ISI INDUSTRY SOLUTIONS INTERNATIONAL, INC.

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Installation of Load Limiters

1. **Install Load Limiter device** to the non-moving rope/ chain near to the anchor/suspension point on a slacked (non-loaded) hoist.

2. **Torque rope clamps down**. Cotter pins are simply to keep the unit in place.

3. **For preset units** see "sizing overload limit devices".

4. **The normally closed contact wires should be placed in series** with an appropriate part of the hoist circuitry usually the contactor coil of the UP contactor. As the load increases the switch will open at the approximate setting and shut down the movement of the hoist in the UP direction. Slack Load option is put in the DOWN circuit of the hoist.

5. **Hysteresis:** All electro-mechanical devices exhibit hysteresis such that to RESET it is likely that the load must decrease below the "trip point" in order to reset.

6. **Repair** of any Load Limit device should not be attempted except for superficial problems such as a cut wire etc. NEVER disassemble and reassemble any unit. The "link" pins on the Chain Load Limit devices are of special grade steel and should never be modified or replaced with other than factory supplied parts.

WIRE ROPE STYLE - Setting in the field:

a. Detach the back protection plate.
b. Pick up the heaviest load required ensuring that it is not more than the safe working load of the crane & hoist combination.
c. Turn the adjusting screw (under protective cover plate) out fully, pick up safe working load, turn adjusting screw in until cut out then turn back about 1/8 turn and lock. The adjusting screw is very sensitive.
d. Lower the load and lift up again to ensure correct functioning. Do this several times as a check. You may have to fine tune several times. *** USE TORQUE WRENCH to put cable clamp on hoist!**
e. Reattach back protective plate. (see *** Best Torque below)**

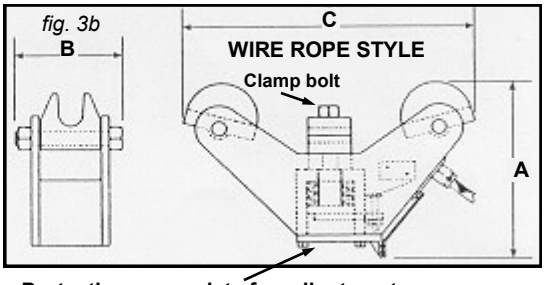

table 3 Rope Clamp Bolt Torque Rating

Model	* Best Torque	Socket
LL18, LL28	8 Nm or 5.9 Ft. Lbs.	13mm
LL45, LL60	10 Nm or 7.4 Ft. Lbs.	16mm
LL80, LL150, LL200	15 Nm or 11.1 Ft. Lbs.	19mm

fig. 3b Wire rope Hoist Load Limiter showing internal mechanics, rope clamp and cover plate for adjusting screw.

N.C. Circuit

CHAIN HOIST STYLE – Setting in the field:

a. Install Chain Load Limiter device using Link pins provided, see table 4.
b. Use the heaviest load required ensuring that it is not more than the safe working load of the crane and hoist combination.
c. LOOSEN LOCK NUT. Turn the adjusting nut IN (clockwise) to increase the chain load setting and or OUT (counter-clockwise) to decrease the setting (see *fig 4b*). The adjusting nut is very sensitive and a small adjustment will cause a relatively large change in setting. The adjusting nut is tight and is constantly under internal pressure.
d. When desired cut out point is reached, the N.C. contact will open (test several times to assure setting), the adjusting nut must be locked by tightening the lock nut (*see fig 4b*).
e. CHECK load cut out again to ensure proper setting. You may have to fine tune.
f. Ensure that any hoist "top" limit switches are set and arranged so the Chain load limit device could not be broken by the bottom block when at maximum lift height.

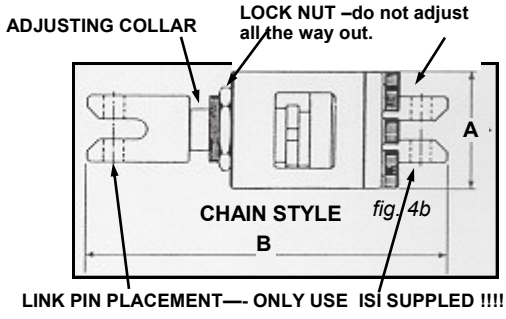

table 4 Chain Link Pin, Adjusting Collar and Lock Nut sizes

Model	Link Pins Allen	Link Pins Hex	Adjusting Collar	Lock Nut
LL12C	6mm	13mm	19mm	38mm
LL17C	10mm	19mm	25mm	50mm
LL28C	10mm	19mm	25mm	50mm

fig. 4b Chain hoist load limiter showing adjustment collar lock nut and link pin placement (included).

N.C. Circuit

 Prices and specifications are subject to change without notice.

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PROPER INSTALL OF "PRESET" HOIST ROPE LOAD LIMIT DEVICES

1. If unit has been **preset at factory** to a "rope load" trip point, then it is ***necessary*** **for the installer to use an accurate torque reading wrench upon installation**. The two screws, which hold the clamshell clamp against the rope, is precisely set at the factory when "preset" trip point is specified. If an accurate torque reading wrench is not used the preset value becomes very inaccurate. Test weights must be used to reset the unit manually. In addition, the 2 screws rely on an accurate rope diameter.

Accurate torquing of the clamshell holding bolts using a calibrated torque wrench.

Accurate rope diameter must have been reported

Rope diameter is critical since the clamshell has a precise diameter hole for clamping the hoist rope. This is especially important when a unit has been preset at the factory.

2. Preset is done on a single fall of rope. A multiple fall of rope might show slight differences in how the load is "shared". Usually this is very small and insignificant.

3. Be aware that old stretched ropes may not have the same diameter as when new. A manual adjustment will then be necessary. Be advised that stretched ropes may not be acceptable to OSHA.

4. Once a manual adjustment of the internal setscrew is made, then the preset value is "gone."

5. Retesting or re-preset at the factory is available at a charge.

6. Another source of preset error is an improper initial calculation of the individual rope load on a single rope of the hoist. Although the setting is correct on the unit, the hoist calculation was done incorrectly and the trip point is thus set incorrectly.

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PRESET ROPE LOAD LIMITS

When accurate rope diameter and rope load information is given to ISI the device is set accurately to within specification.

Some sources of inaccuracy:

Incorrect installation technique
Damage in shipment
Incorrect initial calculation of rope load
Incorrect rope diameter
Inaccurate unadjusted torque reading wrench used (or NOT used)

It is the responsibility of the installer to verify response of the unit at the installation.

ISI will re-preset or test any LL unit within 90 days of ISI shipment at no charge FOB East Dundee, IL.