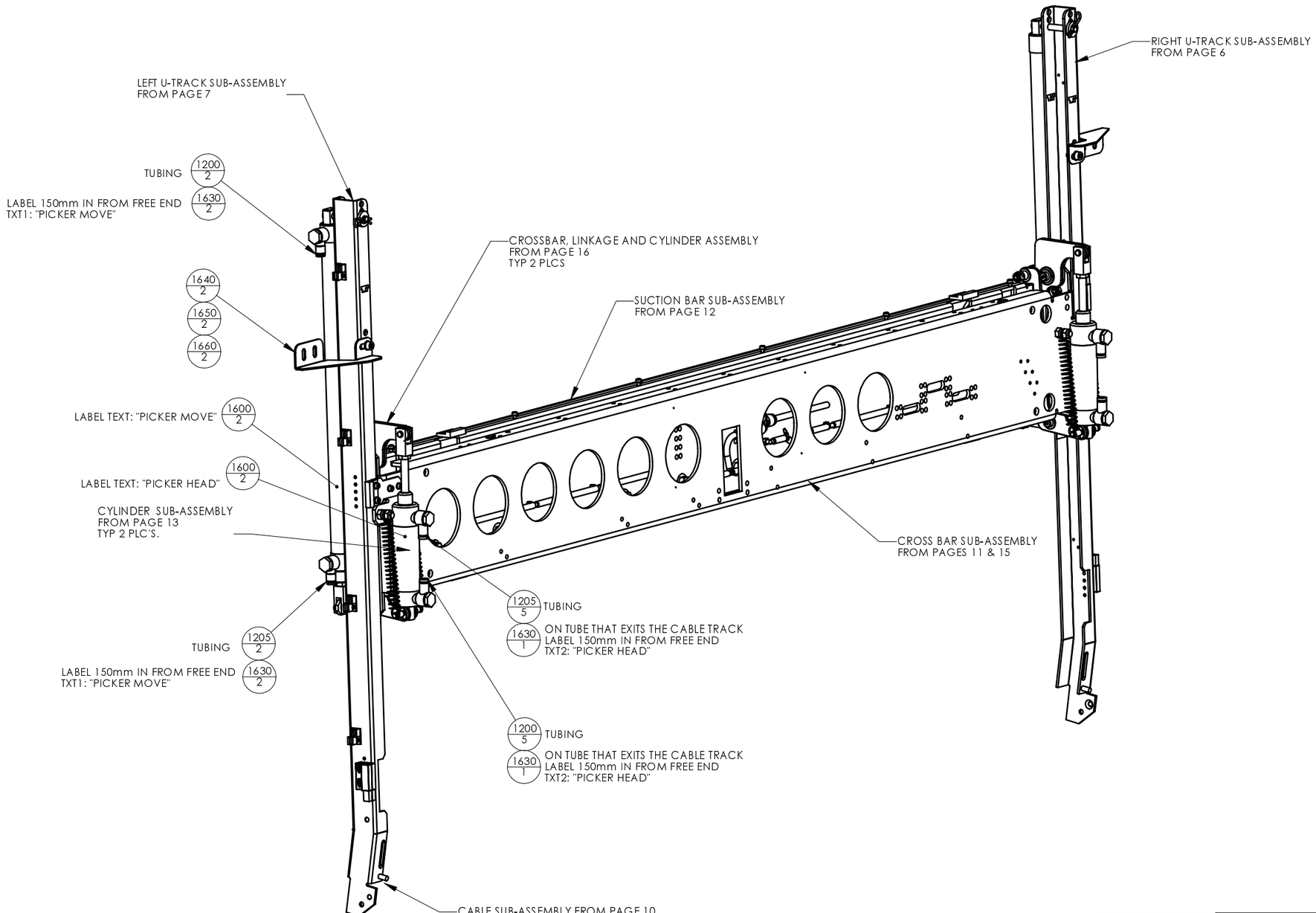


REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY
P	C444	28 SEPT 1998	S MONTAGUE	S MONTAGUE
R	C514	04 NOV 1998	S MONTAGUE	S MONTAGUE

R NO CHANGES THIS SHEET

THIRD ANGLE PROJECTION

DEBURR 0.25mm MAX

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE ✓

TOLERANCES UNLESS NOTED

LINEAR	ANGULAR °
X. ± X.	X. ± X.
X.X ± X.X	X.X ± X.X
X.XX ± X.XX	X.XX ± X.XX
X.XXX ± X.XXX	IMPLIED 90° ± X.XX

FINISH

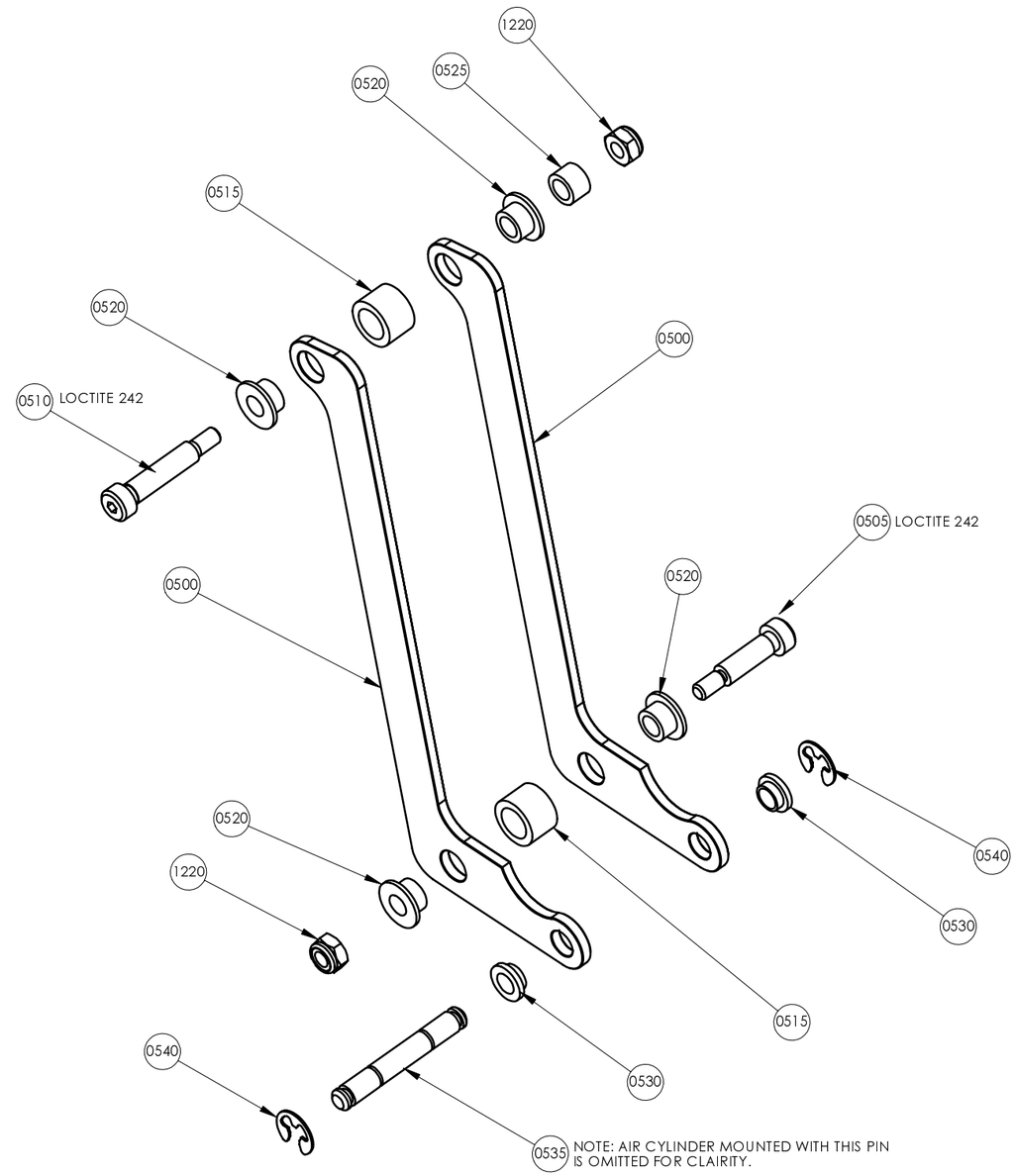
MATERIAL

CREO

PICKER ASSEMBLY
TS-AUTO

© COPYRIGHT CREO PRODUCTS INC.

DESIGNED BY	DRAWN BY			
IAN GARBEN	IAN GARBEN			
MILLIMETERS UNLESS SPECIFIED	DATE 18 JUNE 1997	SIZE C	SCALE 1:1	
PART NO. 50-1448A — R	AD	REV 1	DOC	SHEET 19 OF



P	C444	28 SEPT 1998	S MONTAGUE	S MONTAGUE
R	C514	04 NOV 1998	S MONTAGUE	S MONTAGUE
REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY

R NO CHANGES THIS SHEET

FINISH

MATERIAL NOTED

THIRD ANGLE PROJECTION

DEBURR 0.25mm MAX

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE ✓

TOLERANCES UNLESS NOTED

LINEAR	ANGULAR °
X. ± X.	X. ± X.
X.X ± X.X	X.X ± X.X
X.XX ± X.XX	X.XX ± X.XX
X.XXX ± X.XXX	IMPLIED 90° ± X.XX

CREO

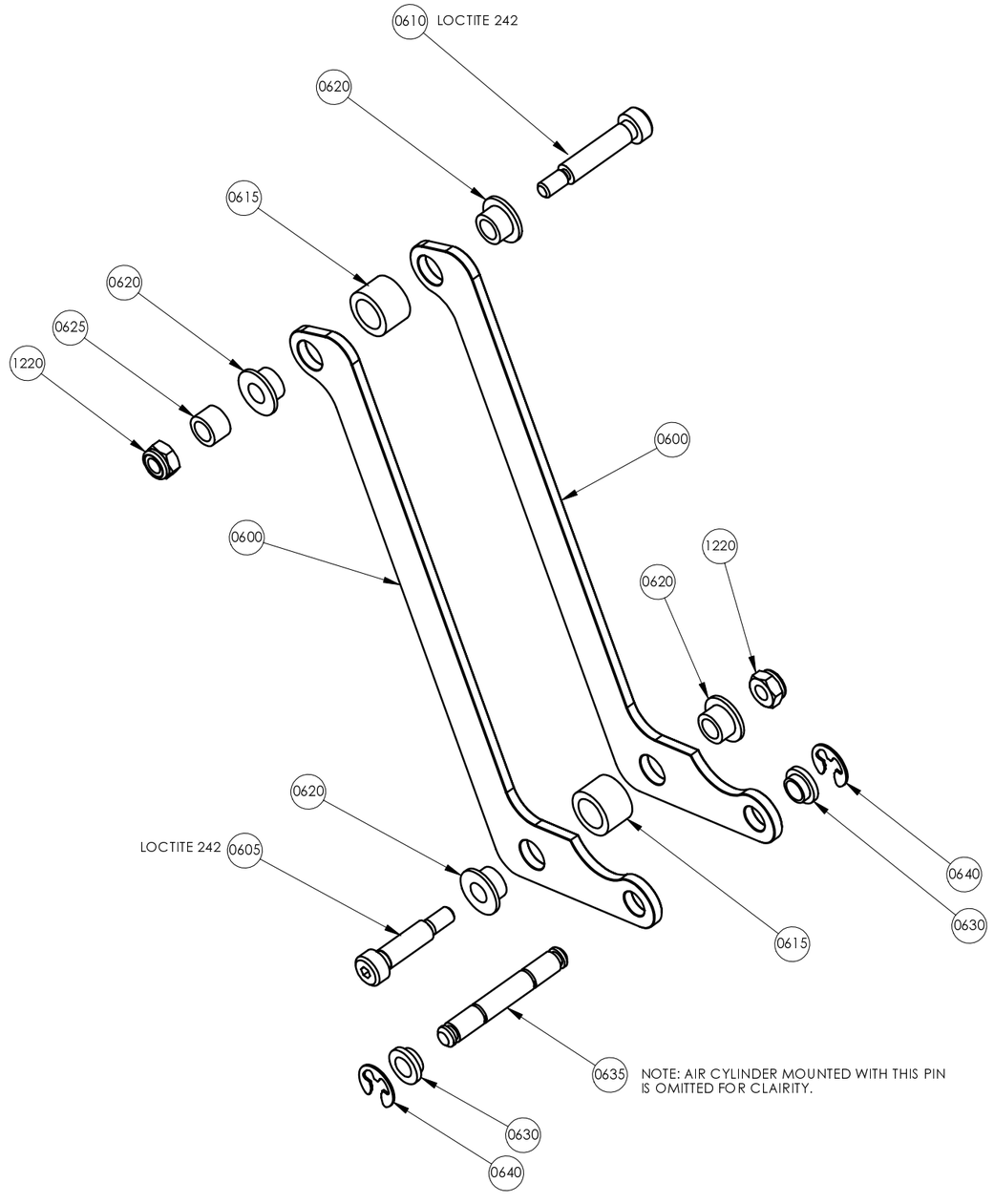
PICKER ASSEMBLY
LINKAGE ARM 1L DETAIL
TS-AUTO

© COPYRIGHT CREO PRODUCTS INC.

