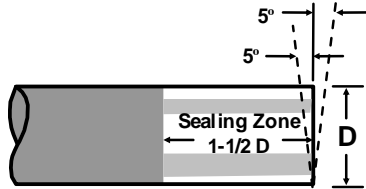


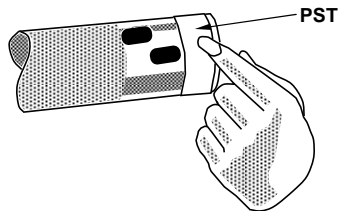
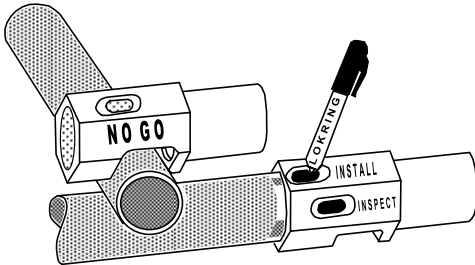
INSTALLATION PROCEDURE

Note: Refer to LOKRING procedure LP-105 for detailed installation instructions

STEP 1: Cut pipe to within 5° square. Using 120 grit Aluminum oxide abrasive cloth, sand pipe sealing zone in circumferential direction to clean surface and remove scratches. If deep pits or scratches persist, use 60 grit, followed by 120 grit. See procedure LP-105 with specific questions regarding ERW pipe, and proper surface finish.



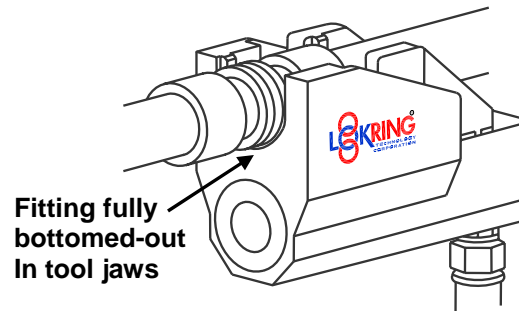
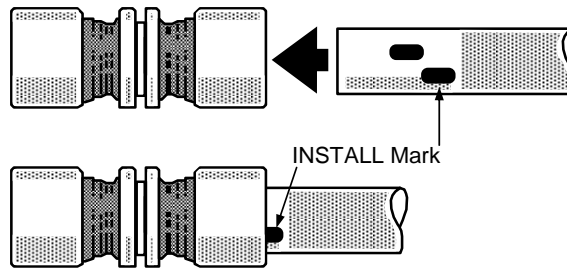
Step 2: Using Multipurpose Gage, verify that pipe OD is correctly sized, and mark pipe ends as shown.



Special Note: A thin coat of Loctite® 567 PST (Pipe Sealant with Teflon) may be applied as an aide to seal where pipe surface is poor, and is suggested for Sch 10 pipe and thinner. The PST should be applied just back from the end of the pipe up to the inspect mark; care should be taken to prevent excess PST from entering the system at the pipe end.

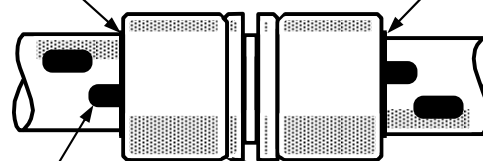
STEP 3: Select and assemble required LOKRING tool. Inspect and cycle tool to assure proper function.

STEP 4: Position fitting on "INSTALL" mark, fully engage and actuate tool.



STEP 5: Carry out visual checks below to verify successful installation.

