



**ATEX APPROVED**

**AIR SAWS FOR THE PROFESSIONAL**



***PL905***  
***operating instructions***



## **EC Declaration of Conformity**

Cengar. Ltd.  
70, Lister Lane, Halifax  
England HX1 5DN

We the undersigned, declare under our sole responsibility that the following apparatus: -

Machine description: Cengar Air Saw  
Machine Type: PL 905

Is in conformity with the following relevant EC legislation:

Machinery Directive 2006/42/EC  
Atex Directive 94/ 9/EC

Based on the following Harmonised Standards:

EN13463-1:2009

And therefore complies with the essential requirements of those directives.

### **Additional Information:**

ATEX Coding II 2G T5  
Certificate No. TRAC09ATEX21236X  
Technical File No. CEEX-0803

Authorised Signature:

Date: 15/12/09

Title of Signatory: General Manager - Cengar Ltd.

# Cengar Air Saw Model PL 905

We recommend normal safe working practices should be followed as per the Health and Safety at Work Act, or the appropriate National and State Laws. We recommend that eye protection be worn when using Cengar Saws



## SPECIFICATIONS

Speed	2000 strokes per minute
Stroke	22 mm ( $7/8$ " )
Air Consumption	0.116m <sup>3</sup> /minute (4 cfm)
Air Pressure	5-6 Bar (100 PSI)
Weight	2.4 Kgs. ( $5\frac{1}{4}$ Lbs.)
Length	300 mm. ( $11\frac{7}{8}$ " )
Height	135 mm. ( $5\frac{3}{8}$ " )
Width	40.6 mm. ( $1\frac{5}{8}$ " )
Vibration Level averaged	1.9 m/s <sup>2</sup>
Sound Pressure Level	68.7 db.
Sound Power Level	69.8 db.
Atex Certification	CE II 2G T5 X

## **CENGAR SAWS**

are hand held reciprocating saws designed to cut metals and plastics in production environments and can be used in Atex zoned areas where appropriate. They should only be used by trained operators who are responsible for the safety of themselves and others in the vicinity. Saw blades are capable of causing serious injury

Think safe

Act safe

Be safe

## **LUBRICATION**

Use Cengar Green Oil with longer lasting coating properties for best results. Cengar Green Oil is specially prepared to: -

- 1 Emulsify the water generally found in compressed air lines.
- 2 Give perfect mist lubrication.
- 3 Remain fluid at the low working temperature of compressed air tools.
- 4 Contains corrosion and oxidation inhibitors.

Incorrect oils if used will soon “break down” forming a sludge which will slow and eventually stop the action of the saw. See maintenance details.

## **INSTALLATION OF BLADES.**

Before attempting to insert or change a blade, ensure that the air supply is isolated by operating the isolation valve provided. Loosen the retaining grub screws with the key provided, insert blade through nosepiece so that the teeth are cutting on the pull stroke.

Locate the back screw in the hole in the end of the blade, for a positive drive, the front screw can then be tightened to grip the blade firmly.

## **BLADES**

Cengar “Shatterproof” Bi-Metal blades are specially prepared for use with Cengar saws, to withstand the high operating speeds, and give maximum cutting life.

Choose the teeth per inch to suit the characteristics of the material being cut.

Choose pitch to ensure that at least 3 or 4 teeth are cutting at the same time.

(See chart on page 14 for guidance)

## **OPERATING THE SAW**

We recommend that eye protection be worn, and normal safe working practices observed as per the Health and Safety at work act, and the appropriate National and State Laws.

Set the isolator to “on” position, rest the blade on the material to be cut with the nosepiece firmly abutted to the work piece, with forward hand pressure, to prevent judder. Allow the Cengar Saw to cut under its own weight, with just a slight downward hand pressure to keep the teeth engaged in the cut. It is not necessary to put excessive downward pressure on the saw, this only accelerates blade wear, and prevents the saw from operating efficiently. Normal airline pressure of 5 to 6 Bar is required, any higher pressure only accelerates internal wear of the machine.

## **USE IN HAZARDOUS AREAS**

We strongly advise that the contact area of the blade on the work piece be quenched with coolant or water during cutting to dissipate any heat which may be created by the cutting process.

Anti-static conductive air hose must be used, with adequate earth bond continuity (resistance below 1 ohm), to ground any electrostatic charges.

