

REPUBLIC OF POLAND

**GENERAL INSPECTORATE OF CIVIL AVIATION
CIVIL AIRCRAFT INSPECTION BOARD**

CB-116

Wytwornia Sprzętu
Komunikacyjnego
„PZL - Kalisz” S.A.

Models: ASz-62IR-16

ASz-62IR-M18

ASz-62IR-M18/K9-BA

ASz-62IR-M18/K9-BB

Issue # 7

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TYPE CERTIFICATE DATA SHEET CB-116

This Data Sheet is the part of the Certificate N° CB-116 and specifies the conditions and restrictions of equipment usage for which the Type Certificate has been issued.
TYPE CERTIFICATE (TC) HOLDER:

Wytwornia Sprzętu Komunikacyjnego
„PZL – Kalisz” Spółka Akcyjna
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Rev.									

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MODELS	ASz-62IR-16	ASz-62IR-M18	ASz-62IR-M18/K9-BA ASz-62IR-M18/K9-BB
TYPE	9 RA, 687:1 reduction gears. Clockwise rotation of crankshaft and propeller (viewed from rear) single – speed supercharger		
RATINGS			
Maximum continuous			
Hp, rpm, in. Hg, at	812 – 2100 – 35.4 – 4920	954 – 2150 – 41.3 – 4920	
Sea level pressure altitude	793 – 2100 – 35.4 – S.L.	917 – 2150 – 41.3 – S.L.	
(ft)			
Take off power (5 minute) min	967 – 2200 – 41.3 – S.L.	1000 – 2200 – 45.2 – S.L.	
Fuel (min. Grade aviation fuel)	91		
Lubricating Oil	<p>Mineral aircraft engine oils with 20 cSt/100°C or 100 SUS/210°F viscosity and the minimum viscosity index 80, according to standards:</p> <ol style="list-style-type: none"> 1. Non – ash dispersing oils: <ul style="list-style-type: none"> - D. Eng RD2450 D – 80 and D – 100 - AIR 3570 Grade 80 D and Grade 100D - MIL – L – 22851 D type II and type II G - 3 – GP – 320 – 1080 and 3-GP – 321 Grade 120 - BA – PO – 114 type B and type C - FSD MO 741: 266 2. Straight oils: <ul style="list-style-type: none"> - GOST 21743 – 76 - D. Eng RD 2472 B/O and DED 2472C - AIR 3560 D Grade 100 - MIL – L – 6082 E (1100) 		

MODELS	ASZ-62IR-16	ASZ-62IR-M18	Asz-62IR-M18/K9-BA Asz-62IR-M18/K9-BB
CARBURETION	- 3 - GP - 100 C : FSD MO 741: 0586		
FUEL PUMP	Dry oil sump AKM - 62IRA BNK - 12 BK,		
OIL PUMP	MSz-8A with centrifugal filter TCM - 25		
IGNITION	Two BSM - 9 magnetos or two BSM - 9F magnetos. Timing: - R.H. - 20° ± 0,5 BTC - L.H. - 15° ± 0,5 BTC		
SPARK PLUGS	Eighteen SD - 48BSM		
BORE AND STROKE	155,5 / 174,5 mm (6.10 X 6.87in)		
DISPLACEMENT	29,87 dm ³ (1823cu. in.)		
COMPRESSION RATIO	6,4 ± 0,1		
SUPERCHARGER, crankshaft driven at the ratio	7 : 1	7 : 1	8,325 : 1
PRINCIPAL DIMENSIONS	Length: 1328 mm (52.28 in) Diameter: 1380 mm (54.33 in)		
CENTER OF GRAVITY (CG):	Length: 1130 mm (44.49 in) Diameter: 1380 mm (54.33 in)		
From cylinder axle plane to the rear	19 mm (0.75 in)		
Above crankshaft axle	11,5 mm (0.45 in)		
WEIGHT (DRY)	579 kg (1276 lb) + 2%	567 kg (1250 lb) + 2%	570 kg (1256 lb) + 2%

MODELS	ASz-62IR-16	ASz-62IR-M18	ASz-62IR-M18/K9-BA ASz-62IR-M18/K9-BB
CRANKSHAFT DAMPERS:	Two mobile counterweights on rear arms of the crankshaft, damping the harmonic of 4.5 order		
CERTIFICATION BASIS	FAR 33 effective October 31, 1974 including amendment 1-6.		

Note 1:

Maximum temperature limits:

- Cylinder head temperature measured under rear spark plug :

245° C (473°F) - max 15 min.

215° C (419°F) - no time limit

- Inlet oil temperature:

95° C (203° F) - max 3 min. (for oil viscosity 120 SUS at 210° F)

85° C (185° F) - max 3 min. (for other oil types)

75° C (167° F) - no time limit

Note 2:

Pressure limits:

- Fuel carburetor inlet pressure:

	min	max
at rated range	0,25 (3.55)	0,35 (4.97)
at idle	0,15 (2.13)	

- Oil pressure in rear cover

	4	5
at rated range	(56.9)	(71.1)

(6-for engine Asz-62IR-M18/K9-BA, Asz-62IR-M18/K9-BB)

at idle

1,5 (21.3)	[kG/cm ²]: [p.s.i.]
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Note 3: Accessory drives or mounting provisions

