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IWF 2231-B IWF 2231-plus



Operating Instructions

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WARNING

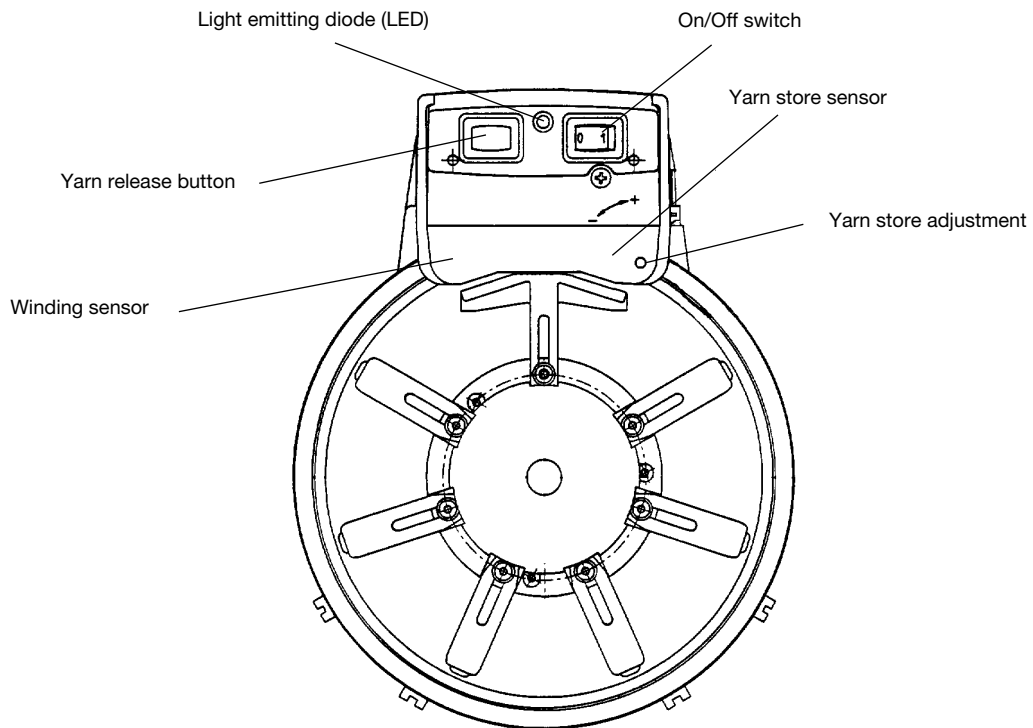
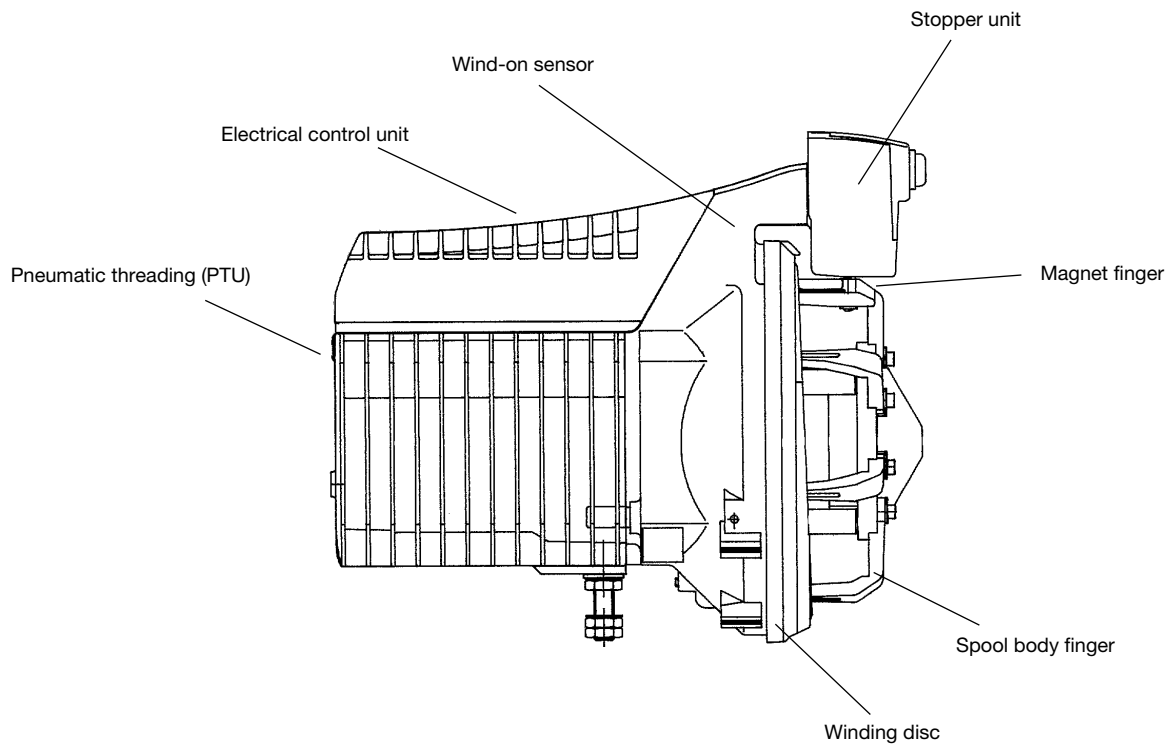
CAUTION MUST BE TAKEN IN THE CLOSE VICINITY OF THE FEEDER AS IT CONTAINS MOVING PARTS THAT CAN CAUSE INJURIES AND, IN NORMAL OPERATION, STARTS WITHOUT PRIOR WARNING.

