

ROLL REPLACEMENT

TUBE MILL FOR THE PRODUCTION OF WELDED STEEL TUBES
TYPE MTM 60/C/ST/HF

Manufacturer	OFFICINE M.T.M. S.P.A.
Serial number	06M336
Building year	2005



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2 - ROLL REPLACEMENT

2.1 *MOTORISED ROLL REPLACEMENT FOR WORKING STANDS*

Proceed as follows:

- 1- Hydraulic nuts
- 2- Contrast fork
- 3- Mobile shoulder lock bolts
- 4- Coupling devices
- 5- Mobile shoulder

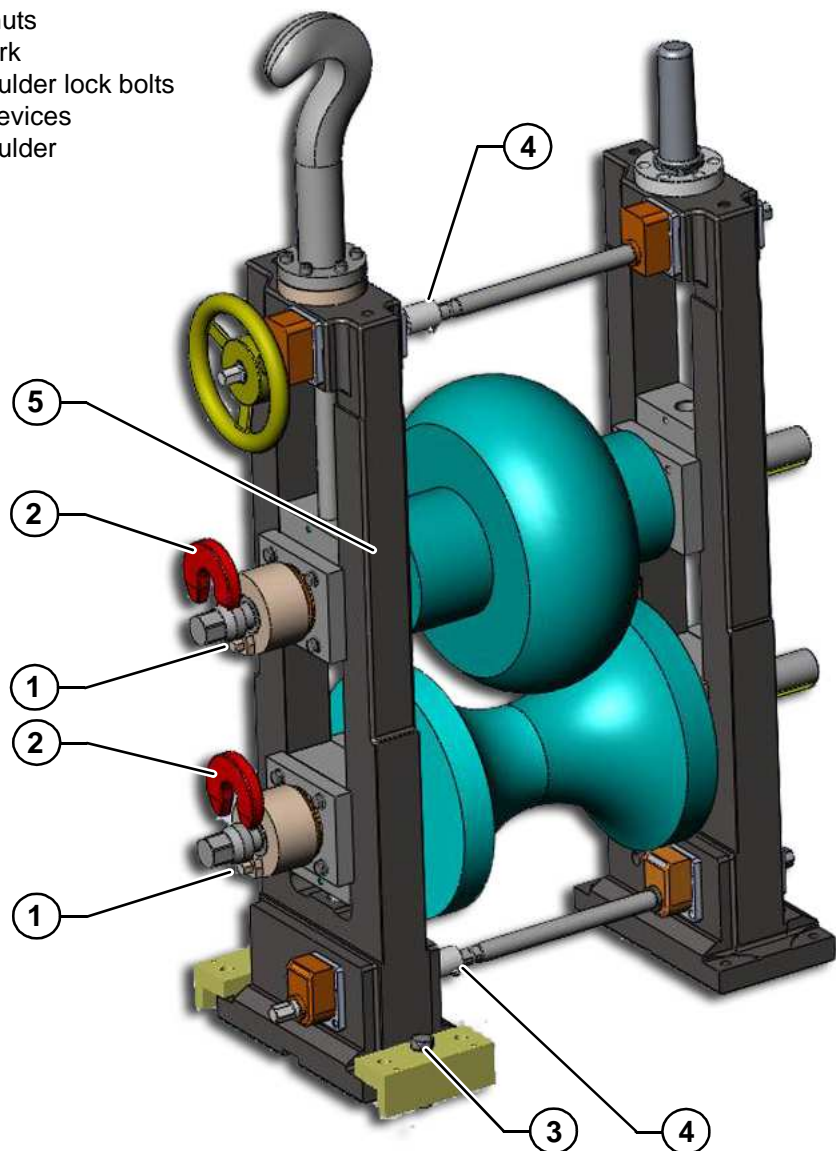


Fig. 2-A Mobile shoulder extraction: phase 1



- 1- Loosen the hydraulic nuts pos.1 in *Fig. 2-A*, located on the lower and upper shafts
- 2- After removing the nut, remove the contrast fork pos.2
- 3- Loosen the mobile shoulder lock bolts pos.3 and release the coupling device pos.4 from the top and bottom

