



FIT UP ROLLER SYSTEM

MAX LOAD, ROTATION AND TRANSLATION CAPACITY 200 MT

SPECIFICATIONS

Concept	2015 FIT UP ROLLS MODEL FUR WR 100 SECOND GENERATION		
	SET # 1 Two Fit Up Rollers	SET # 2 Two Power Rotators	SET # 3 Two Idler Rotators
Number of rotators	2 No	2 No	2 No
Load capacity (MT)	100 MT (50 @ 2)	100 MT (50 @ 2)	100 MT (50 @ 2)
Rotation capacity (MT)	NA	200 MT	NA
Rotation speed (mm/min)	NA	100 up to 1,000	NA
Vessel diameter range (mm)	2,000 up to 5,500	2,000 up to 5,500	2,000 up to 5,500
Bogie speed (mm/min)	NA	150 up to 1500	NA
Bogie translation (MT)	NA	200 MT	NA
C-C adjust between wheels by Jack	2 No @ 2	NA	NA
Lifting Jacks of 150 mm stroke	100 MT	100 MT	100 MT
Wheel diameter (mm)	500	500	500
Wheel width (mm)	260	260	260
Wheel surface covered	Polyurethane	Polyurethane	Polyurethane
Power rotation	NA	3.0 kW @ 2 No @ 2 (*)	NA
Power translation	NA	1.1 kW @ 2 No @ 2 (*)	NA
Power packs	3 kW @ 2 No	3 kW @ 1 No	3 kW @ 1 No
Weight (MT)	5 MT @ 2 No	6.5 MT @ 2 No	4.5 MT @ 2 No

ADVANTAGES

1. Saves time on fit up shell/shell
2. Minimize the use of overhead crane
3. Production on growing line



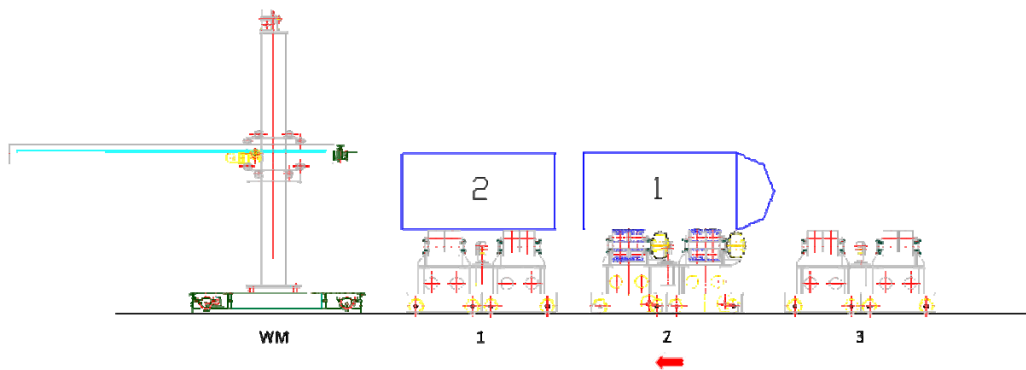
DEFINITION

- A. **Fit Up Roller System FUR WR 100.** It is composed by three sets of Rollers. Set # 1: The fit up Rolls, two rollers; Set # 2: The Power Rotators, two synchronized rollers; Set # 3: The Idler Rotators, two rollers. Three sets of Rollers have 200 MT maximum load, rotation and translation capacity. Vessel diameter range: From 1.5 to 6.0 m.
- B. **Set # 1. The Fit up Rolls.** Wheel center to center between wheels moves hydraulic in/out. The effect is move shell up/down. Set is equipped with two hydraulic lifting cylinders with 100 MT maximum lifting capacity. Idler bogies have 100 MT maximum load capacity. **Application:** Fit up shells
- C. **Set # 2. The Power Rotators.** Wheel center to center between wheels is fixed by means of bolts. Set is equipped with two synchronized power rotators with 200 MT maximum rotation capacity. Motorized bogies (trolley) has 200 MT maximum translation capacity, and 100 MT load capacity. Set is equipped with two hydraulic lifting cylinders with 100 MT maximum lifting capacity. **Application:** Rotation capability is used for circumferential SAW seam welding. Translation capability is used for fit up and tank/vessel displacement.
- D. **Set # 3. The Idler Rotators.** Wheel center to center between wheels is fixed by means of bolts. Set is equipped with two hydraulic lifting cylinders with 100 MT maximum lifting capacity. Idler bogies has 100 MT maximum load capacity. **Application: Growing line**
- E. After the vessel/tank/wind tower is fully assembled and circumferential SAW seam welds are made, the work piece is un-loaded with a crane or moved outside of the shop by means of motorized bogies.