Fitting body protrudes from underneath swage ring



INSPECT mark partially covered

Small gap is acceptable

LOKRING INSTALLER'S Field Installation Guide

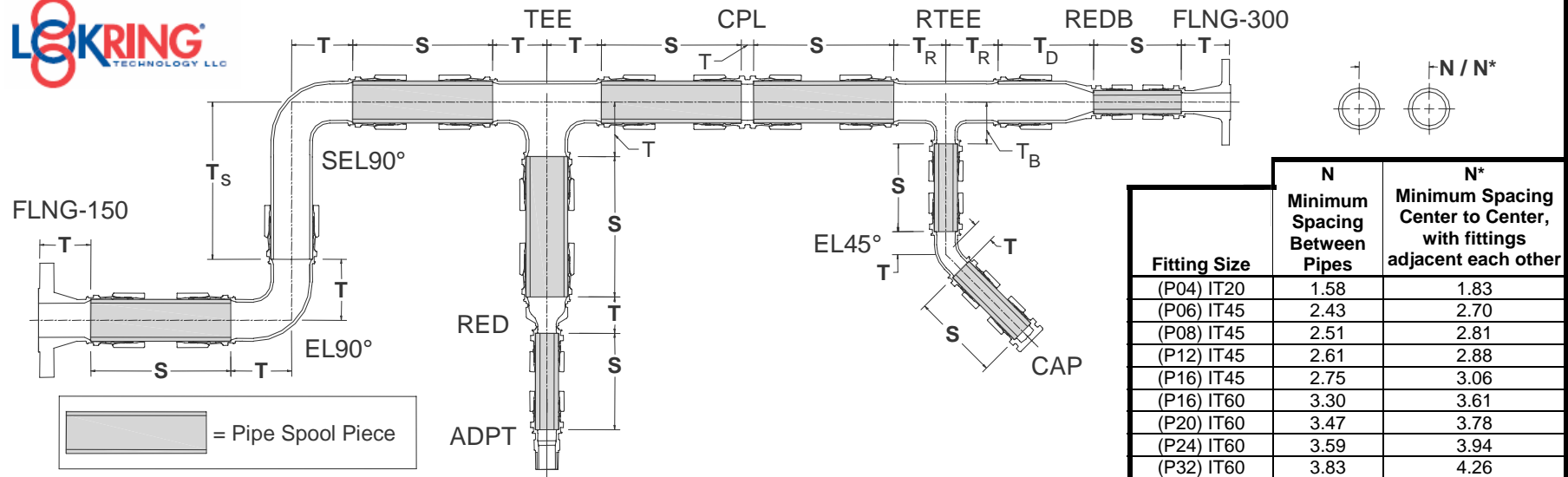
For Series MAS-3000
Carbon Steel
LOKRING™ Pipe Fittings



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8.03A 5 Step Tri-Fold Handout For MAS-3000
Pipe Fittings (07-02-09)



| Fitting Size | N Minimum Spacing Between Pipes | N* Minimum Spacing Center to Center, with fittings adjacent each other |
|--------------|------------------------------------|---|
| (P04) IT20 | 1.58 | 1.83 |
| (P06) IT45 | 2.43 | 2.70 |
| (P08) IT45 | 2.51 | 2.81 |
| (P12) IT45 | 2.61 | 2.88 |
| (P16) IT45 | 2.75 | 3.06 |
| (P16) IT60 | 3.30 | 3.61 |
| (P20) IT60 | 3.47 | 3.78 |
| (P24) IT60 | 3.59 | 3.94 |
| (P32) IT60 | 3.83 | 4.26 |
| (P48) IT100 | 6.98 | 7.39 |