5- Mobile shoulder

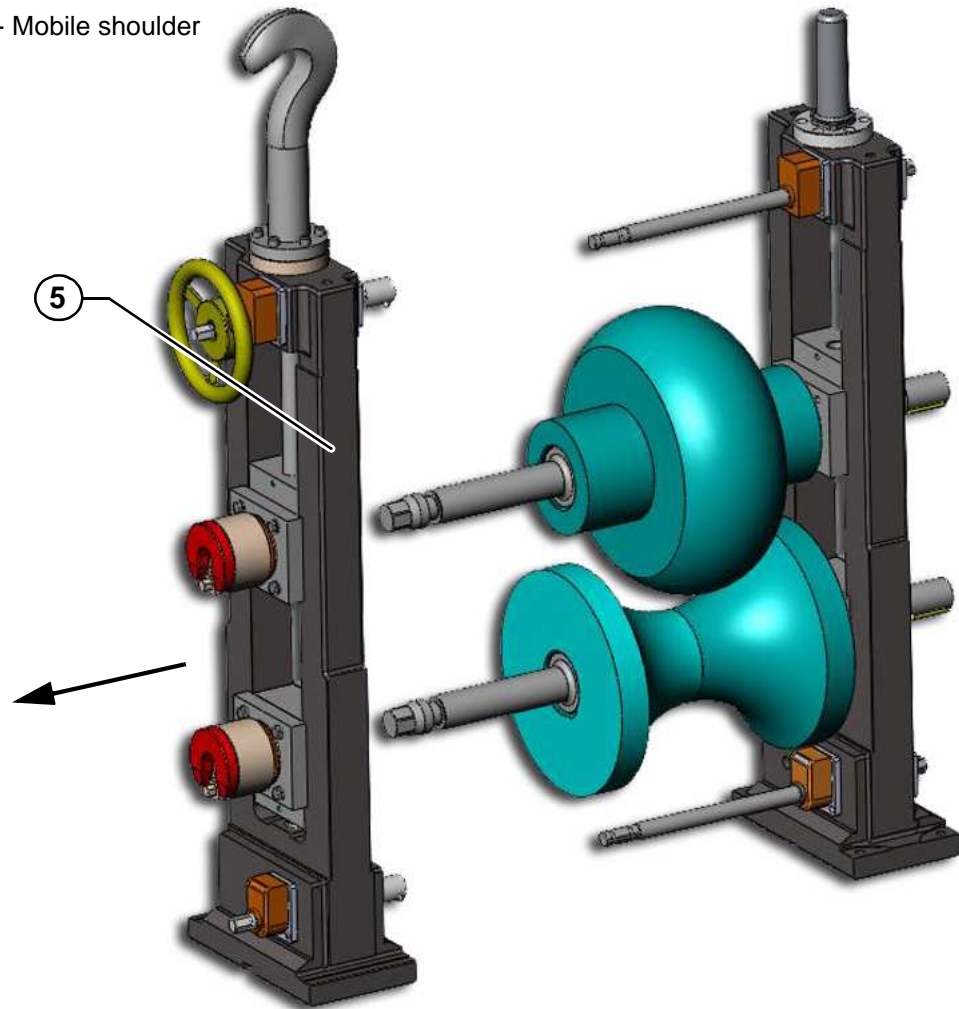


Fig. 2-B Mobile shoulder extraction: phase 2

- 4- At this point, the shoulder pos.5 in can be removed using the trolley and new rolls installed as described in paragraph 2.1.0.1 *ROLL ASSEMBLY* (page 2-3).



2.10.1 ROLL ASSEMBLY

The following roll assembly procedure applies to all working stands.

After removing the front mobile shoulder, install the rolls.

- 1- Use the roll loading sleeve pos.1 inserting it in the lower shaft. Install the first half of the lower roll pos.2 in *Fig. 2-C*.

- 1- Roll loading sleeve
- 2- First half of the lower roll

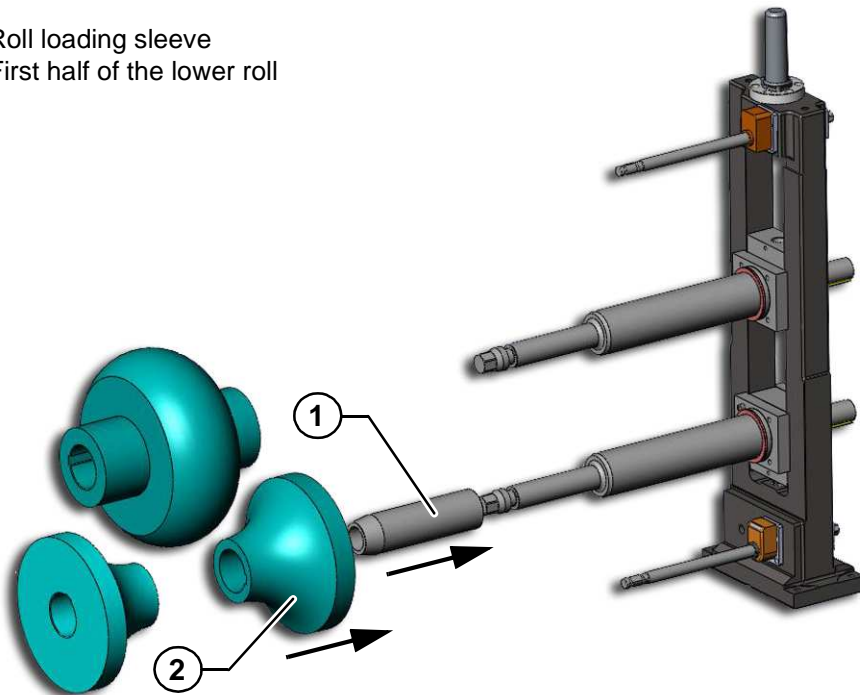


Fig. 2-C Roll assembly: phase 1

- 2- Place the roll loading sleeve pos.1 on the upper shaft and install the upper roll pos.3 in *Fig. 2-D*.

- 1- Roll loading sleeve
- 3- Upper roll

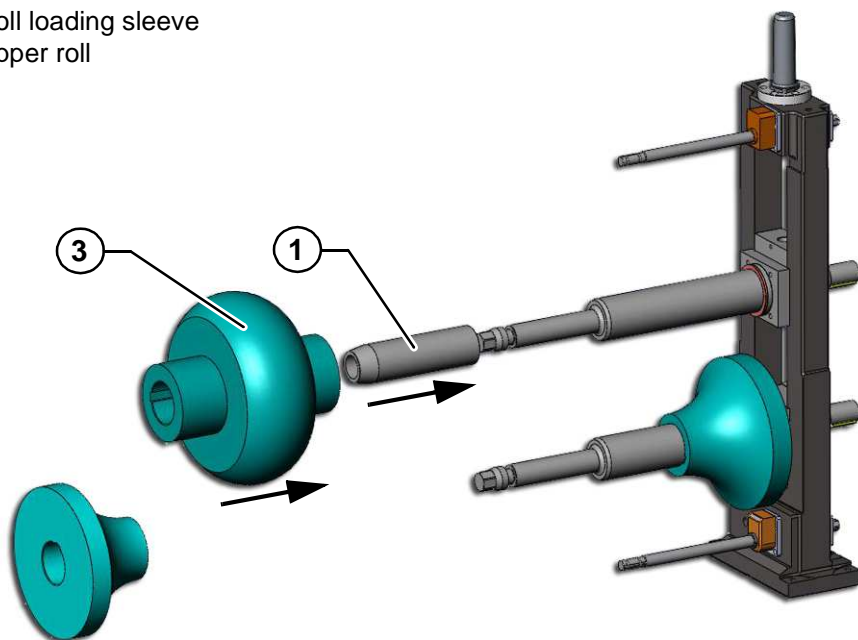


Fig. 2-D Roll assembly: phase 2



- 3- Align the roll loading sleeve pos.1 with the lower shaft and install the second half of the lower roll pos.4 in *Fig. 2-E*.