THE POWER SUPPLY MUST BE SWITCHED OFF AT THE MAINS BEFORE ANY WORK IS CARRIED OUT ON THE FEEDER, THE TRANSFORMER OR ANY OTHER ELECTRICAL COMPONENTS. THE FEEDER AND THE TRANSFORMER CABINET MUST BE FULLY ASSEMBLED BEFORE THE POWER SUPPLY IS CONNECTED.

THE FEEDER AND TRANSFORMER CONTAIN ELECTRICAL COMPONENTS THAT RETAIN AN ELECTRIC CURRENT UP TO THREE MINUTES AFTER DISCONNECTION

ALL WORK ON ELECTRICAL COMPONENTS MUST BE CARRIED OUT BY A QUALIFIED ELECTRICIAN.

TO COMPLY WITH C. E. REGULATIONS ONLY REPLACEMENT PARTS APPROVED BY IRO AB MAY BE USED.



SYSTEM

The system consists of feeders, cables to each feeder, PTU (pneumatic threading up), and input yarn tensioners.

FEEDER

The feeder consists of;

- Motor and control circuit.
- Spool body with 7 independently adjustable fingers.
- Pick length control stopper magnet.
- Yarn store sensor.
- Wind-on sensor.
- Winding sensor.

Spool body circumference, yarn store size and stopper unit are mechanically adjusted on the feeder. All other settings are carried out on the weaving machine keyboard and are transmitted to the feeder through the serial communication. The yarn release is controlled by the weaving machine.

The motor speed control is a microprocessor based frequency controller situated in the cover above the motor.

At feeder start-up, the number of windings on the spool body is controlled by the yarn store sensor which indicates the outer limit of the yarn store. The number of windings supplied to the yarn store is continuously counted by the wind on sensor whilst at the same time the number of windings removed from the yarn store is counted by the winding sensor. This information is used by the microprocessor to calculate the motor speed. This procedure ensures a small constant yarn store.

The length of the pick is equal to the spool body circumference multiplied by the number of windings removed during one insertion. The magnet pin is opened by a trigger signal from the weaving machine and closes directly after the second to last winding passes the winding sensor.

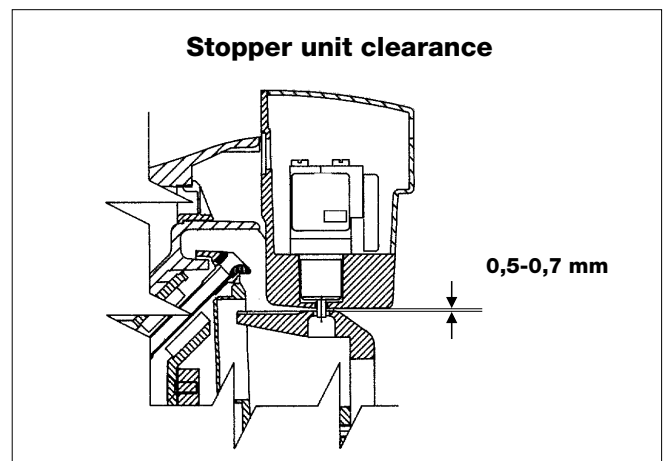
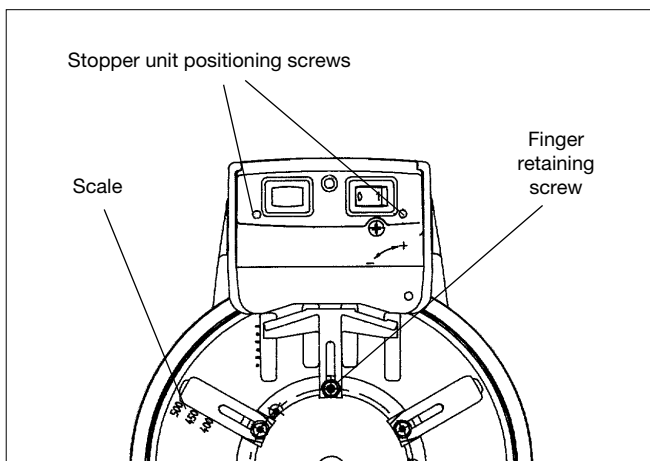
SPOOL BODY CIRCUMFERENCE

