

REACTION ARMS

&

EXTENSIONS

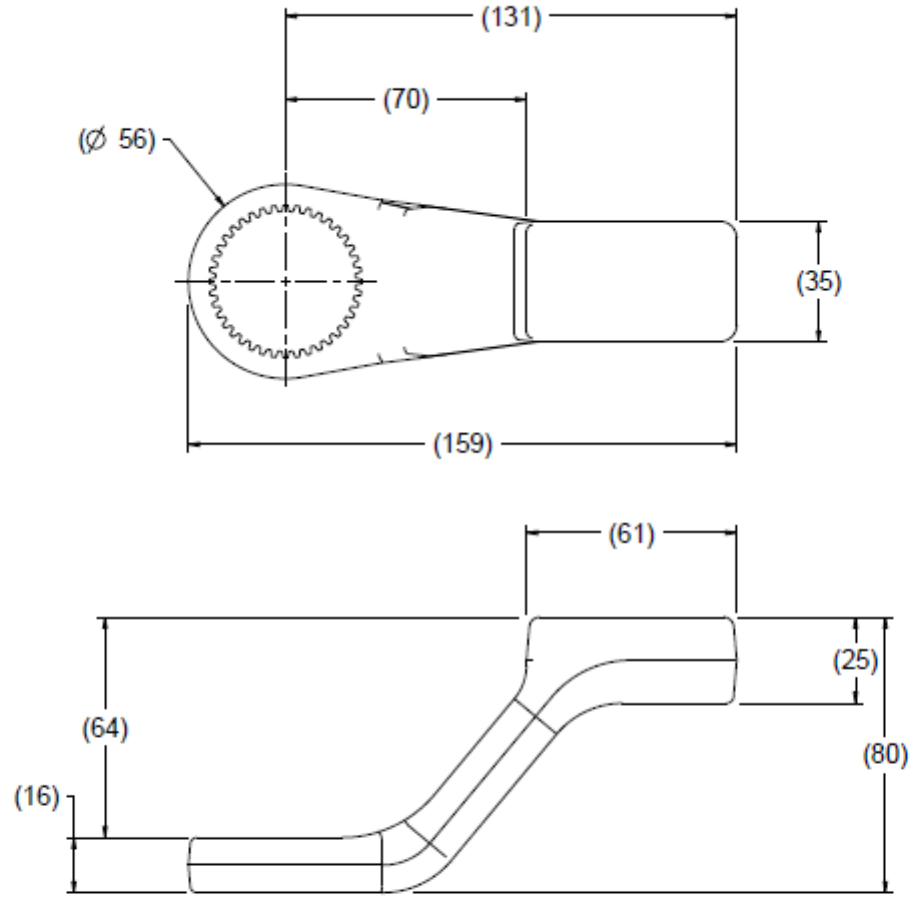
INGERSOLL RAND/ NORBAR

200 & 500 Nm TOOLS

52 mm SPLINE

REACTION ARMS

REV	NO.	BY	DESCRIPTION	DATE	DRWN	APPROV
001	A	01/15/2016	ENGINEERING RELEASE	01/15/16	K.Zimmer	D.Neider



RELEASED

NORBAR TORQUE TOOLS	Widmers Road, Banbury, Oxfordshire OX16 3JU UNITED KINGDOM	18648
MFR NAME	ADDRESS	PART NO.

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FOR SOURCE OF SUPPLY

STANDARD TOLERANCES
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS
PER ASME Y14.5M-1994

UNSPECIFIED TOLERANCES
F ±0.15
D ±0.10
E ±0.14 ±0.20
H ±0.10 ±0.15

MACHINED SURFACES: 3.2 MAX
★ CRITICAL TO QUALITY
INGERSOLL RAND TOOLING: 88793

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DO NOT SCALE DRAWING
DRAWING CONFORMS TO ASME Y14.5M-1994
NO MANUAL REVISIONS ALLOWED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS AND SHALL BE IN ACCORDANCE WITH ASME Y14.5M-1994

DATE: 01/15/16
BY: K.Zimmer
CHECKED: 01/15/16
APPROVED: D.Neider

SCALE: 1:00

SOURCE CONTROL DRAWING

IR Ingersoll Rand

REACTION PLATE, 52MM CRANKED

INGERSOLL RAND PART NO. NSP-766-52CR
WEIGHT: 0.8 kilogram

SCALE: 1:00

REV: A1

DATE: 01/15/16

BY: K.Zimmer

CHECKED: 01/15/16

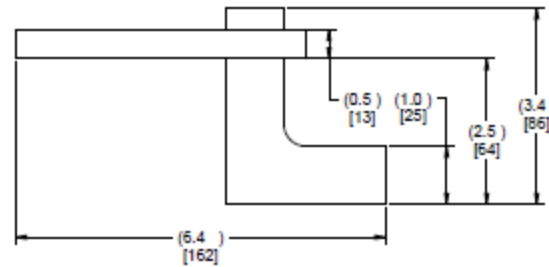
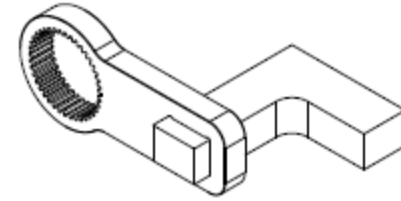
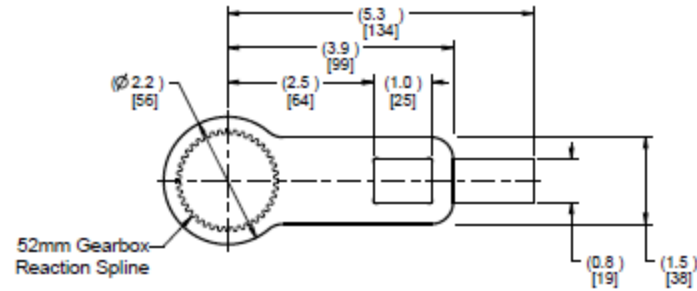
APPROVED: D.Neider

1 of 1

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NOTES:

REV	BY	CHK	DESCRIPTION	DATE	DRWN	APPRVD
1	02/10/2016		ORIGINAL RELEASE	12-02-16	KJZ	UVB



RELEASED

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	W1296.52
MFR NAME	ADDRESS	PART NO.