- 1- Roll loading sleeve
4- Second half of the lower roll

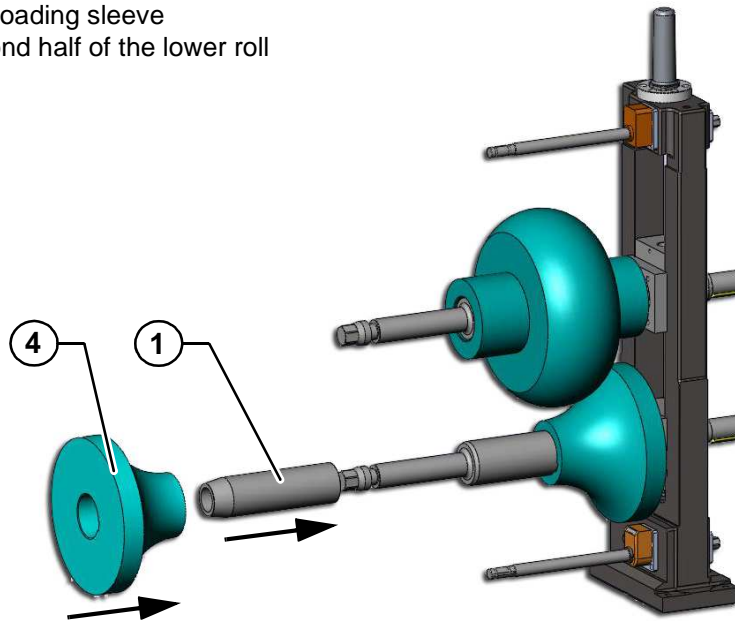


Fig. 2-E Roll assembly: phase 3

- 4- Remove the roll loading sleeve pos.1 from the lower shaft (see *Fig. 2-F*).

- 1- Roll loading sleeve

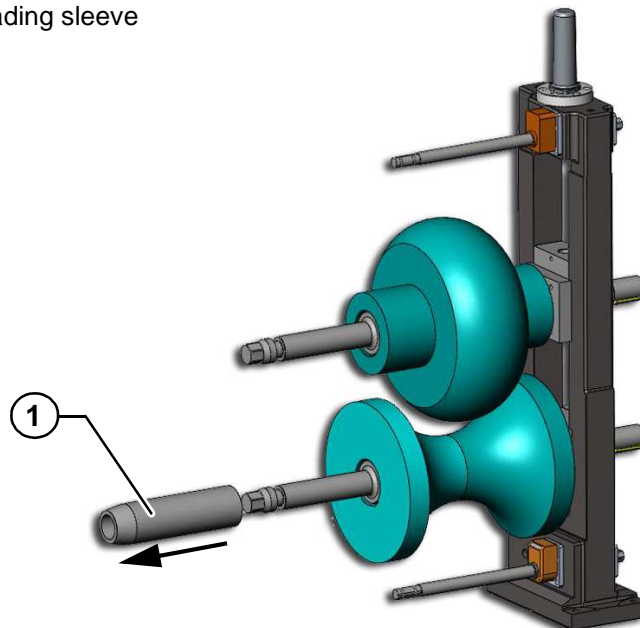


Fig. 2-F Roll assembly: phase 4



- 5- Place the front mobile shoulder near the base notch and insert it (see Fig. 2-G).

