

APPENDIX I (SCREENING DESIGNS)

NUMBER OF FACTORS	DESIGN TYPE	NUMBER OF RUNS
2	FACTORIAL (2^2)	4
	TAGUCHI L4	4
	TAGUCHI L9	9
	TAGUCHI L18	18
3	FACTORIAL (2^3)	8
	TAGUCHI L4	4
	$\frac{1}{2}$ FRACTION FACTORIAL (2^{3-1})	4
	TAGUCHI L8	8
	TAGUCHI L9	9
	TAGUCHI L18	18
	TAGUCHI L27	27

Appendix

4	FACTORIAL (2^4)	16
	$\frac{1}{2}$ FRACTION FACTORIAL (2^{4-1})	8
	TAGUCHI L8	8
	TAGUCHI L9	9
	TAGUCHI L16	16
	TAGUCHI L18	18
	TAGUCHI L27	27
5	FACTORIAL	32
	$\frac{1}{2}$ FRACTION FACTORIAL	16
	$\frac{1}{4}$ FRACTION FACTORIAL	8
	TAGUCHI L8	8
	TAGUCHI L16	16
	TAGUCHI L18	18
	TAGUCHI L27	27

6	FACTORIAL	64
	$\frac{1}{2}$ FRACTION FACTORIAL	32
	$\frac{1}{4}$ FRACTION FACTORIAL	16
	$\frac{1}{8}$ FRACTION FACTORIAL	8
	TAGUCHI L8	8
	TAGUCHI L16	16
	TAGUCHI L18	18
	TAGUCHI L27	27
7	FACTORIAL	128
	$\frac{1}{2}$ FRACTION FACTORIAL	64
	$\frac{1}{4}$ FRACTION FACTORIAL	32
	$\frac{1}{8}$ FRACTION FACTORIAL	16
	$\frac{1}{16}$ FRACTION FACTORIAL	8
	PLACKETT-BURMAN	12
	TAGUCHI L8	8
	TAGUCHI L16	16
	TAGUCHI L18	18
	TAGUCHI L27	27

Appendix

8	½ FRACTION FACTORIAL	128
	¼ FRACTION FACTORIAL	64
	1/8 FRACTION FACTORIAL	32
	1/16 FRACTION FACTORIAL	16
	PLACKETT-BURMAN	12
	TAGUCHI L12	12
	TAGUCHI L16	16
	TAGUCHI L18	18
	TAGUCHI L27	27
9	¼ FRACTION FACTORIAL	128
	1/8 FRACTION FACTORIAL	64
	1/16 FRACTION FACTORIAL	32
	1/32 FRACTION FACTORIAL	16
	PLACKETT-BURMAN	12
	TAGUCHI L12	12
	TAGUCHI L16	16
	TAGUCHI L27	27

10	$1/8$ FRACTION FACTORIAL	128
	$1/16$ FRACTION FACTORIAL	64
	$1/32$ FRACTION FACTORIAL	32
	$1/64$ FRACTION FACTORIAL	16
	PLACKETT-BURMAN	12
	TAGUCHI L12	12
	TAGUCHI L16	16
	TAGUCHI L27	27
11	$1/16$ FRACTION FACTORIAL	128
	$1/32$ FRACTION FACTORIAL	64
	$1/64$ FRACTION FACTORIAL	32
	$1/128$ FRACTION FACTORIAL	16
	PLACKETT-BURMAN	12
	TAGUCHI L12	12
	TAGUCHI L16	16
	TAGUCHI L27	27