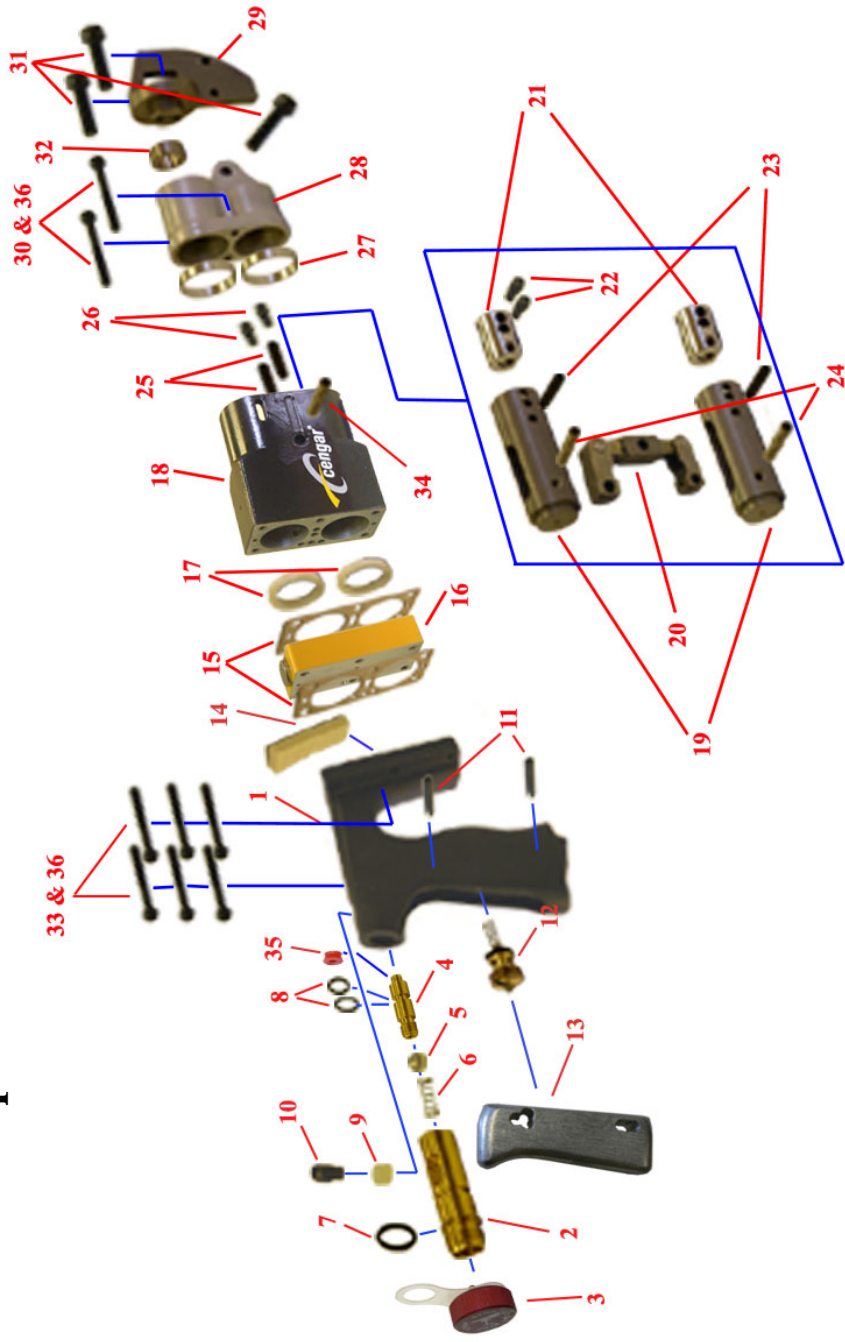
## **MAINTENANCE AND GENERAL HINTS**

Always ensure sufficient oil in the tool, especially when the saw is in constant use.

The valve unit part no. 9507 is a vital component manufactured to close tolerances, and will not tolerate abusive treatment. Lubrication is essential. Any neglect will seriously affect performance of the saw, causing the saw to stall intermittently, or stop completely.

