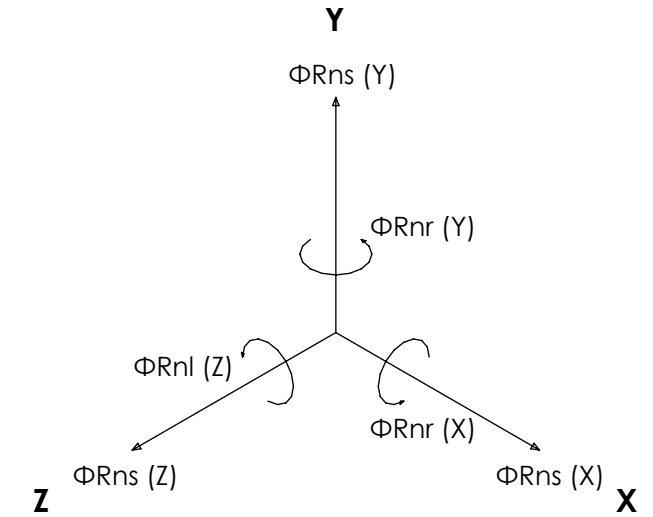


PV-XP-DC

DUALCROSS 90° CROSSOVER BRACKET

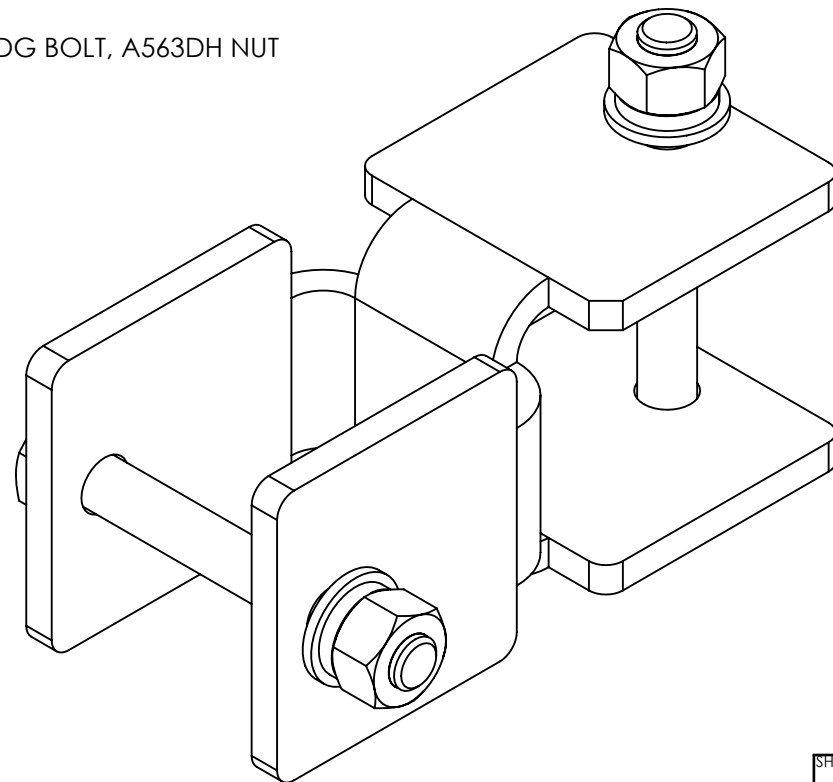
Table 1: Crossover Configurations and Capacities

