KRUGER

General Instructions
Propeller Fan
APK Series

This manual is to assist the engineer to avoid the most common fan problems caused by improper storage, installation, operation and maintenance. HANDLING AND MAINTENANCE SHOULD ALWAYS BE PERFORMED BY EXPERIENCED AND TRAINED PERSONNEL

RECEIVING, HANDLING AND STORAGE

Rough handling during shipment and improper storage can cause damage that is not noticeable until the fan is in operation. This can be avoided with proper storage and handling techniques.

Fan should be hoisted with slings placed around the fan housing. Touch up the scratch coated surfaces during lifting, to prevent corrosion to occur at this area. Store the fan in a clean and dry place, preferably indoor to ensure fan shaft, bearing and fan casing are protected against dust and corrosion. Do not store the fan in a location where it will be subjected to vibration. This can cause the internal surface to rub against each other and damage the bearings.

START-UP CHECK LIST

Before putting any fan into initial operation the manufacturer's instruction must be followed. Complete the following checklist to make sure that the fan is ready to run.

- Lock out the primary and all secondary power sources.
- Ensure that all fastener, particularly impeller fastener, are tight prior to start-up. Do not re -use locking fasteners.
- Regularly check impeller fastener for tightness.
- Spin impeller to see whether it rotates freely and is not grossly out of balance.
- Inspect impeller for correct rotation for the fan design.
- Property secure all safety guards.
- Switch on the electrical supply and allow the fan to reach full speed. Check carefully for :- (1) Excessive vibration
  (2) Unusual noise
  (3) Proper amperage and voltage values

  If any problem is indicated, SWITCH OFF IMMEDIATELY. Lock out the electrical supply, secure the fan impeller if there is a potential for wind milling. (impeller turning due to a draft through the system). Check carefully for the cause of the trouble and correct as necessary.

The fan may now be put into operation but during the first 8 hrs of running, it should be periodically observed and checked for excessive vibration and noise. Checks should be make of motor input current and motor & bearing temperature to ensure that they do not exceed manufacturer's recommendation. After 8 hrs of operation, the fan should be shut down to checkthe following items :-

(1) All set screws and hold-down bolts

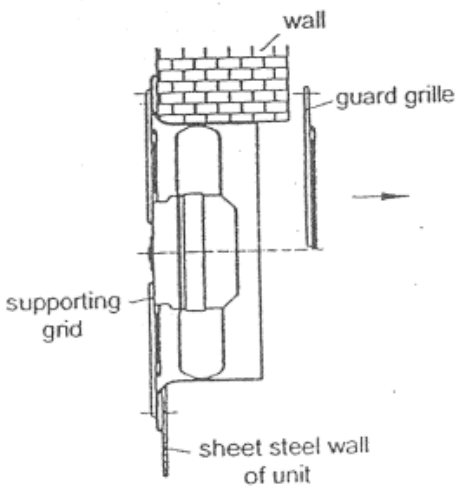
(2) Bearinci ,iousing temperature

INSTALLATION

- Inlet and outlet ductwork should be free from obstructions.
- Avoid sharp bends on inlet or outlets.
- Do not use ductwork smaller in area than the fan.
- Flexible duct connections should be taut
- Ductwork COnnecttortS should be well aligned.
- Inlet cones must be fitted to free inlet applications.
- Ensure that the fan orientation is correct for the required air flow direction.

IMPORTANT: External rotor motors only

All singled-speed three-phase fans must be wired in star only. If wired in delta they will burn out and motor warranty is avoid. Refer to wiring diagram for details.



ROUTINE MAINTENANCE

Maintenance should always be performed by experienced and trained personnel. Do not attempt any maintenance on a fan unless the electrical supply has been locked out or tagged out and the impeller hasbeen secured.

Under normal circumstances, handling clean air, the system should require cleaning only about a year. However, the fan and system should be checked at regular intervals to detect any unusual accumulation.

The tan impeller should be specially checked for build-up of material or dirt which may cause an Imbalance with resulting undue wear on bearings and belt drives. A regular maintenance program should be established as needed to prevent material build-up.