DESIGNED BY IAN GARBEN | DRAWN BY IAN GARBEN

MILLIMETERS UNLESS SPECIFIED | DATE 30 OCT 1997 | SIZE C | SCALE 1:1

PART NO. 50-1448A | REV R | DOC AD | SHEET 2 | OF 19



NO CHANGES THIS SHEET

REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY
P	C444	28 SEPT 1998	S.MONTAGUE	S.MONTAGUE
R	C514	04 NOV 1998	S.MONTAGUE	S.MONTAGUE

FINISH

MATERIAL

THIRD ANGLE PROJECTION

DEBURR 0.25mm MAX

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE ✓

TOLERANCES UNLESS NOTED

LINEAR	ANGULAR °
X. ± X.	X. ± X.
X.X ± X.X	X.X ± X.X
X.XX ± X.XX	X.XX ± X.XX
X.XXX ± X.XXX	IMPLIED 90° ± X.XX

CREO

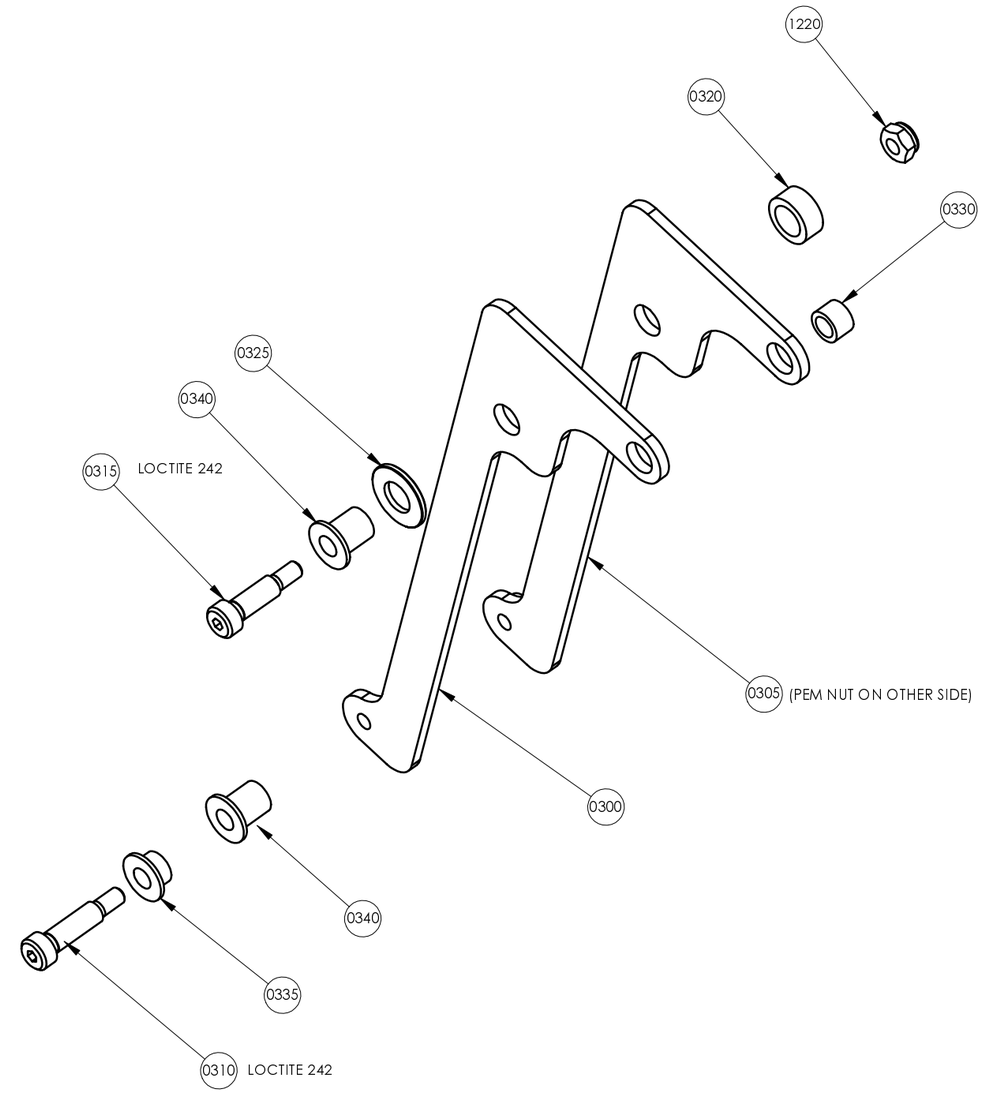
PICKER ASSEMBLY
LINKAGE ARM 1R DETAIL
TS-AUTO

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DESIGNED BY: IAN GARBEN | DRAWN BY: IAN GARBEN

MILLIMETERS UNLESS SPECIFIED | DATE: 18 JUNE 1997 | SIZE: C | SCALE: 1:1

PART NO. 50-1448A — R AD | REV | DOC | SHEET 3 | OF 19



R NO CHANGES THIS SHEET

P	C444	28 SEPT 1998	S MONTAGUE	S MONTAGUE
R	C514	04 NOV 1998	S MONTAGUE	S MONTAGUE
REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY

FINISH

MATERIAL

THIRD ANGLE PROJECTION

DEBURR 0.25mm MAX

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE ✓

TOLERANCES UNLESS NOTED

LINEAR
X. ± X.
X.X ± X.X
X.XX ± X.XX
X.XXX ± X.XXX

ANGULAR °
X. ± X.
X.X ± X.X
X.XX ± X.XX
IMPLIED
90° ± X.XX

CREO

PICKER ASSEMBLY
LINKAGE ARM 2R DETAIL
TS-AUTO

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DESIGNED BY IAN GARBEN

DRAWN BY IAN GARBEN

MILLIMETERS UNLESS SPECIFIED

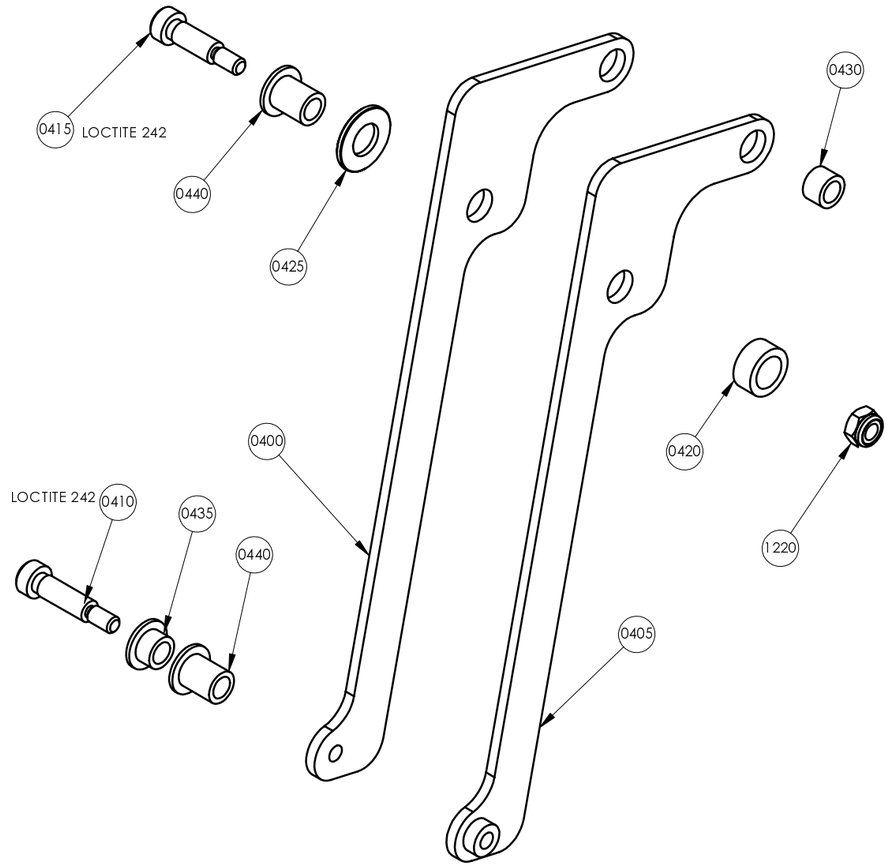
DATE 18 JUNE 1997

SIZE C

SCALE 1:1

PART NO. 50-1448A — R AD 4 19

REV DOC SHEET OF



R NO CHANGES THIS SHEET

REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY
P	C444	28 SEPT 1998	S MONTAGUE	S MONTAGUE
R	C514	04 NOV 1998	S MONTAGUE	S MONTAGUE

FINISH

MATERIAL

THIRD ANGLE PROJECTION

DEBURR 0.25mm MAX

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE ✓

TOLERANCES UNLESS NOTED

LINEAR	ANGULAR °
X. ± X.	X. ± X.
X.X ± X.X	X.X ± X.X
X.XX ± X.XX	X.XX ± X.XX
X.XXX ± X.XXX	IMPLIED 90° ± X.XX

CREO

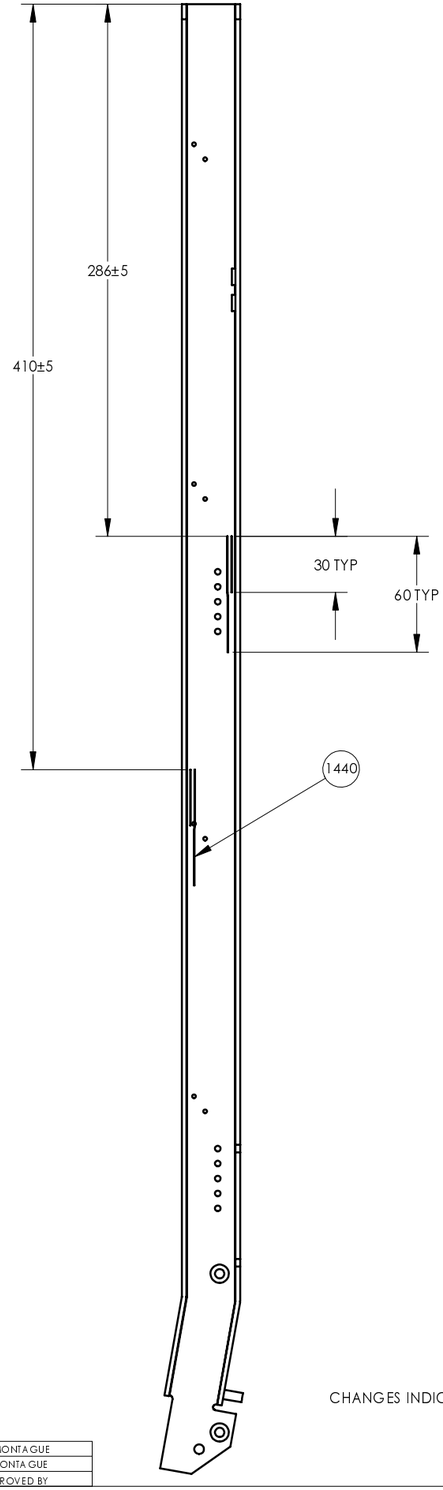
PICKER ASSEMBLY
LINKAGE ARM 2L DETAIL
TS-AUTO

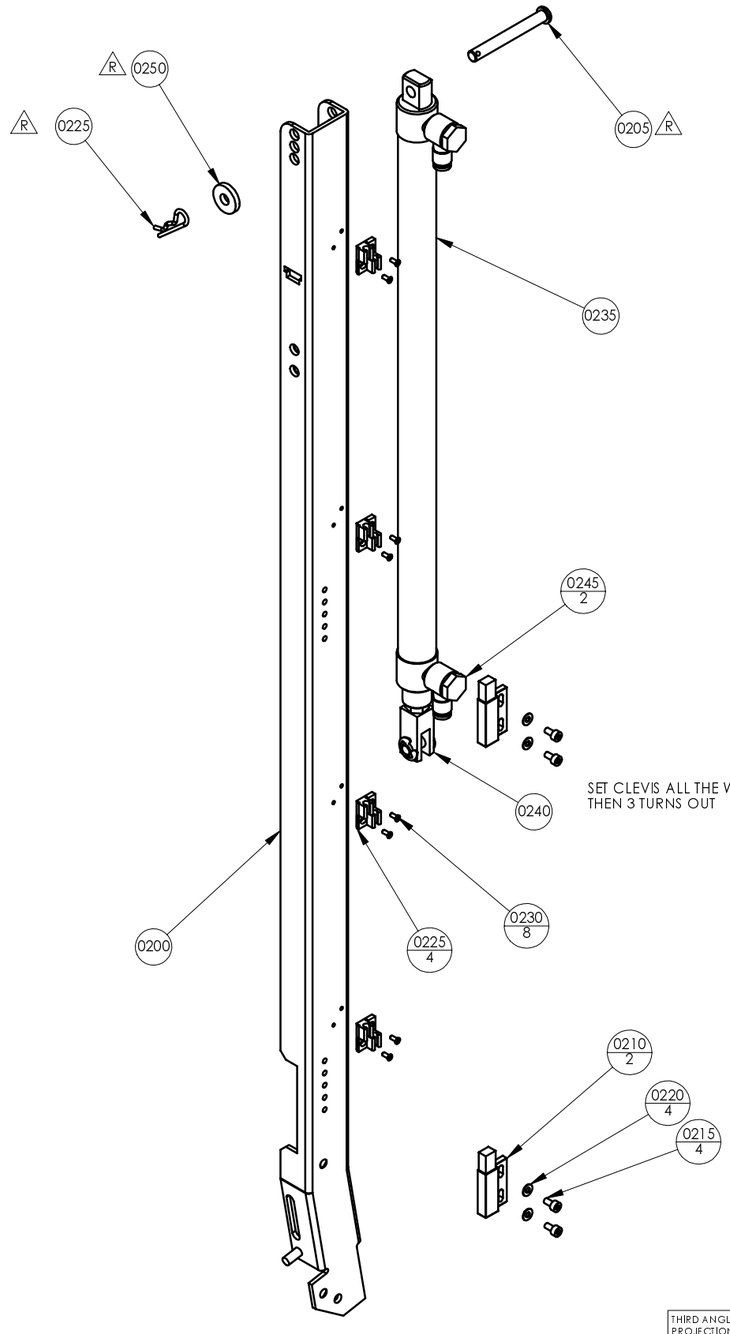
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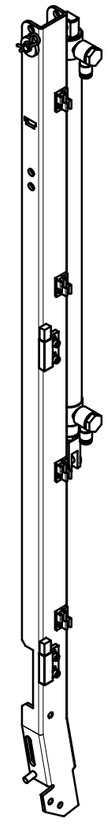
DESIGNED BY: IAN GARBEN | DRAWN BY: IAN GARBEN

