

# Connector set airframe side (HIC/X3) for ROTAX® Aircraft Engines

ATA System: 76-50-00 Wiring harness

## 1) Planning information

“PAC” Service Instruction Documents provide detailed information on ROTAX® Aircraft Engine Parts and Accessories. Depending on the engine type used with, the referenced parts and accessories may be provided with or without EASA certification or ASTM compliance. Certification / Compliance of referenced Parts and Accessories must in such cases be completed by the aircraft OEM.

To obtain satisfactory results, procedures specified in this publication must be accomplished with accepted methods in accordance with prevailing legal regulations.

BRP-Rotax GmbH & Co KG cannot accept any responsibility for the quality of work performed in accomplishing the requirements of this publication.

### 1.1) Applicability

Refer to the latest issue of the relevant Illustrated Parts Catalog of your specific engine type.

#### **NOTICE**

The connector set may be declared as part of the wiring harness on aircraft-side and so might not be a part of the Engine Type Design. Such a PAC part has been then tested and released by BRP-Rotax, but it might not be certified for the relevant engine type.

In such a case the correct function in conjunction with the entire system is the responsibility of the aircraft manufacturer and must be carried out jointly with the aircraft.

### 1.2) Concurrent ASB/SB/SI and SL

None.

### 1.3) Reason

In the course of product maintenance and expansion of our spare parts program, connector set airframe side is available.

### 1.4) Subject

Connector set airframe side (HIC/X3) for ROTAX® Aircraft Engines

### 1.5) Compliance

None - For Information Only.

### 1.6) Approval

None.

### 1.7) Labor time

Estimated labor hours:

Engine installed in the aircraft - - - labor time will depend on airframe installation and therefore no estimate is available from the engine manufacturer.

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## 1.8) Mass data

Change of weight - - - none.

Moment of inertia - - - unaffected.

## 1.9) Electrical load data

No change.

## 1.10) Software modifications

No change.

## 1.11) References

In addition to this technical information refer to current issue of

- Operators Manual (OM)
- Illustrated Parts Catalog (IPC)
- Installation Manual (IM)
- Maintenance Manual Line (MML)
- Maintenance Manual Heavy (MMH)

NOTE: The status of the Manuals can be determined by checking the table of amendments. The 1<sup>st</sup> column of this table shows the revision status. Compare this number to the one listed on the ROTAX WebSite:

[www.flyrotax.com](http://www.flyrotax.com). Updates and current revisions can be downloaded for free.

## 1.12) Other Publications affected

None.

## 1.13) Interchangeability of parts

- All parts are interchangeable

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## 2) Material Information

### 2.1) Material- cost and availability

Price and availability will be provided on request by ROTAX® Authorized Distributors or their independent Service Centers.

### 2.2) Company support information

- Any possible support by BRP-Rotax will be provided on request by ROTAX® Authorized Distributors or their independent Service Centers.

### 2.3) Material requirement per engine

Parts requirement for installation of HIC A, HIC B and X3 connectors:

Fig.no.	Part no.	Qty/ engine	Description	Application
1	881240	1	Parts kit (connector set airframe side, HIC/X3)	Wiring harness
NOTE: The following parts are not available as single parts for purchase. Bill of material (BOM) only for information on content of parts kit. consist of:				
	864110	10	Contact pin male MX150L 1.31-2.06 mm <sup>2</sup> (16 - 14 AWG)	HIC A (fuel pump wires), HIC B (fuel pump wires)
	864112	20	Contact pin male MX150L 0.32-0.82 mm <sup>2</sup> (22 - 18 AWG)	HIC A & HIC B
	864120	1	Connector housing 12-pole MX150L	HIC A / B connector
	864122	1	Connector housing 16-pole MX150L	HIC A / B connector
	864130	2	Sealing pin MX150L	HIC A / B connector, for holes without a pin
	864140	1	Connector housing 3-pole	X3 connector
	864160	5	Connector pin female type XII 1.31-3.31 mm <sup>2</sup>	X3 connector
	864170	1	Cable clamp	X3 connector
	864190	1	Wire entry seals 3-pole	X3 connector

### 2.4) Material requirement per spare part

None.