Periodic inspection of the rotating assembly must be made to detect any indication of weakening of the rotor because of corrosion erosion of metalfatigue

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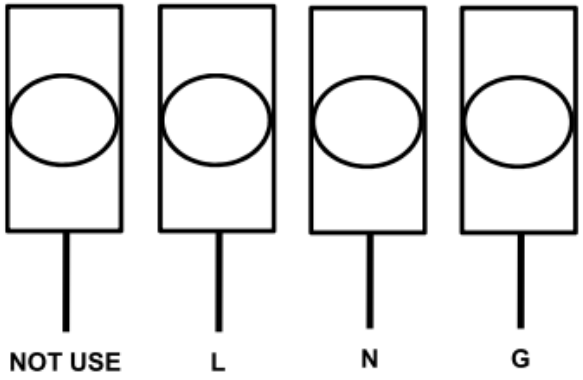
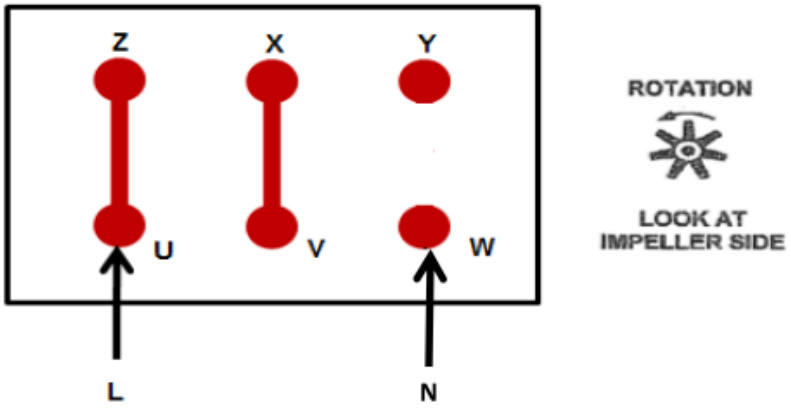
APK WIRING DIAGRAM

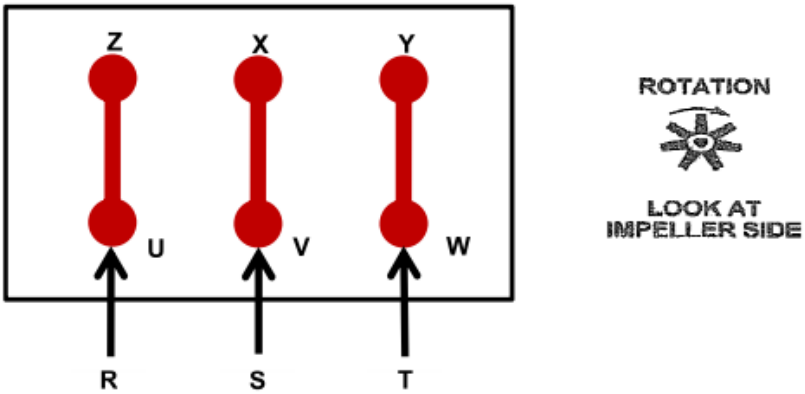
Fan Model : APK 315 4P-1 1S, APK 355 4P-1 1S



Fan Model : APK 400 4P-1 1S, APK 450 4P-1 1S, APK 500 6P-1 1S, APK 4P-1 1S, APK 560 4P-3 1S



Fan Model : APK 450 4P-3 1S, APK 500 4P-3 1S, APK 630 6P-3 1S, APK 710 6P-3 1S, APK 800 6P-3 1S, APK 900 12P-3 1S, APK 1000 12P-3 1S



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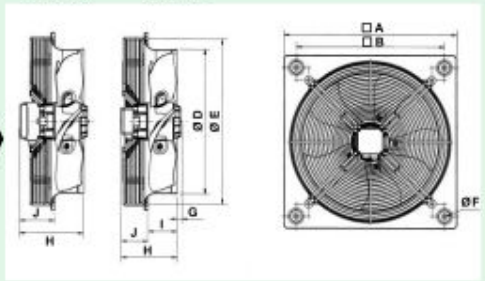
Propeller Fan **APK Series**