MILLIMETERS UNLESS SPECIFIED | DATE: 18 JUNE 1997 | SIZE: C | SCALE: 1:1

PART NO. 50-1448A — R AD | REV | DOC | SHEET 5 OF 19







CHANGES INDICATED BY R

REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY
P	C444	28 SEPT 1998	S MONTAGUE	S MONTAGUE
R	C514	04 NOV 1998	S MONTAGUE	S MONTAGUE

FINISH

MATERIAL

THIRD ANGLE PROJECTION

DEBURR 0.25mm MAX

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE ✓

TOLERANCES UNLESS NOTED

LINEAR	ANGULAR °
X. ± X.	X. ± X.
X.X ± X.X	X.X ± X.X
X.XX ± X.XX	X.XX ± X.XX
X.XXX ± X.XXX	IMPLIED 90° ± X.XX

CREO

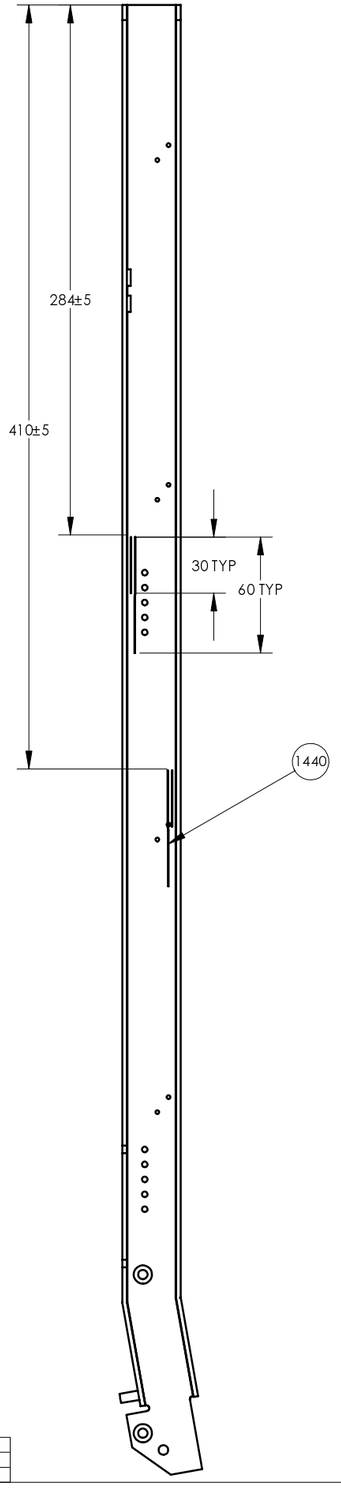
PICKER ASSEMBLY
RIGHT U-TRACK ASSY DETAIL
TS-AUTO

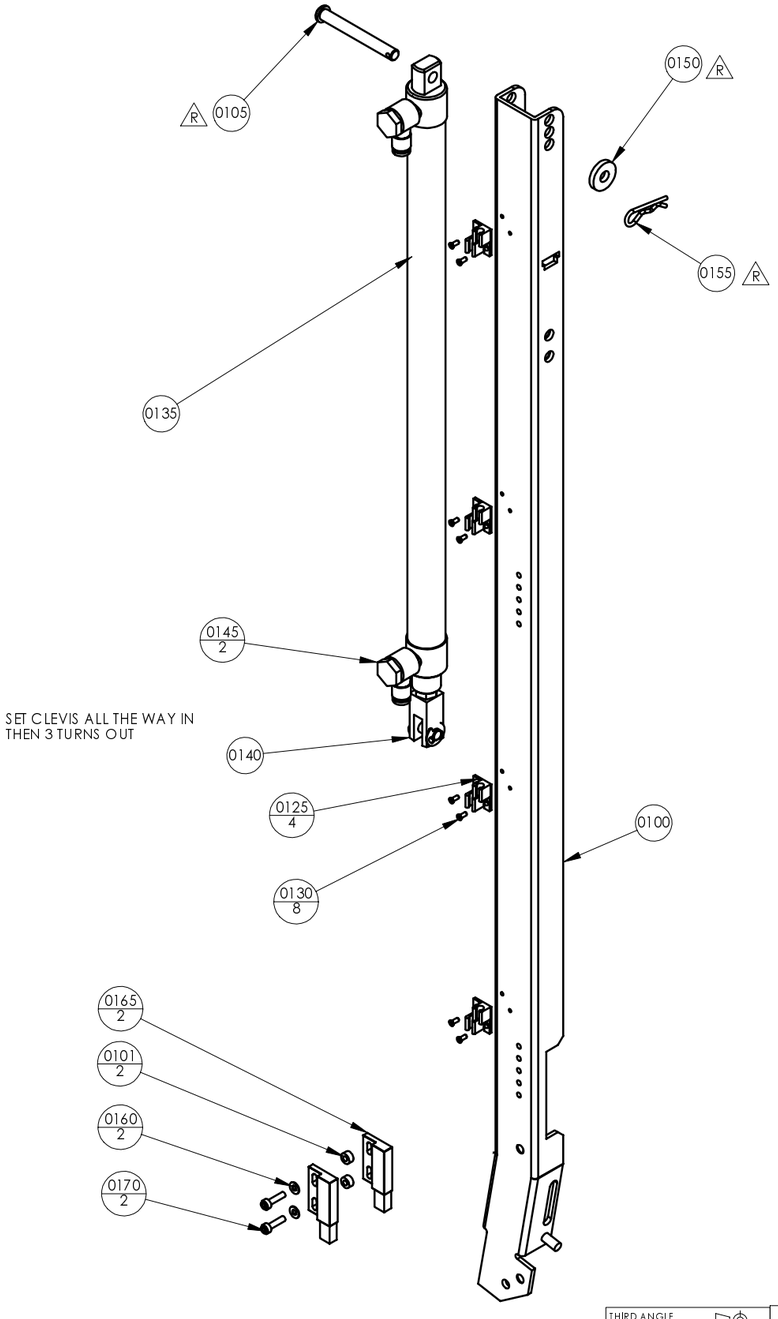
© COPYRIGHT CREO PRODUCTS INC.

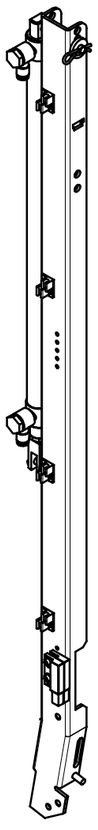
DESIGNED BY	DRAWN BY
IAN GARBEN	IAN GARBEN

MILLIMETERS UNLESS SPECIFIED	DATE	SIZE	SCALE
	18 JUNE 1997	C	1:1

PART NO.	REV	DOC	SHEET	OF
50-1448A	R	AD	6	19







CHANGES INDICATED BY R

REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY
P	C444	28 SEPT 1998	S MONTAGUE	S MONTAGUE
R	C514	04 NOV 1998	S MONTAGUE	S MONTAGUE

FINISH

MATERIAL

THIRD ANGLE PROJECTION

DEBURR 0.25mm MAX

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE ✓

TOLERANCES UNLESS NOTED

LINEAR	ANGULAR °
X. ± X.	X. ± X.
X.X ± X.X	X.X ± X.X
X.XX ± X.XX	X.XX ± X.XX
X.XXX ± X.XXX	IMPLIED 90° ± X.XX

CREO

PICKER ASSEMBLY
LEFT U-TRACK ASSY DETAIL
TS-AUTO

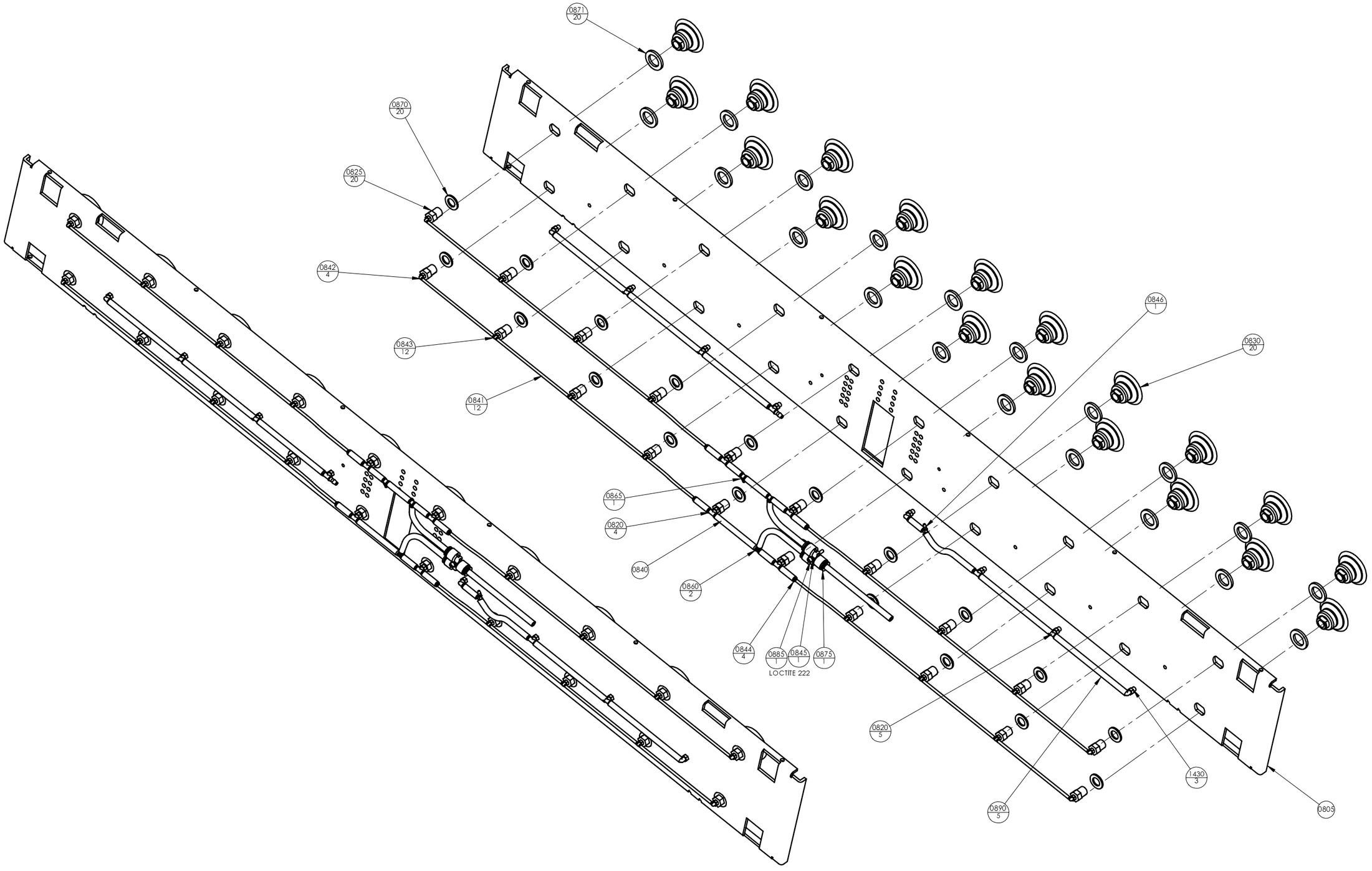
© COPYRIGHT CREO PRODUCTS INC.