### 2.5) Rework of parts

None.

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## 2.6) Special tooling/lubricants- /adhesives- /sealing compounds

Price and availability will be supplied on request by ROTAX® Authorized Distributors or their independent Service Centers:

Fig . no.	Description	Part no.	Application
7	Crimping pliers MOLEX® 64016-0035 or 63811-4400*	-	Connector pins
7	TE Connectivity® Crimping pliers A-MP 539635-1 with die-set 539668-2 or Crimpmaster™ 30-506 with die-set 70225351*	-	X3 socket
7	Disassembly tool MOLEX® 63813-1500*	-	Connector pins
7	TE Connectivity® Crimp Extraction Tool for A-MP Type XII Series Crimp Contact 91019-3*	-	X3 socket

\* or equivalent

### NOTICE

If using these special tools observe the manufacturers specifications.

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## 3) Accomplishment/Instructions

- ROTAX reserves the right to make any amendments to existing documents which might become necessary due to this standardization, at the time of next revision or issue.

NOTE: Before maintenance, review the entire documentation to make sure you have a complete understanding of the procedure and requirements.

### Accomplishment

All measures must be implemented and confirmed by at least one of the following persons or organizations:

- ROTAX® - Airworthiness representatives
- ROTAX® - Authorized Distributors or their independent Service Centers
- Persons approved by the respective Aviation Authority
- Persons with approved qualifications for the corresponding engine types. Only authorized persons (iRMT) are entitled to carry out this work.



See current Installation Manual for the respective engine type.

### General

All general inspection, maintenance and repair has to be carried out e.g. in accordance with relevant Advisory Circular AC 43.13 from FAA.

### Advisory Circular

This Manual "Advisory Circular" AC describes maintenance methods, techniques and practice. These are recognized and authorized for inspection and repairs in non-pressurized areas for which there are no separate maintenance and repair instructions.

### 3.1) Spare Parts - related information



See current Illustrated Parts Catalog for the respective engine type.

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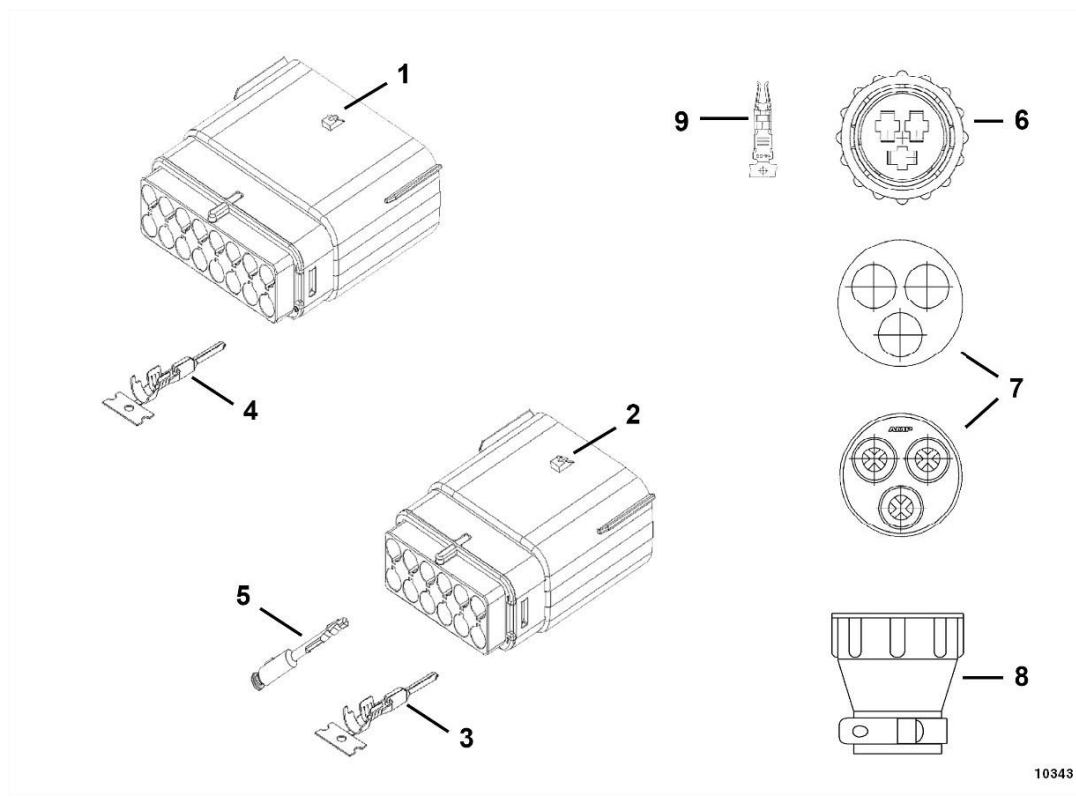


