.4 x 4	32.4 x 2	38.6 x 2	38.6 x 4
REFRIGERANT CHARGE	KG	13.4 x 2	16.0 x 2	13.4 x 3	16.0 x 3	13.4 x 4	13.4 x 2	16.0 x 2	16.0 x 4
PROTECTION DEVICE		HIGH / LOW PRESSURE SWITCH							
CONDENSER	TYPE	CLEANABLE SHELL & TUBE							
	TUBE	Ø 3/4 COPPER FINNED TUBE							
WATER CONNECTION SIZE	INCH	2 X 2	2 1/2 X 2	2 X 3	2 1/2 X 3	2 X 4	2 x 2	2 1/2 x 2	2 1/2 x 4
WATER FLOW RATE	USGPM	135	160	203	240	270	295		319
PRESSURE DROP	FT	7.8	6.5	8	6.5	6.7	7.7		7.7
EVAPORATOR COIL	TUBE	SEAMLESS INNER GROOVE COPPER TUBE							
	FIN	ALUMINIUM WAVE FIN							
ROWS / FIN PER INCH	R / FPI	4 / 12	4 / 12	3 / 12	4 / 12	4 / 12	4 / 12		4 / 12
FACE AREA	SQ.FT	30.0	36.0	53.9	53.9	53.9	66.8		70.7
REFRIGERANT	TYPE	R - 22							
EVAPORATOR FAN MOTOR	CONTROL	THERMAL EXPANSION VALVE							
	TYPE	SQUIRREL CAGE INDUCTION							
POWER SUPPLY	V/PH/Hz	380 - 415 / 3 / 50							
RATED POWER	HP	15	15	20	25	30	30		40
FULL LOAD CURRENT	AMP	21.5	21.5	29.2	33.9	41.2	41.2		55.6
FAN	TYPE	CENTRIFUGAL / BELT DRIVEN							
AIR FLOW	CFM	15,500	17,000	22,000	26,000	26,000	28,000		32,000
EXTERNAL STATIC PRESSURE	INWG	1.5	1.55	2.04	1.86	2.13	2.13		2.0
AIR FILTER		1" WASHABLE SYNTHETIC FIBRE FILTER							
CASING	MATERIAL	ELECTRO-GALVANIZED MILD STEEL							
	FINISH	EPOXY POWDER COATING							
DIMENSION - Width	inch	84	90	108	108	108	138		138
- Depth	inch	52	64	72	72	72	86		86
- Height	inch	78	84	92	92	92	99		99
WEIGHT	KG	1,909	2,818	3,090	3,272	3,636	4,000		4,181