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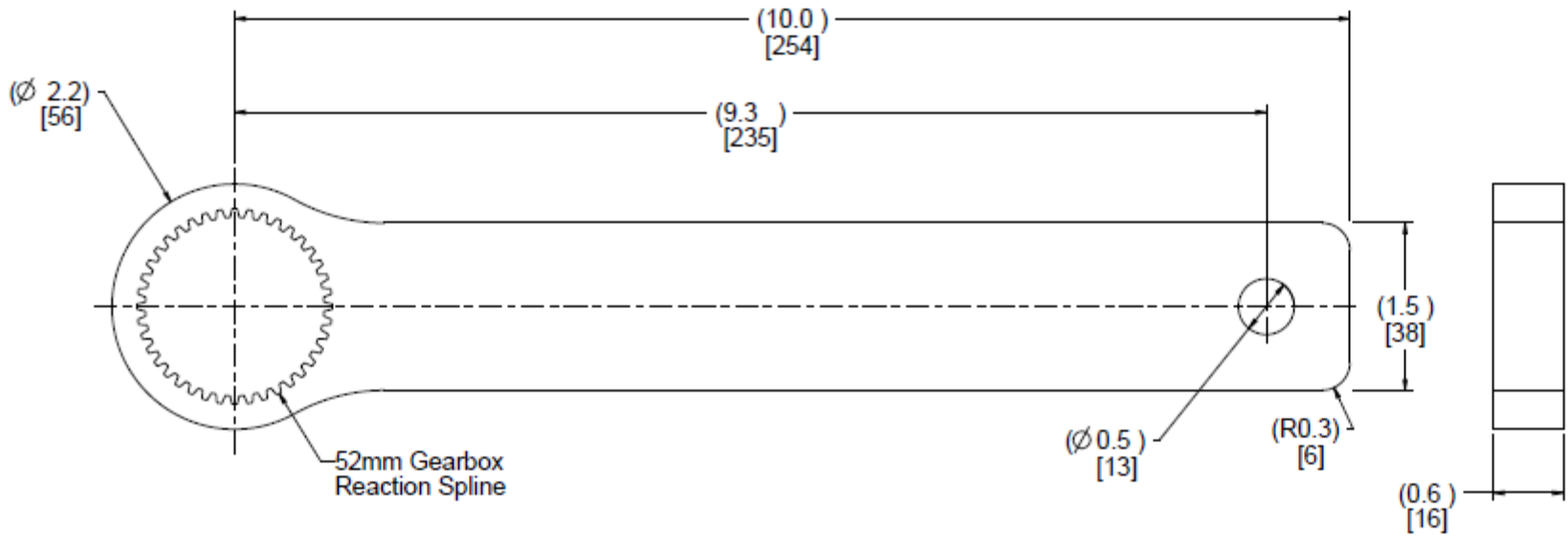
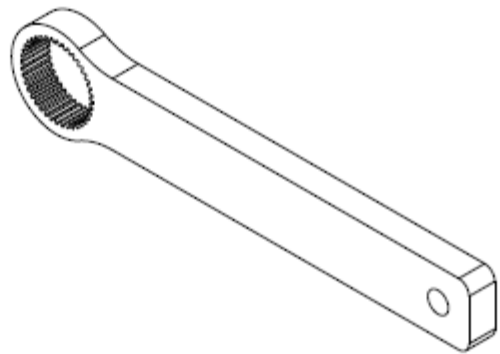
MATERIAL --- STEEL - 4140 --- --- ALTERNATE MATERIAL ---	STANDARD TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-2014 UNSPECIFIED TOLERANCES: FRACTIONS ± 0.10 DECIMALS ± 0.25 ANGLES ± 1.0° MACHINED SURFACES 3.2 MAX ◆ CRITICAL TO QUALITY DIMENSIONS SHOWN SHALL APPLY	REVISIONS UNLESS OTHERWISE SPECIFIED THIS DRAWING IS THE PROPERTY OF INGERSOLL RAND CO. AND IS LOANED TO THE RECIPIENT IN CONFIDENCE. THE RECIPIENT IN RECEIVING AND RETENTION OF THE DRAWING ACCEPTS THE DRAWING IN CONFIDENCE AND AGREES THAT, EXCEPT AS AUTHORIZED IN WRITING BY INGERSOLL RAND CO. IT SHALL (1) NOT USE THE DRAWING OR ANY COPY THEREOF OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN; (2) NOT COPY THE DRAWING; (3) NOT DISCLOSE TO OTHERS EITHER THE DRAWING OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN; AND (4) UPON COMPLETION OF THE NEED TO RETAIN THE DRAWING OR UPON DEMAND, RETURN THE DRAWING, ALL COPIES THEREOF, AND ALL MATERIAL COPIED THEREFROM.
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DO NOT SCALE DRAWING
DRAWING CONFORMS TO ASME Y14.5M - 2014
CAD GENERATED DRAWING
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UNLESS OTHERWISE SPECIFIED DIMENSIONS SHALL BE IN ACCORDANCE WITH ASME Y14.5
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DATE	REV
02/10/2016	001/01
DESIGNER	02/10/2016
02/10/2016	001/01
DRAWN BY	02/10/2016
02/10/2016	001/01

SOURCE CONTROL DRAWING	
REACTION BAR, CRANKED 90	
REV	DESCRIPTION
A1	0.016 Kg
SCALE	1:00
NSP-766-52CR90	NSP-766-52CR90
DATE	REV
12-02-16	001/01

REVISIONS			
DATE	BY	CHK	DESCRIPTION
	A	CONTROLLER	PRELIMINARY RELEASE
			DATE
			BY
			APPROVED
			JOB



RELEASED

NORBAR TORQUE TOOLS INC	WILLOUGHBY, OHIO USA	W1193.S
MFR NAME	ADDRESS	PART NO.

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 INGERSSOL RAND IS THE SOURCE OF SUPPLY

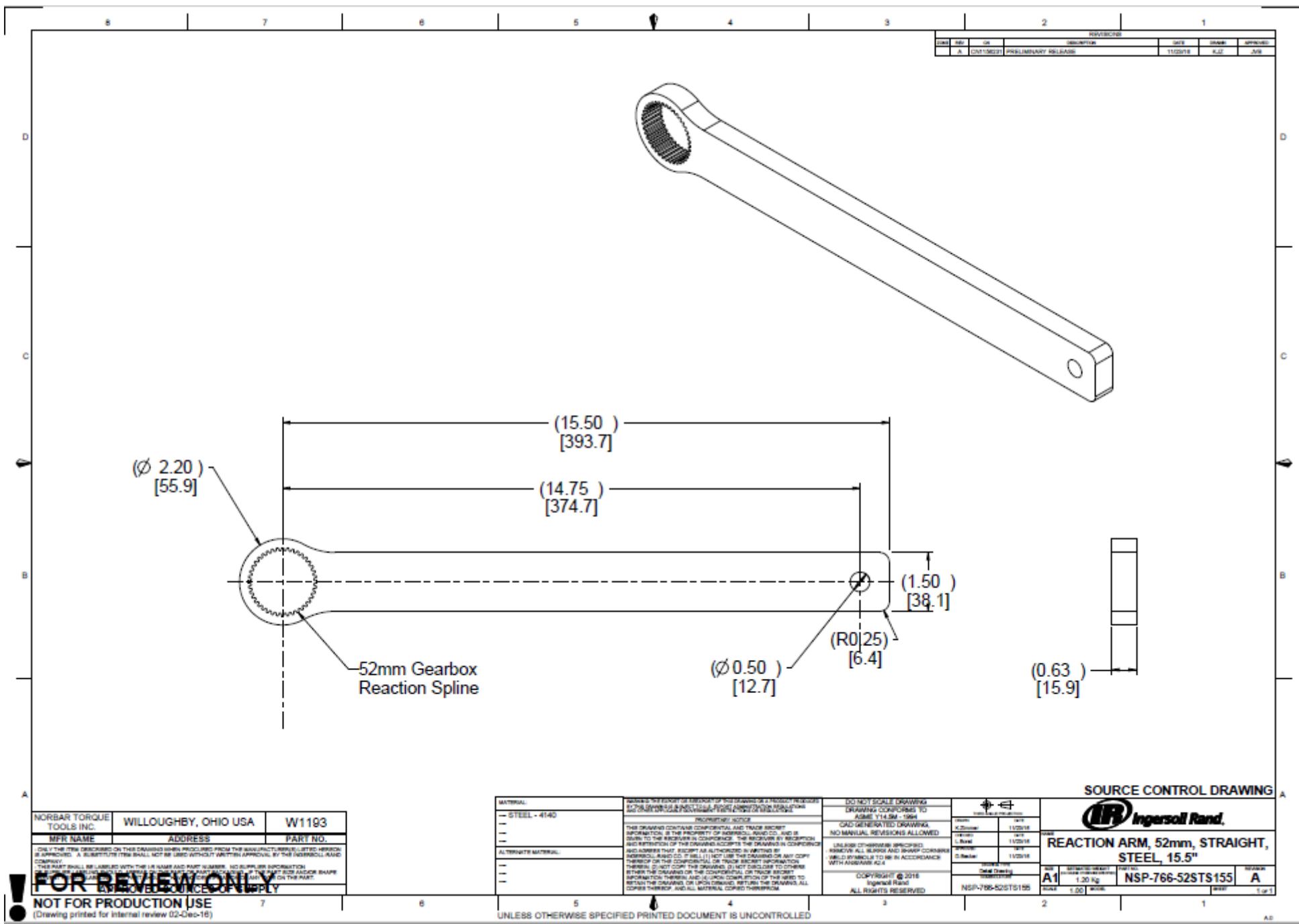
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MATERIAL	UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED
STEEL - 4140	
ALTERNATE MATERIAL	