The required pick length is the deciding factor when calculating the spool body circumference and the number of windings for each pick. The table below indicates the pick length ranges that can be obtained from different numbers of windings. To calculate the appropriate spool body circumference / number of windings per pick, proceed as follows:

1. Determine the required pick length (drawing-in width plus waste).
2. Check the table below and determine a pick length range that covers the required pick length.
3. The number of windings necessary to obtain the required pick length will be found in the right hand column. If there are two possible values, always choose the lower value. Adjust the spool body to the required circumference as follows:

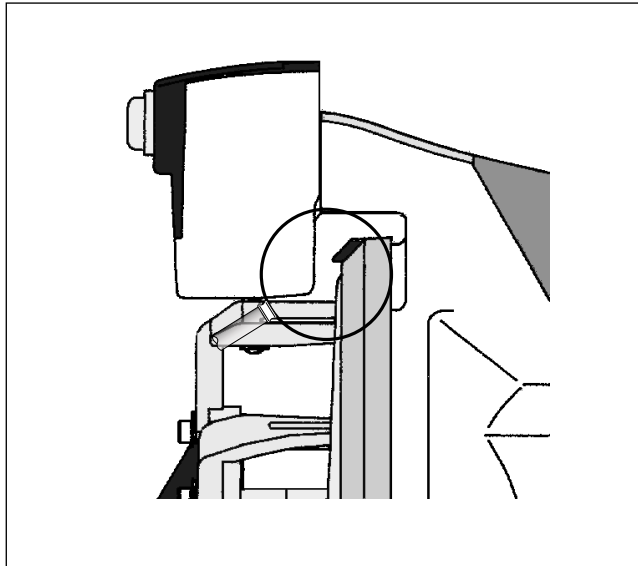
Pick length range (mm)		No. of Winds
MIN	MAX	
374	508	1
748	1016	2
1122	1524	3
1496	2032	4
1870	2540	5
2244	3048	6
2618	3556	7
2992	4064	8

1. Move the stopper unit to its uppermost position.
2. Loosen the spool body finger retaining screws.
3. Adjust the fingers using the scale on the oscillating disc as a reference.
4. Tighten the finger retaining screws and reposition the stopper unit.
5. Make a weft insertion test and, if necessary, adjust.



2. YARN STORE

- 2.1 The number of windings in the yarn store is regulated by the position of the yarn store sensor.
- 2.2 The number of windings needed depends on the weaving machine's speed, the pick length and the pattern. Irregular patterns require larger yarn stores. Increasing yarn store variation will also require an increased yarn store.
- 2.3 For optimal performance the yarn store should contain as few windings as possible. It is however important that the yarn store does not run out during high demand peaks. When adjusting always start with a large yarn store and reduce it successively with the yarn store sensor until there are as few windings as possible left during high yarn demand peaks.

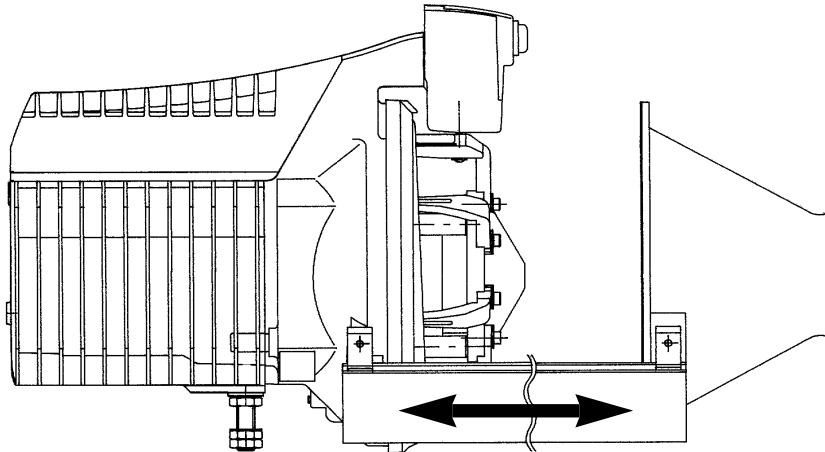


WARNING!! It is important that there is sufficient clearance between the yarn store sensor and the oscillating disc. When weaving with very small yarn stores ensure that the oscillating disc does not touch the sensor after adjustment.

To ensure optimal yarn performance between the feeder and the weaving machine it may be beneficial, especially when weaving heavier yarns, to use a cone for balloon control.

During the initial installation the cone should be adjusted to the outermost position, then, with the machine running, slide the cone inwards towards the feeder until the optimum yarn path is obtained.