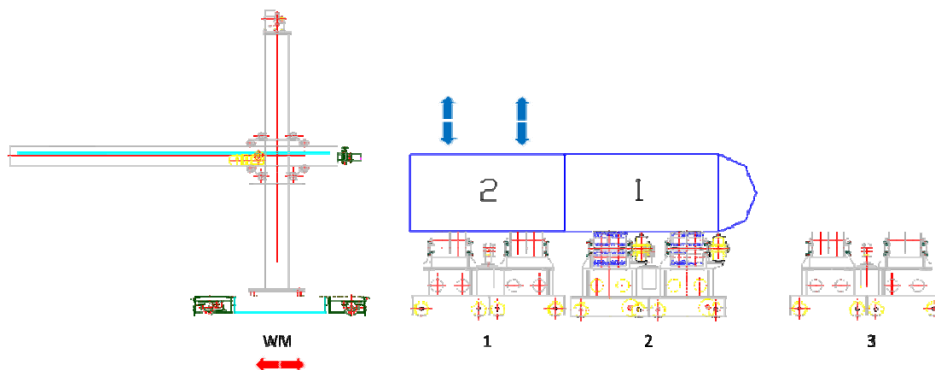


PROCESS

1. Load shell 1 sits on set # 2 and shell 2 on set # 1. Ensure the shells sit on a stable position on rollers wheels. Bring shell 1 close to shell 2 using the motorize buggies on set # 2.

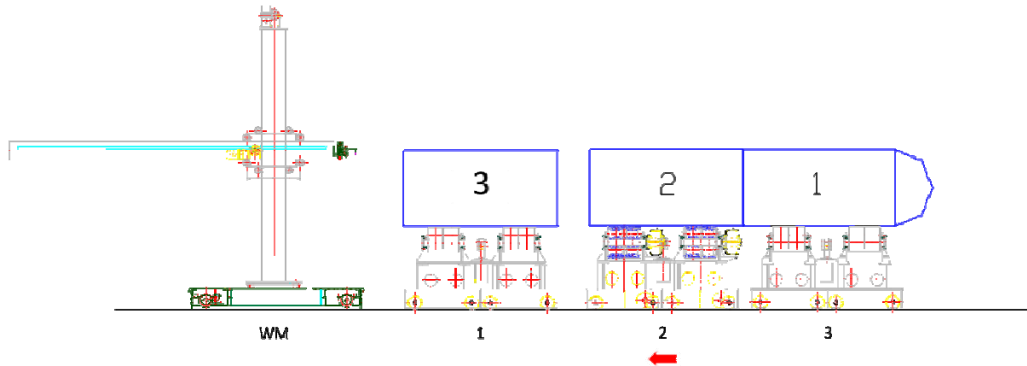


2. Fit Up shell 2 to shell 1 using set # 1 vertical adjustment wheels. Tack weld shell 1 to shell 2; set the Welding Manipulator (WM) close for make circumferential submerged arc welding. Set # 2 is used to rotate the work piece.

