



# Installation instructions



**Dextra**

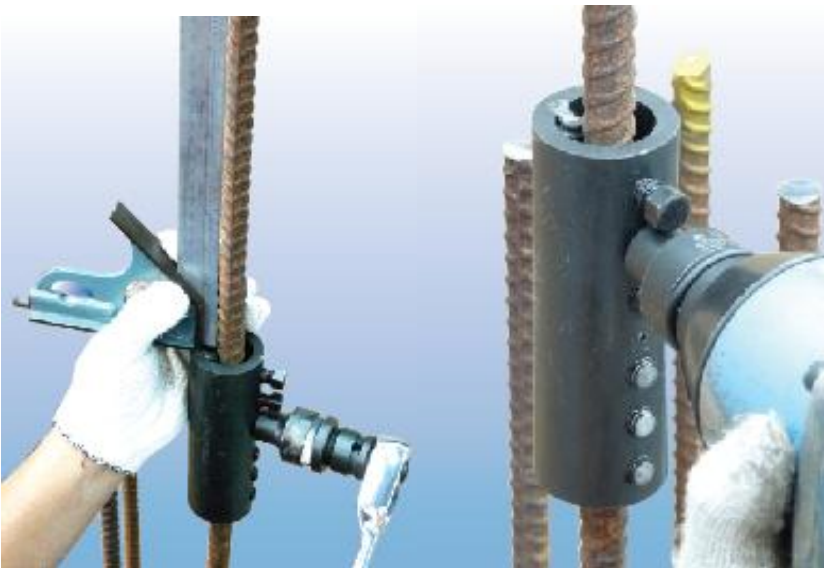
## Installation procedure



Insert the Unitec coupler over the end of the first bar until contact with the centre pin. Strongly hand tighten the screws from centre to outside with a wrench to pre-position the coupler progressively in order to maintain its alignment with the bar.



Tighten the screws, from centre to outside, with a power drive (pneumatic wrench) until their heads shear off. *(A manual wrench can be sufficient for small screws – M12 & M16 – if there are not many couplers to assemble).*



Insert the second bar into the coupler until contact with the centre pin and repeat the operation. Check the bar alignment when hand tightening the screws with a wrench : at a distance of 25cm the misalignment should not exceed 5mm (or not more than 1/4" at a distance of 1ft).

**Safety tip: Wear goggles and ear plugs when using the impact wrench.**

## Position splicing

Remove the centre pin with a punch.



Mark the bar engagement length on each bar end, using the data in the table.

Bar size			Coupler product code	Minimum bar engagement length	
USA & Mexico	Canada	Europe		in	mm
#4		12, 12.5	FPUS0400002	2" 21/32	68
#5	15M	14, 16	FPUS0500002	2" 21/32	68
#6	20M	18, 20	FPUS0600002	3" 27/32	98
#6, #7	20M	20, 22, 24	FPUS0700002	3" 13/32	86
#8	25M	25, 26	FPUS0800002	4" 9/16	116
#9		28	FPUS0900002	4" 1/8	105
#10	30M	30, 32	FPUS1000002	5" 5/16	135
#11	35M	34, 36	FPUS1100002	6" 7/8	174
#12		38, 40	FPUS1200002	8" 5/32	207
#14	45M	43	FPUS1400002	10" 23/32	272
		50	FPUS5000002	12"	304
#18	55M		FPUS1800002	12" 11/32	313



Slide the Unitec coupler all over the first bar. Bring the continuation bar in front of it and slide the Unitec coupler back over it. Position the coupler between the marks and hand tighten the screws.



Tighten the screws, from centre to outside, with a power drive (pneumatic wrench) until their heads shear off.

## Equipment needed

### Impact wrench

We recommend to use one of the Toku & Metabo pneumatic impact wrenches listed below. If another brand or another model is used, the proper speed should be determined before starting the job.