The cone should then be locked into position.



Before threading the feeder it is necessary to remove any yarn that may be on the spool body. To do this the magnet pin must be opened. This can be performed using any of the following methods:

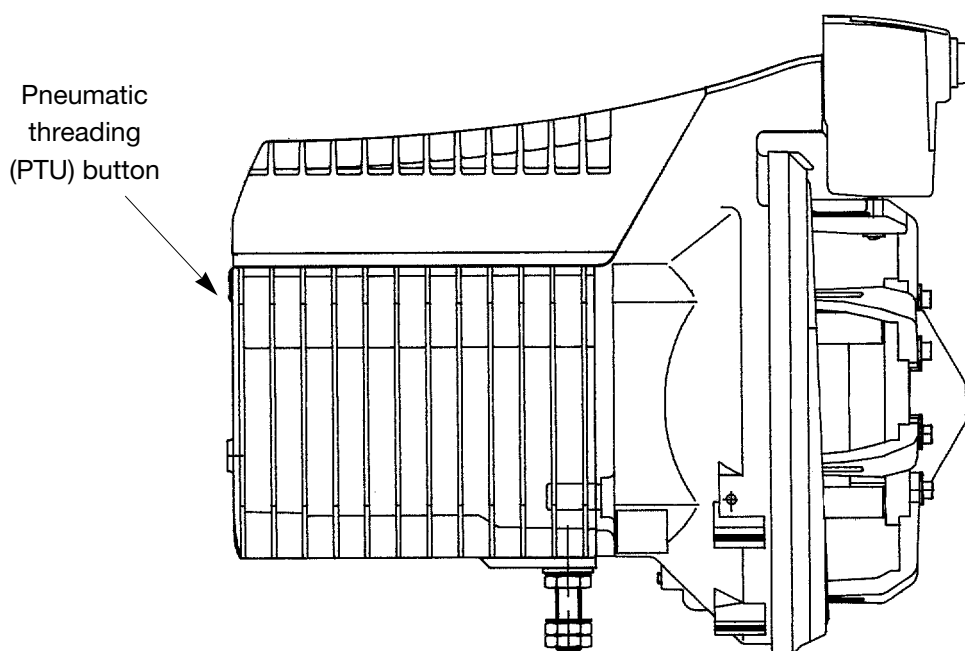
1. A short push on the yarn release button will release one winding.
2. By pushing the yarn release button and keeping it pushed in the magnet pin will remain open as long as the button is pushed in.
3. Push the yarn release button and – while still pushing – switch the motor off. The magnet pin will now remain in the open position until the motor switch is turned on.

After the magnet pin has been opened any yarn on the spool body can be removed.

If the magnet pin has been opened as per method three above it must be closed again before the feeder can be threaded up. To do this, switch on the motor switch.

To thread the unit proceed as follows:

1. Switch off the motor switch.
2. Hold the end of the yarn close to the input eyelet at the rear of the feeder.
3. Push the PTU activating button and release the yarn.
4. Take hold of the yarn end.
5. Switch on the feeder.



Fault	Check in the following order							
The unit will not start	1	3	2	4	5	15		
The unit will not stop	3	7	6	5	22			
The yarn store runs out (without input sensor)	1	8	23	21	2	9	3	5
The yarn store runs out (with input sensor)	1	8	23	21	2	3	5	10
The magnet pin does not respond to the yarn release switch	1	11	5					
Incorrect pick lengths	1	7	12	13	20	11	5	

Stop reasons on loom display	Check in the following order			
Basic settings not received	4	14	5	15
Communication error	4	16	5	15
Yarn store not full	18			
Overheated prewinder	2	19	5	15
Incorrect motor voltage	19	17	15	5
Incorrect magnet voltage	5	17	19	15

WARNING

ALWAYS TURN OFF THE MAIN SWITCH BEFORE DISCONNECTING OR CONNECTING THE FEEDER OR ANY OF THE CIRCUIT BOARDS. ALL WORK ON ELECTRICAL COMPONENTS SHALL BE CARRIED OUT BY A QUALIFIED ELECTRICIAN.

1. Check weaving machine display
2. Check that the winding disc runs free
3. Check yarn store sensor level
4. Check cable connections
5. Replace motor circuit board
6. Replace yarn store sensor
7. Check distance between magnet support and magnet finger
8. Check max speed setting
9. Strong yarn trapped at input side
10. Check that the weaving machine stops when the yarn breaks
11. Replace the stopper magnet
12. Check pick length setting
13. Check winding windows setting
14. Carry out a communication test
15. Replace interface/supply circuit board
16. Check mains supply
17. Check fuses on the interface/supply circuit board
18. Fill up the yarn store before starting the weaving machine
19. Check voltage level
20. Replace winding sensor
21. Check yarn store variation
22. Replace wind-on sensor
23. Check whether yarn store is sufficient