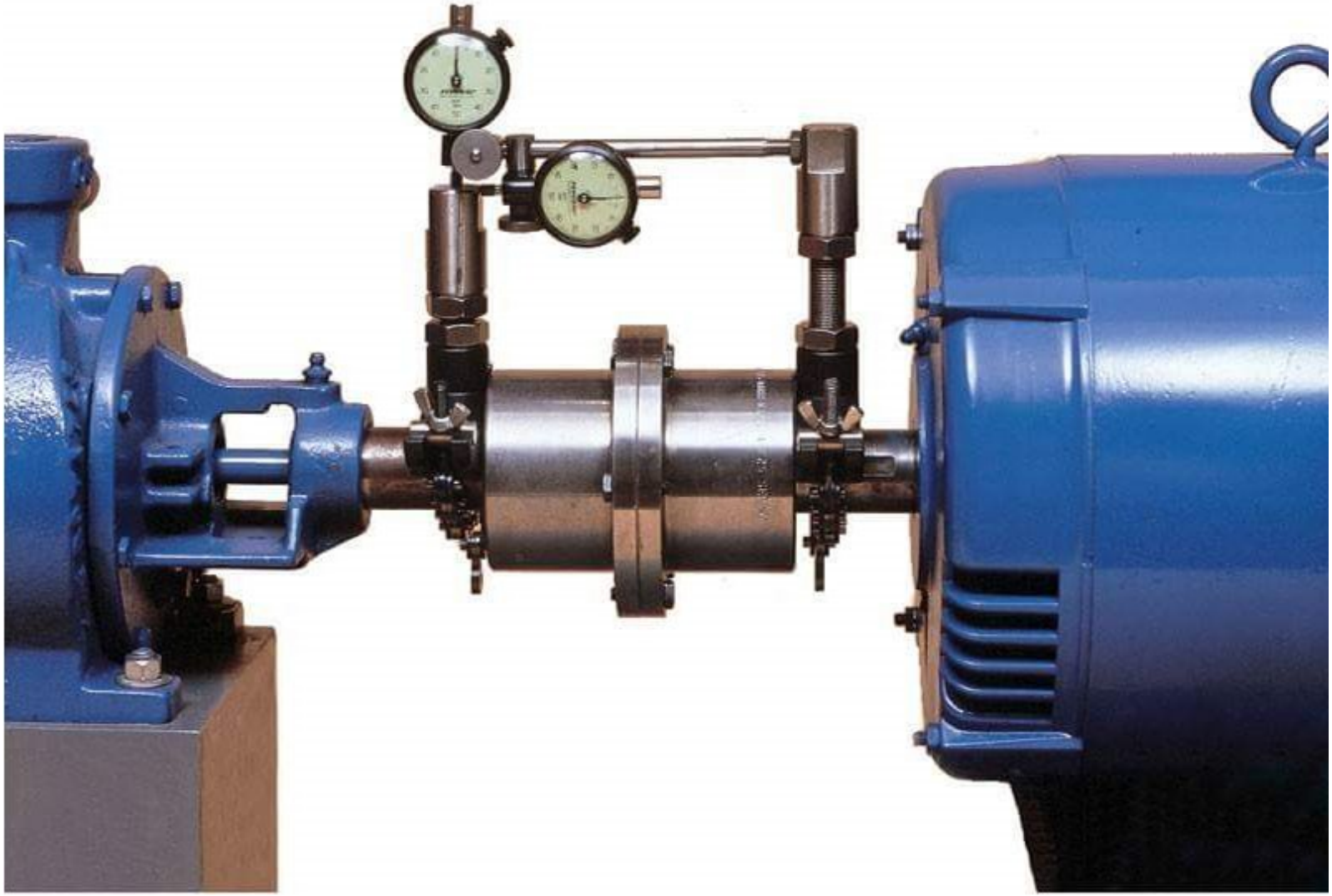
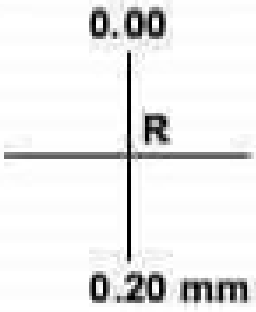
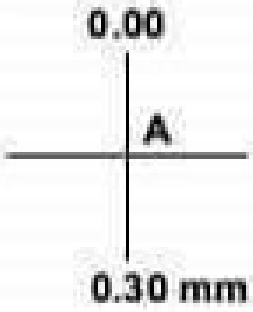