WATER COOLED PACKAGE AIR CONDITIONERS - CEILING HORIZONTAL DUCTED

MODEL		TWCP - CH								TWCPS - CH									
		TWCP 18 CH	TWCP 24 CH	TWCP 28 CH	TWCP 32 CH	TWCP 36 CH	TWCP 46 CH	TWCP 56 CH	TWCP 68 CH	TWCP 81 CH	TWCP 96 CH	TWCP 108 CH	TWCP 125 CH	TWCP 145 CH	TWCP 160 CH	TWCP 190 CH	TWCP 220 CH	TWCP 250 CH	TWCP 290 CH
COOLING CAPACITY	BTUHR	18,000	24,000	28,000	32,000	36,000	46,000	56,000	68,000	81,000	95,000	108,000	125,000	145,000	160,000	190,000	220,000	250,000	290,000
	KW	5.3	7.0	8.2	9.4	10.3	13.5	16.4	19.9	23.7	27.8	31.7	36.6	42.5	46.9	55.7	64.5	73.3	85.0
COMPRESSOR	TYPE	ROTARY								SCROLL									
POWER SUPPLY	V/PH/Hz	240 / 1 / 50								380 - 415 / 3 / 50									
NOMINAL RUNNING CURRENT	AMP	7.7	8.9	10.4	12.1	12.1	6.8	8.2	9.3	8.8	10.0	11.1	12.8	16.2	16.3	20.0	10	12.8	16.2 x 2
REFRIGERANT CHARGE	KG	2.18	2.35	2.5	2.6	2.65	2.85	3.5	3.8	4.5	5.6	6	6	7.2	10.8	11.5	5.2	6.8	9.4 x 2
PROTECTION DEVICE		HIGH / LOW PRESSURE SWITCH																	
CONDENSER	TYPE	CLEANABLE SHELL & TUBE																	
	TUBE	Ø 3/4 COPPER FINNED TUBE																	
WATER CONNECTION SIZE	INCH	3/4	3/4	1	1	1	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	2	1 1/2 X 2	1 1/2 X 2	1 1/2 X 2
WATER FLOW RATE	USGPM	4.5	6	7	8	9	13	14	17	21	24	27	32	37	40	48	55	63	72
PRESSURE DROP	FT	2	2.9	1.8	1.7	1.7	1.8	2	2.5	3.8	5.1	5	3.8	3	3.2	4.5	7.8	6.5	8
EVAPORATOR COIL	TUBE	SEAMLESS INNER GROOVE COPPER TUBE																	
	FIN	ALUMINIUM WAVE FIN																	
ROWS / FIN PER INCH	R / FPI	3 / 12	3 / 12	3 / 12	3 / 12	3 / 12	3 / 12	4 / 12	3 / 12	4 / 12	3 / 12	3 / 12	3 / 12	4 / 12	4 / 12	4 / 12	4 / 12	3 / 12	4 / 12
FACE AREA	SQ.FT	1.92	2.24	2.56	3.11	3.11	4.0	4.0	5.28	5.28	7.22	8.33	9.17	9.17	9.17	10.7	12.08	15.42	15.42
REFRIGERANT	TYPE	R - 22																	
EVAPORATOR FAN MOTOR	CONTROL	THERMAL EXPANSION VALVE																	
	TYPE	SQUIRREL CAGE INDUCTION																	
POWER SUPPLY	V/PH/Hz	240 / 1 / 50								380 - 415 / 3 / 50									
RATED POWER	HP	0.25	0.33	0.33	0.33	0.5	0.5	0.75	0.75	1.5	1.5	1.5	2	3	3	4	5	5.5	7.5
FULL LOAD CURRENT	AMP	1.4	2.6	2.6	2.6	4.5	4.5	5.6	1.7	2.7	2.7	2.7	3.39	4.65	4.65	6.15	7.7	8.0	10.9
FAN	TYPE	CENTRIFUGAL / DIRECT DRIVE								CENTRIFUGAL / BELT DRIVEN									
AIR FLOW	CFM	650	800	1000	1250	1500	1750	1900	2100	2500	3400	3500	4000	4200	4400	5400	6,200	7,400	8,600
EXTERNAL STATIC PRESSURE	INWG	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	1.0	1.0	1.2	1.2
AIR FILTER		1" WASHABLE SYNTHETIC FIBRE FILTER																	
CASING	MATERIAL	ELECTRO-GALVANIZED MILD STEEL																	
	FINISH	EPOXY POWDER COATING																	
DIMENSION - Width	inch	46	46	46	46	46	46	46	63	63	68	68	72	72	72	90	90	108	108
- Depth	inch	30	30	30	30	30	30	30	54	54	54	54	54	54	67 1/2	72	72	72	72
- Height	inch	20	20	20	22	22	22	22	31 1/2	31 1/2	34 1/2	36	36	36	36	36	36	36	36
WEIGHT	KG	100	127	137	146	146	200	218	296	364	422	443	443	523	680	790	900	1,018	1,120

All specifications are subject to change by manufacturer without prior notice.

Note : The nominal cooling capacity is based on condenser outdoor air entering temp. 35°C (DB); indoor on coil temp. 27/19°C (DB / WB)



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DB TOPAIRE SDN BHD



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