Dimensions – 50Hz

315 - 710

1 PHASE 3 PHASE



Model	□A	□B	ØD	ØE	ØF	G	H	I	J	Wt (kg)
APK 315 4P-1 1S	400	330	320	365	10	-	149	68	82	7
APK 355 4P-1 1S	450	380	363	411	10	-	156	75	82	7.5
APK 400 4P-1 1S	500	420	410	464	10	12	200	78	122	9
APK 450 4P-1 1S	560	480	457	522	10	-	204	91	114	11.5
APK 500 4P-1 1S	630	560	512	572	10	13	201	97	104	16
APK 500 6P-1 1S	630	560	512	572	10	-	201	97	104	16
APK 560 6P-1 1S	710	630	570	649	10	-	213	99	114	21.5
APK 560 6P-3 1S	710	630	570	649	10	-	188	99	89	21.5
APK 630 4P-3 1S	800	710	640	730	12	25	182	103	79	24
APK 630 6P-3 1S	800	710	640	730	12	7	182	103	79	24
APK 710 6P-3 1S	900	800	720	810	12	11	207	92	115	27

Technical Data – 50Hz

Model	Max Q m³/h	Power W	Motor Protection	Motor	N° Pole	Hz	Max. Current in AMP		Insulation Class	dB (A) at 3m	RPM
							230V	400V			
APK 315 4P-1 1S	2048	120	IP54	Single Phase	4	50	0.53	-	F	47	1400
APK 355 4P-1 1S	2768	120	IP54	Single Phase	4	50	0.55	-	F	53	1400
APK 400 4P-1 1S	4870	290	IP54	Single Phase	4	50	1.2	-	F	54	1360
APK 450 4P-1 1S	6516	380	IP54	Single Phase	4	50	2.0	-	F	58	1370
APK 500 4P-1 1S	8752	850	IP54	Single Phase	4	50	3.8	-	F	63	1350
APK 500 6P-1 1S	5785	310	IP54	Single Phase	6	50	1.3	-	F	54	870
APK 560 6P-1 1S	8150	410	IP54	Single Phase	6	50	1.8	-	F	55	820
APK 560 6P-3 1S	8366	450	IP54	Three Phase	6	50	-	0.9	F	55	860
APK 630 4P-3 1S	12272	1400	IP54	Three Phase	4	50	-	2.5	F	67	1330
APK 630 6P-3 1S	11423	740	IP54	Three Phase	6	50	-	1.5	F	57	880
APK 710 6P-3 1S	15145	1000	IP54	Three Phase	6	50	-	2.6	F	60	920

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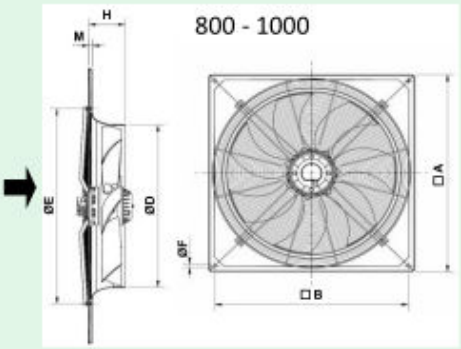
Propeller Fan **APK Series**