5- Mobile shoulder

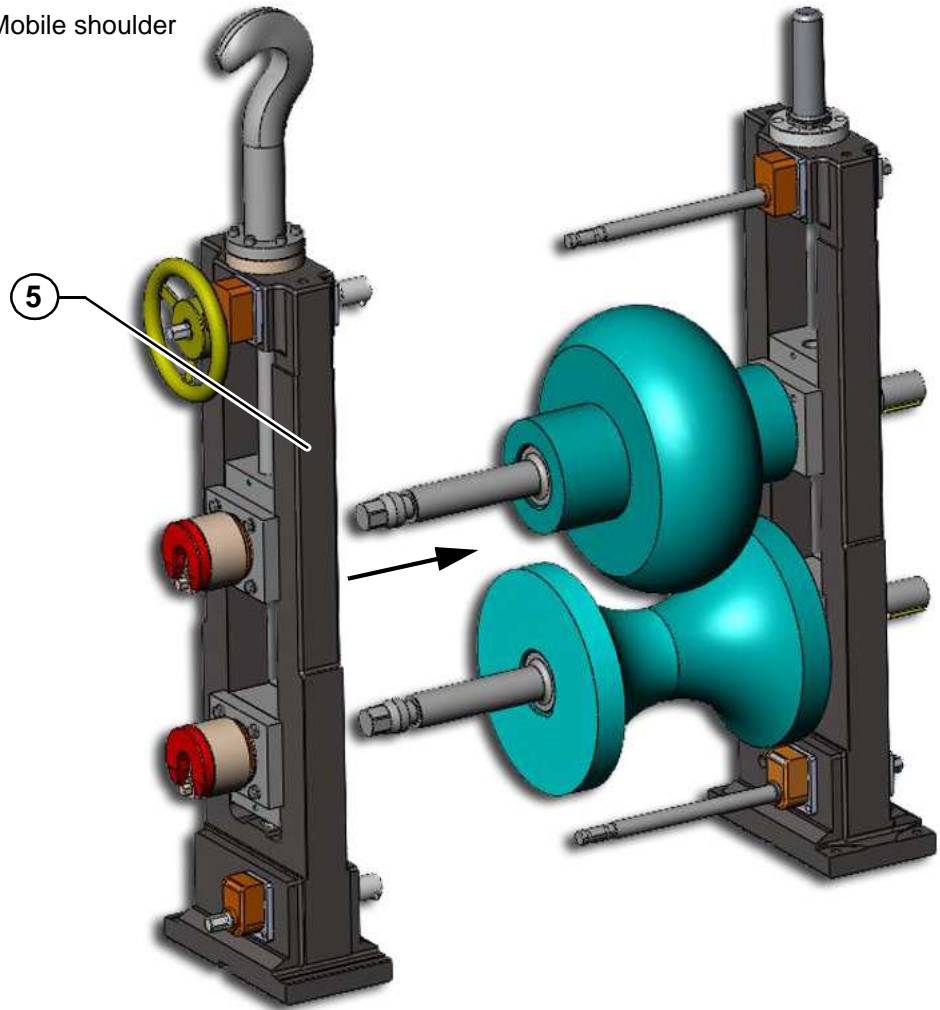


Fig. 2-G Roll assembly: phase 5



6- To reassemble the front mobile shoulder, follow the steps described in paragraph 2.1 *MOTORISED ROLL REPLACEMENT FOR WORKING STANDS* (page 2-1) in reverse order.

- 1- Hydraulic nuts
- 2- Contrast fork
- 3- Mobile shoulder lock bolts
- 4- Coupling devices
- 5- Mobile shoulder