DESIGNED BY	DRAWN BY
IAN GARBEN	IAN GARBEN

MILLIMETERS UNLESS SPECIFIED	DATE	SIZE	SCALE
	18 JUNE 1997	C	1:1

PART NO.	REV	DOC	SHEET	OF
50-1448A	R	AD	7	19

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R HOSE ROUTING AND AIR FITTINGS ON THIS PAGE ARE SIGNIFICANTLY REVISED

REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY
P	C444	28 SEPT 1998	S MONTAGUE	S MONTAGUE
R	C514	04 NOV 1998	IAN GARBEN	IAN GARBEN

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE 3.2

TOLERANCES UNLESS NOTED

LINEAR	ANGULAR*
X. ±	X. ±
X.X ±	X.X ±
X.XX ±	X.XX ±
X.XXX ±	90° ±

THIRD ANGLE PROJECTION

CREO

ASSY, MECH, PICKER SUCTION BAR, TS-AUTO

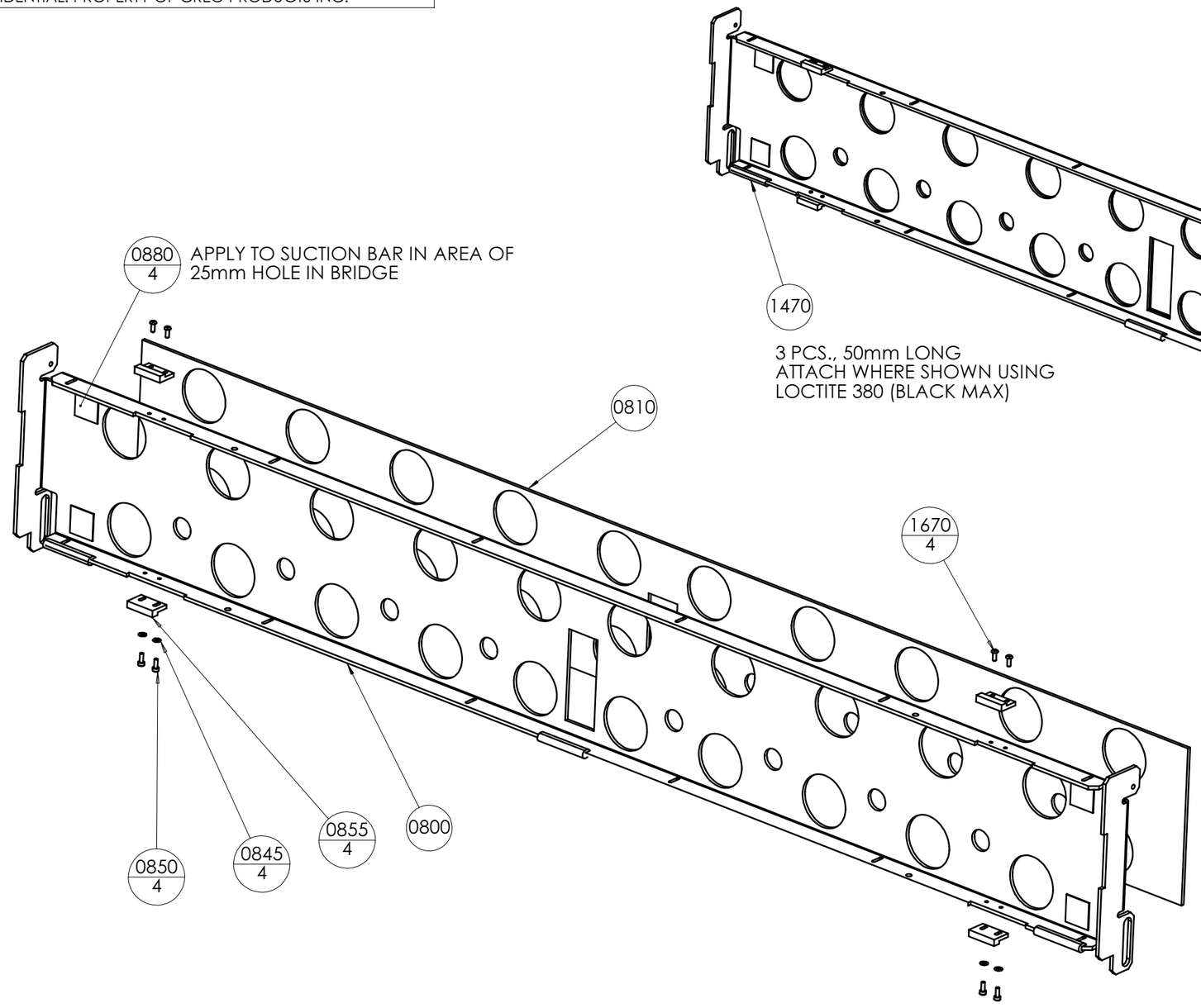
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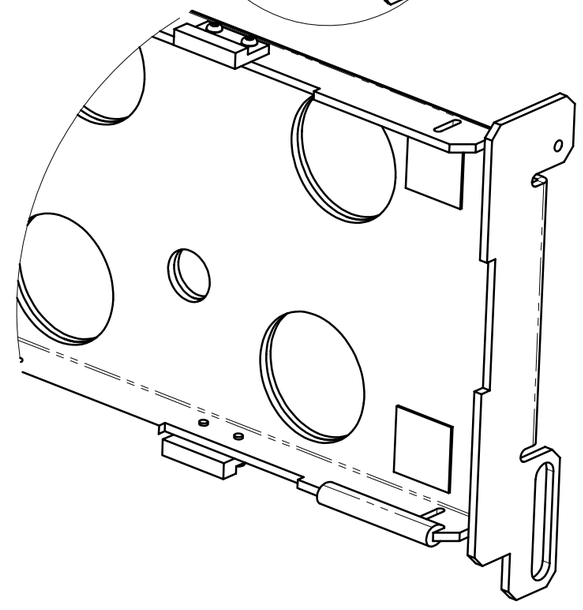
DESIGNED BY: IAN GARBEN | DRAWN BY: Z. PRIMMER

MILLIMETERS UNLESS SPECIFIED | DATE: 4 NOV 1997 | SIZE: D | SCALE: 1:3

PART NO. 50-1448A | REV: R | DOC: AD | SHEET: 8 | OF: 19

CONFIDENTIAL: PROPERTY OF CREO PRODUCTS INC.





R NO CHANGES THIS SHEET

REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY
P	C444	28 SEPT 1998	S MONTAGUE	S MONTAGUE
R	C514	04 NOV 1998	S MONTAGUE	S MONTAGUE

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE 3.2

TOLERANCES UNLESS NOTED

LINEAR		ANGULAR °	
X.	±	X.	±
X.X	±	X.X	±
X.XX	±	X.XX	±
X.XXX	±	90°	±

THIRD ANGLE PROJECTION

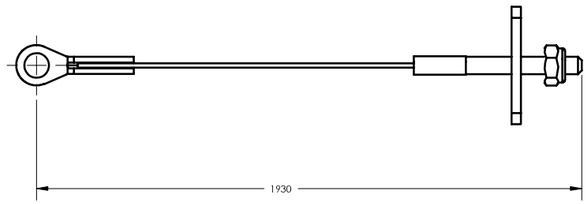
CREO

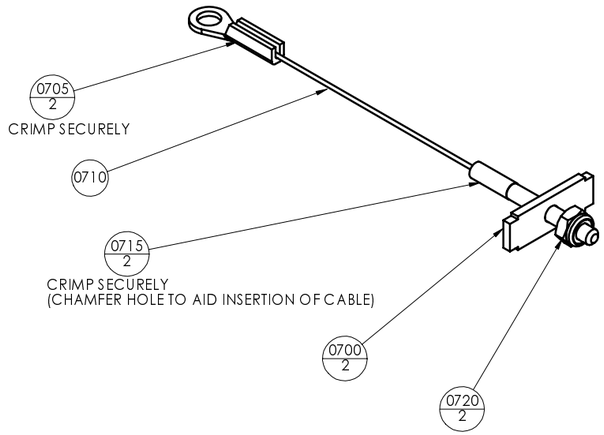
ASSY, MECH,
PICKER SUCTION BAR
TS-AUTO

© COPYRIGHT CREO PRODUCTS INC.

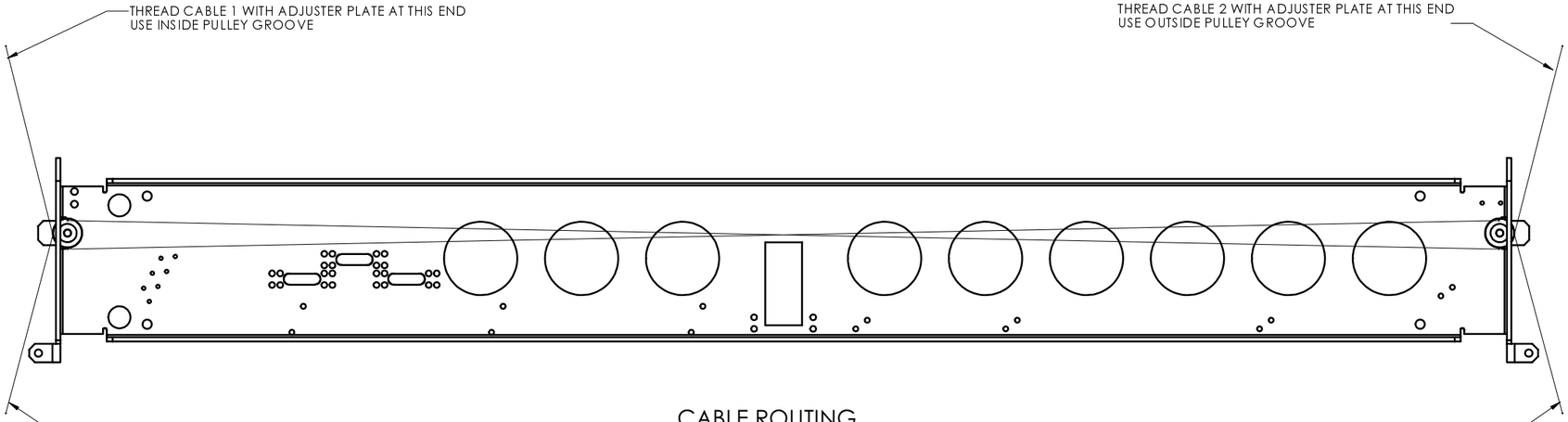
DESIGNED BY: IAN GARBEN
DRAWN BY: Z. PFRIMMER
MILLIMETERS UNLESS SPECIFIED
DATE: 5 NOV 1997
SIZE: B
SCALE: 1 : 4

PART NO. 50-1448A — REV R DOC AD SHEET 9 OF 19





CABLE SUB-ASSEMBLY
2 REQUIRED



CABLE ROUTING

REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY
P	C444	28 SEPT 1998	S MONTAGUE	S MONTAGUE
R	C514	04 NOV 1998	S MONTAGUE	S MONTAGUE

R NO CHANGES THIS SHEET

FINISH

MATERIAL

THIRD ANGLE PROJECTION

DEBURR 0.25mm MAX

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE ✓

TOLERANCES UNLESS NOTED

LINEAR	ANGULAR °
X. ± 5	X. ± X.
X.X ± X.X	X.X ± X.X
X.XX ± X.XX	X.XX ± X.XX
X.XXX ± X.XXX	IMPLIED 90° ± X.XX

CREO

PICKER ASSEMBLY
CABLE AND ROUTING DETAIL
TS-AUTO

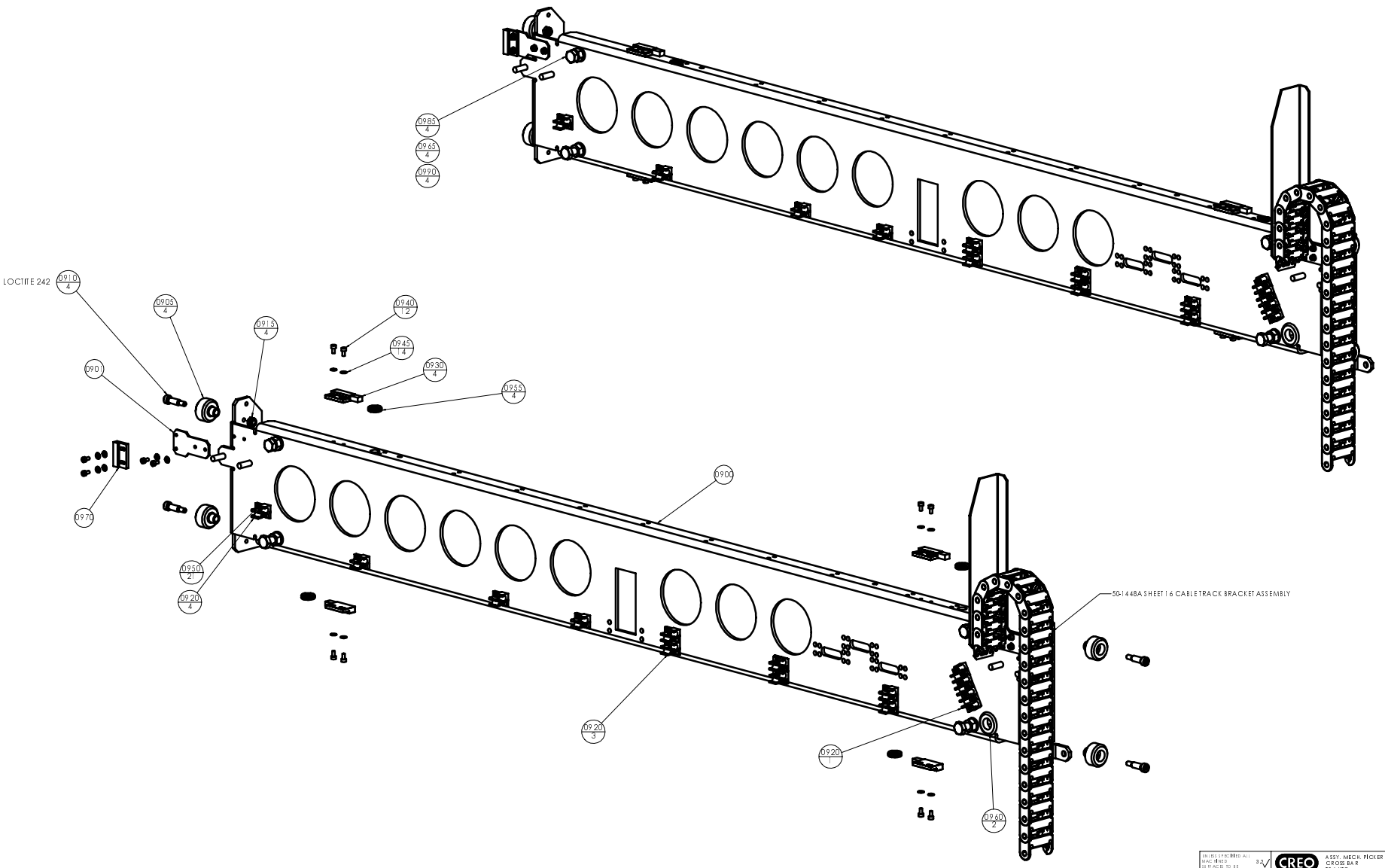
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DESIGNED BY	DRAWN BY
IAN GARBEN	IAN GARBEN