DO NOT SCALE DRAWING
 DRAWING CONFORMS TO ASME Y14.5M - 1994
 CAD GENERATED DRAWING
 NO MANUAL REVISIONS ALLOWED
 UNLESS OTHERWISE SPECIFIED, INKER ALL WELDS AND SWEEP CORNERS SHALL BE MADE TO BE IN ACCORDANCE WITH STANDARD A-4
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DATE	BY
DATE	BY
DATE	BY
DATE	BY

SOURCE CONTROL DRAWING	
Ingersoll Rand	
REACTION PLATE	
52mm FLAT	
SIZE	WEIGHT
A1	1.20 Kg
SCALE	1:00
PART NO.	NSP-766-52ST
REVISION	A
DATE	1 of 1



REV	BY	DA	DESCRIPTION	DATE	SCALE	APPROVED
A	CONTRO21		PRELIMINARY RELEASE	11/20/18	1:1	JOB

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	W1193
MFR NAME	ADDRESS	PART NO.

ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE MANUFACTURER LISTED HEREIN IS APPROVED. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT WRITTEN APPROVAL BY THE INGERSOLL RAND COMPANY.
 THIS PART SHALL BE LABELED WITH THE LR NAME AND PART NUMBER. NO SUPPLIER INFORMATION SHALL BE PRINTED OR STAMPED ON THIS PART OR PART PACKAGING, IF THE PART BEING ORDERED IS A REWORK PART, THE PART NUMBER SHALL BE INDICATED ON THE PART.
 APPROVED SOURCES OF SUPPLY

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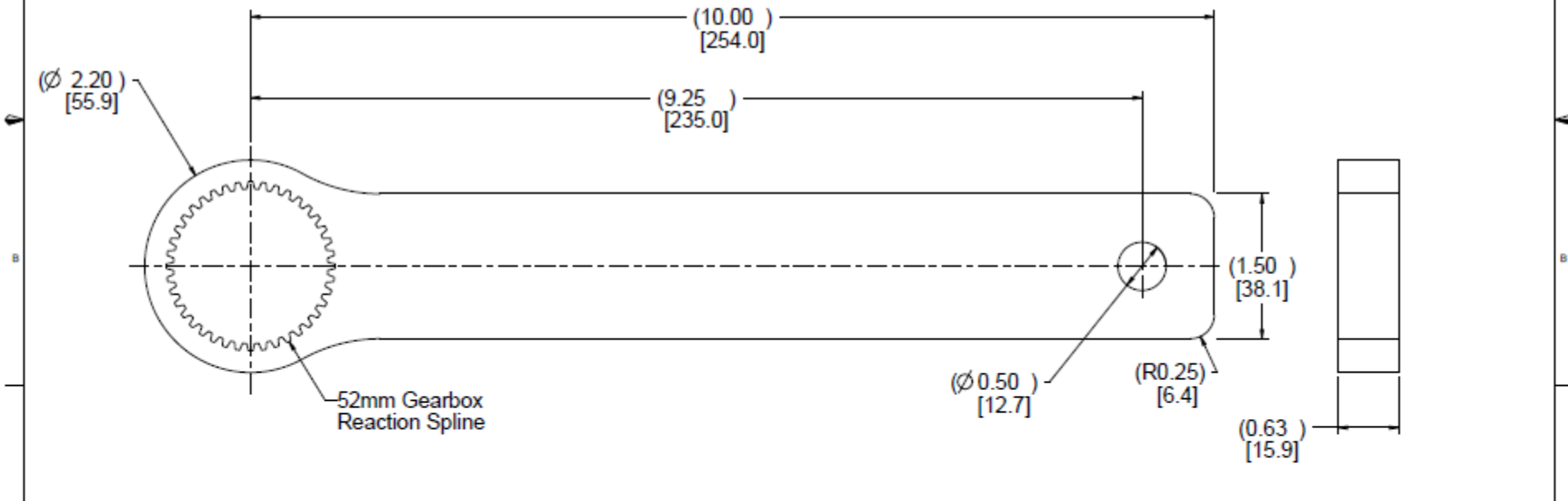
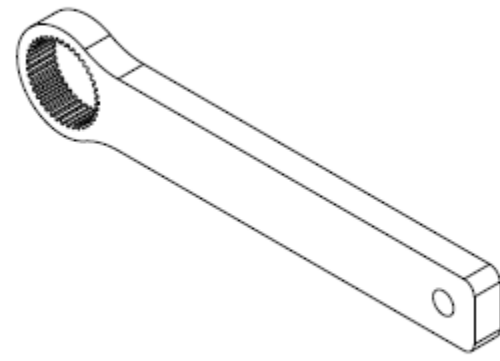
MATERIAL	UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED
--- STEEL - 4140	
ALTERNATE MATERIAL	

UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED

DO NOT SCALE DRAWING
 DRAWING CONFORMS TO
 ASME Y14.5M - 1994
 CAD GENERATED DRAWING
 NO MANUAL REVISIONS ALLOWED

	REACTION ARM, 52mm, STRAIGHT, STEEL, 15.5"
A1	NSP-766-52STS155

DATE	REV	OR	DESCRIPTION	DATE	DRAWN	APPROVED
	A	02/19/2016	PRELIMINARY RELEASE	11/20/16	KJZ	JOB



SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	W1394.S
MFR NAME	ADDRESS	PART NO.

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THIS PART SHALL BE LABELED WITH THE LR NAME AND PART NUMBER. NO SUPPLIER INFORMATION SHALL BE LABELED ON THIS PART OR PART NUMBER. THE PART SIZE AND/OR SHAPE SHALL BE LABELED ON THE PART OR PART NUMBER. THE PART SHALL BE LABELED WITH THE LR NAME AND PART NUMBER.