ALIGNMENT PROCEDURE – STEP NO. : 3C

CORRECTING TOTAL MISALIGNMENT

AS PER OUR EXAMPLE, THE TOP BOTTOM READINGS ARE :





SHIMING REQUIRED FOR RADIAL & AXIAL MISALIGNMENTS RESPECTIVELY HAVE BEEN CALCULATED ON THE PREVIOUS SLIDES. THE TOTAL SHIMING REQUIRED IS CALCULATED AS FOLLOWS :

	AMOUNT OF SHIMS REQUIRED IN	
	FRONT LEG	REAR LEG
TO CORRECT RADIAL ALIGNMENT	+ 0.10 mm	+ 0.10 mm
TO CORRECT AXIAL ALIGNMENT	+ 0.60 mm	+ 1.20 mm
TOTAL ALIGNMENT CORRECTION	0.10 + 0.60 = 0.70 mm	0.10 + 1.20 = 1.3 mm

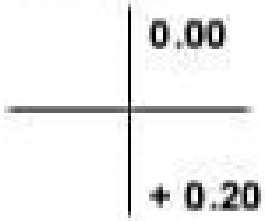
THUS, IN ORDER TO DO TOTAL (RADIAL + AXIAL) ALIGNMENT, PUT SHIMS OF 0.70 mm IN FRONT LEG AND 1.3 mm IN BACK LEG OF MOTOR IN OUR EXAMPLE.

ALIGNMENT PROCEDURE – STEP NO. : 3A

CORRECTING RADIAL MISALIGNMENT

RADIAL CORRECTION VALUE IS HALF OF THE TOTAL INDICATOR READING.

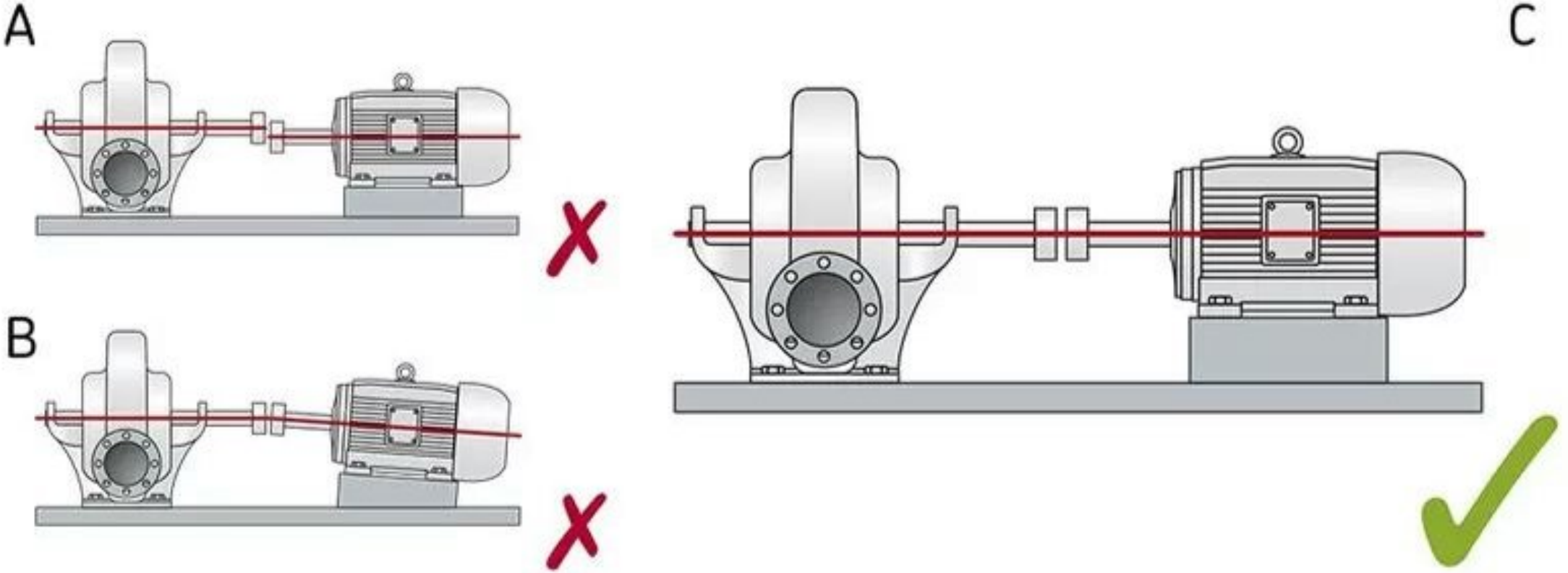
FOR EXAMPLE :