Bar size	Brand	Model	Square drive	Weight		Air consumption under load		Air inlet thread	Speed
			in	lbs	kg	cfm	(L/min)	in	
#4 to #8	Toku	MI-20P	3/4"	8.6	3.9	39	1,104	3/8"	4
12 to 25	Ingersoll Rand	2141P	3/4"	7	3.2	40	1,132	3/8"	-
	Atlas Copco	LMS61 HR20	3/4"	11.2	5.1	25	707	3/8"	-
#4 to #18	Toku	MI-5000GS	1"	31.2	14.2	66	1,868	1/2"	4
12 to 50	Metabo	RS-4900L	1"	23.3	10.6	22	622	1/2"	2
	Ingersoll Rand	2940 B2	1"	22	10	58	1,641	1/2"	-
	Chicago	CP7780	1"	15	6.8	49.8	1,404	1/2"	-
	Atlas Copco	LMS86 GIR38	1 1/2"	36	16.4	61	1,726	1/2"	-



### Air supply



The requirement for air flow is 100 psig (7 bar) of operating pressure and 70 cfm (2m<sup>3</sup>/min) of delivered air to the pneumatic impact wrench through a 3/4" (Unitec 12 to 25) or 1" (Unitec 12 to 50) hose.





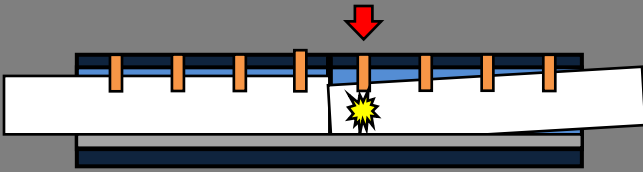
# Tools settings

Bar size			Coupler product code	Coupler weight		Length	Total number of screws per coupler	Screw size	Average torque to shear screw heads		Air gun socket size	
USA & Mexico	Canada	Europe		lbs	kg	mm			ft-lb	Nm	Hexagonal dimension mm	Square drive in
#4		12, 12.5	FPUS0400002	3.5	1.6	140	6	M12	100	140	13	3/4"
#5	15M	14, 16	FPUS0500002	3.5	1.6	140	6					
#6	20M	18, 20	FPUS0600002	5.5	2.5	200	8					
#6, #7	20M	20, 22, 24	FPUS0700002	6.2	2.8	180	6	M16	185	250	15	3/4" or 1"
#8	25M	25, 26	FPUS0800002	8.4	3.8	240	8					
#9		28	FPUS0900002	15	6.8	220	6	M20	500	680	19	1"
#10	30M	30, 32	FPUS1000002	18.7	8.5	280	8					
#11	35M	34, 36	FPUS1100002	26.8	12.2	360	10					
#12		38, 40	FPUS1200002	33.9	15.4	425	12					
#14	45M	43	FPUS1400002	41.8	19	555	16					
		50	FPUS5000002	51.7	23.5	620	18					
#18	55M		FPUS1800002	84	38.2	640	16	M24	730	990	21	1"

# Treatment of non-conformities

## A Problem?

- ▶ Final assembly is not straight !



## Possible causes

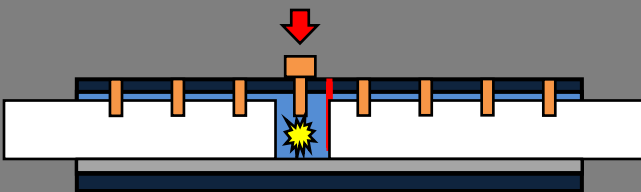
- ▶ You did not pre-tighten the screws
- ▶ You did not follow the proper tightening sequence (from centre to outside).

## Remedial action

- ▶ gas-cut the bar and replace the coupler.

## A Problem?

- ▶ The head of the innermost screw does not shear off!!



## Possible causes

- ▶ The bar was not inserted deep enough

*(This should have been noticed during pre-tightening)*

## Remedial action

- ▶ gas-cut the bar and replace the coupler.



# A Problem?

- ▶ The head of most screws does not shear off!

## Possible causes

- ▶ Your wrench doesn't deliver enough torque.
- ▶ Your air compressor doesn't deliver enough air flow : the compressor may not be powerful enough, its tank may be too small, or the air hose may be too small.
- ▶ The air pressure is too low : the compressor may not be powerful enough, the air hose may be too long, or there may be too much moisture in the air. of the bar.

## Remedial actions

- ▶ Compare its datasheet to the specifications in our installation instructions, you may need to adjust its speed!
- ▶ Compare these to those specified in our installation instructions]
- ▶ Compare these to those specified in our installation instructions]

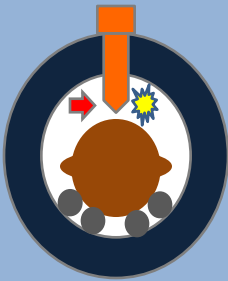
*More causes and remedial actions for "head of most screws did not shear off" next page...*

## A Problem?

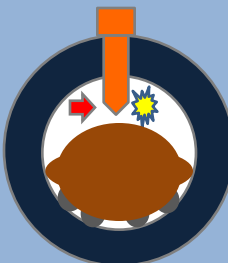
- ▶ The head of most screws does not shear off!