Fig. 1

Pos.	Description	Part no.	Pos.	Description	Part no.
1	Connector housing 16-pole	864122	6	Connector housing 3-pole	864140
2	Connector housing 12-pole	864120	7	Wire entry seal 3-pole	864190
3	Contact pin 1.31-2.06 mm <sup>2</sup> (16 - 14 AWG)	864112	8	Cable clamp	864170
4	Contact pin 0.21-0.82 mm <sup>2</sup> (22 - 18 AWG)	864110	9	Contact pin (socket)	864160
5	Sealing pin MX150L	864130			

### 3.2) Operation - related information



See current Operators Manual for the respective engine type.

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### 3.3) Installation - related information



See current Installation Manual for the respective engine type.

### 3.4) Maintenance (Line) - related information

Points of inspection	Interval Operating hours	Chapter Reference
	100 h	
Visual inspection of the wiring harness, connectors and brackets for secure fit, damage and signs of wear.	X	See current Maintenance Manual (Line) for the respective engine type and its periodical maintenance information.

### 3.5) Maintenance (Heavy) - related information



See current Maintenance Manual Heavy for the respective engine type.



See also current Installation Manual Heavy for the respective engine type for wirings diagrams and wire gauge specifications.

NOTE: The HIC A connector allows powering ECU Lane A and Main fuel pump.

NOTE: The HIC B connector allows powering ECU Lane B and AUX fuel pump.

NOTE: The X3 connector allows connection to airframe bus.

#### 3.5.1) Extraction of female contact

Step	Procedure
1	Insert the tool tips into the offsets in the cavity.
2	Push the tool into the housing until it bottoms in the cavity. NOTE: The rear section of the handle will back out of the tool.
3	Keeping the tool bottomed in the cavity, push the rear section of the handle toward the housing.
4	Remove the contact by pulling it out of rear of the cavity.

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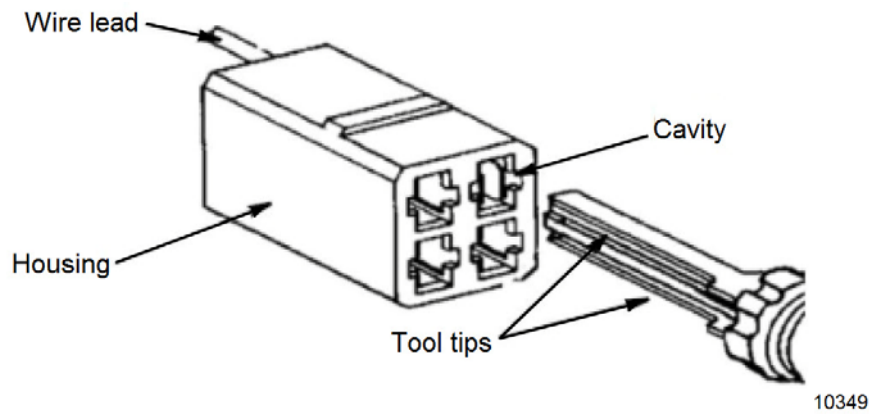