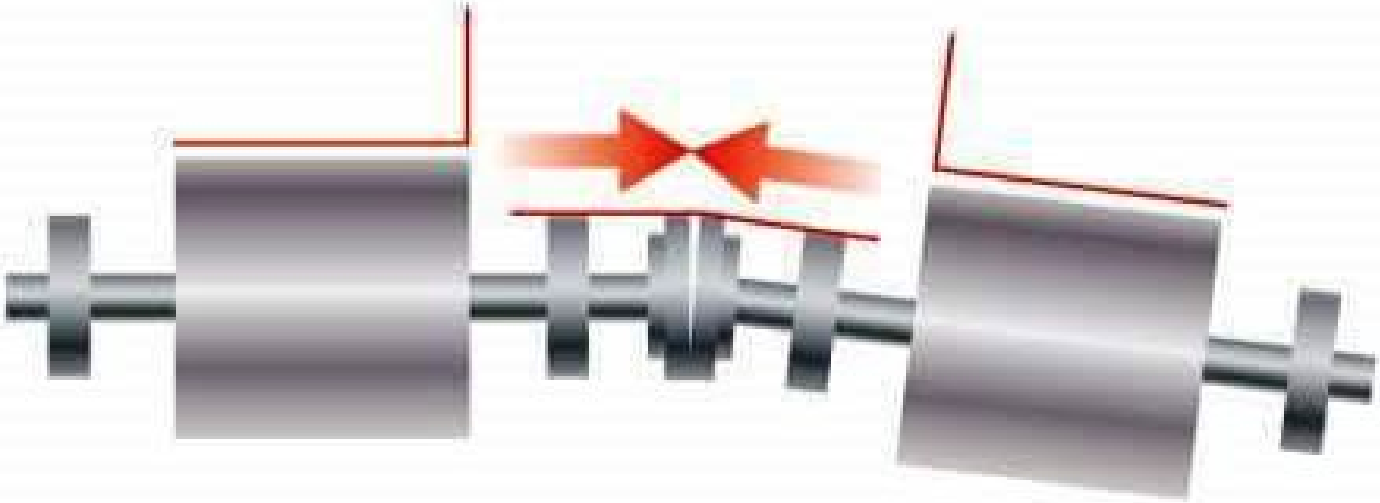
- DIAL IS CLAMPED ON PUMP COUPLING AND POINTER IS ON MOTOR COUPLING.
- DIAL IS SET TO ZERO AT 12 O'CLOCK POSITION.
- DIAL IS READING +0.20 mm AT 6 O'CLOCK POSITION.
- THIS MEANS THAT MOTOR SHAFT IS DOWN (+ SIGN MEANS DIAL POINTER HAS GOT COMPRESSED.)
- THUS MOTOR SHAFT WILL HAVE TO BE LIFTED UP BY +0.20/2 = 0.10 mm . THAT IS, SHIMMING OF 0.10 mm IS REQUIRED AT ALL THE FOUR LEGS.

