| ×   | Equipment :             | Boring Machine   |  | Loss Type :             | Loss     |      |                   |   |                                   |  |                      |                       |                  |               |          |  |
|---|-------------------------|--|--|-------------------------|----------|------|-------------------|---|-----------------------------------|--|----------------------|-----------------------|------------------|---------------|----------|--|
|   | Department              | QA   |  |                         | Result : | N    | P                 | C   | 2 C                               | D  | S                    | М                     | KAIZE            | EN IDEA SHEET |          |  |
|   |                         |  |  |                         | Type :   |      |                   |   |                                   |  | _                    |                       |                  |               |          |  |
| Cell : KTM  | Powder coating          |  |  |                         |          | Oper | ration :          | -   | lead pipe ID                      | 52.00                                    | ) & 48.00 bo         | oring.                |                  |               |          |  |
| Kaizen Theme: To e  | liminate rejection in k | KTM frame (KT04) due to borin  | g operation shift.   | (uneven wall thickness) | Idea :   | ROB  | O weldi           | ing c   | overlap posi                      | ion aw                                   | ay from bo           | ring fixtu            | re resting area. |               |          |  |
| Problem / Present Statu   | S                       | Counter Measure  |  |                         |          |      |                   | Benchmark : 9   |                                   |  |                      |                       |                  |               |          |  |
| When = Continuous.  |                         |  | End point of ROBO welding shifted away from boring fixture resting area. |                         |          |      |                   | Target : 0  |                                   |  | 0                    |                       |                  |               |          |  |
| Who = Boring operation operator.<br>What = boring operation shift. (uneven wall thickness).                             |                         |  |  |                         |          |      |                   |   | Start : 18/07/2014                |  |                      | Finished : 21/07/2014 |                  |               |          |  |
| Where = KTM frame (KT04) boring.<br>Which   |                         |  |  |                         |          |      |                   |   | Note :                            |  |                      |                       |                  |               |          |  |
|   |                         | No Gap between head<br>pipe OD & resting pad.                                |  |                         |          |      | Team Members :    |   |                                   |  |                      |                       |                  |               |          |  |
|   |                         |  |  |                         |          |      | 1. Mr. S K Parhad |   |                                   |  | 2. Mr. Aashis Sawant |                       |                  |               |          |  |
|   | ····                    |  |  |                         |          |      |                   | 3. Mr. Anna Surve   |                                   |  |                      | 4. Mr. Vinod Theng    |                  |               |          |  |
|   |                         |  |  |                         |          |      | 5.                |   |                                   |  | 6.                   |                       |                  |               |          |  |
|   |                         |  |  |                         |          |      | Benefits          |   |                                   |  |                      |                       |                  |               |          |  |
|   |                         | ROBO welding<br>overlap position<br>away from boring<br>fixture resting area |  |                         |          |      |                   | P Inspection operation for frame resting eliminated. Nos 1.00 |                                   |  |                      |                       |                  |               |          |  |
|   |                         |  |  |                         |          |      |                   | Q Rejection due to boring operation shift is zero. Nos 0.00   |                                   |  |                      |                       |                  |               |          |  |
|   |                         |  |  |                         |          |      |                   | C Rework for excess weld bead is zero. Nos 0.00               |                                   |  |                      |                       |                  |               |          |  |
| Why Why Analysis :  |                         |  | Result :   |                         |          |      |                   |   | Kaizen Sustenance :               |  |                      |                       |                  |               |          |  |
| W1 : Why Boring operation shift. (uneven wall thickness). ?   |                         |  | Rejection due to boring operation shift is zero.                         |                         |          |      |                   |   | What To Do : Irreversible kiazen. |  |                      |                       |                  |               |          |  |
| A1 : Head pipe position sh  | nift in upward directio | n on boring fixture.   |  |                         |          |      |                   |   |                                   |  |                      |                       |                  |               |          |  |
| W2 : Why Head pipe position shift in upward direction on boring fixture. ?  |                         |  |  |                         |          |      |                   |   | How To Do : Irreversible kiazen.  |  |                      |                       |                  |               |          |  |
| A2 : Frame not rest on head pipe OD.  |                         |  | Boring operation shift rejection trend                                   |                         |          |      |                   |   |                                   |  |                      |                       |                  |               |          |  |
| W3 : Why Frame not rest on head pipe OD. ?  |                         |  | <b>5</b><br><b>5</b><br><b>4</b>   |                         |          |      |                   |   |                                   |  |                      |                       |                  |               |          |  |
| A3 : Excess weld bead near resting area of head pipe OD.  |                         |  |  |                         |          |      |                   |   | Frequency :                       |  |                      |                       |                  |               |          |  |
| W4 : Why Excess weld bead near resting area of head pipe OD. ?<br>A4 : ROBO welding overlap position near resting area. |                         |  | <b>5</b><br><b>9</b> 3 -   |                         |          |      |                   |   | Cost Incurred For Making Kaizen : |  |                      |                       |                  |               |          |  |
| A4 . ROBO weiging overlap position hear resting area.   |                         |  | 2 -  |                         |          |      |                   |   | Mat                               | erial C                                  | Cost                 | La                    | abour Cost       | Т             | Fotal    |  |
|   |                         |  | 1 -  |                         |          | C    | )                 |   |                                   | 0.00                                     |                      |                       | 0.00             | 0             | 0.00     |  |
|   |                         |  | 0  | Jun-14                  | lul-14   | Aug  | Aug-14            |   | Scope &                           | Scope & Plan For Horizontal Deployment : |                      |                       |                  |               |          |  |
| Root Cause  |                         |  |  |                         |          |      |                   | Equipmnet<br>Welding machine                                  |                                   |  |                      |                       | Target           | Status        |          |  |
| ROBO welding overlap position near resting area.  |                         |  |  |                         |          |      |                   |   | Welding n                         | nachine                                  | e                    |                       |                  | 21/07/2014    | COMPLETE |  |
| Date : 18/0   | 8/2014                  |  |  |                         |          |      |                   |   |                                   |  |                      |                       |                  |               |          |  |
| Dale. 10/00   | 0/2014                  |  |  |                         |          |      |                   |   | 1                                 |  |                      |                       |                  |               |          |  |
|   | D K Thorve              |  |  |                         |          |      |                   |   |                                   |  |                      |                       |                  |               |          |  |
|   | O K Thorve              |  |  |                         |          |      |                   |   |                                   |  |                      |                       |                  |               |          |  |