### Possible causes

- ▶ You use the wrong coupler (Too big) for the size of the bar : if the bar is too small, the screw will be too short, so its head will reach the coupler before its tip touches the bar;



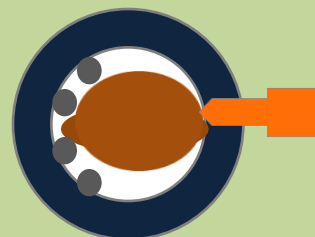
- ▶ The bar is oval, and the screws are in front of its smallest side, so their tips don't touch the bar.



### Remedial actions

- ▶ Refer to our product datasheet to choose the coupler model matching your rebar size.

- ▶ Try turning the coupler so that the screws are facing the largest side of the bar.







## A Problem?

- ▶ The screw turns freely, without penetrating inside the coupler!

## Possible causes

- ▶ The female thread in the coupler has been damaged. It could be because of:
  - ▶ excessive rotary speed
  - ▶ the screwing tool was not held straight.

## Remedial actions

- ▶ If that was the first screw, just remove the coupler and use another one.
- ▶ If the coupler cannot be removed, there is no other choice than cutting the bar.

## Other Problem?

- ▶ Something else ?

## Remedial actions

- ▶ Please fill up the inquiry form on next page and send it to [thailand@dextragroup.com](mailto:thailand@dextragroup.com)



# Unitec Quality Assessment Form

Date: \_\_\_\_\_

## Where did it occur?

Company name: \_\_\_\_\_

Plant : \_\_\_\_\_

Problem observed & Reported by: \_\_\_\_\_

Project for which the production was done: \_\_\_\_\_

## Details of Production Parameters

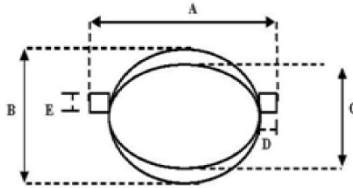
### Bar use when the problem occurred:

Dia: \_\_\_\_\_

Grade: \_\_\_\_\_

Mill: \_\_\_\_\_

### Actual Bar Diameter Measured:



	# 1	# 2	# 3
A			
B			
C			
D			
E			

Rebar info.

### Air compressor

Air flow \_\_\_\_\_ CFM

Operating pressure \_\_\_\_\_ bar

Air hose size \_\_\_\_\_ inch

Operation tools info.

### Pneumatic impact wrench

Brand \_\_\_\_\_

Model \_\_\_\_\_

Speed use \_\_\_\_\_

### Coupler on which the problem occurred:

Marking: \_\_\_\_\_

Outside diameter of coupler \_\_\_\_\_ mm.

Wall thickness of coupler \_\_\_\_\_ mm.

### Product's appearance

Stud's welding \_\_\_\_\_

Rebar's alignment after assembly \_\_\_\_\_

Coupler info.

Assembly info.

Incase of screw did not shear off :

Number of screws did not shear off screws \_\_\_\_\_ pcs.

Position A: ..... mm.

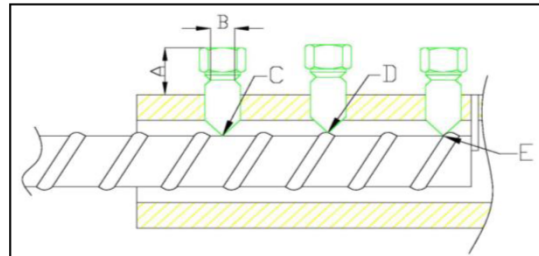
Position B: ..... mm.

Position of screw did not shear off

Position C: ..... Pcs

Position D: ..... Pcs

Position E: ..... Pcs



## Mechanical steel testing report

Samples length: \_\_\_\_\_ mm.

Operator name who's prepare the samples: \_\_\_\_\_

	Item	Tensile test		Failure mode		
		Load (kN)	Strength (MPa)	Bar		
				Bar break	Bar break inside coupler	Bar Slipped
Control bar	-					
Unitec sample	1					
	2					
	3					

Please send back this form to

Attn: QA Manager

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