MATERIAL:	ALUMINUM 6061
ALTERNATE MATERIAL:	

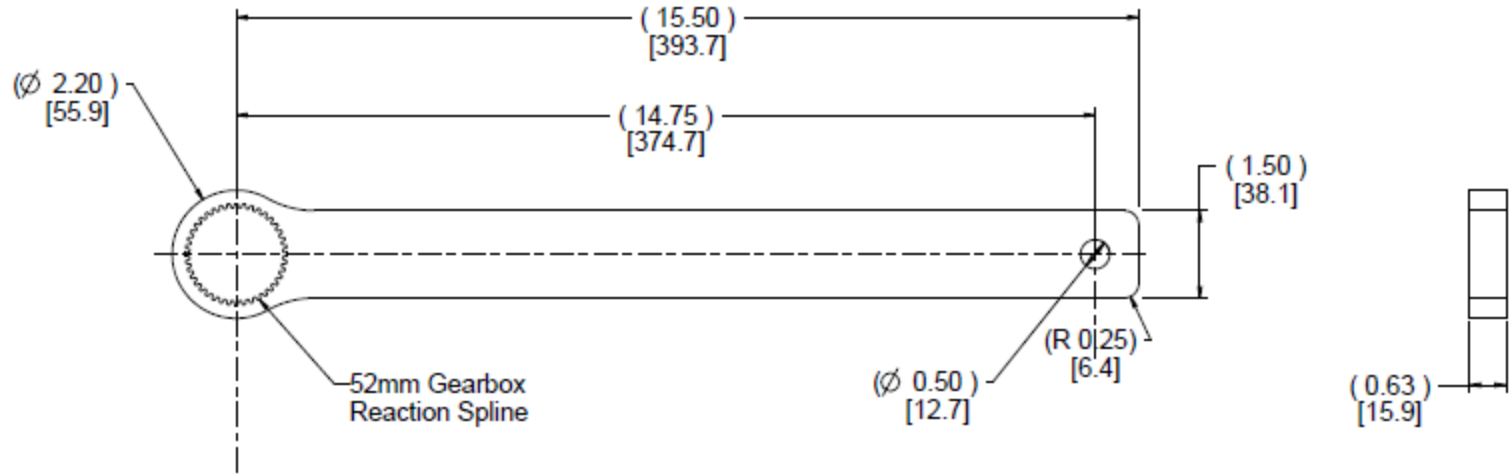
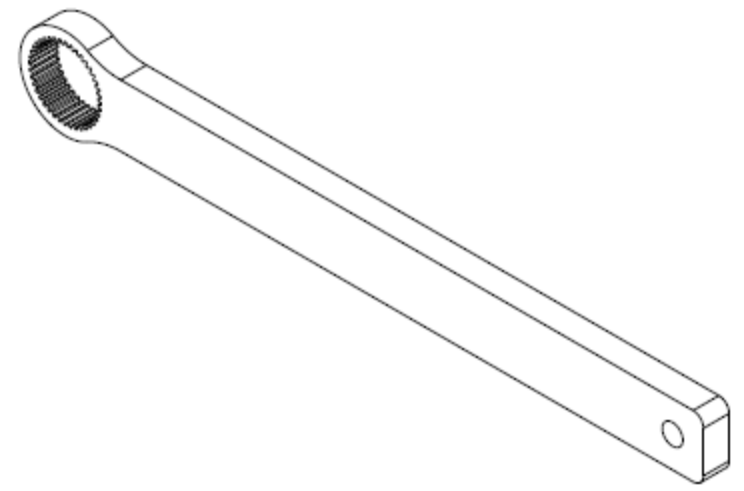
UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED
UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED

DO NOT SCALE DRAWING	DRAWING CONFORMS TO ASME Y14.5M - 1994
NO MANUAL REVISIONS ALLOWED	
DATE	11/20/16
DATE	11/20/16
DATE	11/20/16

REACTION ARM, 52mm, STRAIGHT, ALUMINUM, 10.0"
A1 1.20 kg NSP-766-52STA100 **A**

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DATE	REV	OR	DESCRIPTION	DATE	DRAWN	APPROVED
A	001	0001	PRELIMINARY RELEASE	11/20/18	KJZ	JAB



NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	W1394
MFR NAME	ADDRESS	PART NO.

ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE MANUFACTURER LISTED HEREON IS APPROVED. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT WRITTEN APPROVAL BY THE INGERSOLL RAND COMPANY.

THIS PART SHALL BE LABELED WITH THE LR NAME AND PART NUMBER. NO SUPPLIER INFORMATION SHALL BE PLACED ON THIS PART OR ANY PART OF THIS PART OR ANY PART OF THIS PART OR ANY PART OF THIS PART.

MATERIAL:	ALUMINUM - 6061
ALTERNATE MATERIAL:	

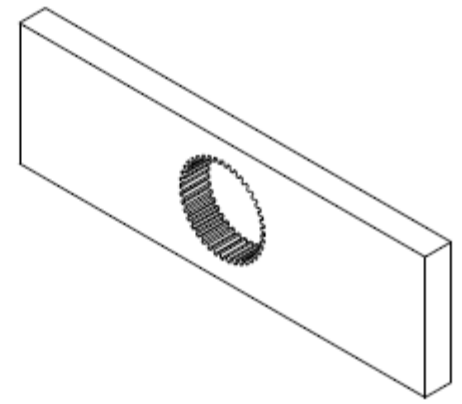
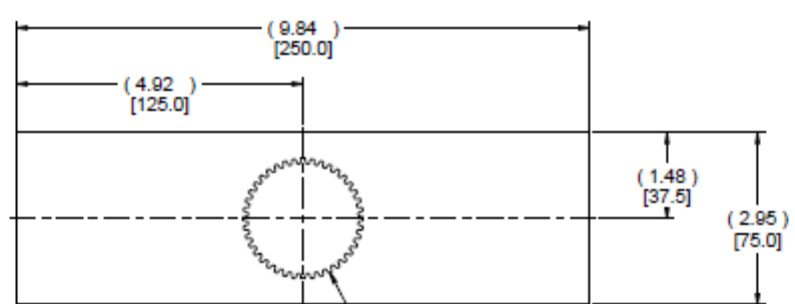
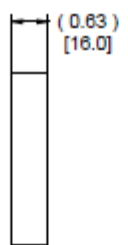
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DO NOT SCALE DRAWING	DRAWING CONFORMS TO ASME Y14.5M - 1994
CAD GENERATED DRAWING	NO MANUAL REVISIONS ALLOWED
UNLESS OTHERWISE SPECIFIED REMOVE ALL SHARP AND CHAMFER CORNERS PER 2D SYMBOL TO BE IN ACCORDANCE WITH ANSI/ASME Y14.5	
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SOURCE CONTROL DRAWING	
IR Ingersoll Rand	
REACTION ARM, 52mm, STRAIGHT, ALUMINUM, 15.5"	
REV: A1	DESCRIPTION: NSP-766-52STA155
DATE: 11/20/18	QTY: 1.00
WEIGHT: 1.20 Kg	UNIT: 1 of 1

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DATE	REV.	BY	DESCRIPTION	DATE	BY	APPROVED
	A	CVT190221	ORIGINAL RELEASE	20-Feb-18	KJJ	LVB



52mm Gearbox
Reaction Spline

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	18590
MFR NAME	ADDRESS	PART NO.

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MATERIAL	STANDARD TOLERANCES
--- STEEL - 4140	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994
---	UNFRACTIONED TO FINISHES: X +/- 1.0, XX +/- 0.25, XXX +/- 0.15
ALTERNATE MATERIAL	ANGLES +/- 1.0°
---	MATCHED SURFACES: 3.2 MAX
---	◆ CRITICAL TO QUALITY
---	FINISHES: SEE ASSEMBLY DRAWING

UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994

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DO NOT SCALE DRAWING

DRAWING CONFORMS TO ASME Y14.5M-1994

NO MANUAL REVISIONS ALLOWED

CAD GENERATED DRAWING

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994

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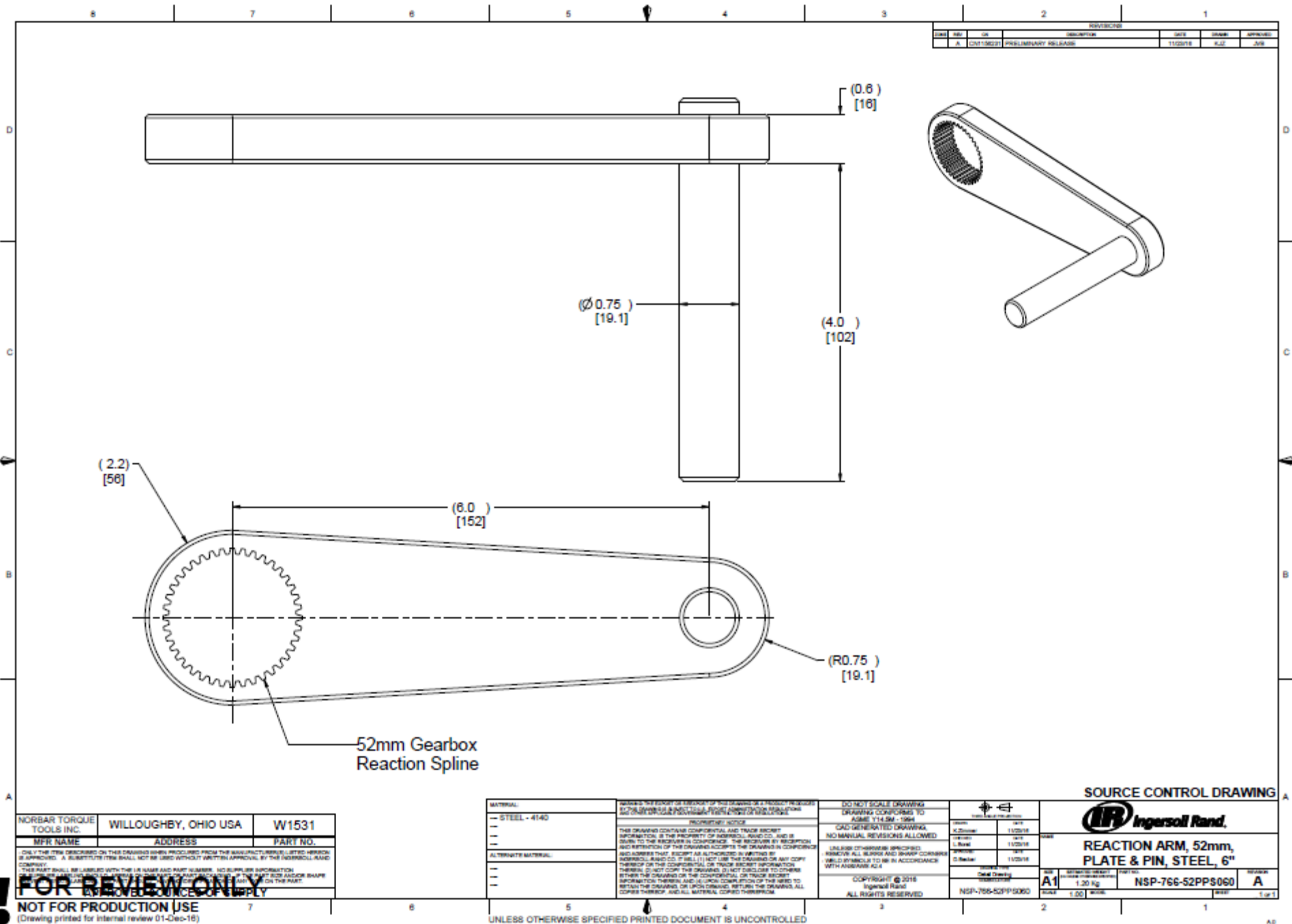
INGERSOLL RAND

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DATE	REV.
11/20/16	011
11/20/16	012
11/20/16	013
11/20/16	014

INGERSOLL RAND	
REACTION ARM, 52 MM, STRAIGHT, STEEL, DOUBLE SIDED	
DATE	REV.
11/20/16	011
11/20/16	012
11/20/16	013
11/20/16	014
SCALE	1:1
WEIGHT	0.0 kilogram
PART NO.	NSP-766-52STD098
REV.	A

SOURCE CONTROL DRAWING



REV	BY	DA	DESCRIPTION	DATE	DRWN	APPRVD
1	A	01/18/2018	PRELIMINARY RELEASE	11/20/18	KJJ	JOB

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	W1531
MFR NAME	ADDRESS	PART NO.

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MATERIAL	UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED
STEEL - 4140	
ALTERNATE MATERIAL	

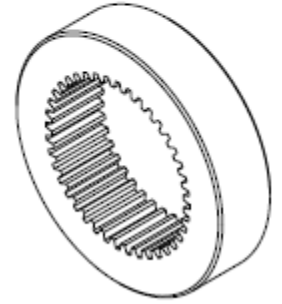
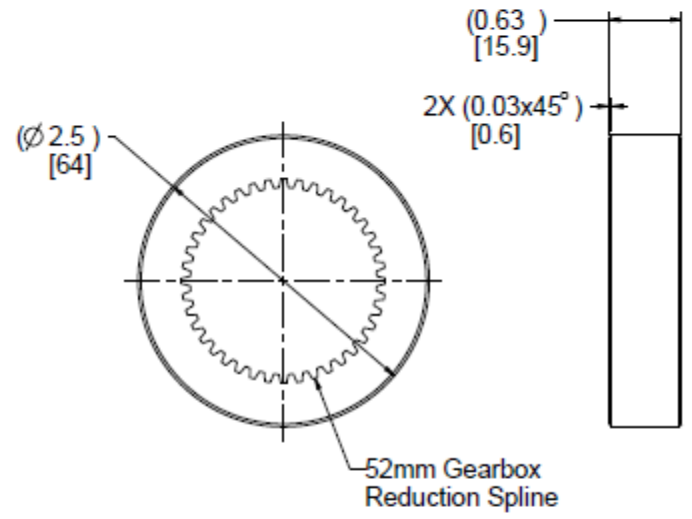
DO NOT SCALE DRAWING
 DRAWING CONFORMS TO
 ASME Y14.5M - 1994
 CAD GENERATED DRAWING
 NO MANUAL REVISIONS ALLOWED
 UNLESS OTHERWISE SPECIFIED
 INFER ALL DIMS AND DIMS CONFORM
 WITH ASME Y14.5
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DATE	REV
11/20/18	001
11/20/18	002
11/20/18	003
11/20/18	004

SOURCE CONTROL DRAWING	
IR Ingersoll Rand	
REACTION ARM, 52mm, PLATE & PIN, STEEL, 6"	
REV	DATE
A1	11/20/18
QTY	1.20 kg
DATE	1.00
NSP-766-52PP0060	NSP-766-52PP0060
REV	DATE
A	11/20/18

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REVISED		DATE	BY	APPROVED
DATE	BY	DATE	BY	APPROVED
A	02/10/2016	ORIGINAL RELEASE	DES/16	KJJ