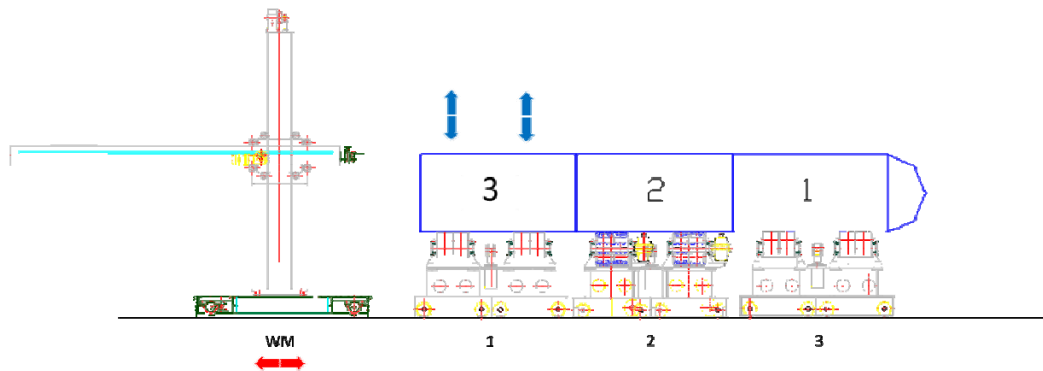




- The work piece is then moved using a crane to sit on set # 2 and set # 3. Shell 3 is then loaded on set # 1. Set the work piece close to shell 3 using the motorize buggies on set # 2

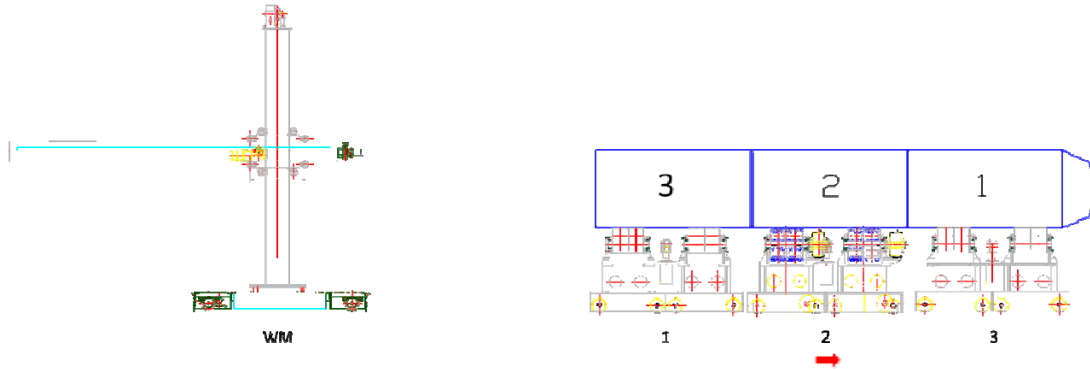


- Fit up shell 3 to work piece using roller set # 1 vertical adjustment wheels. Tack weld shell 3 to the work piece; Set WM close for submerged arc welding. Set # 2 is used to rotate the work piece.

