Equipment Compliance Certification and Inspection Solutions

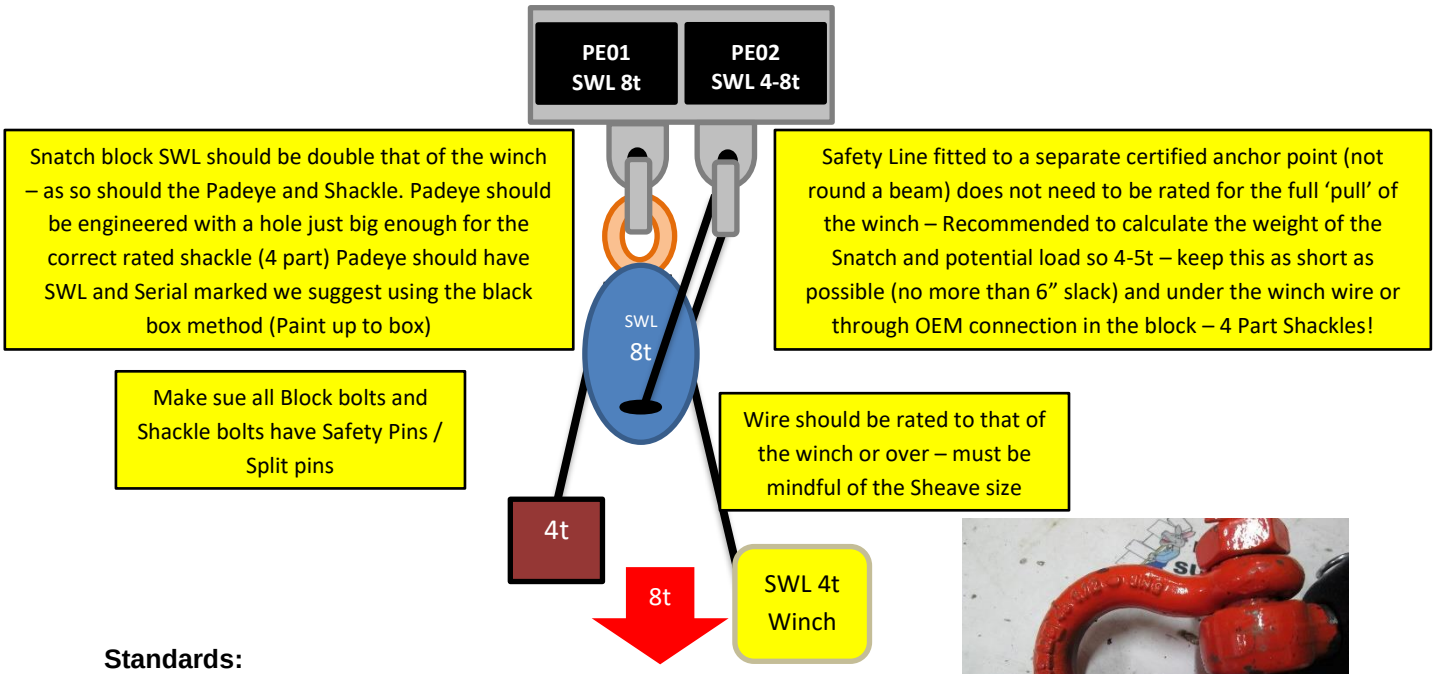
Comaea Focus on safety: Snatch Blocks / Sheave Blocks C006

What are they?

Snatch / Sheave blocks are a critical part of rigging systems and a critical part of the Rig floor tugger, manrider and Rig tong system in the Derrick.

Snatch Block: has a removable side plate so the wire does not have to be reeved around the Sheave
Sheave Block: has fixed side plates and the wire needs to be reeved round the sheave.

Standard snatch block rigging arrangement: (SWL for calculation purpose only)



Standards:

1. OEM – Important to follow OEM Recommendations
2. API 4G / API2C
3. ASME B30.26:2015
4. BS4018:1996
5. Swim Sec 3 & Sec 39

Recently Inspected Under crown snatch block – Swivel Padeye Pin bent (overpulled)

Example recorded incidents involving Snatch blocks:

1. Incorrect load rating – Middle pin failure
2. Side plate pins not secured with safety pin – Side plate opens
3. Rigging not secured correctly – (Monkey board tugger) Equipment drops from Monkey board
4. Incorrect Snatch blocks used at height **(Snatch blocks must have secondary retention on Sides)**
5. Wire snags in between sheave and side plate – Check for distortion and sheave movement