RELEASED

MFR NAME	WILLOUGHBY, OHIO USA	PART NO.
52WR		

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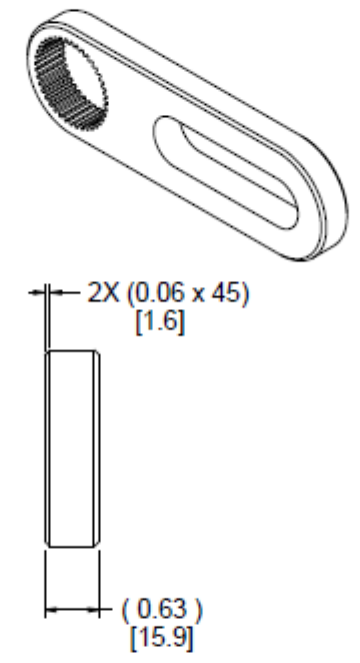
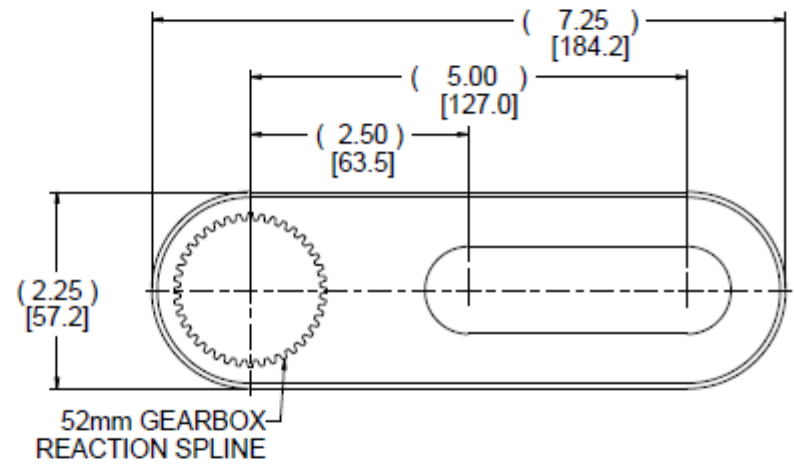
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DO NOT SCALE DRAWING	DATE	BY
DRAWING CONFORMS TO ASME Y14.5M - 1994	02/10/16	DES/16
NO MANUAL REVISIONS ALLOWED	DATE	BY
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES AND DECIMALS THEREOF. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE TO BE HOLE DIMENSIONS. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE TO BE HOLE DIMENSIONS. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE TO BE HOLE DIMENSIONS.	02/10/16	DES/16
COPYRIGHT © 2016 Ingersoll Rand	DATE	BY
ALL RIGHTS RESERVED	02/10/16	DES/16

SOURCE CONTROL DRAWING	
RING, WELD 52	
SIZE	WEIGHT
A1	0.22 kg
DATE	ISSUE
02/10/16	001
NSP-766-52WR	A

DATE	BY	CHK	DESCRIPTION	SIZE	QTY	APPROVAL
A	02/18/2016		ORIGINAL RELEASE	1102018	1.00	1/1



NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	W1311.1
MFR NAME	ADDRESS	PART NO.
<small>ONLY THE ITEM DESCRIBED ON THE DRAWING SHALL BE PRODUCED FROM THE MANUFACTURER LISTED HEREIN UNLESS OTHERWISE SPECIFIED. A SUBSTITUTE ITEM SHALL NOT BE USED WITHOUT WRITTEN APPROVAL BY THE INGERSSOLL RAND COMPANY.</small>		
<small>THIS PART SHALL BE LABELED WITH THE I/R NAME AND PART NUMBER. NO SUPPLIER INFORMATION SHALL BE LABELED ON THIS PART OR PART PACKAGING. IF THE PART SIZE AND/OR SHAPE DIFFERS FROM THE DRAWING, THE USER SHALL CONTACT THE SUPPLIER IMMEDIATELY.</small>		

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MATERIAL	UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED	DO NOT SCALE DRAWING
STEEL - 4140	UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED	DRAWING CONFORMS TO ASME Y14.5M - 1994
	UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED	NO MANUAL REVISIONS ALLOWED
	UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED	UNLESS OTHERWISE SPECIFIED REMOVE ALL BURRS AND SWAMP CORNERS WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/AWS A3.4
	UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED	COPYRIGHT © 2016 Ingersoll Rand ALL RIGHTS RESERVED

DATE	BY	CHK
11/20/18		
DATE	BY	CHK
11/20/18		
DATE	BY	CHK
11/20/18		
DATE	BY	CHK
11/20/18		

SOURCE CONTROL DRAWING

REACTION ARM, 52mm, SLIDING SLAVE, STEEL, 5"

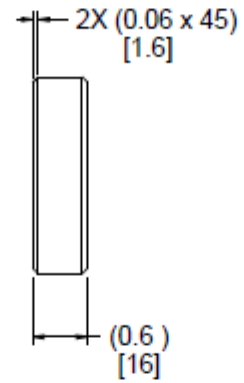
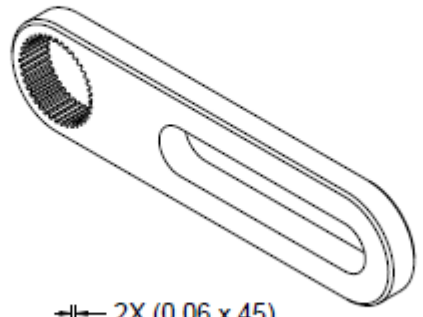
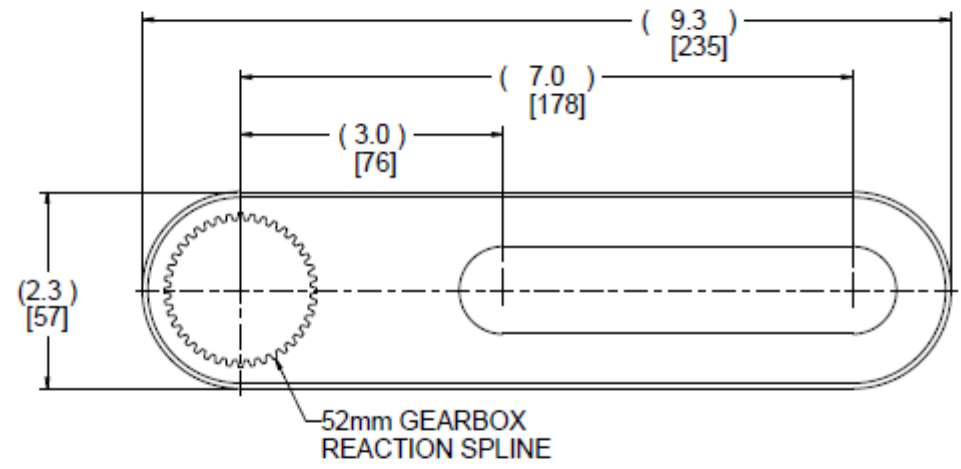
NSP-766-S2SL5050

A1 1.0 kg

NSP-766-S2SL5050

1 of 1

REV	NO.	DATE	DESCRIPTION	BY	CHKD	APPROVED
1	1	02-09-16	ORIGINAL RELEASE			



RELEASED

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	W1645.1
MFR NAME	ADDRESS	PART NO.

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MATERIAL: --- STEEL - 4140	UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED	DO NOT SCALE DRAWING DRAWING CONFORMS TO ASME Y14.5M - 1994 NO MANUAL REVISIONS ALLOWED
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INGERSOLL RAND CO. 11000 W. 12TH AVE. MINNEAPOLIS, MN 55426 COPYRIGHT © 2016 INGERSOLL RAND ALL RIGHTS RESERVED	NSP-766-52SL
--	--------------