| LOKRING Fitting ¹ (NPS) | LOKTOOL Head | "S" Min ² | Fitting Take-Out "T" in 1/16" Increments | | | | | | | Reducing Fittings | RTEE T _R | RTEE T _B | RED T | |
|---|-----------------|-------------------------|--|---------|--------|---------------|--------|----------|--------------|------------------------------|----------------------------|------------------------|----------|---------|
| | | | FLNG 150# | TEE | EL90 | EL90 (-LR) | CPL | EL45 | FLNG 300# | | | | | |
| MAS-3000-XXX-P04 (1/4" NPS) | IT20 | 3-1/16" | N/A | N/A | N/A | N/A | 3/8" | N/A | N/A | 3/4"x1/2" (P12xP08) | 1-5/8" | 2" | 1-5/16" | |
| MAS-3000-XXX-P06 (3/8" NPS) | IT45 | 3-3/8" | N/A | N/A | N/A | N/A | 7/16" | N/A | N/A | 1"x1/2" (P16xP08) | 2-1/4" | 2-1/8" | 1-1/2" | |
| MAS-3000-XXX-P08 (1/2" NPS) | IT45 | 3-1/2" | 2-1/2" | 1-5/8" | 1-5/8" | 2-1/8" | 1/2" | 1-5/16" | 2-11/16" | 1-1/4"x3/4" (P20xP12) | 2-5/8" | 3-1/8" | 1-1/2" | |
| MAS-3000-XXX-P12 (3/4" NPS) | IT45 | 3-15/16" | 2-13/16" | 1-7/8" | 1-7/8" | 2-1/4" | 9/16" | 1-1/2" | 3" | 1-1/4"x1" (P20xP16) | 2-5/8" | 2-3/4" | 1-3/4" | |
| MAS-3000-XXX-P16 (1" NPS) | IT45 | 4-3/4" | 2-15/16" | 2-1/4" | N/A | 2-1/4" | 5/8" | 1-5/8" | 3-3/16" | 1-1/2"x1/2" (P24xP08) | 3-1/16" | 2-7/8" | 2-1/8" | |
| MAS-3000-XXX-P16 (1" NPS) | IT60 | 4-3/4" | 2-15/16" | 2-1/4" | N/A | 2-1/4" | 5/8" | 1-5/8" | 3-3/16" | 1-1/2"x3/4" (P24xP12) | 3-1/16" | 3" | 2-1/16" | |
| MAS-3000-XXX-P20 (1-1/4" NPS) | IT60 | 5-1/2" | 3" | 2-5/8" | N/A | 2-5/8" | 5/8" | 1-3/4" | 3-5/16" | 1-1/2"x1" (P24xP16) | 3-1/16" | 3" | 1-7/8" | |
| MAS-3000-XXX-P24 (1-1/2" NPS) | IT60 | 5-5/8" | 3-1/4" | 3-1/16" | N/A | 3-1/16" | 11/16" | 1-15/16" | 3-1/2" | 2"x1/2" (P32xP08) | 3-5/16" | 2-5/8" | 2-1/2" | |
| MAS-3000-XXX-P32 (2" NPS) | IT60 | 7-3/16" | 3-5/16" | 3-5/16" | N/A | 3-13/16" | 11/16" | 2-3/16" | 3-9/16" | 2"x 3/4" (P32xP12) | 3-5/16" | 2-3/4" | 2-5/16" | |
| MAS-3000-XXX-P48 (3" NPS) | IT100 | 9-13/16" | 3-13/16" | 4-7/16" | N/A | 5-9/16" | 7/8" | 2-1/16" | 4-3/16" | 2"x1" (P32xP16) | 3-5/16" | 2-3/4" | 2-1/4" | |
| 1. Carbon steel pipe to ASTM-A106 and A53. Refer to LOKRING specification FS-3000 for qualified pipe specifications and schedules. 2. Minimum cut spool length "S" listed is for reverse installation. Spool lengths may be decreased slightly if one fitting end can be pulled up prior to positioning the second end and the reverse position of the tool is used for the installation. | | | | | | | | | | | 2"x1-1/2" (P32xP24) | 3-5/16" | 3-3/16" | 2-5/16" |
| | | | | | | | | | | | 3"x1/2" (P48xP08) | N/A | N/A | 5-3/16" |
| | | | | | | | | | | | 3"x3/4" (P48xP12) | 4-7/16" | 3-3/8" | 5-1/4" |
| | | | | | | | | | | | 3"x1" (P48xP16) | 4-7/16" | 3-3/8" | 5-5/16" |
| | | | | | | | | | | | 3"x1-1/2" (P48xP24) | 4-7/16" | 3-11/16" | 5-3/8" |
| 3"x2" (P48xP32) | 4-7/16" | 3-13/16" | 5-3/8" | | | | | | | | | | | |