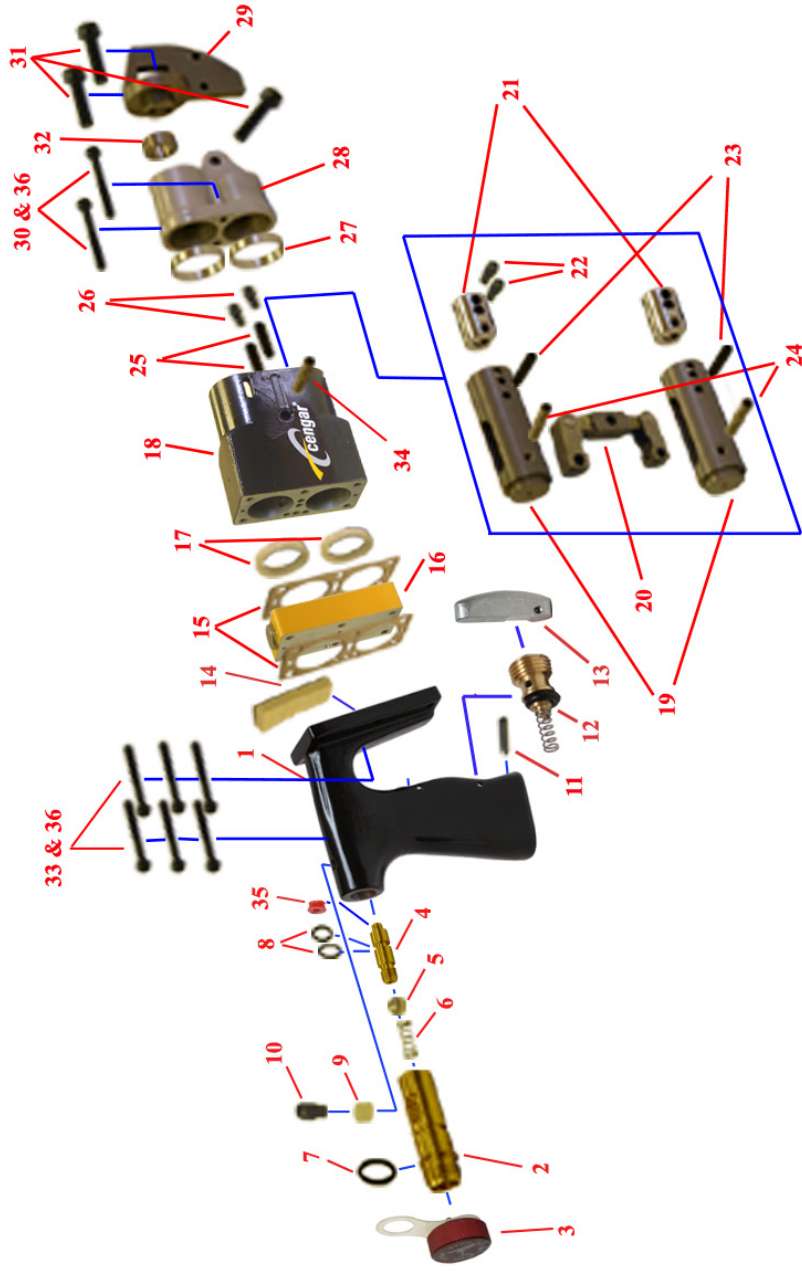
Very little maintenance is required if the correct oil is used, but incorrect oil will soon breakdown into sludge, slowing down the action of the saw, necessitating its removal by use of Cengar M.S. Cleaner. It is imperative that the saw is re-oiled immediately after cleaning, with Cengar Green Oil.

# PL905 Exploded View



Item	Part No.	Description	Number Per Tool	Item	Part No.	Description	Number Per tool
1	9550	Handle	1	19	9509P	Piston	2
2	9554	Isolator body	1	20	1150	Link	1
3	9553	Oil Cap & Retainer	1	21	9512	Blade Grip	2
4	9555	Isolator Nozzle	1	22	5068	Blade screw	2
5	9559	Oil Control Ball	1	23	9513	Pin-Blade Grip	2
6	9334A	Spring	1	24	9519	Pin-Link	2
7	9561	‘O’ Ring Large	2	25	9514	Locking Pin	2
8	9560	‘O’ Ring Small	2	26	5056	Retaining Screw	2
9	9557	Détente Spring	1	27	9515	Connecting Ring	2
10	9556A	Lock Screw	1	28	9516	Front End	1
2 to 10	9552	Isolator Assembly		29	5045	Nose Piece 1/2”	1
11	51834	Roll Pin-Trigger	2	30	5520	Screw	2
12	50034	Valve in Handle	1	31	54160	Screw	3
13	9502	Trigger	1	32	9517	Guide Bush	1
14	9506	Filter/Gauze	1	33	5540	Screw—Handle	6
15	9538	Gasket	2	34	9511	Pivot Pin	1
16	9507	Valve Unit	1	35	QR5108	Quad Ring	1
17	9510	Piston Ring	2	36	W55	Serrated Washer	8
18	9508	Body	1				