SOURCE CONTROL DRAWING

PLATE, SLIDING REACTION 52

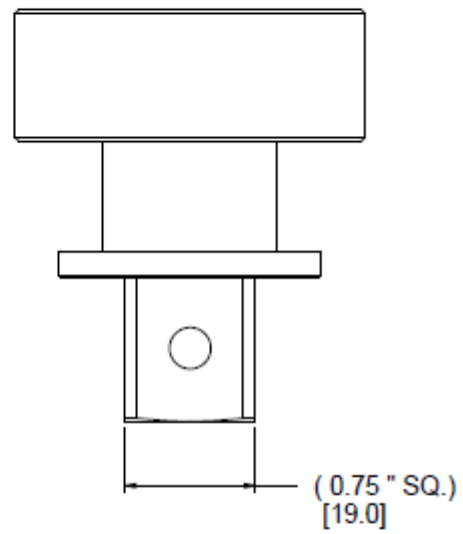
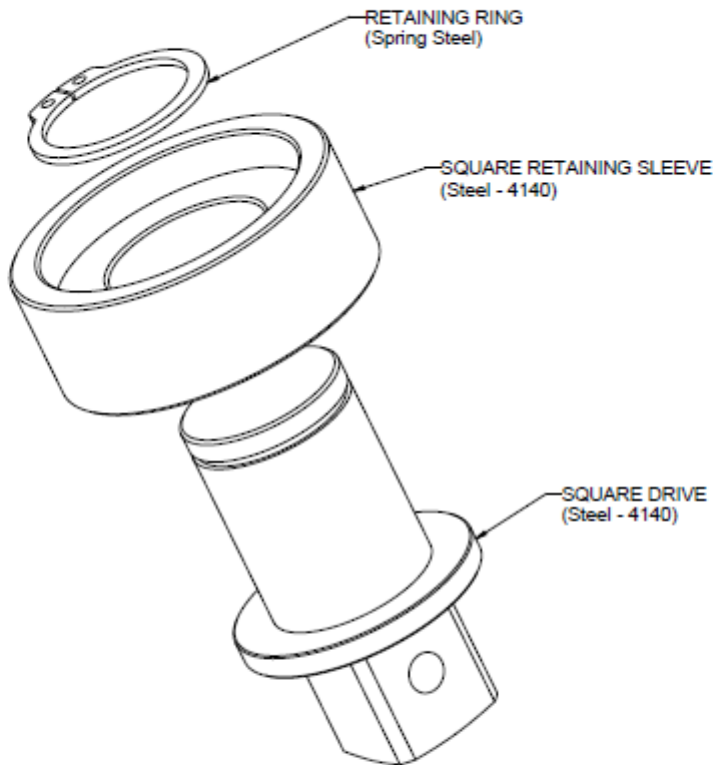
NSP-766-52SL B

1 of 1

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(Drawing printed for internal review 02-Dec-16)

REVISIONS				DATE	BY	APPROVED
REV	NO.	OR	DESCRIPTION	DATE	BY	APPROVED
A			ORIGINAL RELEASE	02/05/16	KJZ	LVB



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MATERIAL:
 --- See Above

ALTERNATE MATERIAL:

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 WELD SYMBOLS TO BE IN ACCORDANCE
 WITH ASME 9.4

DATE DRAWING
 02/05/16

NSP-766-52SLK12

SOURCE CONTROL DRAWING

Ingersoll Rand

KIT, SLIDING REACTION ARM 3/4"

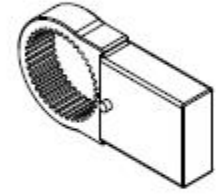
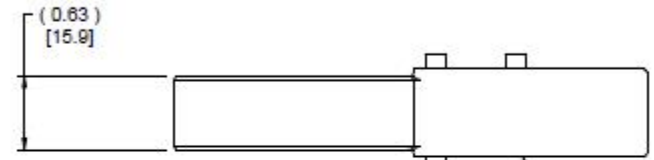
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NSP-766-52SLK12

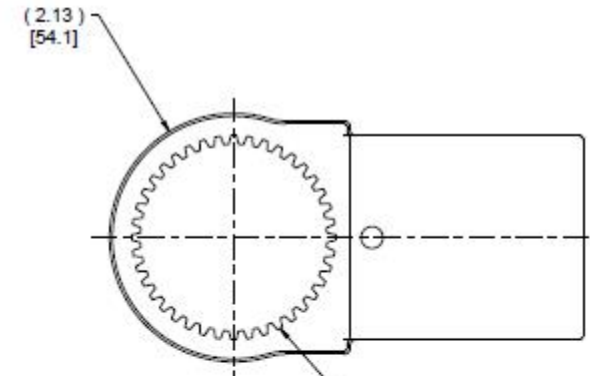
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1 of 1

REV	DATE	DESCRIPTION	BY	CHKD	APPROVED	
A	02/15/2016	PRELIMINARY RELEASE		11/01/16	KJJ	JAB



ROLL PIN SPRING DETENT



52mm Gearbox Reaction Spline

SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	18558
MFR NAME	ADDRESS	PART NO.

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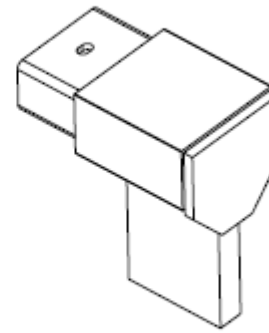
MATERIAL: --- CAST STEEL	UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED
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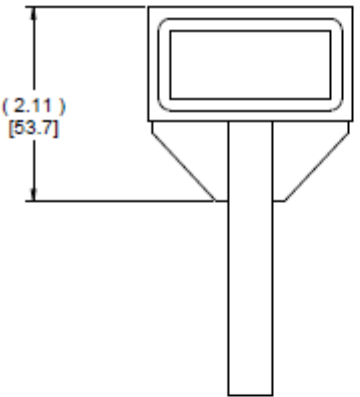
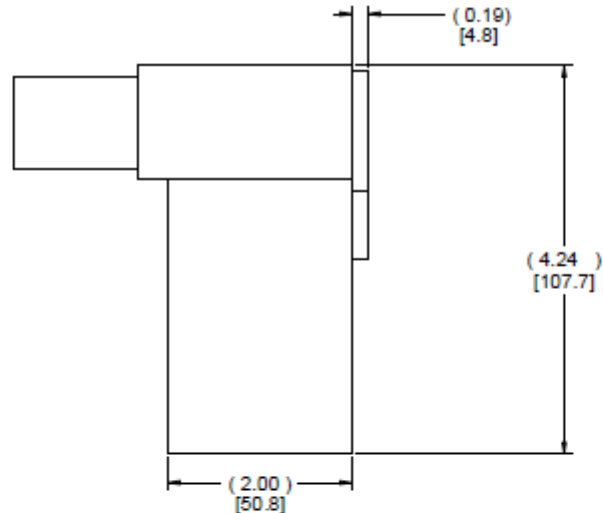
DATE DRAWING 11/01/16
DATE CHECKED 11/01/16
DATE RELEASED 11/01/16
DATE APPROVED 11/01/16

REACTION ARM, 52mm, YOKE, CAST STEEL	
SIZE A1	WEIGHT 1.20 kg
SCALE 1:00	PART NO. NSP-766-52Y
	REV A

REV	BY	CHK	DESCRIPTION	DATE	ISSUED	APPROVED
A			ORIGINAL RELEASE	11/09/16	KJE	LVM



SCALE 1.000



SOURCE CONTROL DRAWING



**REACTION ARM, 52/72MM,
YOKE TUBE AND PADDLE**

MFR NAME	WILLOUGHBY, OHIO USA	18241
ADDRESS		
PART NO.		