IMPORTANT :

FOR RADIAL MISALIGNMENT CORRECTION, THE VALUE OF SHIMMING REQUIRED WILL BE SAME FOR ALL THE FOUR LEGS, AS WE SAW IN THE ABOVE EXAMPLE.

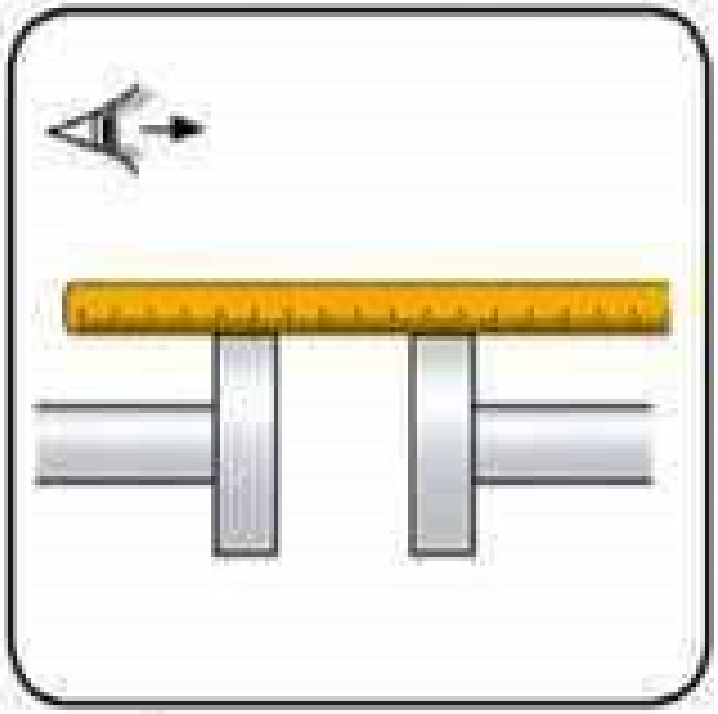

A
B
C

Angular misalignment



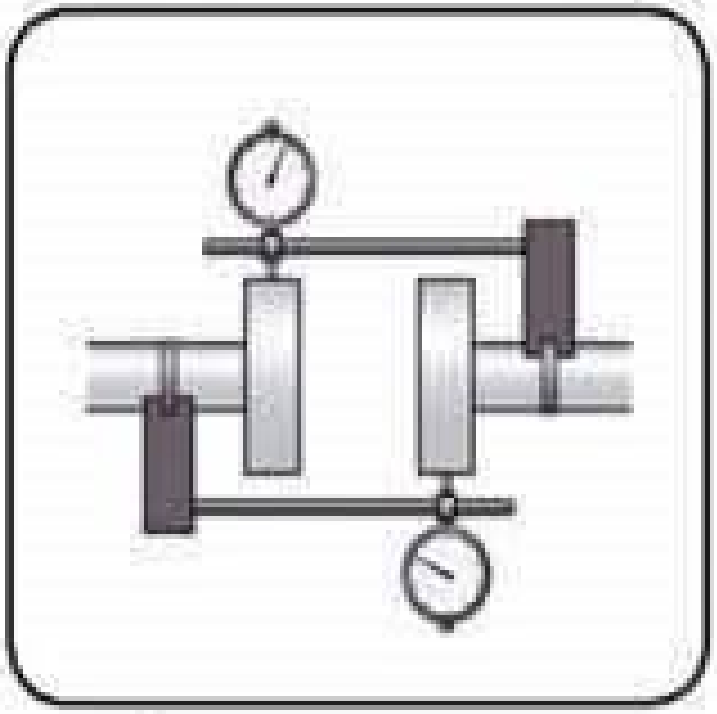
Parallel misalignment

Straightedge alignment



Accuracy	- -
Speed	+ +
Ease of use	+ +

Dial Indicators