Part Number	Weight <i>lbs</i>	Pipe 1 Size (Vertical) <i>in</i>	Pipe 2 Size (Horizontal) <i>in</i>	Pipe 1 Bolt Size <i>in</i>	Pipe 2 Bolt Size <i>in</i>	Available Sliding Strength ($\Phi=0.7$)			Available Torsional Strength ($\Phi=0.7$)		Available Lateral Twist Strength ($\Phi=0.9$)
						ΦRns (X) <i>kjp</i>	ΦRns (Y) <i>kjp</i>	ΦRns (Z) <i>kjp</i>	ΦRnr (X) <i>kjp-in</i>	ΦRnr (Y) <i>kjp-in</i>	ΦRnl (Z) <i>kjp-in</i>
PV-XP-DC-2020	6.1	$\Phi 2.375$	$\Phi 2.375$	$\Phi 5/8 \times 4-1/2$	$\Phi 5/8 \times 4-1/2$	3.85	3.85	Fixed	6.0	6.0	14.0
PV-XP-DC-2025	7.0	$\Phi 2.375$	$\Phi 2.875$	$\Phi 5/8 \times 4-1/2$	$\Phi 5/8 \times 5$	3.85	3.85	Fixed	6.0	6.0	14.0
PV-XP-DC-2030	8.1	$\Phi 2.375$	$\Phi 3.5$	$\Phi 5/8 \times 4-1/2$	$\Phi 5/8 \times 5-1/2$	3.85	3.85	Fixed	6.8	6.0	14.0
PV-XP-DC-2525	8.0	$\Phi 2.875$	$\Phi 2.875$	$\Phi 5/8 \times 5$	$\Phi 5/8 \times 5$	3.85	3.85	Fixed	6.0	6.0	20.0
PV-XP-DC-2530	9.3	$\Phi 2.875$	$\Phi 3.5$	$\Phi 5/8 \times 5$	$\Phi 5/8 \times 5-1/2$	3.85	3.85	Fixed	6.8	6.0	20.0
PV-XP-DC-3030	10.7	$\Phi 3.5$	$\Phi 3.5$	$\Phi 5/8 \times 5-1/2$	$\Phi 5/8 \times 5-1/2$	3.85	3.85	Fixed	6.8	6.8	27.0
PV-XP-DC-3040	13.1	$\Phi 3.5$	$\Phi 4.5$	$\Phi 5/8 \times 5-1/2$	$\Phi 5/8 \times 6-1/2$	3.85	3.85	Fixed	6.8	6.8	27.0



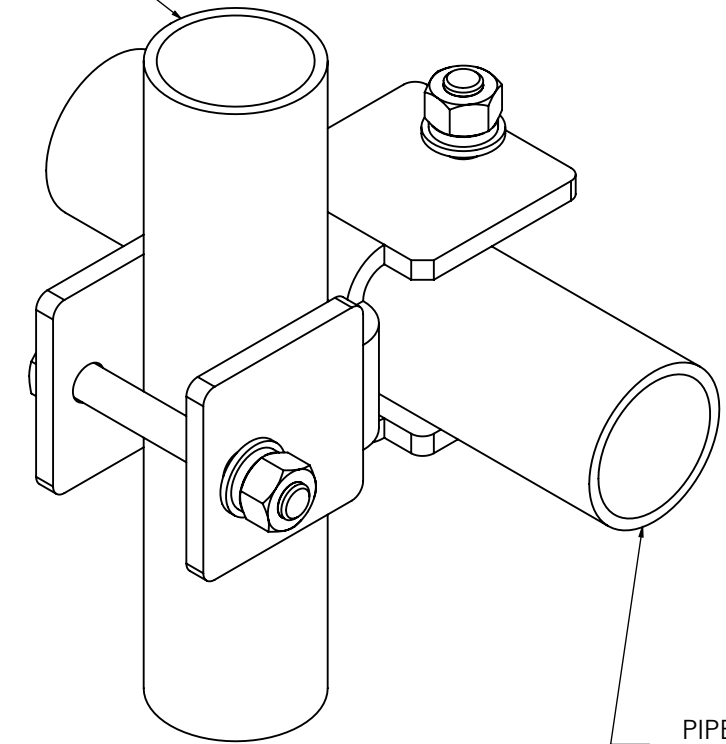
NOTES:

- CAPACITY VALUES EXPERIMENTALLY DETERMINED
- INSTALLATION REQUIREMENTS:
 - MINIMUM BOLT TORQUE: 100 FT-LBS
 - CLEAN, DRY ASSEMBLY
 - GALVANIZED BRACKET AND HARDWARE
 - COLORED WAX COATING ON NUTS
- MATERIALS
 - BRACKET: A36 HDG
 - HARDWARE: A325 HDG BOLT, A563DH NUT