MILLIMETERS UNLESS SPECIFIED	DATE	SIZE	SCALE
	18 JUNE 1997	C	1:1

PART NO.	REV	DOC	SHEET	OF
50-1448A	R	AD	10	19

CONFIDENTIAL: PROPERTY OF CREO PRODUCTS INC.



⚠R NO CHANGES THIS SHEET

REV	ECO	DATE	DRAWING CHANGE BY	APPROVED BY
*	6644	28 SEPT 1998	S MONTAGUE	S MONTAGUE
A	C514	04 NOV 1998	S MONTAGUE	S MONTAGUE

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE 3.2√

TOLERANCE UNLESS NOTED

DECIMALS	ANGULAR
XX ±	°±
.XX ±	.X° ±
.XXX ±	.XX° ±
.XXXX ±	.XXX° ±

THIRD ANGLE PROJECTION

CREO

ASSY, MECH. PICKER CROSS BAR T54 UTO

DESIGNED | DRAWN | APPROVED

UNITS: MILLIMETERS

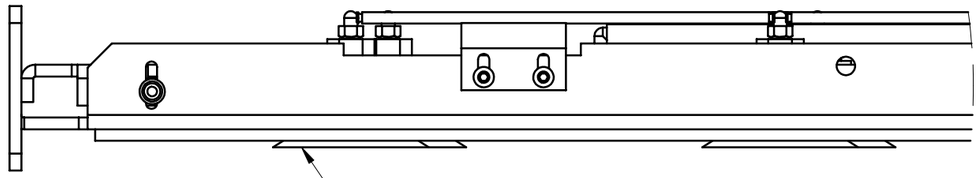
DATE: 7 NOV EMBER 1998

SIZE: D | DWG NO: 1 | REV: 2

MATL NO: 50-1448A

SHT 1 OF 1 | SHT 1 OF 1

R AD 11 19

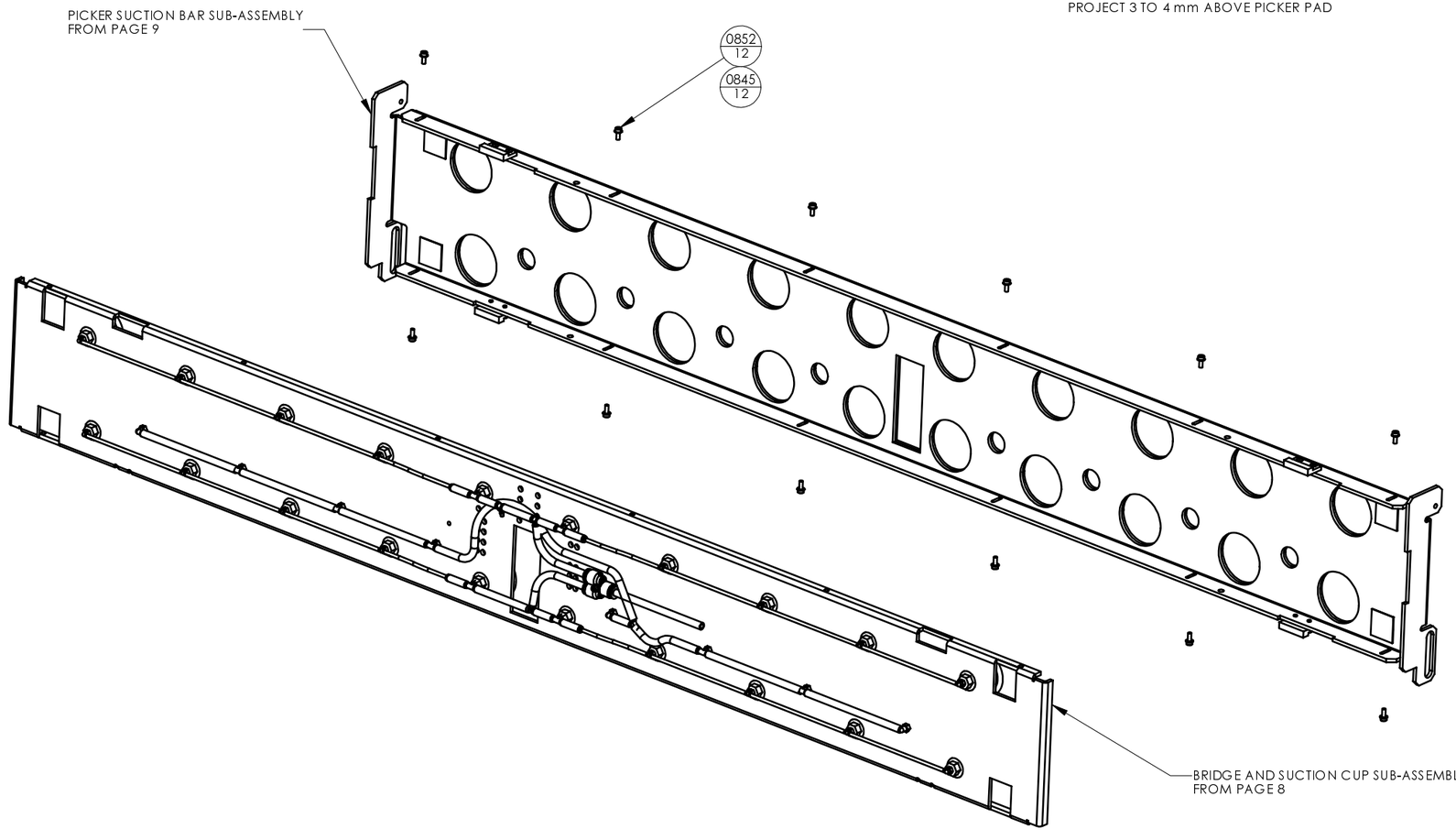


ADJUST BRIDGE SO THAT SUCTION CUPS
PROJECT 3 TO 4 mm ABOVE PICKER PAD

PICKER SUCTION BAR SUB-ASSEMBLY
FROM PAGE 9

0852
12

0845
12



BRIDGE AND SUCTION CUP SUB-ASSEMBLY
FROM PAGE 8

MAXIMUM 1.0mm OF TWIST
PERMITTED ON COMPLETED
SUB-ASSEMBLY

R NO CHANGES THIS SHEET

REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY
P	C 444	28 SEPT 1998	S MONTAGUE	S MONTAGUE
R	C514	04 NOV 1998	S MONTAGUE	S MONTAGUE

FINISH

MATERIAL

THIRD ANGLE PROJECTION

DEBURR 0.25mm MAX

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE ✓

TOLERANCES UNLESS NOTED

LINEAR	ANGULAR °
X. ± X.	X. ± X.
X.X ± X.X	X.X ± X.X
X.XX ± X.XX	X.XX ± X.XX
X.XXX ± X.XXX	IMPLIED 90° ± X.XX

CREO

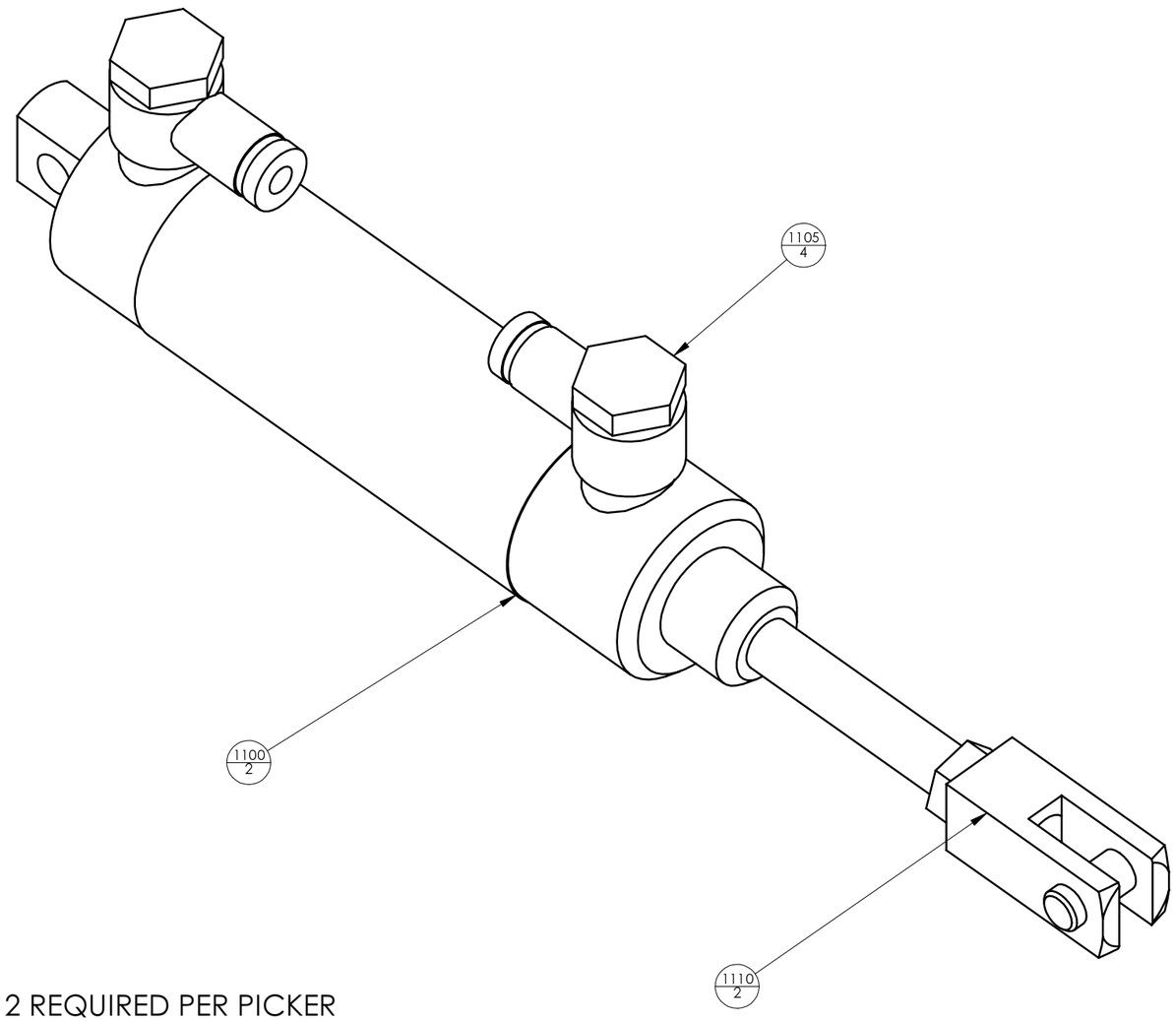
PICKER ASSEMBLY
SUCTION BAR SUB-ASSEMBLY
TS-AUTO

© COPYRIGHT CREO PRODUCTS INC.