Maintenance and Inspection

- Follow OEM CAT1, CAT2, and CAT3 and Schedules – follow inspection points from the OEM – many under crown 'fitted' when under inspection cannot be inspected fully.
- Crosby suggests frequent CAT1 and CAT2 – CAT3 (including some disassembly) required as per Contractor PM system but maximum of 12 months. CAT4 as required
- B30.26 Complete inspection by competent person maximum of 12 months – Checklist in Standard
- A 5 Yearly CAT4 would be a good maintenance practice – to include NDT of center pin

Common Audit corrective actions:

1. **Secondary Retention not fitted (Safety / split pins)**
2. **Safety Securing not fitted correctly (not rated to withstand drop with weight, not secured to certified anchor point, no 4-part shackles, not fitted under the main wire)**
3. **No Periodic Maintenance / Replacement schedule – Ensure complete maintenance / inspections**
4. **Incomplete inspections on under crown snatch blocks that are fitted whilst inspected**
5. **All Equipment covered in paint (Color code or just coating) No way of conducting full inspection!**

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Appendix D Care and maintenance of wire rope pulley blocks

Wire rope pulley blocks should be subjected only to fair and proper usage. Special attention should be given to the undermentioned precautions:

a) *Swivel head fittings.* Examine the nut or collar of the shank, to ensure that it is securely fastened and free from visible defects. See that the shank is not distorted and turns freely by hand, and that the clearance is not excessive. Grease or oil the shank and the bearing surface of the nut or collar.

b) *Binding.* Examine for fractures and wastage due to corrosion.

c) *Side or partition plates.* Examine to see these are not buckled nor distorted. Buckled side or partition plates may allow the rope to jam between the sheave or side and partition plate: this has been the cause of many accidents.

d) *Sheaves.* Examine for cracks; verify that the bush is not slack in the sheave and is not worn where in contact with the axle pin. See that each sheave turns freely by hand.

Examine the fit of the rope in the grooves of the sheaves. This is particularly important when a new rope is first reeved, since a worn sheave may result in a high rate of rope wear.

e) *Axle pins.* Examine axle pins for wear; check that they do not rotate, also that they are securely held in place to prevent the pins working out of the shell of the block.

f) *Lubrication.* It is impossible to over-emphasize the necessity for regular and adequate lubrication. If the block is not lubricated regularly and carefully, its life is greatly reduced and the efficiency of the tackle is impaired.

g) *Protection.* Do not paint the block in such a manner that free movement is impaired or lubrication points or grease holes are choked. It is specially important that reference marks should not be obliterated.

h) *Cleaning blocks by heating, prior to examination.* Parts of blocks having been where necessary heat treated in manufacture do not require further heat treatment in service, except that after repair or treatment involving heat, they should be normalized before being put back in service.

Neither blocks nor parts should ever be subjected to sub-critical annealing, (i.e. low temperature annealing as applied to wrought iron).

j) *Reeving.* When reeving blocks, the wire rope should be paid out without slack from a reel or coil in a straight line to prevent the possibility of kinking or disturbance of the lay of the rope. A coil of rope should be paid out from a turntable, or alternatively one end of the coil should be made free and the remainder rolled along a clean floor. In no case should the rope be unwound by throwing off turns when the coil or reel is flat on the floor. Terminal seizings should not be removed without ensuring that the lay of the rope is held.

26-5.8.4 Removal Criteria

Rigging blocks shall be removed from service if conditions such as the following are present and shall only be returned to service when approved by a qualified person:

(*a*) missing or illegible identification

(*b*) misalignment or wobble in sheaves

(*c*) excessive sheave groove corrugation or wear

(*d*) loose or missing nuts, bolts, cotter pins, snap rings, or other fasteners and retaining devices

(*e*) indications of heat damage, including weld spatter or arc strikes

(*f*) excessive pitting or corrosion

(*g*) bent, cracked, twisted, distorted, stretched, elongated, or broken load bearing components

(*h*) excessive wear, nicks, or gouges

(*i*) a 10% reduction of the original or catalog dimension at any point

(*j*) excessive damage to load bearing threads

(*k*) evidence of unauthorized welding or modifications

(*l*) for hooks, the removal criteria specified in B30.10

(*m*) for shackles, the removal criteria specified in B30.26

(*n*) other conditions, including visible damage that cause doubt as to the continued use of the rigging block