PV-XP-DC
DUALCROSS 90° CROSSOVER

PIPE 1
SEE TABLE 1



PIPE 2
SEE TABLE 1

SHEET 1 OF 3	THIRD ANGLE PROJECTION 	CATEGORY 06_Pipe & Attachment HW	4			PERFECT VISION
5/13/2021	SCALE 1:2	SERIES 01_Crossovers	3			
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		TYPE PV-XP-DC_DualCross	2	ADDED RECT TUBE	5/13/21	DUALCROSS 90DEG CROSSOVER BRACKET
		BY DJN	1	ADDED CAPACITIES	7/23/19	
		CHECKED SJS	0	INITIAL RELEASE	11/8/18	DOCUMENT NUMBER
		STATUS APPROVED	REV	DESCRIPTION	DATE	XP-ENG-01-R2
						REV 2

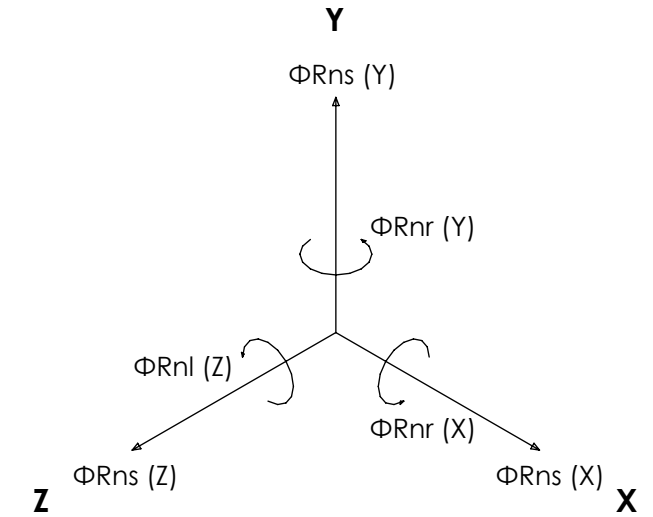
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PV-XP-DC

DUALCROSS 90° CROSSOVER BRACKET

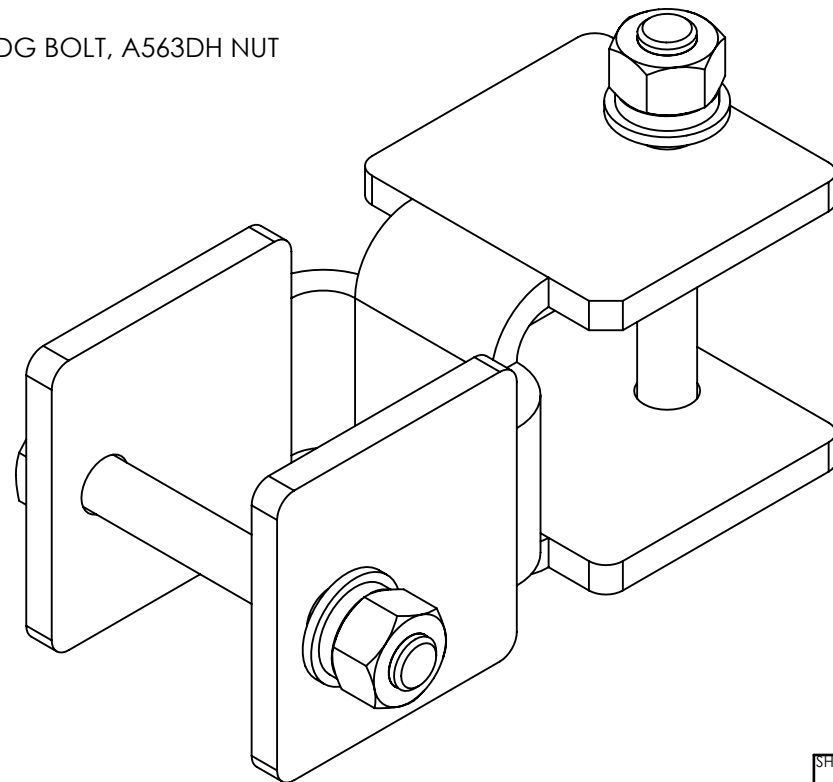
Table 2: Crossover Configurations and Capacities (Square Tube)