DESIGNED BY IAN GARBEN | DRAWN BY IAN GARBEN

MILLIMETERS UNLESS SPECIFIED | DATE 18 JUNE 1997 | SIZE C | SCALE 1:1

PART NO. 50-1448A | REV R | DOC AD | SHEET 12 | OF 19



2 REQUIRED PER PICKER

INITIAL ADJUSTMENT IS "FULLY ON"

R NO CHANGES THIS SHEET

REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY
P	C444	28 SEPT 1998	S MONTAGUE	S MONTAGUE
R	C514	04 NOV 1998	S MONTAGUE	S MONTAGUE

FINISH

MATERIAL

THIRD ANGLE PROJECTION

DEBURR 0.25mm MAX

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE ✓

TOLERANCES UNLESS NOTED

LINEAR	ANGULAR °
X. ± X.	X. ± X.
X.X ± X.X	X.X ± X.X
X.XX ± X.XX	X.XX ± X.XX
X.XXX ± X.XXX	IMPLIED 90° ± X.XX

CREO

PICKER ASSEMBLY
CYLINDER DETAIL
TS-AUTO

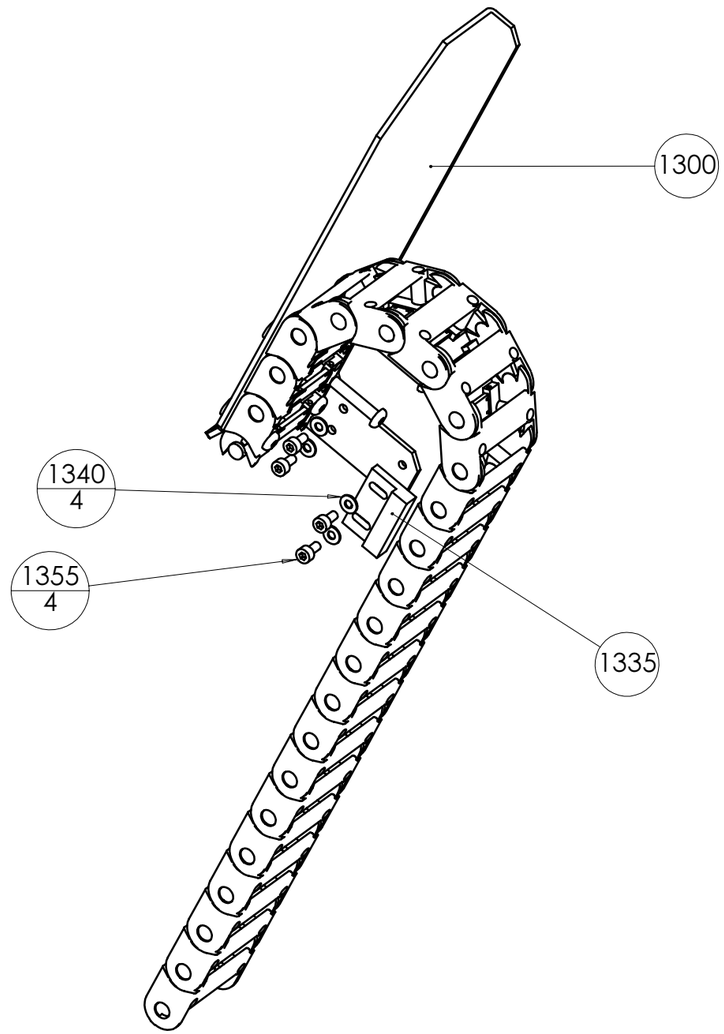
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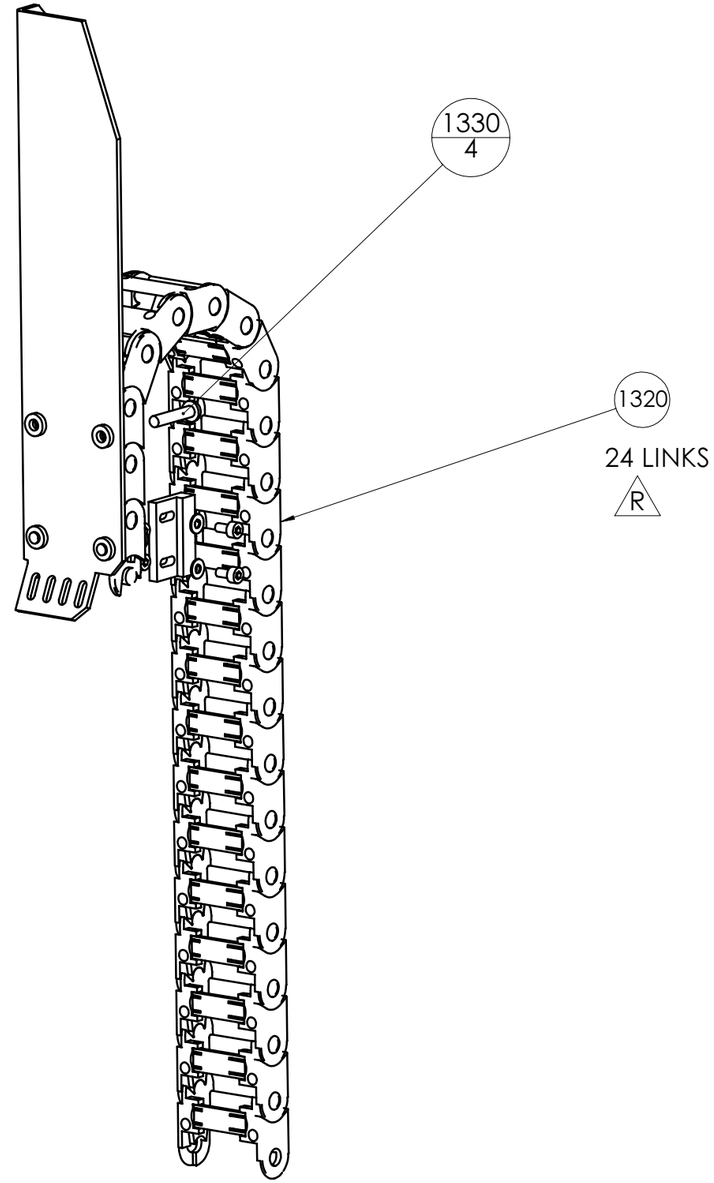
DESIGNED BY IAN GARBEN | DRAWN BY IAN GARBEN

MILLIMETERS UNLESS SPECIFIED | DATE 18 JUNE 1997 | SIZE C | SCALE 1:1

PART NO. 50-1448A — R | REV AD | DOC 13 | SHEET | OF 19

CONFIDENTIAL: PROPERTY OF CREO PRODUCTS INC.





LATEST CHANGES INDICATED BY R

REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY
P	C 444	28 SEPT 1998	S MONTAGUE	S MONTAGUE
R	C514	04 NOV 1998	S MONTAGUE	S MONTAGUE

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE 3.2

TOLERANCES UNLESS NOTED

LINEAR	ANGULAR °
X. ±	X. ±
X.X ±	X.X ±
X.XX ±	X.XX ±
X.XXX ±	90° ±

THIRD ANGLE PROJECTION

INTERPRET GD&T PER ANSI Y14.5M - 1994

FINISH

MATERIAL

CREO

ASSY, MECH, PICKER, CABLE TRACK BRACKET ASSEMBLY, TS-AUTO

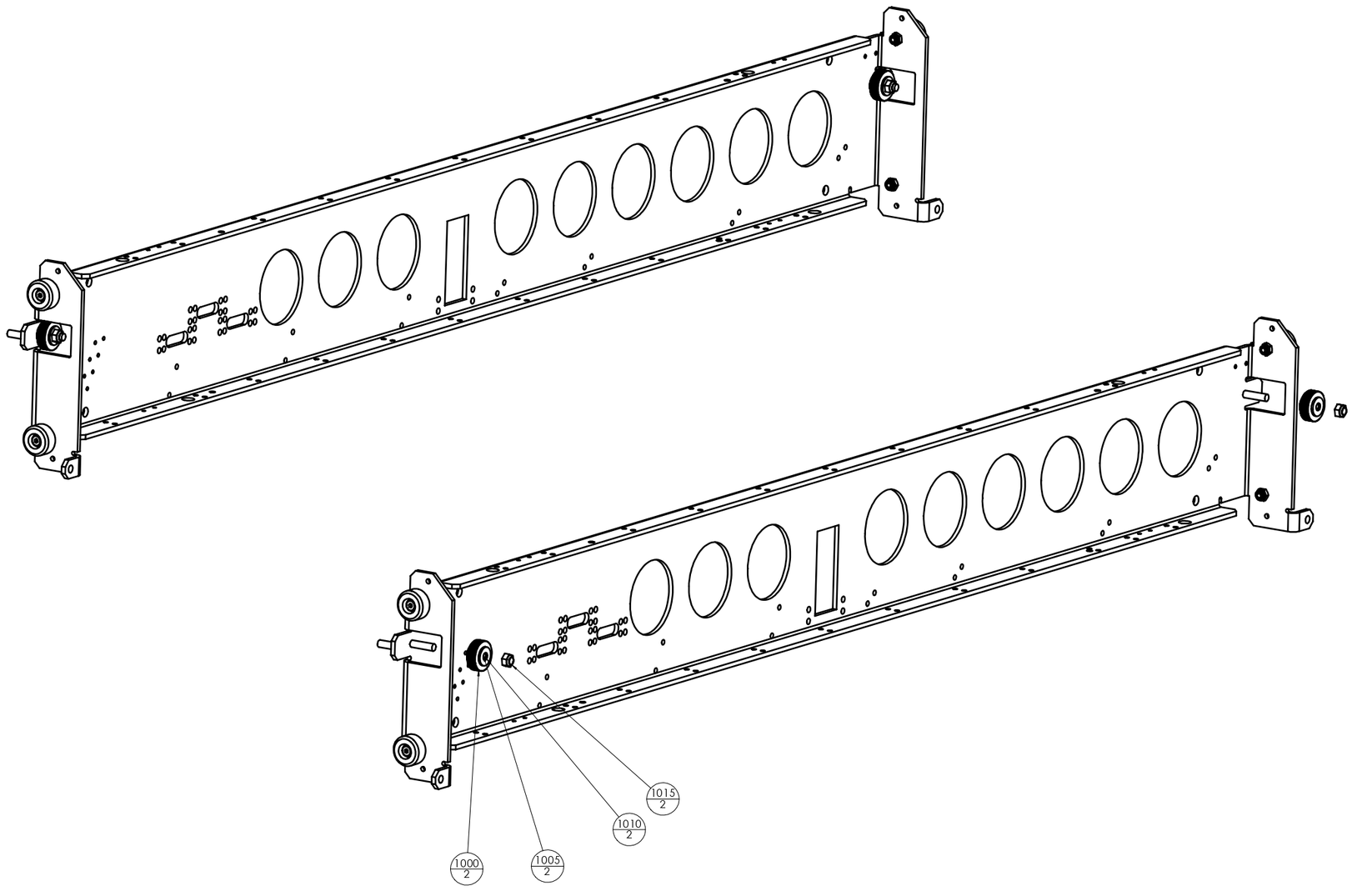
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DESIGNED BY IAN GARBEN | DRAWN BY Z. PFRIMMER

MILLIMETERS UNLESS SPECIFIED | DATE 7 NOV. 1997 | SIZE B | SCALE 1 : 1

PART NO. 50-1448A | REV — R | DOC AD | SHEET 14 | OF 19

CONFIDENTIAL: PROPERTY OF CREO PRODUCTS INC.



(INSIDE PULLEY)

R NO CHANGES THIS SHEET

P	C444	28 SEPT 1998	S MONTAGUE	S MONTAGUE
R	C514	04 NOV 1998	S MONTAGUE	S MONTAGUE
REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE 3.2

TOLERANCES UNLESS NOTED

LINEAR	ANGULAR°
X. ±	X. ±
X.X ±	X.X ±
X.XX ±	X.XX ±
X.XXX ±	90° ±

THIRD ANGLE PROJECTION

CREO

ASSY, MECH, PICKER SUCTION BAR (BACK), TS-AUTO

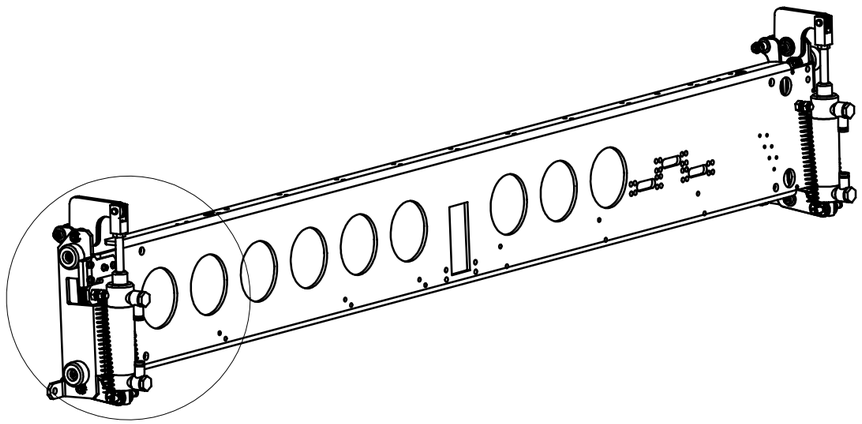
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DESIGNED BY: IAN GARBEN | DRAWN BY: Z. PFEMMER