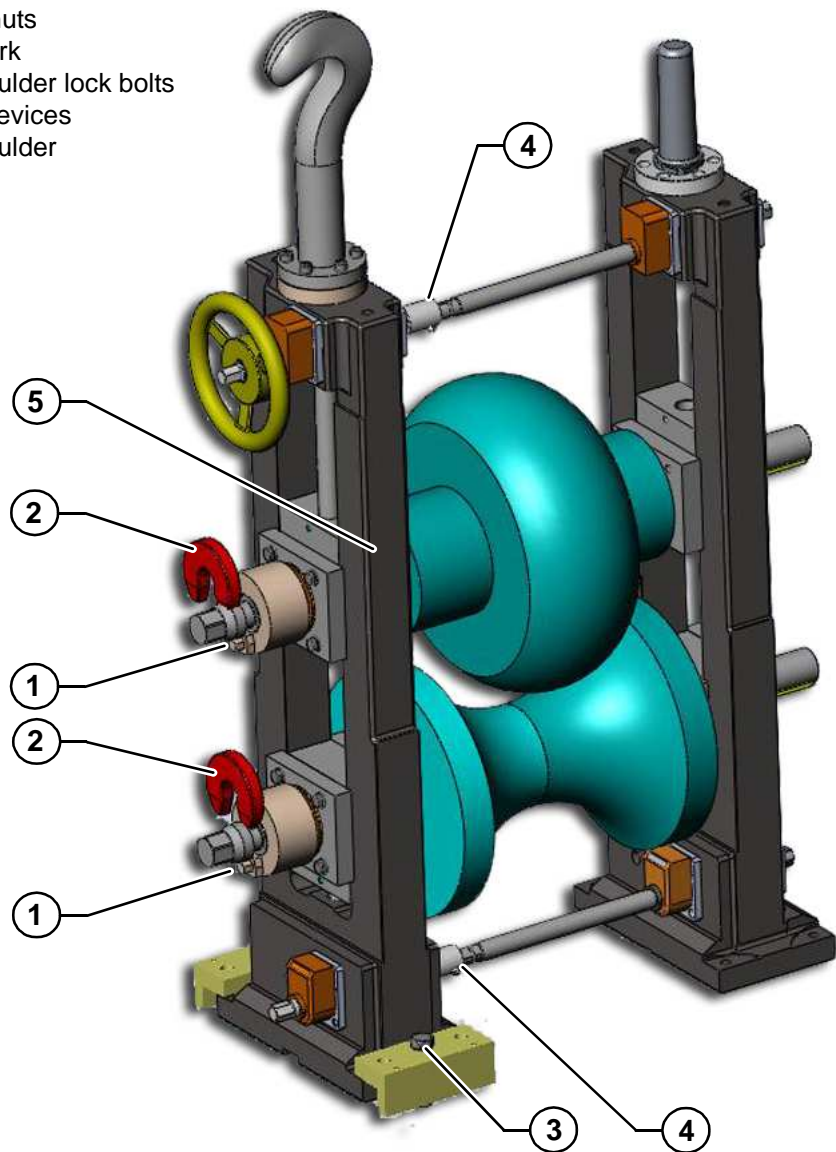


Fig. 2-H Front shoulder reassembly



2.1.1 SIDE STAND ROLL REPLACEMENT PROCEDURE

- 1- Lock screw
- 2- Lock plate
- 3- Lock screw
- 4- Spacer
- 5- Roll

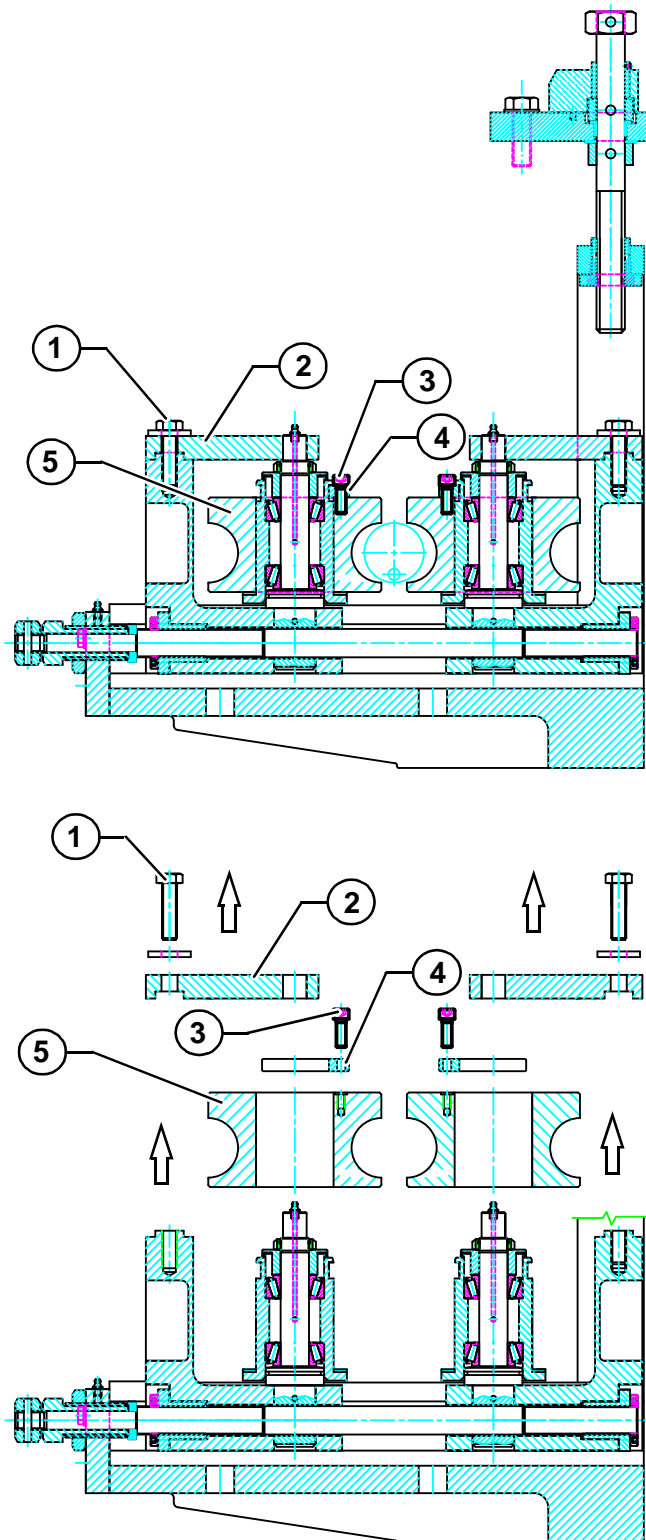


Fig. 2-1 Side stand rolls



Proceed as follows (see Fig. 2-I):

- 1- unscrew lock screw pos. 1 and remove lock plate pos. 2
- 2- unfasten lock screw pos. 3
- 3- remove spacer pos. 4
- 4- remove roll pos. 5.

2.1.2 ASSEMBLY SCHEME OF ROLL LOCKING RING NUTS ACCORDING TO LINE WORK DIRECTION

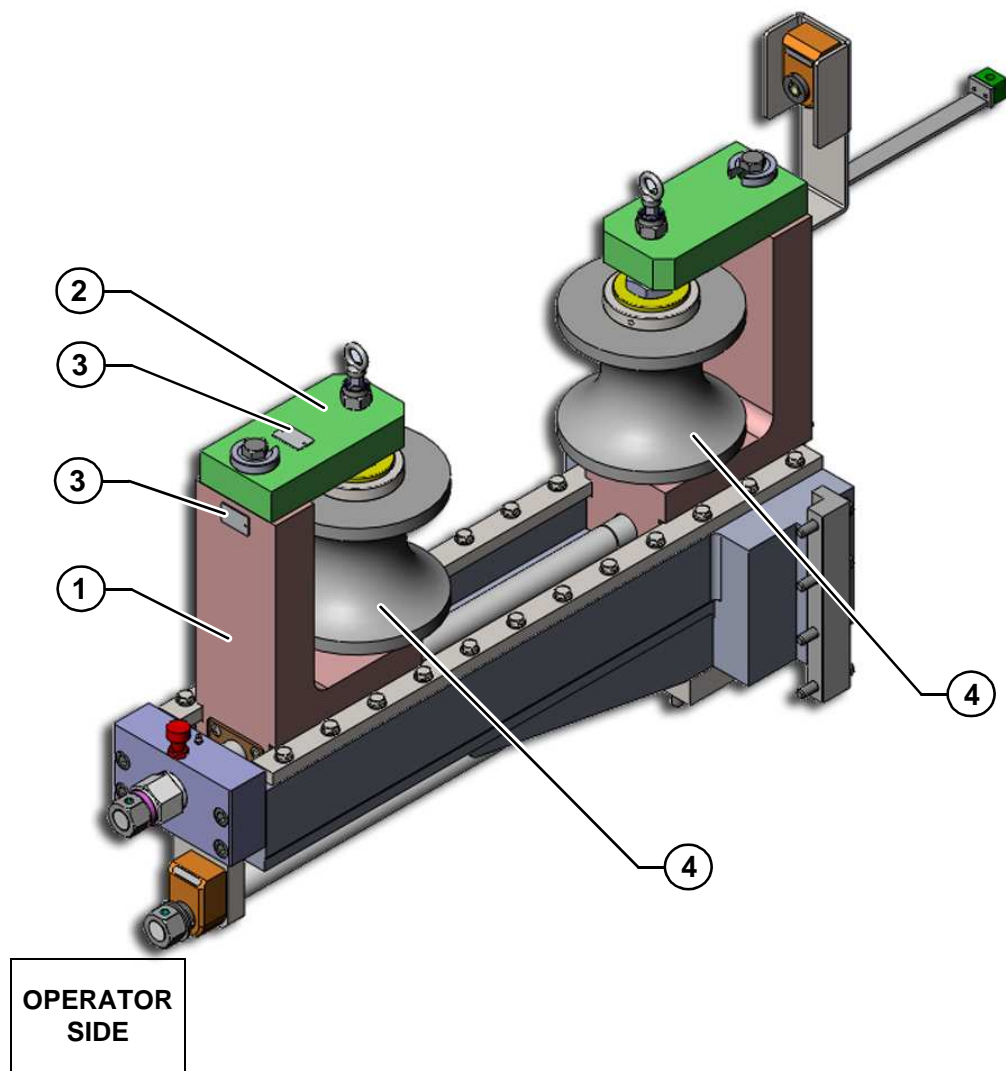


Fig. 2-J Assembly scheme of roll locking ring nuts according to line work direction

- 1- Roll block pos.1 and the support plate of the roll bush pos.2, operator side, are identified by plates marked with A (pos.3).
- 2- During roll change always make sure that unit pos.1 with letter A is assembled on support pos.2 with identifying letter A.