Accuracy	+ +
Speed	- -
Ease of use	- -

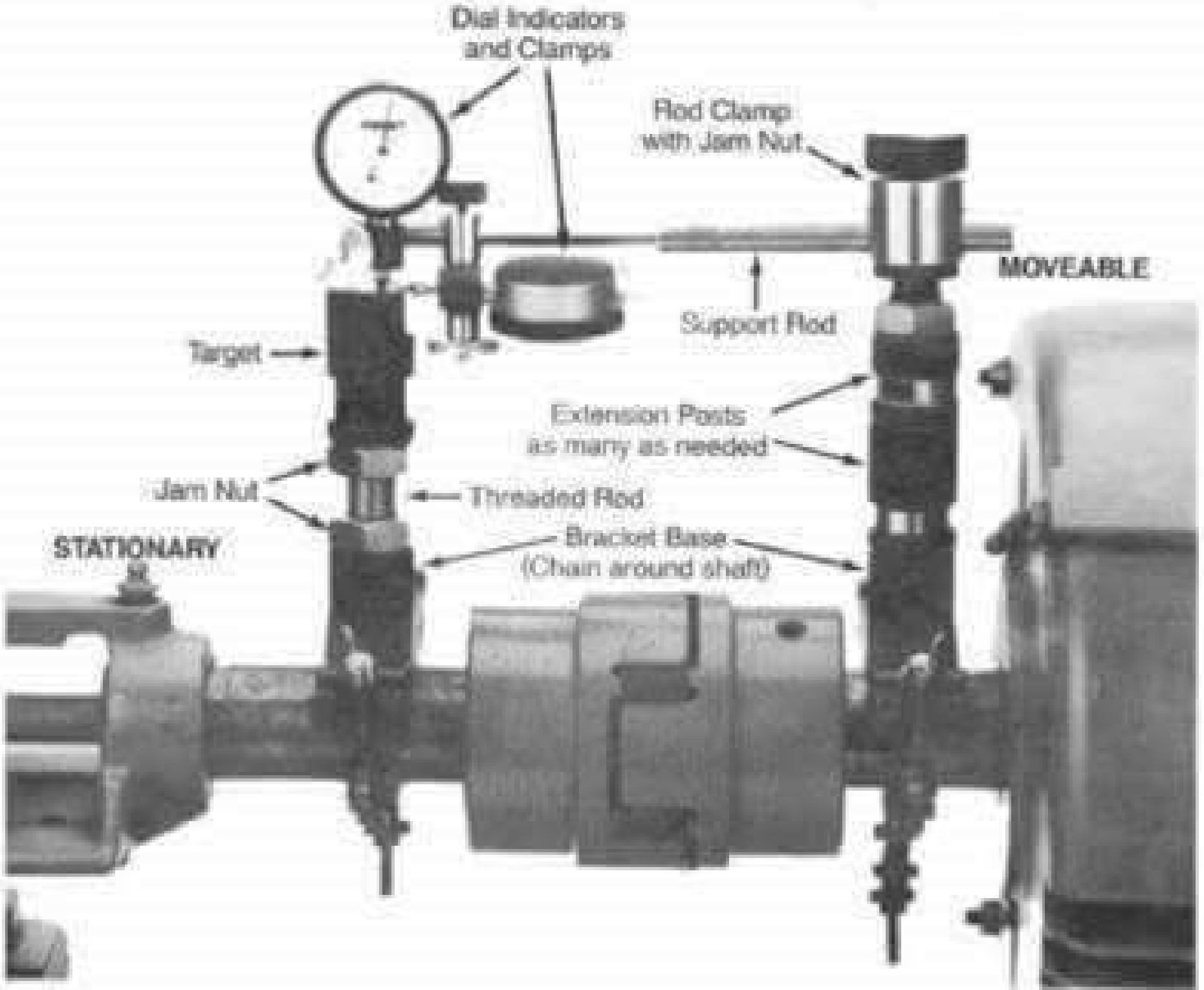
Laser shaft

Accuracy	+ +
Speed	+
Ease of use	+

Types of misalignment

- **Offset**

- **Angular**


Dial Indicators
and Clamps
Rod Clamp
with Jam Nut
MOVEABLE
Support Rod
Target
Extension Posts
as many as needed
Jam Nut
Threaded Rod
STATIONARY
Bracket Base
(Chain around shaft)