Part Number	Weight <i>lbs</i>	Pipe 1 Size (Vertical) <i>in</i>	Tube 2 Size (Horizontal) <i>in</i>	Pipe 1 Bolt Size <i>in</i>	Tube 2 Bolt Size <i>in</i>	Available Sliding Strength ($\Phi=0.7$)			Available Torsional Strength ($\Phi=0.7$)		Available Lateral Twist Strength ($\Phi=0.9$)
						ΦRns (X) <i>kjp</i>	ΦRns (Y) <i>kjp</i>	ΦRns (Z) <i>kjp</i>	ΦRnr (X) <i>kjp-in</i>	ΦRnr (Y) <i>kjp-in</i>	ΦRnl (Z) <i>kjp-in</i>
PV-XP-DC-2030	8.1	$\Phi 2.375$	HSS 3.5x3.5	$\Phi 5/8 \times 4-1/2$	$\Phi 5/8 \times 5-1/2$	3.85	3.85	Fixed	8.4	6.0	14.0
PV-XP-DC-2530	9.3	$\Phi 2.875$	HSS 3.5x3.5	$\Phi 5/8 \times 5$	$\Phi 5/8 \times 5-1/2$	3.85	3.85	Fixed	8.4	6.0	20.0
PV-XP-DC-3030	10.7	$\Phi 3.5$	HSS 3.5x3.5	$\Phi 5/8 \times 5-1/2$	$\Phi 5/8 \times 5-1/2$	3.85	3.85	Fixed	8.4	6.8	27.0



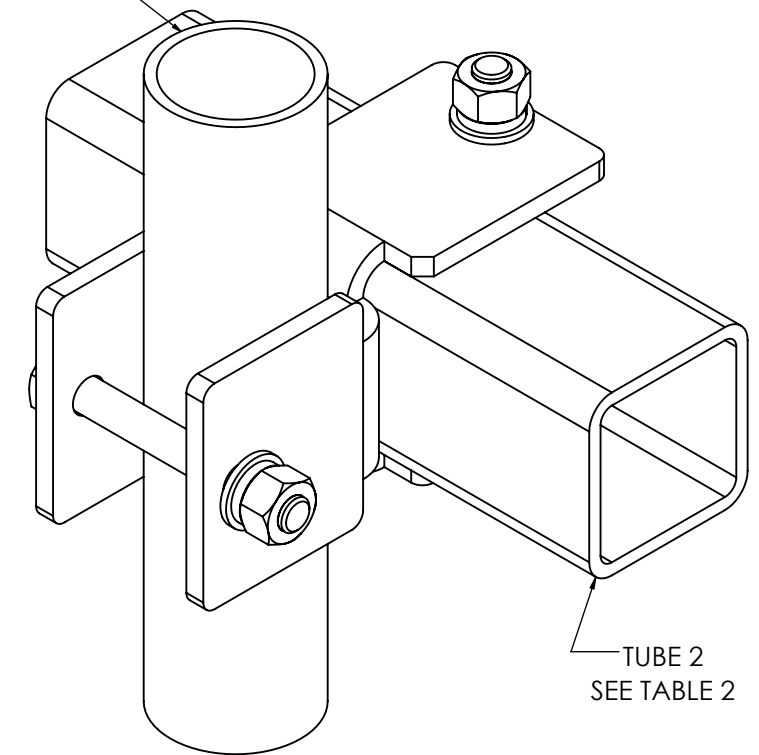
NOTES:

- CAPACITY VALUES EXPERIMENTALLY DETERMINED
- INSTALLATION REQUIREMENTS:
 - MINIMUM BOLT TORQUE: 100 FT-LBS
 - CLEAN, DRY ASSEMBLY
 - GALVANIZED BRACKET AND HARDWARE
 - COLORED WAX COATING ON NUTS
- MATERIALS
 - BRACKET: A36 HDG
 - HARDWARE: A325 HDG BOLT, A563DH NUT