This procedure avoids the unscrewing of bottom ring nuts that block roll pos.4; one ring nut is provided with a right direction threading, the other with a left direction threading

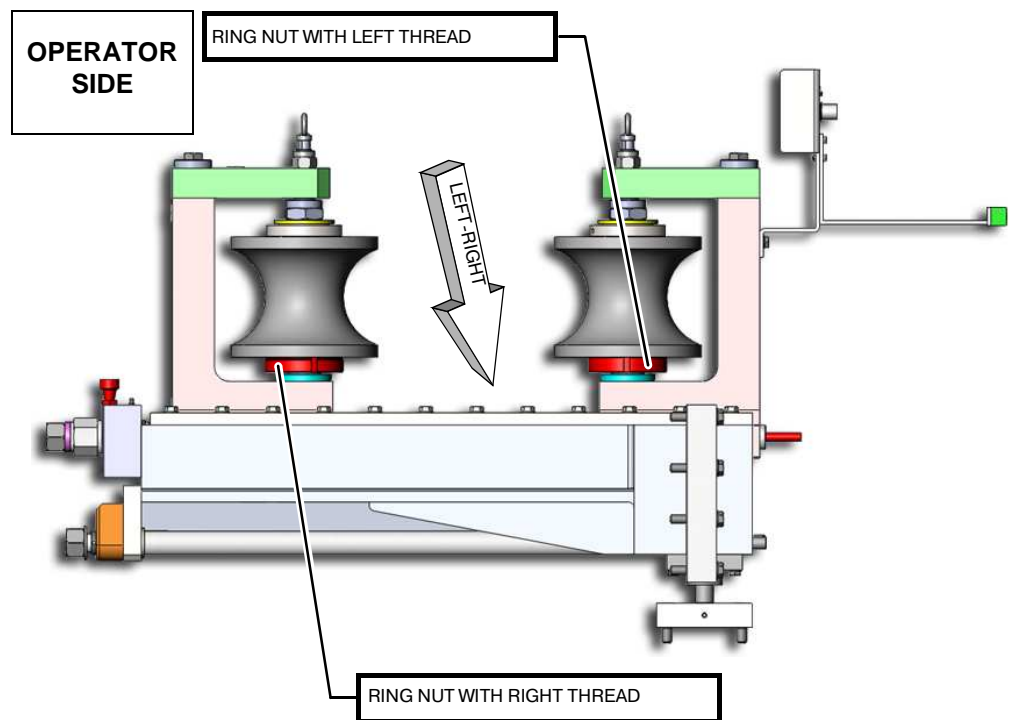


Fig. 2-K Assembly scheme of roll locking ring nuts according to line work direction



2.1.3 ROLL HOLDING MANDREL PREPARATION

2.1.3.1 QUICK CHANGE EDGE GUIDE UNIT HOLDING MANDREL

- 1- Unscrew lock nut pos.1
- 2- Unscrew the 2 bearing block lock screws pos.2
- 3- Lift the bearing block pos.3 off the shaft
- 4- At this point the rolls pos.4 can be removed
- 5- Proceed in reverse order for assembly.

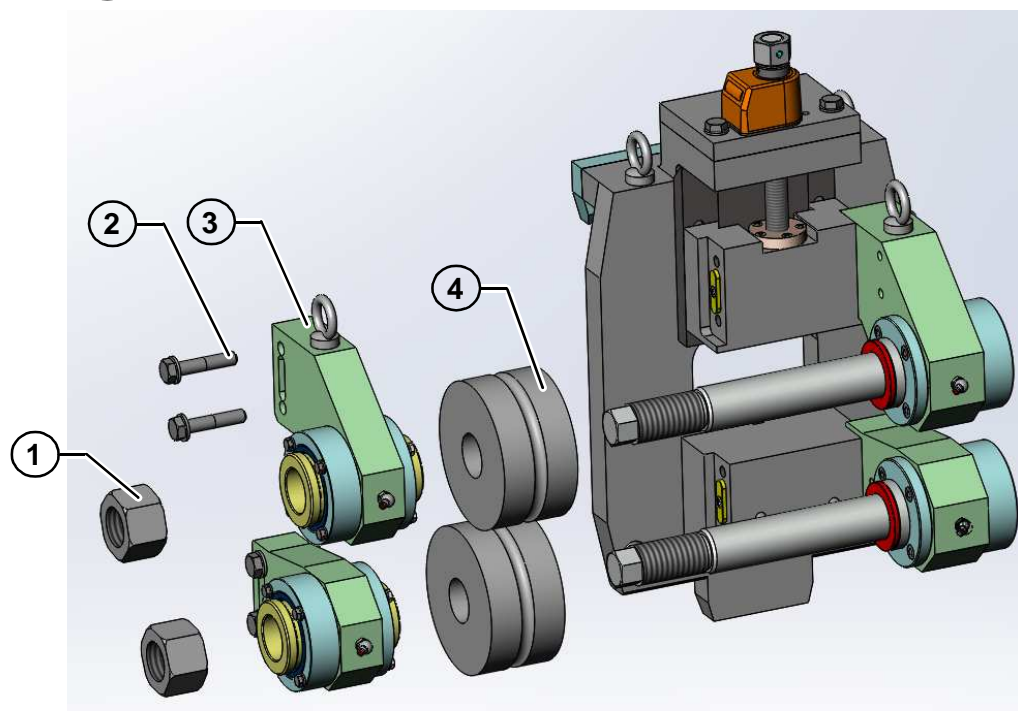
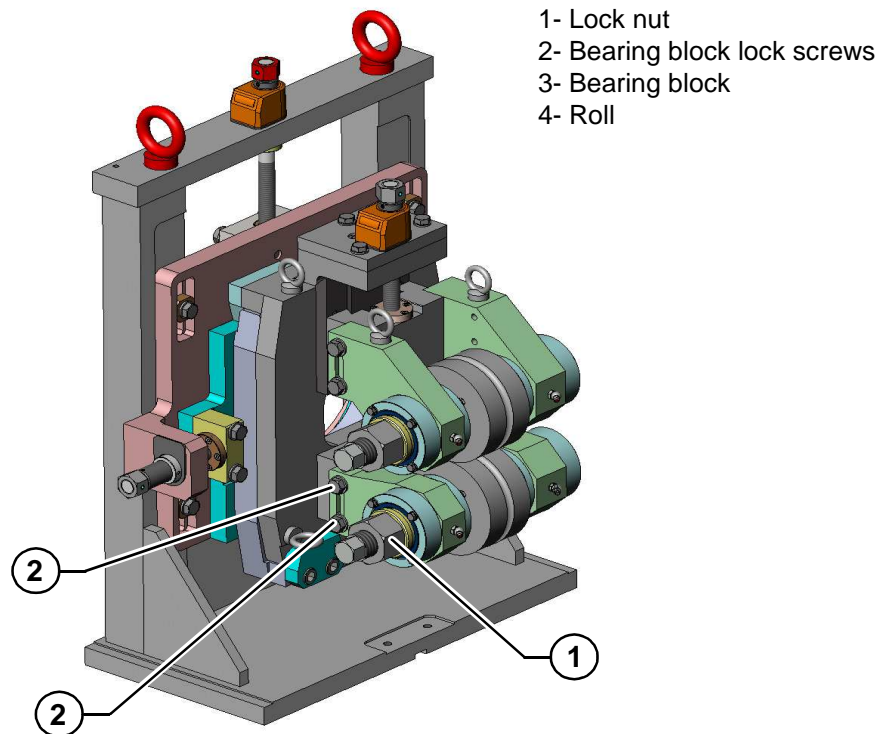