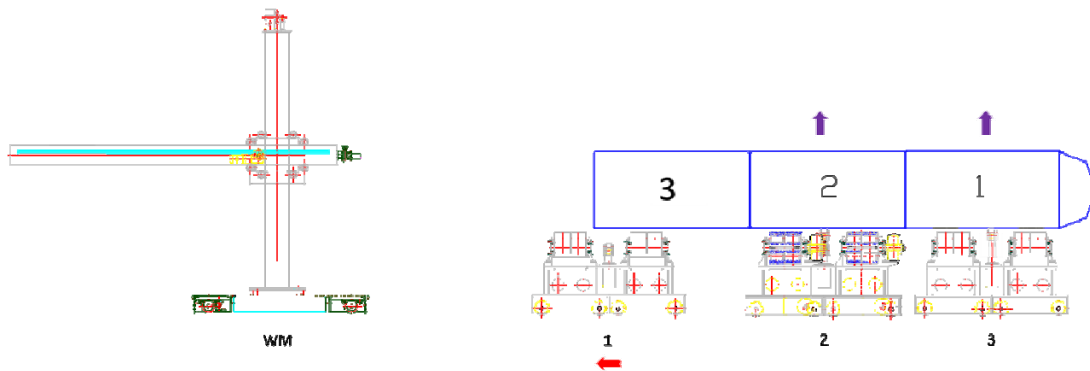




5. Move the work piece to the right using the motorized buggies on set # 2.

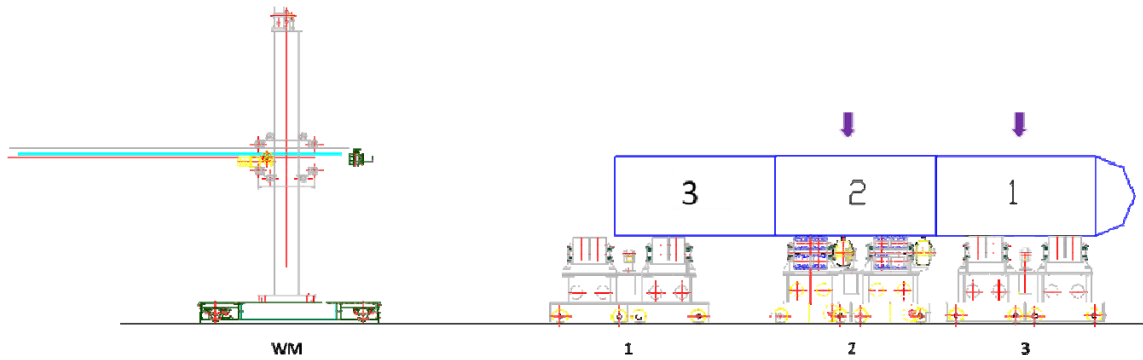


6. Use the push up hydraulic cylinder on set # 2 and set # 3 to lift the work piece. Maximum hydraulic lifting capacity is 200 MT. Once set # 1 is free of contact from the work piece, move it by hand as seen on the diagram. The push up piston on set # 1 should be on the edge of the work piece.