Appendix

12	FOLDED FRACTION FACTORIAL	32
	$1/256$ FRACTION FACTORIAL	16
	PLACKETT-BURMAN	20
	TAGUCHI L16	16
	TAGUCHI L27	27

APPENDIX II (ROBUST DESIGNS)		
NUMBER OF FACTORS	DESIGN TYPE	NUMBER OF RUNS
2	FACTORIAL	4
	TAGUCHI L4	4
	TAGUCHI L9	9
	TAGUCHI L18	18
	CENTRAL COMPOSITE FULL + STAR	16
	CENTRAL COMPOSITE FACED	16
3	FACTORIAL	8
	TAGUCHI L4	4
	½ FRACTION FACTORIAL	4
	TAGUCHI L8	8
	TAGUCHI L9	9
	TAGUCHI L18	18
	TAGUCHI L27	27
	CENTRAL COMPOSITE FULL + STAR	23
	CENTRAL COMPOSITE FACED	23

Appendix

4	FACTORIAL	16
	½ FRACTION FACTORIAL	8
	TAGUCHI L8	8
	TAGUCHI L9	9
	TAGUCHI L16	16
	TAGUCHI L18	18
	TAGUCHI L27	27
	CENTRAL COMPOSITE FULL + STAR	36
	CENTRAL COMPOSITE FACED	36
5	FACTORIAL	32
	½ FRACTION FACTORIAL	16
	¼ FRACTION FACTORIAL	8
	TAGUCHI L8	8
	TAGUCHI L16	16
	TAGUCHI L18	18
	TAGUCHI L27	27
	CENTRAL COMPOSITE FULL + STAR	59
	CENTRAL COMPOSITE HALF + STAR	38
CENTRAL COMPOSITE FACED	38	

6	FACTORIAL	64
	½ FRACTION FACTORIAL	32
	¼ FRACTION FACTORIAL	16
	⅛ FRACTION FACTORIAL	8
	TAGUCHI L8	8
	TAGUCHI L16	16
	TAGUCHI L18	18
	TAGUCHI L27	27
	CENTRAL COMPOSITE HALF + STAR	61
	CENTRAL COMPOSITE FACED	61

Appendix

7	FACTORIAL	128
	½ FRACTION FACTORIAL	64
	¼ FRACTION FACTORIAL	32
	1/8 FRACTION FACTORIAL	16
	1/16 FRACTION FACTORIAL	8
	PLACKETT-BURMAN	12
	TAGUCHI L8	8
	TAGUCHI L16	16
	TAGUCHI L18	18
	TAGUCHI L27	27
	CENTRAL COMPOSITE HALF + STAR	102
	CENTRAL COMPOSITE FACED	102

8	1/2 FRACTION FACTORIAL	128
	1/4 FRACTION FACTORIAL	64
	1/8 FRACTION FACTORIAL	32
	1/16 FRACTION FACTORIAL	16
	PLACKETT-BURMAN	12
	TAGUCHI L12	12
	TAGUCHI L16	16
	TAGUCHI L18	18
	TAGUCHI L27	27
9	1/4 FRACTION FACTORIAL	128
	1/8 FRACTION FACTORIAL	64
	1/16 FRACTION FACTORIAL	32
	1/32 FRACTION FACTORIAL	16
	PLACKETT-BURMAN	12
	TAGUCHI L12	12
	TAGUCHI L16	16
	TAGUCHI L27	27

Appendix

10	$1/8$ FRACTION FACTORIAL	128
	$1/16$ FRACTION FACTORIAL	64
	$1/32$ FRACTION FACTORIAL	32
	$1/64$ FRACTION FACTORIAL	16
	PLACKETT-BURMAN	12
	TAGUCHI L12	12
	TAGUCHI L16	16
	TAGUCHI L27	27
11	$1/16$ FRACTION FACTORIAL	128
	$1/32$ FRACTION FACTORIAL	64
	$1/64$ FRACTION FACTORIAL	32
	$1/128$ FRACTION FACTORIAL	16
	PLACKETT-BURMAN	12
	TAGUCHI L12	12
	TAGUCHI L16	16
	TAGUCHI L27	27

12	FOLDED FRACTION FACTORIAL	32
	$1/256$ FRACTION FACTORIAL	16
	PLACKETT-BURMAN	20
	TAGUCHI L16	16
	TAGUCHI L27	27