**PV-XP-DC
DUALCROSS 90° CROSSOVER**

PIPE 1
SEE TABLE 2

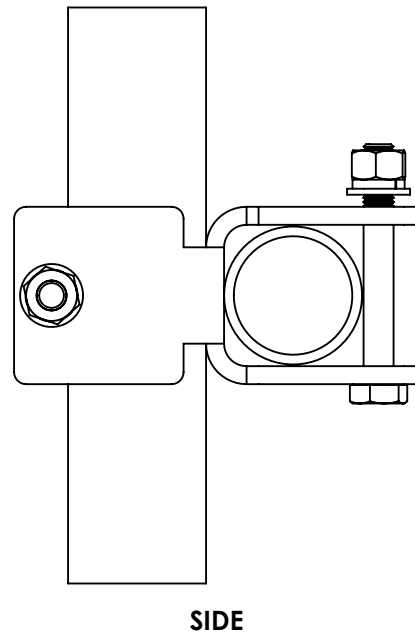
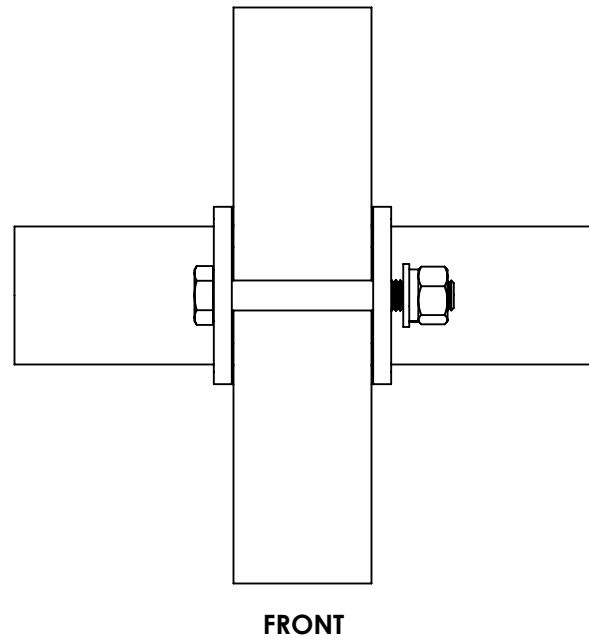
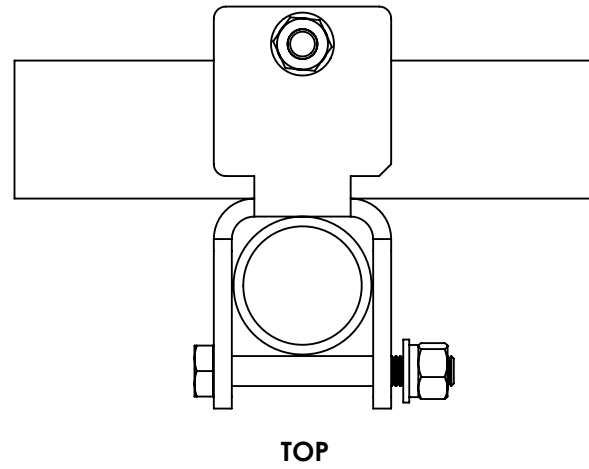