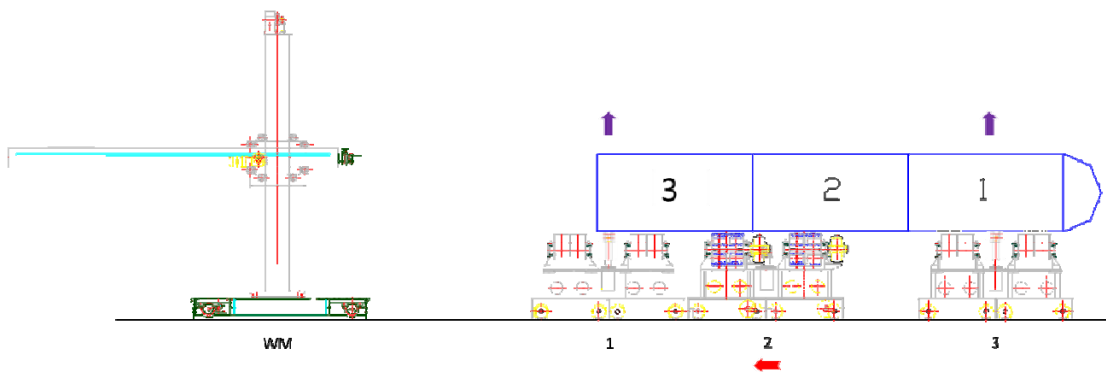




7. Lower the work piece using hydraulic cylinders on set # 2 and set # 3. Ensure the work piece sits stable on set # 1.

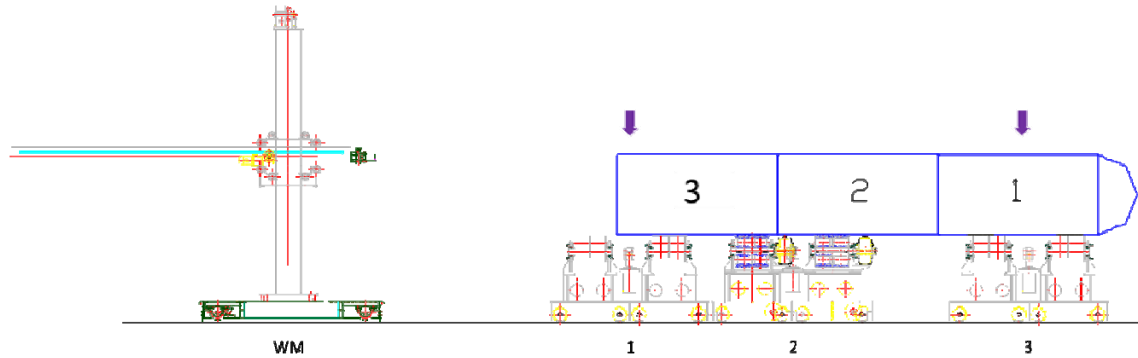


8. Use the push up hydraulic cylinders on set # 1 and set # 3 to lift the work piece. Once roller set # 2 is free of contact from the work piece, move roller set # 2 to the left using the motorize buggies as seen on the diagram. Ensure set # 2 is moved as close as possible to roller set # 1.

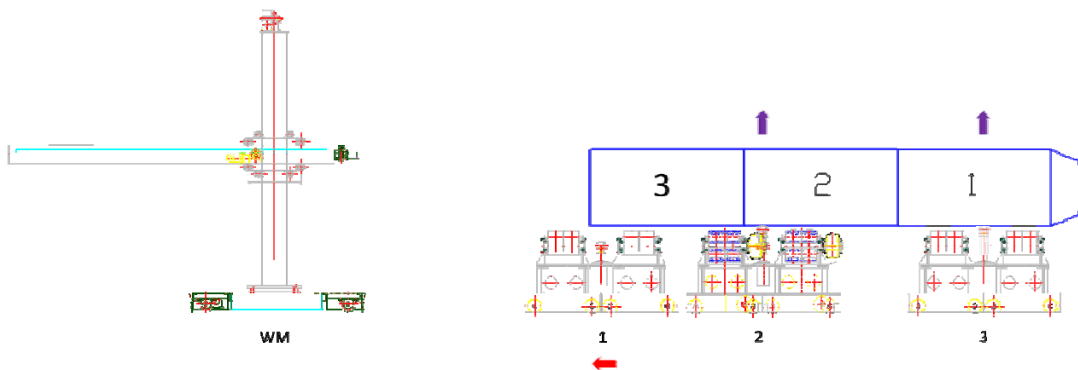




9. Lower the work piece using hydraulic cylinder on set # 1 and set # 3. Ensure the work piece sits stable on the rollers.

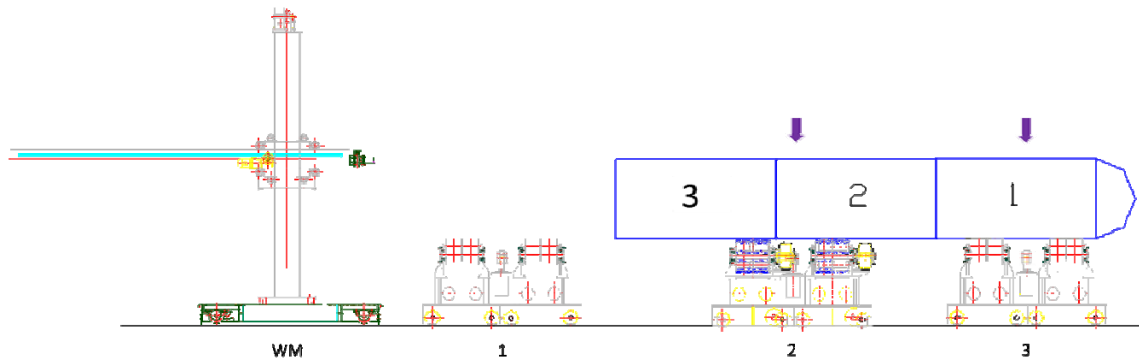


10. Use the push hydraulic cylinder on set # 2 and set # 3 to lift the work piece. Once roller set # 1 is free of contact from the work piece, move it by hand as seen on the diagram.