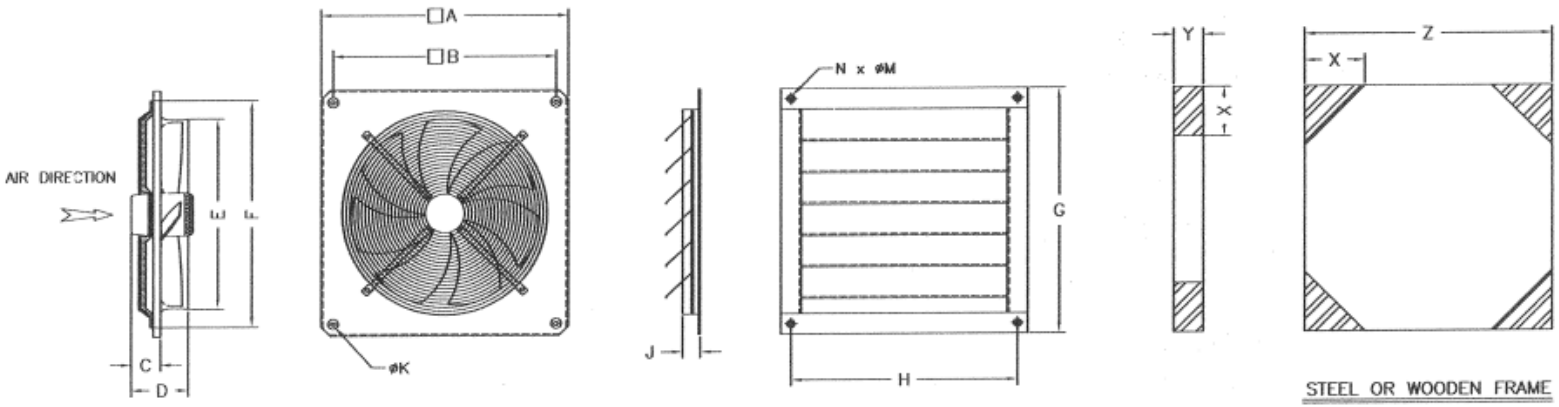
Dimensions – 50Hz

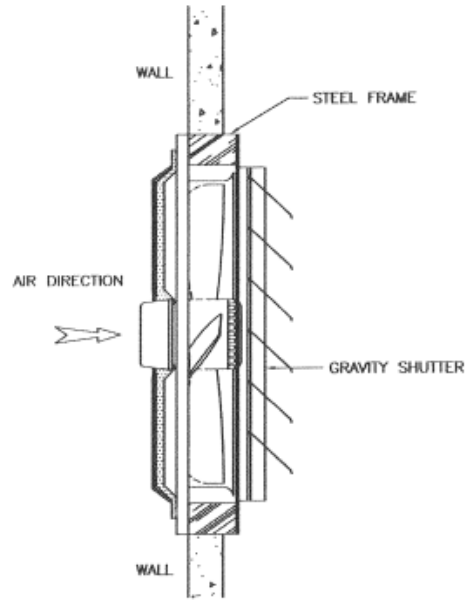


Model	□A	□B	ØD	ØE	ØF	H	M	Wt (kg)
APK 800 6P-3 1S	970	910	797	960	14.5	170	17	46
APK 800 8P-3 1S	970	910	797	960	14.5	170	17	45
APK 900 12P-3 1S	1070	1010	914	1115	14.5	210	22	55
APK 1000 12P-3 1S	1170	1110	1000	1140	14.5	210	22	61

Technical Data – 50Hz

Model	Max Q m³/h	Power W	Motor Protection	Motor	N° Pole	Hz	Max. Current in AMP at 400V	Insulation Class	dB (A) at 3m	RPM
APK 800 6P-3 1S	22672	1900	IP54	Three Phase	6	50	3.5	F	61	890
APK 800 8P-3 1S	14378	760	IP54	Three Phase	8	50	1.83	F	54	630
APK 900 12P-3 1S	18439	690	IP54	Three Phase	12	50	2.2	F	49	440
APK 1000 12P-3 1S	23794	890	IP54	Three Phase	12	50	1.9	F	50	420





MODEL	PROPELLER FAN							GRAVITY SHUTTER				STEEL OR WOODEN FRAME		
	A	B	C	D	øE	øF	øK	G	H	J	N x M	X	Y	Z
APK 315	400	330	82	149	320	365	10	400	365	70	4 x ø9	115	75	400
APK 355	450	380	82	456	363	411	10	450	415	70	4 x ø9	115	80	450
APK 400	500	420	122	200	410	464	10	500	465	70	4 x ø9	125	95	500
APK 450	560	480	114	204	457	522	10	560	525	70	4 x ø11	125	95	560

REMARK :

KRUGER KRUGER VENTILATION INDUSTRIES (THAILAND) LTD.

DESCRIPTION : INSTALLATION GUIDE LINE APK SERIES

DRAWN BY :MON | CHECK BY:MON | APPROVED BY :

DATE:24/09/2008

ALL DIMENSIONS IN M.M.

MAT'L : –

THK : – | QTY/UNIT : | SCALE :

PART. NO. :

DRAWING NO. :