Fig. 2-L Quick change edge guide unit holding mandrel



2.13.2 IMPEDER SUPPORT

Before producing tubes, stock impeder for the tube to be produced.

These impeder are attached to the support mounted on the presetting fin-pass on eighth forming stand.

2.13.3 FORGING ROLL HOLDING MANDREL

- 1- using a hexagon wrench loosen the two screws pos.1 that block the rolls holder fork
- 2- using a hexagon wrench loosen the grub screws pos.2
- 3- extract the roll pin pos.3.

Proceed in reverse order to assemble new rolls.

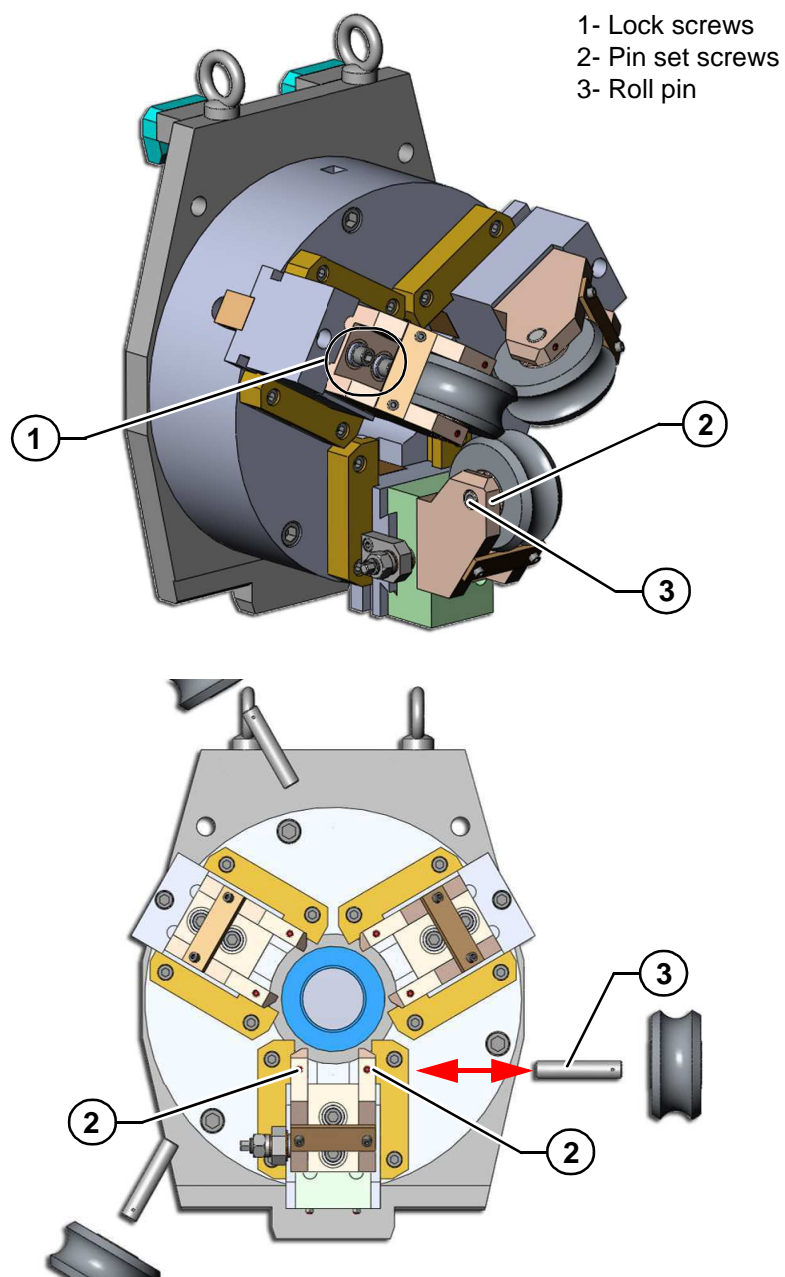


Fig. 2-M Forging mandrel

**2.13.4 STRAIGHTENING (TURK'S HEAD MANDREL)**

- 1- Remove split pin pos.1
- 2- Remove the roll pin pos. 2
- 3- Proceed in reverse order for assembly.