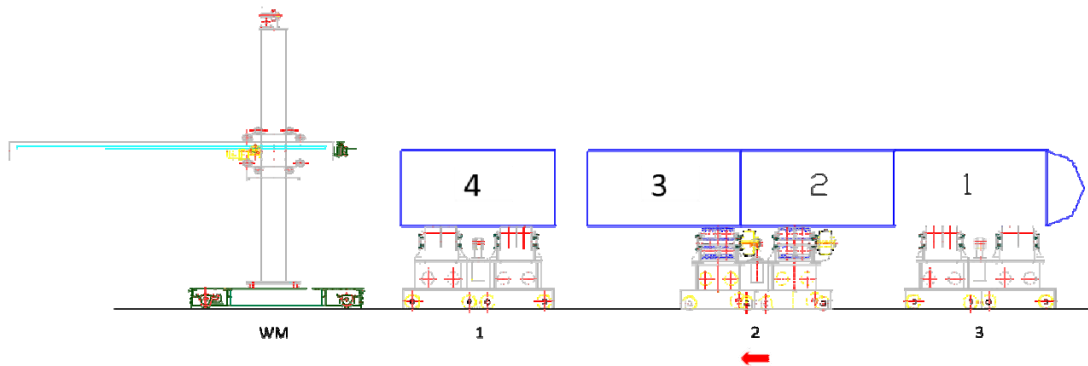




11. Lower the work piece using hydraulic cylinder on set # 2 and set # 3. Ensure the work piece sits stable on the rollers.

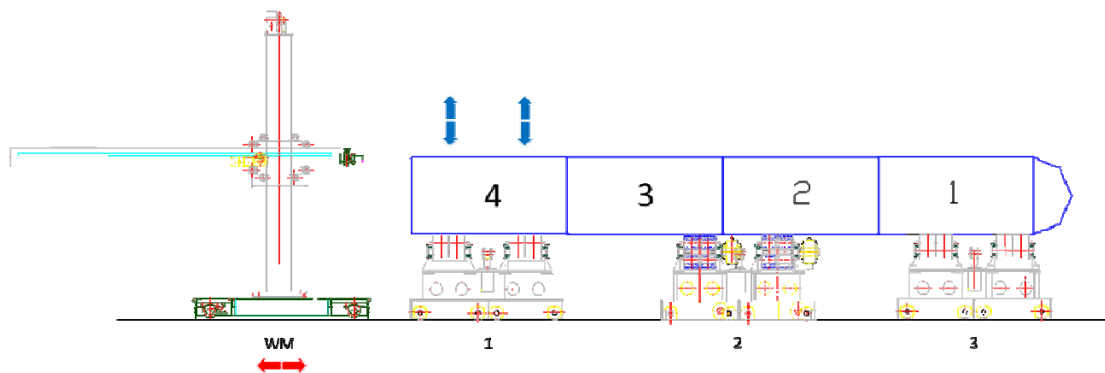


12. Shell 4 is then loaded on se # 1. Bring the work piece close to shell 4 using the motorize buggies on roller set # 2.





13. Fit up shell 4 to work piece using set # 1 with vertical adjustment wheels. Tack weld shell 4 to the work piece; then bring the WM close for submerged arc circumferential seam weld. Roller set # 2 is used to rotate the work piece.



14. Repeat steps 5-13 for all upcoming shells.