GENERAL TOLERANCES : UNLESS SPECIFIED
0 – 499 : ±0.5
500 – 999 : ±1.0
1000 AND ABOVE : ±2.0

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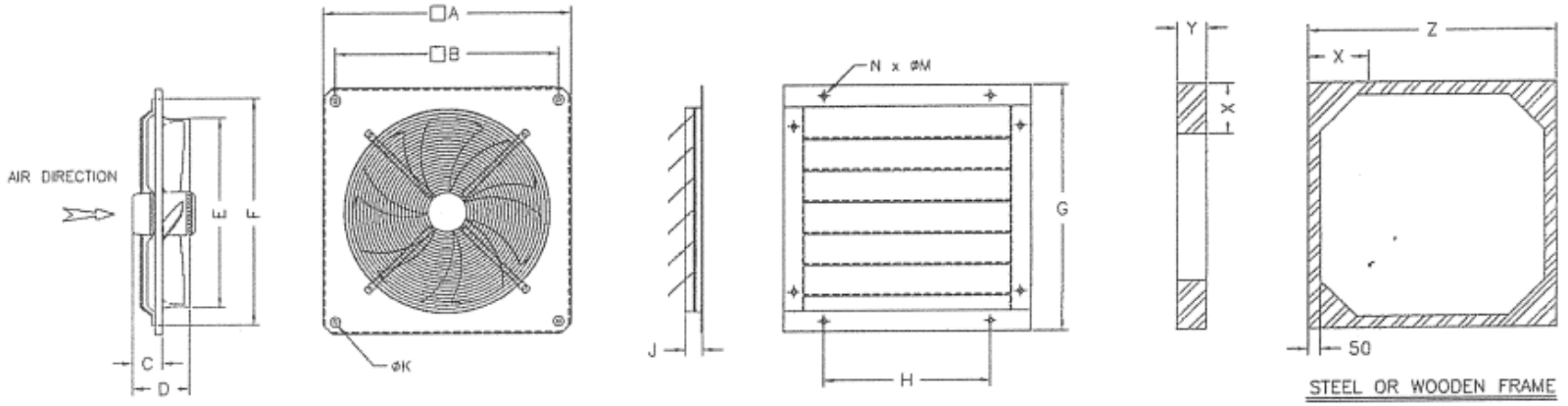

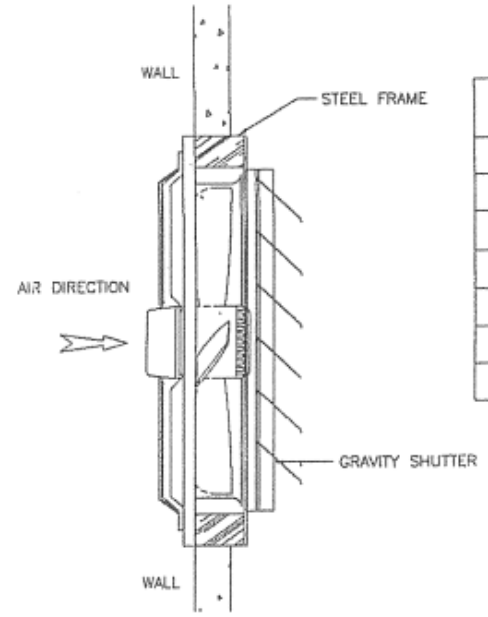

MODEL	PROPELLER FAN							GRAVITY SHUTTER				STEEL OR WOODEN FRAME		
	A	B	C	D	øE	øF	øK	G	H	J	N x M	X	Y	Z
APK 500 4P-1	630	560	104	201	512	572	10	630	330	70	8 x ø11	115	115	630
APK 500 6P-1	630	560	104	201	512	572	10	630	330	70	8 x ø11	115	102	630
APK 560 6P-1	710	630	114	213	570	649	10	710	410	70	8 x ø11	125	105	710
APK 560 6P-3	710	630	89	188	570	649	10	710	410	70	8 x ø11	125	105	710
APK 630 4P-3	800	710	79	182	640	730	12	800	500	70	8 x ø11	135	133	800
APK 630 6P-3	800	710	79	182	640	730	12	800	500	70	8 x ø11	135	115	800
APK 710 6P-3	900	800	115	206	710	810	12	900	600	70	8 x ø11	145	108	900

REMARK :

KRUGER KRUGER VENTILATION INDUSTRIES (THAILAND) LTD.

DESCRIPTION : INSTALLATION GUIDE LINE APK SERIES

DRAWN BY :MON | CHECK BY:W.W. | APPROVED BY :

DATE:24/09/2008

ALL DIMENSIONS IN M.M.