TUBE 2
SEE TABLE 2

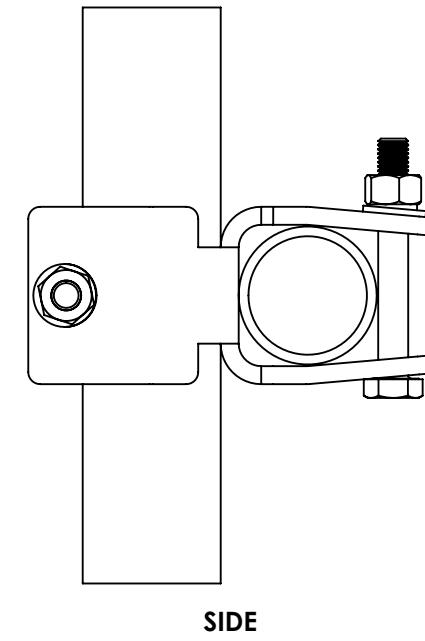
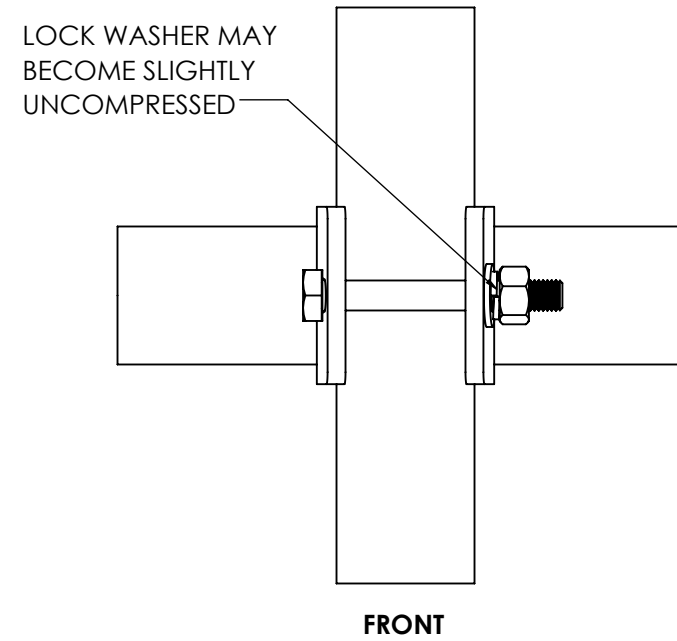
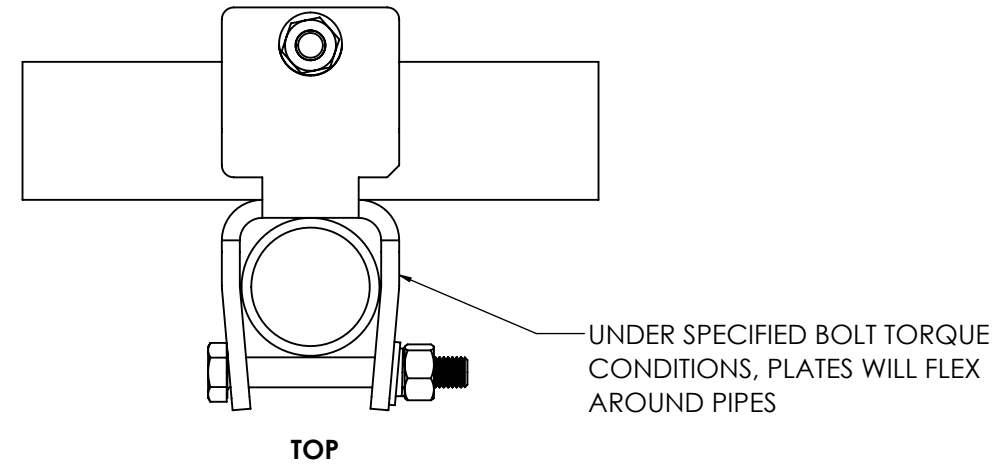
SHEET 2 OF 3	THIRD ANGLE PROJECTION 	CATEGORY 06_Pipe & Attachment HW	4			
5/13/2021	SCALE 1:2	SERIES 01_Crossovers	3			
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		TYPE PV-XP-DC_DualCross	2	ADDED RECT TUBE	5/13/21	
		BY DJN	1	ADDED CAPACITIES	7/23/19	
		CHECKED SJS	0	INITIAL RELEASE	11/8/18	
		STATUS APPROVED	REV	DESCRIPTION	DATE	
			PERFECT VISION			
			DUALCROSS 90DEG CROSSOVER BRACKET			
			DOCUMENT NUMBER			
			XP-ENG-01-R2			
			REV			
			2			

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PRE-INSTALL ASSEMBLY:



POST-INSTALL ASSEMBLY:



SHEET 3 OF 3	THIRD ANGLE PROJECTION 	CATEGORY	06_Pipe & Attachment HW	4		PERFECT VISION [®]
		SERIES	01_Crossovers	3		
5/13/2021	SCALE 1:4	TYPE	PV-XP-DC_DualCross	2	ADDED RECT TUBE	5/13/21
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4°, BEND ±2° ALL OTHERS: ±1/16"		BY	DJN	1	ADDED CAPACITIES	7/23/19
		CHECKED	SJS	0	INITIAL RELEASE	11/8/18
		STATUS	APPROVED	REV	DESCRIPTION	DATE
DOCUMENT NUMBER						XP-ENG-01-R2
REV						2

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