# PL905FT Exploded View





Item	Part No.	Description	Number Per Tool	Item	Part No.	Description	Number Per tool
1	9550FT	Handle	1	19	9509P	Piston	2
2	9554	Isolator body	1	20	1150	Link	1
3	9553	Oil Cap & Retainer	1	21	9512	Blade Grip	2
4	9555	Isolator Nozzle	1	22	5068	Blade screw	2
5	9559	Oil Control Ball	1	23	9513	Pin-Blade Grip	2
6	9334A	Spring	1	24	9519	Pin-Link	2
7	9561	‘O’ Ring Large	2	25	9514	Locking Pin	2
8	9560	‘O’ Ring Small	2	26	5056	Retaining Screw	2
9	9557	Détente Spring	1	27	9515	Connecting Ring	2
10	9556A	Lock Screw	1	28	9516	Front End	1
2 to 10	9552	Isolator Assembly		29	5045	Nose Piece 1/2”	1
11	51834	Roll Pin-Trigger	1	30	5520	Screw	2
12	50034	Valve in Handle	1	31	54160	Screw	3
13	9502FT	Trigger	1	32	9517	Guide Bush	1
14	9506	Filter/Gauze	1	33	5540	Screw—Handle	6
15	9538	Gasket	2	34	9511	Pivot Pin	1
16	9507	Valve Unit	1	35	QR5108	Quad Ring	1
17	9510	Piston Ring	2	36	W55	Serrated Washer	8
18	9508	Body	1				

## **IF THE SAW DOES NOT OPERATE**

- 1 Check that the isolator is switched on.
- 2 Check air supply is correct.
- 3 Valve in handle (part no. 50034) could be worn and/or the seal is broken, blocking an air passage. Check and replace if necessary.
- 4 Valve unit (Part No. 9507) may be stuck. **IT IS IMPERATIVE TO REMOVE THE SAW FROM THE AIRLINE BEFORE COMMENCING THIS CHECK.** Remove the two hexagonal nuts, push out valve piston with a pencil, keeping note which end is top. Clean with oil only, NEVER USE ABRASIVE. Clean valve bore with oil, re-fit piston from top, keeping the seal at the top end. Tighten nuts, and reconnect saw to air supply.

## **REPLACEMENT OF PISTON SEALS AND BLADE GRIP BLOCK ON PL 905 SAW**

The centre shaft is always fitted from the blade grip access side of the saw body, and should be removed in the opposite direction after first slackening the two screws (part no 5056) using 2.5mm hexagon wrench.

The piston link assembly should only be removed from the body, when fitting new pistons or link. Inspection of the seals can be carried out as explained in No. 2 or No. 5 of the following procedures.

- 1 Fit the link to pistons with the shorter piston slot facing outward. Install 2 blade grip screws (Part No. 5068) into the blade grip block (Part No. 9512) and fit to top piston, with securing pin Part no. 9513) Fit second blade grip block to bottom piston also, for balance purposes.
- 2 Fit Piston – link assembly to body without seals, and with one piston leading the other. With both pistons in the body, push one to the rear, to reveal the piston seal slot.

Place the piston seal in hot (not boiling) water until pliable, and fit to piston with the outer lip facing outward, and ensure that the seal is fully home in the groove. Push piston back into bore using hand pressure only. Repeat the procedure with the second piston.

- 3 Do not push the piston in to the bore too far, the seal must not travel as far as the cut-away inside the body. Move the pistons in the bores until the hole in the centre part of the link (part No. 1150) lines up with the centre shaft hole in the body, and fit centre shaft (part No. 9511)
- 4 Fit roll pins (part no. 9514) and screws (part no. 5056) in to the two threaded holes in the front , to secure the centre shaft.
- 5 Should the blade grip block, or its screws require replacement at any time, this can be achieved without removing the pistons fully, which would damage the seals. With the handle/valve block removed, pushing the piston as far forward as it will go, will reveal the retaining pin. Tap this out, and replace blade grip block. Use a new retaining pin each time.

## **REPLACEMENT OF ISOLATOR ASSEMBLY**

All the parts of the isolator are available separately, however for ease of service, we offer an **Isolator assembly (Part No 9552)** Complete with retaining screw and Détente spring, This has the seat bonded in place already, and can be fitted in seconds.

**Always remove the saw from the airline before commencing any maintenance work.**

**Only fit genuine Cengar parts and accessories, or safety may be compromised**

## **NEVER**

- 1 **NEVER** fit breakable “All-Hard” blades in Cengar saws, these can shatter causing injury to yourself and others.
- 2 **NEVER** operate saw without wearing safety glasses
- 3 **NEVER** operate saw whilst you, or others are near the saw blade, which can cause serious injury or trapping
- 4 **NEVER** use excessive force, this may increase vibration above safe levels
- 5 **NEVER** hold the Cengar saw in a vice by the body, this will distort the bores, rendering the tool inoperative.
- 6 **NEVER** screw nameplates to the body, as the screws may penetrate an airway or bore.
- 7 **NEVER** operate the Cengar saw without lubrication.
- 8 **NEVER** be tempted to clean internal parts with anything other than a clean lint free cloth, and M.S. Cleaner, or Cengar Green oil.
- 9 **NEVER** modify Cengar saws or use non Cengar parts, this will invalidate ATEX approval, and warranty.