MAT'L : -

THK : - | QTY/UNIT : | SCALE :

PART. NO. :

DRAWING NO. :

GENERAL TOLERANCES : UNLESS SPECIFIED
0 - 499 : ±0.5
500 - 999 : ±1.0
1000 AND ABOVE : ±2.0

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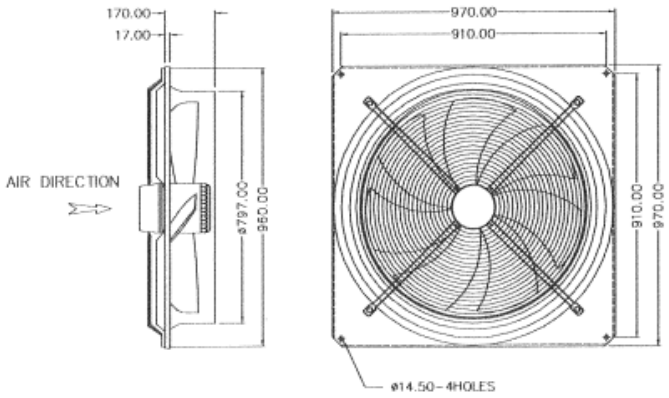
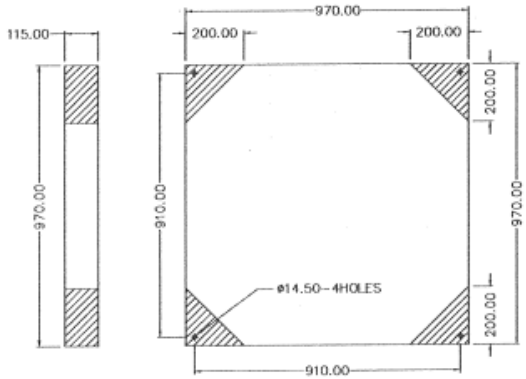
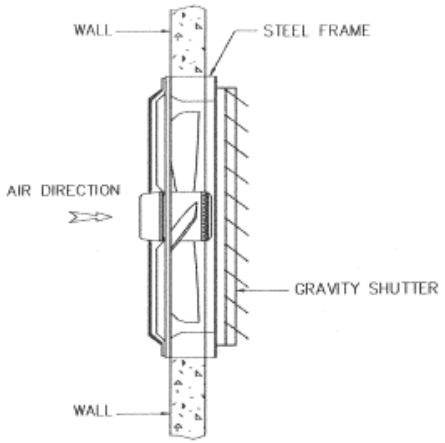
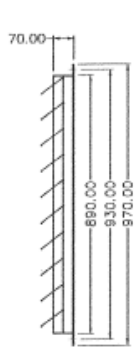
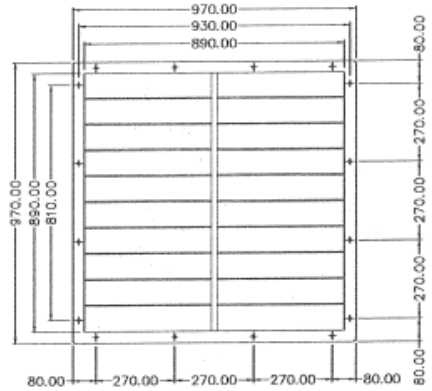




STEEL OR WOODEN FRAME







KRUGER VENTILATION INDUSTRIES (THAILAND) .CO.,LTD	DESCRIPTION : APK 800-6P-3-1S			DRAWN BY : CHATREE	GENERAL TOLERANCES ACCORDING TO DIN ISO 2768-1	ECN : –	REV.: 00	NEW DWG
				REVIEW BY : –	LINEAR MEASURES: 0.5 up to 6 : ±0.10; > 6 up to 30 : ±0.20; > 30 up to 120 : ±0.30; > 120 up to 400 : ±0.50; > 400 up to 1000 : ±0.80; >1000 up to 2000 : ±1.20; >2000 up to 4000 : ±2.00	PRODUCT CODE : —		
	REMARKS : –			APPR. BY : –	ANGULAR MEASURES: 0.5 up to 10 : ±1°; > 10 up to 50 : ±0°30'; > 50 up to 120 : ±0°20'; > 120 up to 400 : ±0°10'; > 400 : ±0°5'			
	MAT'L : –	THK : –	Qty : –	DATE : 14-11-2014	ALL DIMENSIONS ARE IN MM. FIRST ANGLE PROJECTION	FILE : –		PAGE : 1of1

F-E-001-00 (02-05-2014)

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