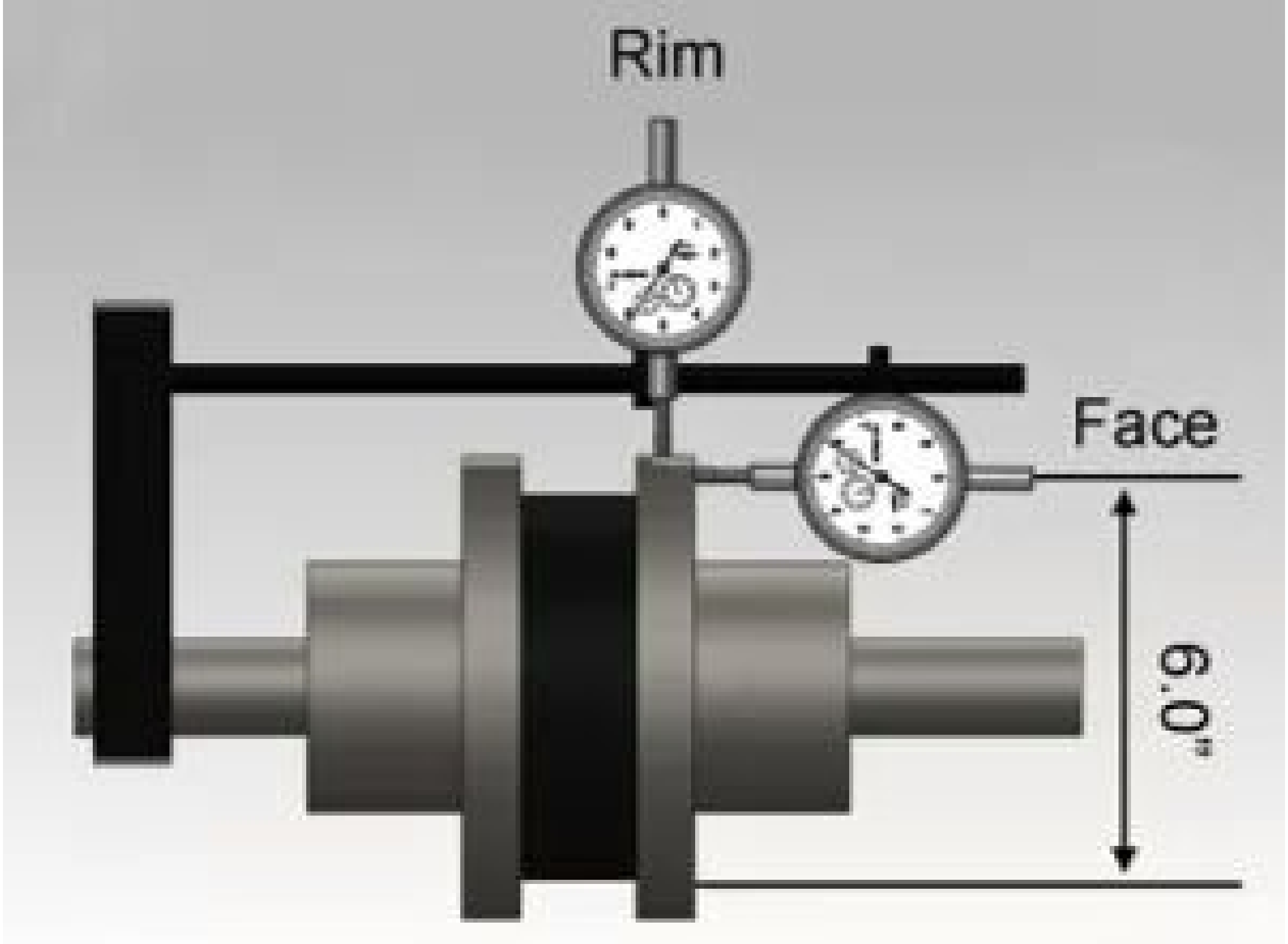
F103 HOT 2011-12-06 16:26 37405 GP 2.0

+11	+6

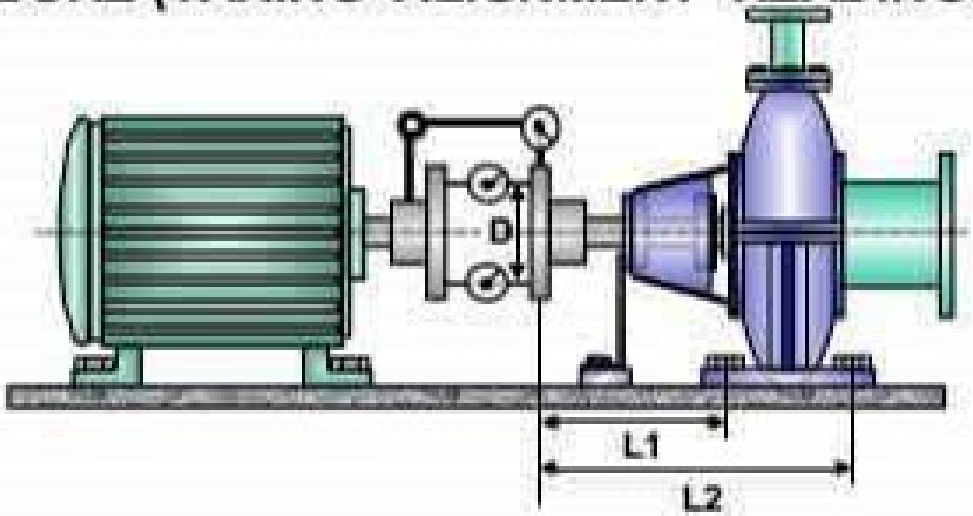
+0.1 / 1"	
+4.7	

-25	-11

-0.3 / 1"	
-6.2	

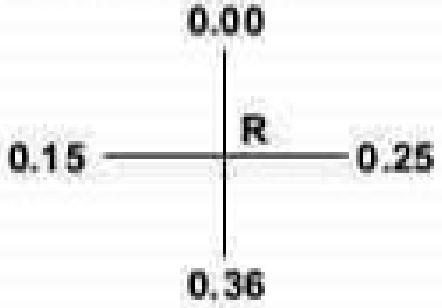

Rim
Face
0.6"

ALIGNMENT PROCEDURE (TAKING ALIGNMENT READINGS) – STEP NO. : 1



- DIAL POINTER SHOULD PREFRABLY BE KEPT ON THE MACINE TO BE MOVED.
- THE SUM TOTAL OF BOTH SIDE READINGS SHOULD BE SAME AS SUM TOTAL OF TOP BOTTOM READINGS. IN ACTUAL PRACTICE ,WE CAN ALLOW A DIFFERENCE OF ABOUT 15%. THIS RULE IS CALLED VALIDITY RULE.

FOR EXAMPLE



SUM TOTAL OF SIDE READINGS = 0.15 + 0.25 = 0.40
SUM TOTAL OF TOP BOTTOM READINGS = 0.00 + 0.36 = 0.36
DIFFERENCE = 0.40 – 0.36 = 0.04
THIS DIFFERENCE SHOULD BE LESS THAN 15 %
15 % OF 0.40 = 0.06

THUS DIFFERENCE IS LESS THAN 15 %. HENCE ALIGNMENT READING IS VALID.

IMPORTANT :

ALIGNMENT CORRECTION SHOULD BE ATTEMPTED ONLY WHEN SUM TOTAL OF SIDE READINGS AND TOP BOTTOM READINGS ARE MATCHING WITHIN 15 % AS SHOWN IN THE ABOVE EXAMPLE.