## ALWAYS

- 1 **ALWAYS** use Cengar green oil for best results. Keeping the saw clean and well oiled will give excellent reliability, and a long life.
- 2 **ALWAYS** use Cengar Bi-Metal Shatterproof blades, for safety, and best cutting performance
- 3 **ALWAYS** isolate the air supply when changing blades.
- 4 **ALWAYS** wear eye protection when using sawing machines.
- 5 **ALWAYS** keep the nosepiece abutted to the work to prevent excessive vibration
- 6 **ALWAYS** isolate the machine when not in use
- 7 **ALWAYS** keep others away from the saw blade to prevent injury or trapping
- 8 **ALWAYS** have machines vibration tested annually to ensure exposure is kept to the minimum

## Cengar Blade selection for cutting solid material

### Available blade pitches

Thickness (mm)	32 TPI	24 TPI	18 TPI	14 TPI	10-14 TPI Varipitch	10 TPI	8 TPI	6 TPI
2	3	2	1	1	1	1	1	0
5	6	5	4	3	2	2	2	1
10	13	9	7	6	5	4	3	2
15	19	14	11	8	7	6	5	4
20	25	19	14	11	9	8	6	5
25	31	24	18	14	12	10	8	6
30	38	28	21	17	14	12	9	7
35	44	33	25	19	17	14	11	8
40	50	38	28	22	19	16	13	9
45	57	43	32	25	21	18	14	11
50	63	47	35	28	24	20	16	12
55	69	52	39	30	26	22	17	13
60	76	57	43	33	28	24	19	14
65	82	61	46	36	31	26	20	15
70	88	66	50	39	33	28	22	17
75	94	71	53	41	35	30	24	18
80	101	76	57	44	38	31	25	19
85	107	80	60	47	40	33	27	20
90	113	85	64	50	43	35	28	21
95	120	90	67	52	45	37	30	22
100	126	94	71	55	47	39	31	24

The numbers in the coloured boxes indicates the *actual* number of teeth in contact

### General Rule: -

No Less than 3 teeth in contact
Ideally between 6 and 12 teeth in contact
No More than 24 teeth in contact



For Hollow Section:	Thickness in mm = Wall Thickness X 2
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## ACCESSORIES

### Saw Blades



MC 220/24      220 mm long by 12 mm deep blade for general cutting 24 TPI

[Other sizes and types available on request](#)

A range of 19 mm deep blades could be fitted in certain circumstances. Replace the nosepiece 5045 with 5075 to use 19 mm blades

### Cengar Green Oil



GO 9107P      Cengar Green Oil 250 ml plastic bottles for all air tools

GO 9109      As above in 5 litre container

GO 9110      As above in 25 litre container

### M.S. Cleaner

MS 9105      1 litre General purpose cleaning fluid for air tools.

MS 9125      50 ml. In a dropper bottle. - Enough for 10 tools

**Always use plenty of Cengar green oil afterwards.**



### Nosepiece

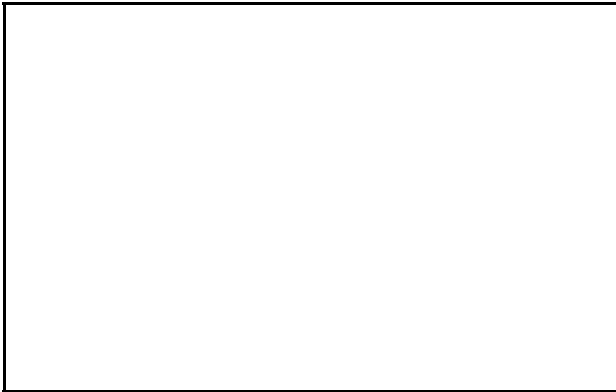
5045      Replacement nosepiece/blade guide for 12 mm deep blades

5075      Alternative nosepiece/blade guide for 19 mm deep blades

## **SERVICE**

We offer a full factory repair and refurbishment service for Cengar Saws, - normally within 5 working days. Quotations at no charge can be given before work is carried out.

## **DISTRIBUTOR ADDRESS**



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