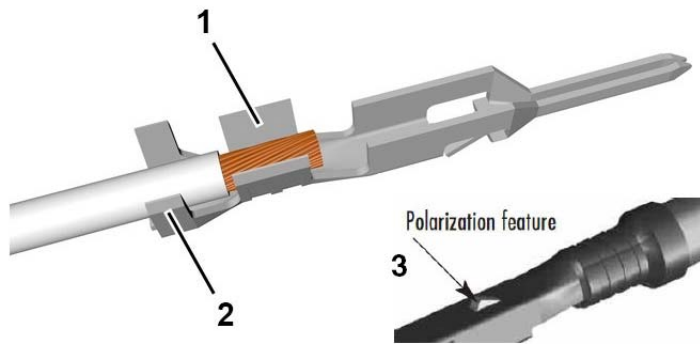
Fig. 2

### 3.5.2) Installation - HIC A/B connectors

To install HIC connectors the following steps are necessary:  
See Fig. 2 and Fig. 3.

Step	Procedure
1	Strip wire back approx. 10 mm (0.39 in.).
2	Place appropriate size connector pin over the stripped wire.
3	Crimp the wire at the inner crimp location (1).
4	Crimp the wire's insulator at the outer crimp location (2).

TYPICAL



- 1 Inner crimp location
- 2 Outer crimp location
- 3 Polarization feature (male)

Fig. 3

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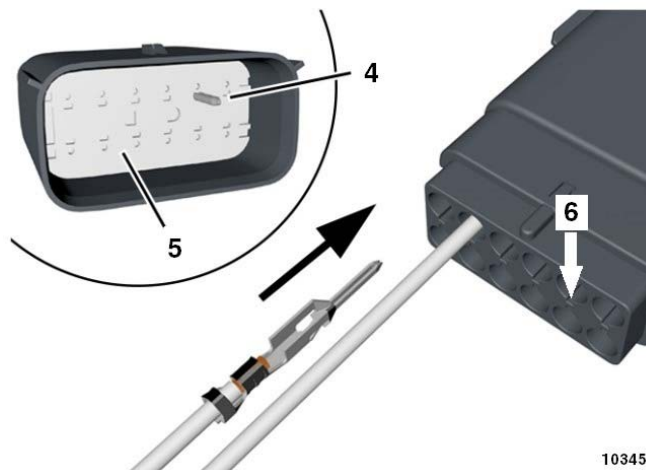
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## NOTICE

It is important to use an appropriate quality crimping tool.  
See section 2.6.

Step	Procedure
5	Unlock the white plate (4), using needle nose pliers. Pull white plate out approximately 4 mm (1/4 in.).
6	Align the polarization feature (male) with the polarization feature (female) of the housing and insert the crimped connector and wire into position in the respective connector housing (HIC A or HIC B).
7	Push the connector pin firmly into the housing until it locks in place (3). NOTE: The white retaining plate (4) must be in place in the front of the connector housing in order to retain the pins in place.
8	Install sealing pins part no. 864130 into empty holes.
9	Once all pins are properly in place push the white plate (4) back 4 mm (1/4 in.) until it "clicks". This locks the pins into position.