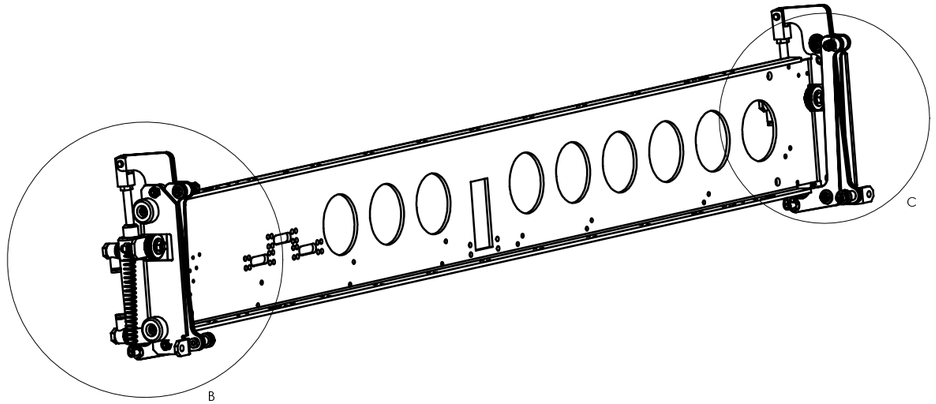
MILLIMETERS UNLESS SPECIFIED | DATE: 7 NOVEMBER 1997 | REV: D | SCALE: 1 : 2

PART NO. 50-1448A — R | DOC: AD | SHEET: 15 | OF: 19

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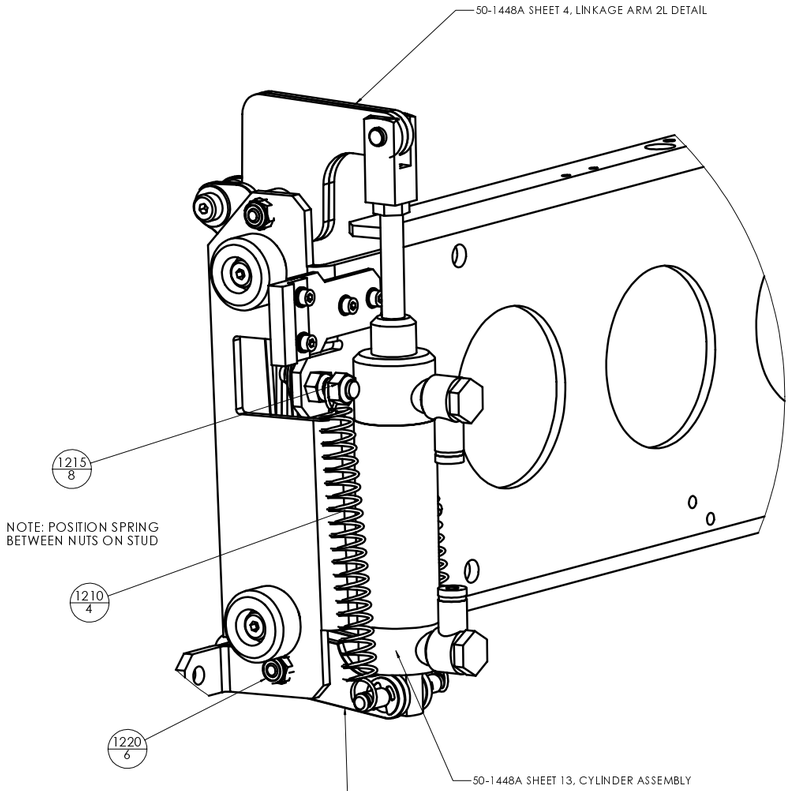


A

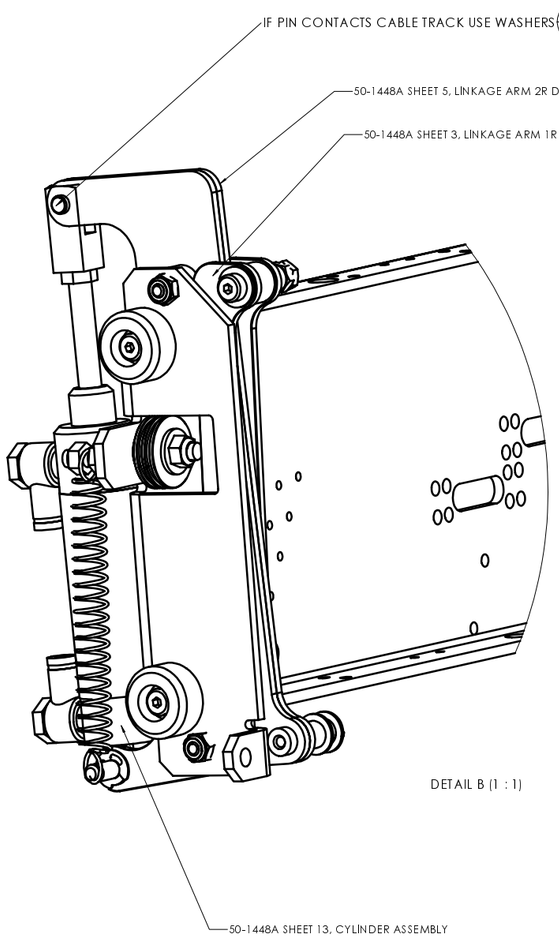


B

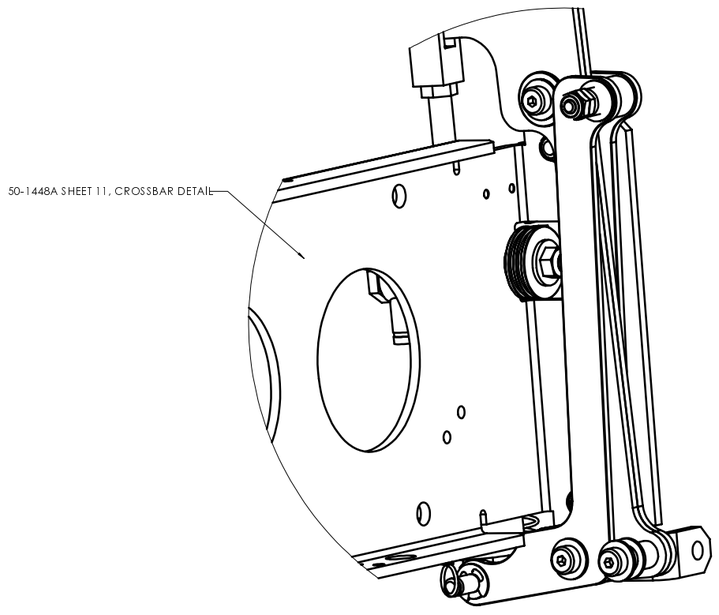
C



DETAIL A (1 : 1)



DETAIL B (1 : 1)



DETAIL C (1 : 1)

REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY
P	C444	28 SEPT 1998	S MONTAGUE	S MONTAGUE
R	C514	04 NOV 1998	S MONTAGUE	S MONTAGUE

REV R- NO CHANGES THIS SHEET

UNLESS SPECIFIED ALL MACHINED SURFACES TO BE 3.2

TOLERANCES UNLESS NOTED

LINEAR	ANGULAR°
X. ±	X. ±
X.X ±	X.X ±
X.XX ±	X.XX ±
X.XXX ±	90° ±

MILLIMETERS UNLESS SPECIFIED

THIRD ANGLE PROJECTION

CREO

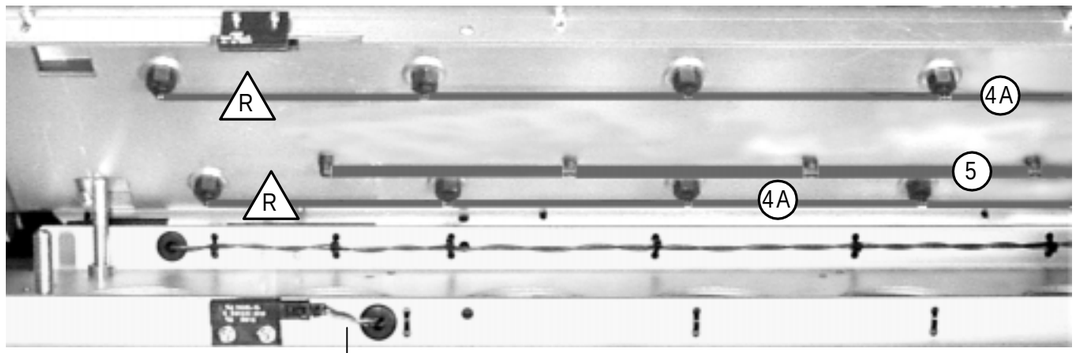
PICKER LINKAGE, CYLINDER AND SPRING ASSEMBLY TS-AUTO

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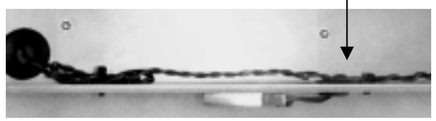
DESIGNED BY: IAN GARBEN — DRAWN BY: Z.FERMIMER

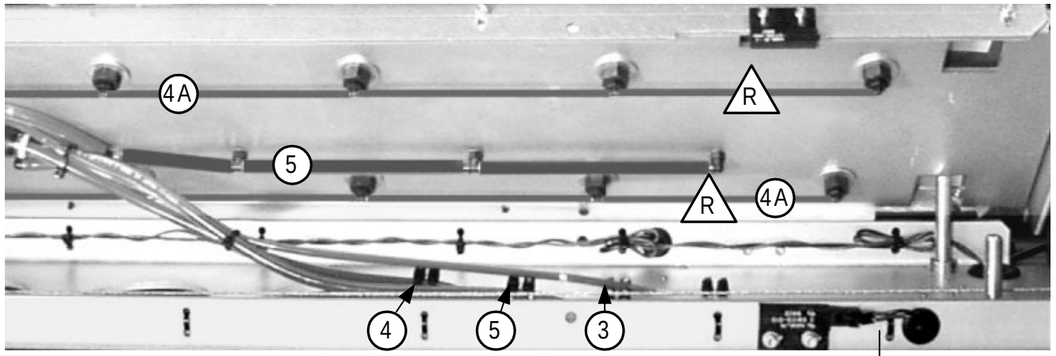
DATE: 13 NOVEMBER 1997 — SIZE: D — SCALE: 1:2

PART NO. 50-1448A — REV R — DOC AD — SHEET 16 — OF 19

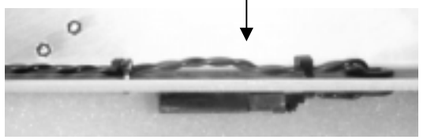


REF (1400)





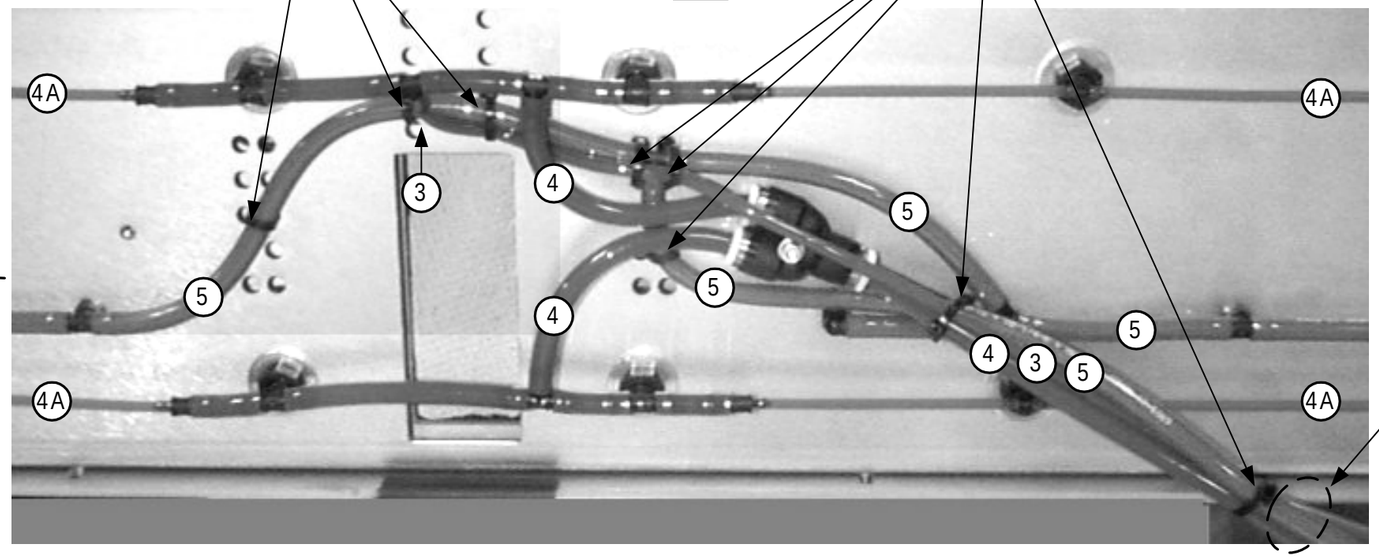
REF (1400)



(1610)

(1610)

R



TUBES SHOULD NOT BE STRETCHED DURING PICKER OPERATION

TUBE

	REF (1200)	1	BLK 4mm (5/32") AIR IN PICKER HEAD CYL. A,B
	REF (1205)	2	RED 4mm (5/32") AIR IN PICKER HEAD CYL. A,B
	REF (1450)	3	BLU 4mm (5/32") VACUUM SENSOR
	REF (0840)	4	BLU 1/4" SUCTION CUPS VACUUM
R	REF (0841)	4A	BLU 3mmSUCTION CUPS VACUUM
	REF (0890)	5	RED 1/4" AIR JET