- 1- Split pin
- 2- Pin
- 3- Roll

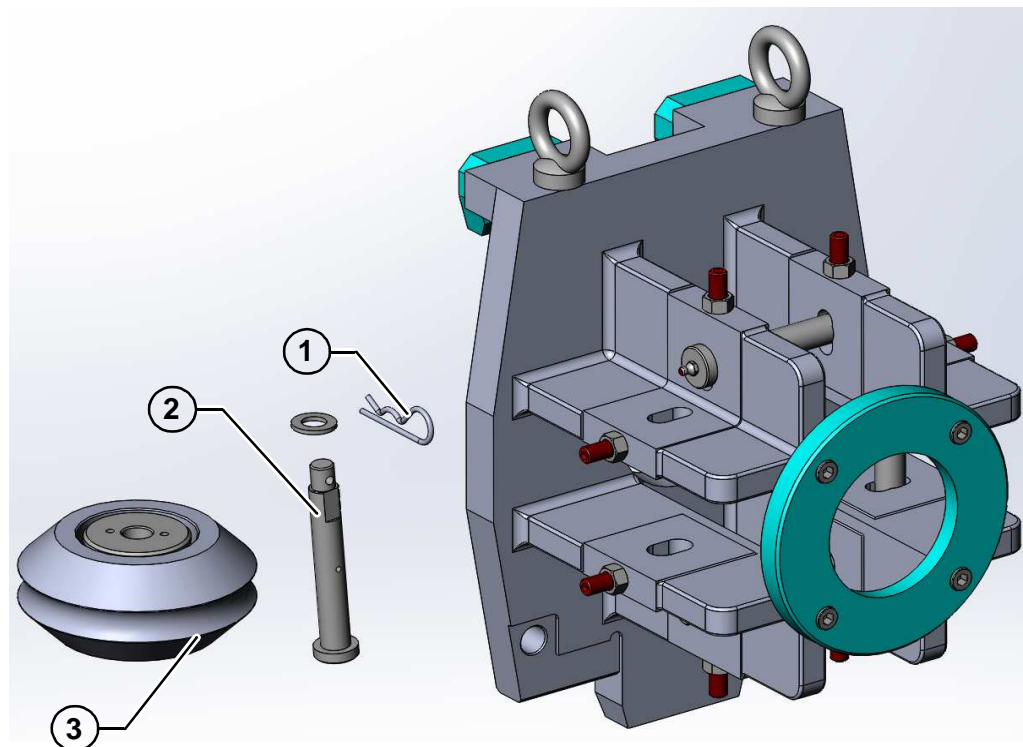


Fig. 2-N Straightening (turk's head mandrel)



2.1.4 OUTSIDE SCARFING ROLL REPLACEMENT

- 1- Unscrew the 2 roll blocking washer lock screws pos.1
- 2- Extract the roll blocking washer pos.2
- 3- At this point the rolls can be removed
- 4- Proceed in reverse order for assembly.

- 1- Lock screw
- 2- Lock washer
- 3- Roll

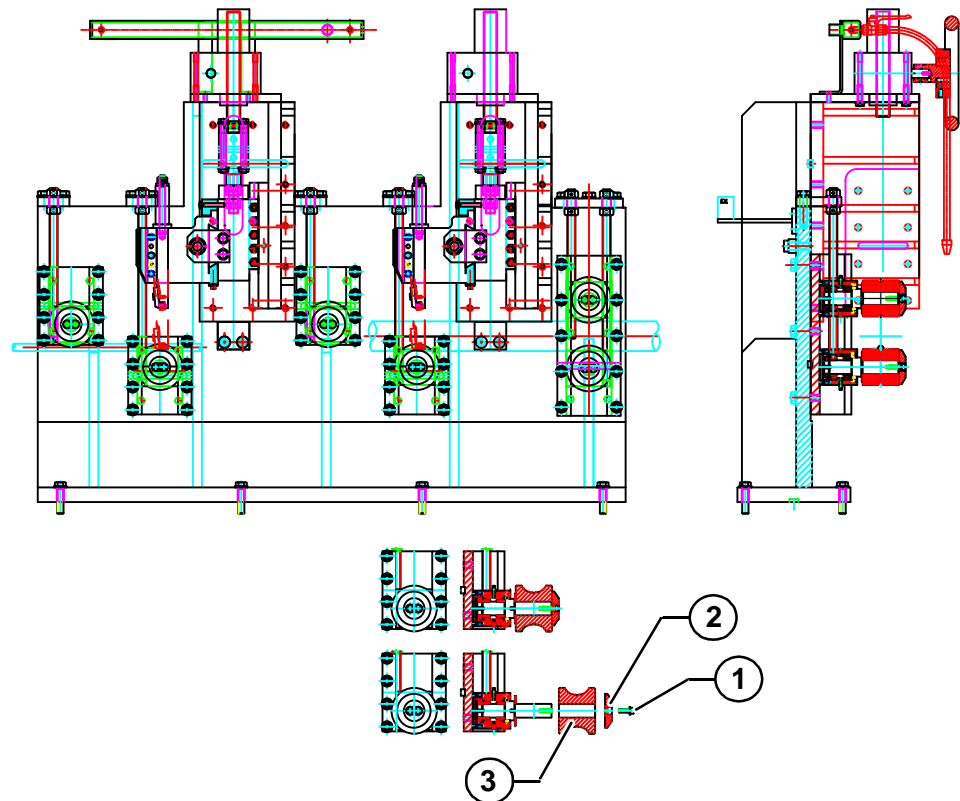


Fig. 2-0 Outside scarfing roll replacement



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