Accessory	Engine models			Rotation	Speed ratio to crankshaft	Max torque kGm [lb.ft.]	Max over hang moment kGm [lb.ft.]
	ASz-62IR-16	ASz-62IR-M18	ASz-62IR-M18/ K9-BA i K9-BB				
Starter RIM-U-24IR	X	X	X	CC	1:1	110 795	2,35 17.0
Magneto BSM-9 or BSM-9F	X	X	X	CC	1,125:1	0,31 2.21	0,41 2.93
Carburetor AKM-62IRA	X	X	X	-	-	-	-
Fuel pump BNK-12BK	X	X	X	CC	1:1	0,20 1.45	0,06 0.44
Oil pump MSz-8M.	-	X	X	C	1,125:1	0,72 5.21	0,20 1.45
Oil pump MSz-8A + + filter TCM-25	X	-	-	C	1,125:1	0,98 7.09	1,30 9.40
Centrifugal filter TCM-25	X	-	-	C	3,345:1	0,18 1.30	0,25 1.81
Propeller governor R-9SM2	X	X	X	CC	1,114:1	0,36 2.60	-
Generator GSN-3000M.	XX	XX	XX	C	2,52:1	1,46 10.56	1,23 8.90
Piston air compressor AK-50P-12	XX	-	-	C	0,825:1	0,65 4.70	0,18 1.30
Hydraulic pump PLT-2-3 or LUN6102.01-8	-	XX	XX	C	2,17:1	0,83 6.00	0,13 0.94
Hydraulic pump PZ-5TC	-	XX	XX	C	0,825:1	-	0,1 0.72
"AGRO" hydraulic pump PLTZ-15	-	XX	XX	CC	1,78:1	6,00 43.4	0,57 4.12
Vacuum pump 212CW	-	XX	XX	CC	1,78:1	0,17 1.23	0,041 0.293

Hydraulic pump 1P-582	-	-	XX	C	1,6986:1	1,3 9,4	0,182 1,31
Vacuum pump 3P-207	-	-	XX	CC	1,787:1	-	0,156 1,13

„X” – standard accessory

„XX” – optional accessory

„C” – clockwise (facing drive pad)

„CC” – counter - clockwise

„-” – does not apply

Note 4:

Engine rating basis

The given ratings are based on sea level standard conditions of International Standard Atmosphere (ISA) without taking into account dynamic pressure and with no aircraft accessories loads

Note 5:

Engine models descriptions:

ASz-62/IR-16 – basic model

The engine body consist of seven parts (reduction gear cover, two parts of the crankcase, two parts of the supercharger case, rear cover, oil sump). The crankcase is made of forged aluminum alloy.

The two-part screw – fastened crankshaft is mounted in two roller bearings.

The propeller shaft reduction gear is of satellite type with six planet gears.

The master connecting – rod is in cylinder No1.

Sliding surface (cylinder bearing surface) of a cylinder sleeve has been subjected to nitrogen hardening and lapping treatment.

The piston is equipped with six rings:

The first two are steel compression rings, the first two chromium plated compression rings, the steel ring in first groove, the cast – iron ring in second groove, three others are cast – iron scraper rings and the remaining one is a cast – iron lubricating ring.

The engine is lubricated under pressure.

Oil filters: the slot filter at the inlet and the centrifugal one at the engine's output (MSz-8A oil pump driven at the ratio of 3.345: 1 to the crankshaft).

Oil sump is equipped with an electric metal chip detector (signal lamp in the cockpit).

The AK-50P-12 piston air compressor is on the accessory drive body (on rear cover).

ASz-62IR-M18 – a similar design including the following differences:

1. The MSz-8M Oil pump is mounted instead of the MSz-8M pump due to the absence of a centrifugal oil filter.
2. Absence of the metal – chip detector
3. Accessory drive body on the rear cover is adapted for PLT-2-3 or LUN 6102.01-8 and PLTZ-15 or vacuum pump 212 CW, optionally the accessory drive body is adapted for pump PZ-5TC.
4. Absence of head and inter cylinder deflectors

ASz-62IR-M18/K9 BB— design similar to base version with differences as follows:

1. The MSz-8M oil pump is mounted instead of the MSz-8M pump due to the absence of a centrifugal oil filter.
2. Absence of the metal – chip detector.
3. Accessory drive body on the rear cover is adapted for PLT-2-3 or LUN 6102.01-8 and PLTZ-15 or vacuum pump 212 CW, optionally the accessory drive body is adapted for pump PZ-5TC.
4. Absence of head and inter cylinder deflectors.
5. Strengthened connecting – rod system.
6. Increased supercharger impeller drive ratio results in rise of engine manifold pressure.
7. Increased, facilitated oil drainage from engine crankcase.
8. Cylinder assembly has two, instead of three, valve springs installed on suction and exhaust valve.
9. Scraper for carbon deposit removal from the exhaust valve stem is installed on the exhaust valve guide.
10. There is employed a supercharger impeller and cam disk drive divided double gear with raised execution accuracy and is used a better material grade.
11. Piston with six piston rings First two rings (counting from piston head) are sealing sulfonitrided steel rings.
Remaining cast iron rings are of spheroidal cast iron and are sulfonitrided.

Note 6:

Engine ASz-62IR-M18/K9-BA is different from ASz-62IR-M18/K9-BB in that it is equipped with head baffles and inter cylindrical baffles and a different accessory gear box is adapted for hydraulic pump 1P-582 or vacuum pump 3P-207.

It is designed to be mounted as a drive unit on two engine planes.

Note 7:

ASz-62IR-M18 engine mates with AW-2-30 controllable – pitch tractor airscrew

ASz-62IR-16 and ASz-62IR-M18/K9engines mate with AW-2 controllable – pitch tractor airscrew

END