R CHANGES INDICATED ON THIS DRAWING

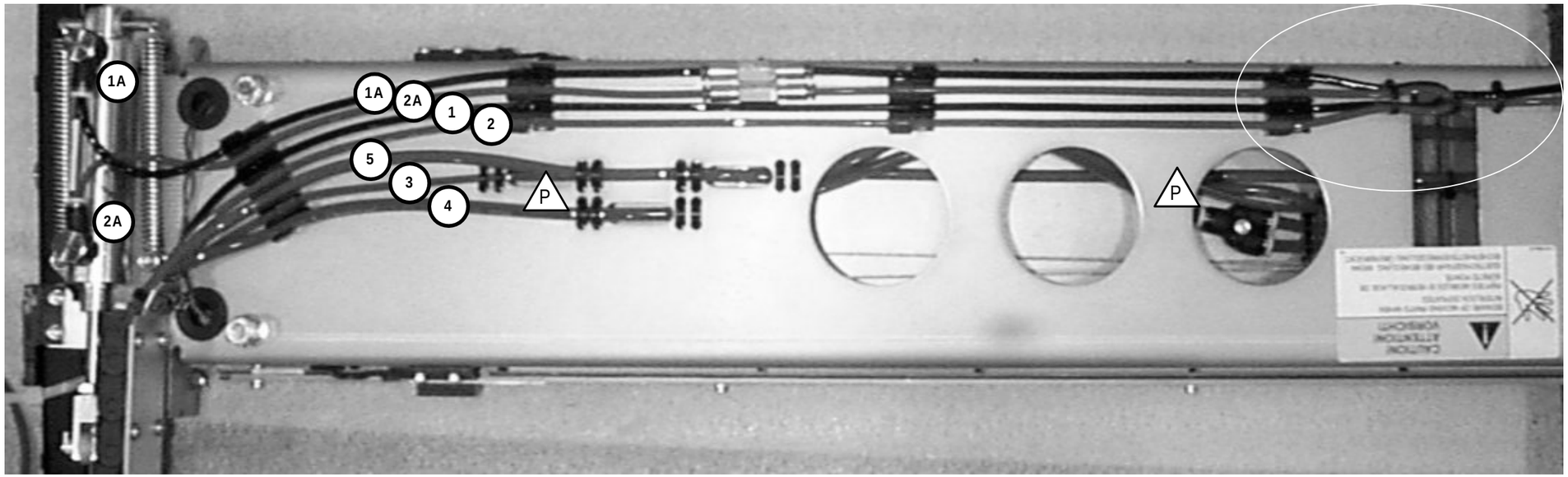
REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY
R	C514	1998:NOV:04	P.HORAK	S.MONTAGUE
P	C444	1998:SEP:29	P.HORAK	S.MONTAGUE

CREO

TS 3244
PICKER, AL
ASSEMBLY DRAWING

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DESIGNED BY	DRAWN BY			
IAN GARBEN	P HORAK			
MILLIMETERS UNLESS SPECIFIED	DATE 1998:OCT:20	SIZE B	SCALE NTS	
PART NO.	REV	DOC	SHEET	OF
50-1448A	— R	AD	17	19

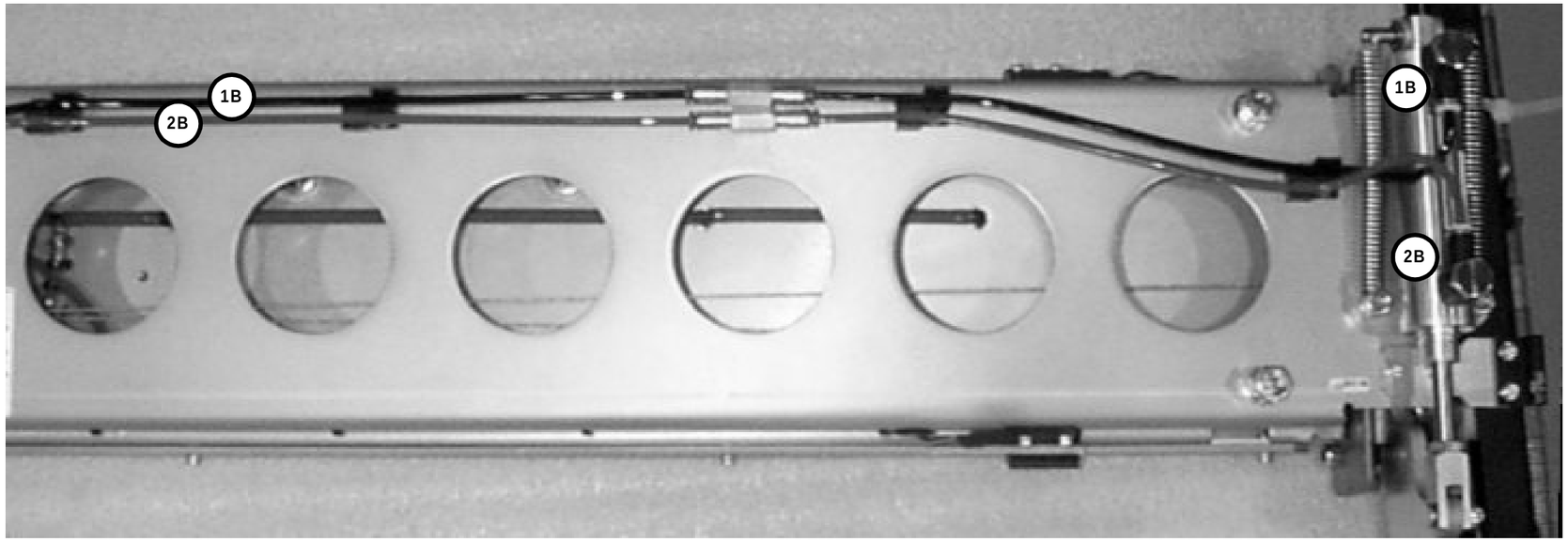


SEE DETAIL "A"

CYLINDER A

CYLINDER B

SEE DETAIL "A" →



TUBE

REF (1200)	1	BLK 4 (5/32") AIR IN PICKER HEAD CYL. A,B
REF (1205)	2	RED 4 (5/32") AIR IN PICKER HEAD CYL. A,B
REF (1450)	3	BLU 4 (5/32") VACUUM SENSOR
REF (0840)	4	BLU 1/4" SUCTION CUPS VACUUM
REF (0890)	5	RED 1/4" AIR JET

P CHANGES INDICATED ON THIS DRAWING

REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY
P	C444	1998:SEP:29	P.HORAK	S.MONTAGUE
N	C402	1998:JUL:29	P.HORAK	S.MONTAGUE

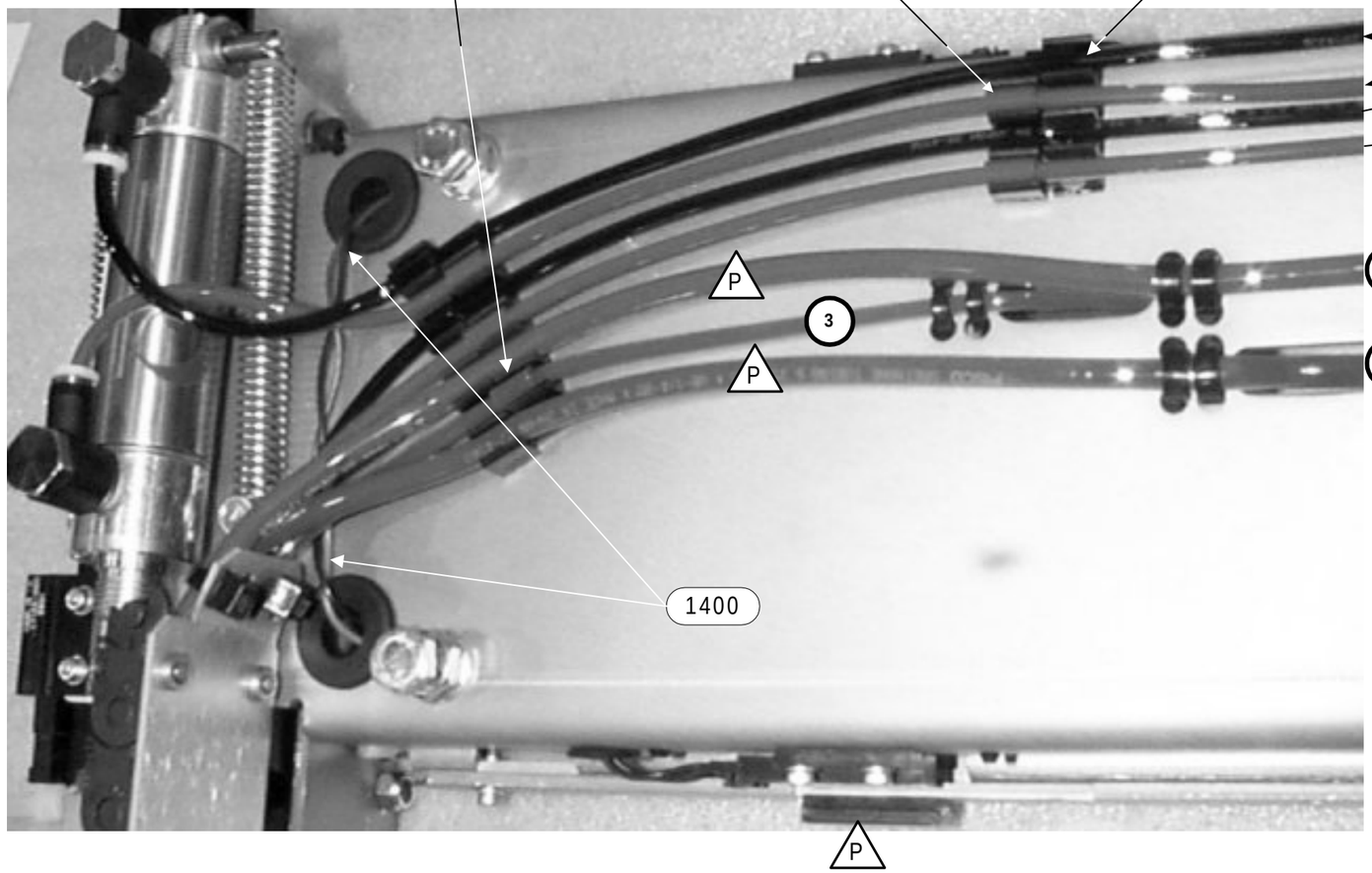
CREO

TS 3244
PICKER, AL
ASSEMBLY DRAWING

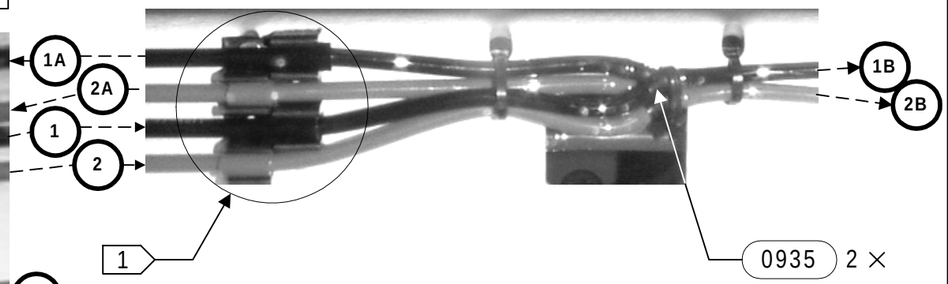
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IAN GARBEN	P HORAK		
MILLIMETERS UNLESS SPECIFIED	DATE 1998:OCT:20	SIZE B	SCALE NTS

PART NO.	REV	DOC	SHEET	OF
50-1448A — P	AD	18	19	



DETAIL "A"



TUBE

REF (1200)	1	BLK 4 (5/32") AIR IN PICKER HEAD CYL. A,B
REF (1205)	2	RED 4 (5/32") AIR IN PICKER HEAD CYL. A,B
REF (1450)	3	BLU 4 (5/32") VACUUM SENSOR
REF (0840)	4	BLU 1/4" SUCTION CUPS VACUUM
REF (0890)	5	RED 1/4" AIR JET

NOTES:

1. USE 1/4" TUBING FOR SECURING 4mm TUBES IN ALL TUBE PLATES

P CHANGES INDICATED ON THIS DRAWING

REV	ECO	DATE	DRAWING CHANGES BY	APPROVED BY
P	C444	1998:SEP:29	P.HORAK	S.MONTAGUE
N	C402	1998:JUL:29	P.HORAK	S.MONTAGUE

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TS 3244
PICKER, AL
ASSEMBLY DRAWING

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DESIGNED BY	DRAWN BY		
IAN GARBEN	P HORAK		
MILLIMETERS UNLESS SPECIFIED	DATE 1998:OCT:20	SIZE B	SCALE NTS

PART NO.	REV	DOC	SHEET	OF
50-1448A — P	AD	19	19	