TYPICAL



4 Pin protrusion is approx. 3mm with white plate in unlocked position. pin protrusion with white plate in locked position is approx. 8mm  
5 White plate (TPA Termination Position Assurance)  
6 Polarization feature (female)

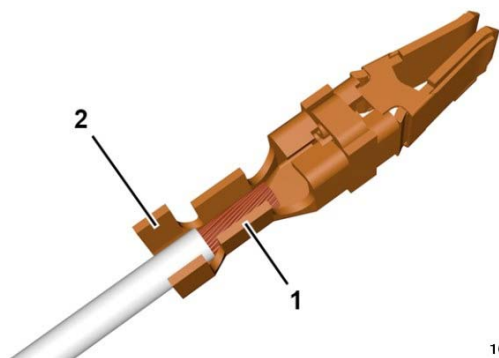
Fig. 4

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## 3.5.3) Installation - X3 connector

To install X3 connectors the following steps are necessary:  
See Fig. 4 and Fig. 5.

Step	Procedure
1	Poke wires through appropriate hole in sealing kit.
2	Strip wire back approx. 10 mm (0.39 in.).
3	Place appropriate size connector pin over the stripped wire.
4	Crimp the wire at the inner crimp location (1). NOTE: DOUBLE CHECK the wires line-up with the correct hole of the connector BEFORE crimping contact.
5	Crimp the wire's insulator at the outer crimp location (2).



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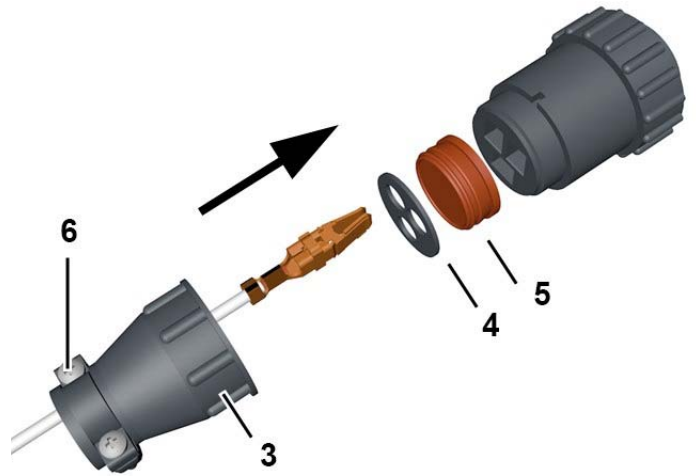
1 Inner crimp location  
2 Outer crimp location

Fig. 5

Step	Procedure
5	Push each crimped connector into position in the connector housing until it locks in position.
6	Thread the screw cap over the connector housing and hand tighten. NOTE: Do not allow the wires to be twisted while threading screw cap.
7	Tighten screw cap retainer screws (6) until the wires are lightly compressed.

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- 3 Screw cap  
4 Compression disk  
5 Seal  
6 Retainer screws

Fig. 6

### 3.6) Test run

In case of uninstalled engines test run can be skipped as this is covered by the mandatory test run after installation.



Conduct test run. See current Maintenance Manual Line for the respective engine type, Chapter 12-20-00.

### 3.7) Summary

The execution of the Service Instruction - PAC must be confirmed in the logbook.



A revision bar outside of the page margin indicates a change to text or graphic.

Translation into other languages might be performed in the course of language localization but does not lie within ROTAX' scope of responsibility.

In any case the original text in English language and the metric units are authoritative.

### 3.8) Inquiries

Inquiries regarding this Service Instruction - PAC should be sent to the ROTAX® Authorized Distributor of your area.

A list of all ROTAX® Authorized Distributors or their independent Service Centers is provided on [www.FLYROTAX.com](http://www.FLYROTAX.com).

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## 4) Appendix

The following drawings/schematics/tables should convey additional information:



- 1 Crimping pliers
- 2 Pin removal tool
- 3 X3 extraction tool
- 4 X3 crimping pliers

Fig. 7

NOTE: The illustrations in this document show the typical construction. They may not represent full detail or the exact shape of the parts which have the same or similar function.

Exploded views are **not technical drawings** and are for reference only. For specific detail, refer to the current documents of the respective engine type.