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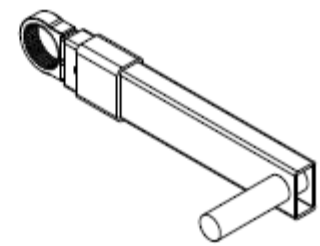
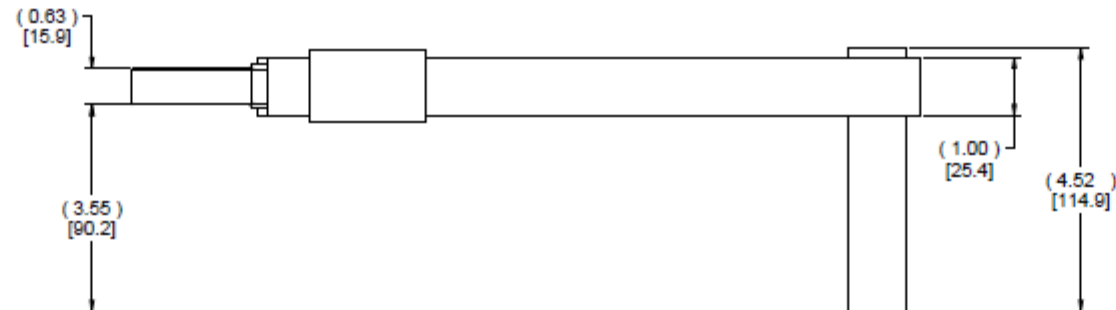
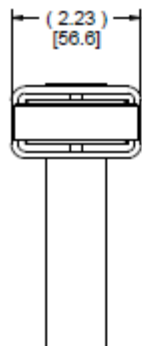
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MATERIAL TUBE AND SLEEVE - STEEL - 4130	STANDARD TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994 UNSPECIFIED TOLERANCES: X ±1.0 Z ±0.5 X, Z ±0.25 ANGLES ±1° MACHINED SURFACES 3:2 MAX ★ CRITICAL TO QUALITY INGERSOLL RAND - TORQUE TOOLS - SPECIFIC	WARNING: THE SOURCE OR RECEIPT OF THIS DRAWING OR A PRODUCT PRODUCED THEREFROM IS NOT TO BE RELEASED TO ANY OTHER PARTY WITHOUT THE WRITTEN PERMISSION OF INGENERSOLL RAND. PROPRIETARY NOTICE THIS DRAWING CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION IS THE PROPERTY OF INGENERSOLL RAND CO. AND IS GIVEN TO THE RECEIVER IN CONFIDENCE. THE RECEIVER BY ACCEPTANCE AND RETENTION OF THE DRAWING ACCEPTS THE DRAWING IN CONFIDENCE AND AGREES THAT, EXCEPT AS AUTHORIZED IN WRITING BY INGENERSOLL RAND CO. IT WILL (1) NOT USE THE DRAWING OR ANY COPY THEREOF OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN; (2) NOT COPY THE DRAWING; (3) NOT DISCLOSE TO OTHERS THE INFORMATION THEREIN; AND (4) UPON COMPLETION OF THE WORK TO WHICH THE DRAWING OR LAPON DRAWING RELATES RETURN THE DRAWING, ALL COPIES THEREOF, AND ALL MATERIAL COMED THEREFROM.	DO NOT SCALE DRAWINGS DRAWING CONFORMS TO ASME Y14.5M - 1994 CAD GENERATED DRAWING NO MANUAL REVISIONS ALLOWED UNLESS OTHERWISE SPECIFIED FINISH: ALL SURFACES AND SHARP CORNERS - WELD SYMBOLS TO AN IN ACCORDANCE WITH ANSI/ASME A2.4 COPYRIGHT © 2016 Ingersoll Rand ALL RIGHTS RESERVED
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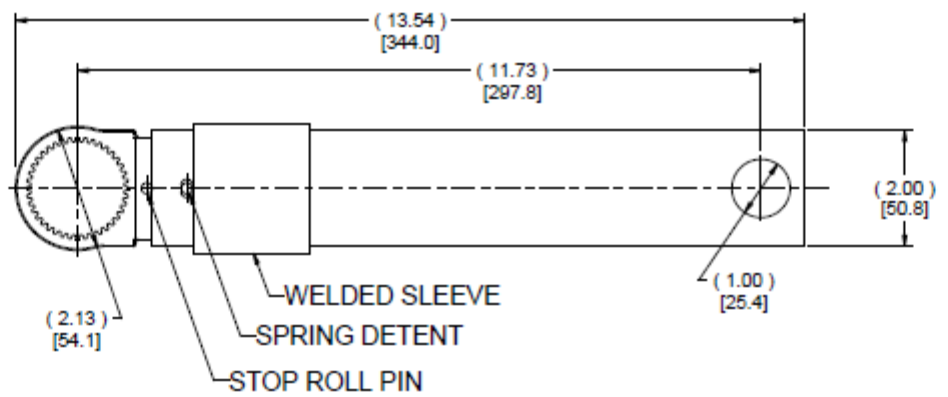
DATE	11/09/16
ISSUED	11/09/16
BY	KJE
CHK	LVM
DATE	11/09/16
ISSUED	11/09/16
BY	KJE
CHK	LVM

SCALE	1.000	UNIT	MM
WEIGHT	0.0 kilogram	PART NO.	NSP-766-52-72YP
REV	A1	DATE	11/09/16
ISSUED	11/09/16	BY	KJE
CHK	LVM	DATE	11/09/16
ISSUED	11/09/16	BY	KJE
CHK	LVM	DATE	11/09/16
ISSUED	11/09/16	BY	KJE
CHK	LVM	DATE	11/09/16

REV	NO.	BY	DESCRIPTION	DATE	CHKD	APPROV
1	A	CVT100221	ORIGINAL RELEASE	11/07/18	KJZ	LSB



SCALE 0.500



ITEM	QTY.	PART NO.	NOMENCLATURE	DESCRIPTION	MATL.	SHITZ
2	1	NSP-766-52Y	NSP-766-52Y	REACTION ARM, 52mm, YOKE		
1	1	NSP-766-52-72YTP	NSP-766-52-72YTP	REACTION ARM, 52/72MM YOKE TUBE AND PEG		

BOM FOR NSP-766-52YTA

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	18558 CONFIG. 1
MFR NAME	ADDRESS	PART NO.

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STANDARD TOLERANCES
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994

UNFINISHED TO FINISHES:
F ± 0.15
X ± 0.25
Z ± 0.50
ANGLES ± 1.0°

MACHINED SURFACES: 3.2 MAX

◆ CRITICAL TO QUALITY

INTEGRAL AND NON-INTG. METALS

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SOURCE CONTROL DRAWING

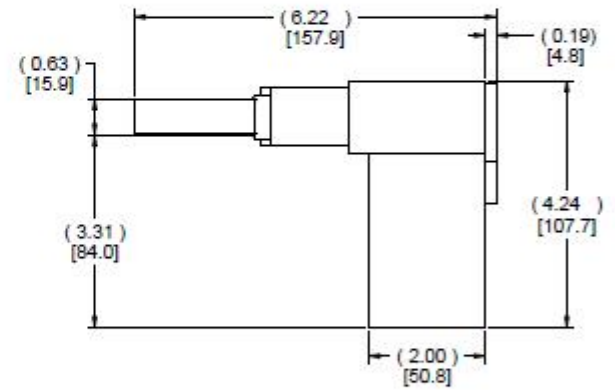
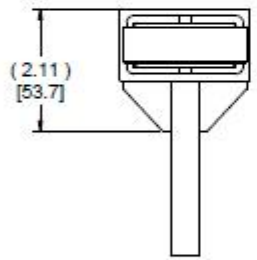
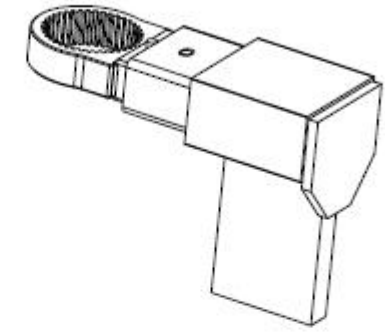
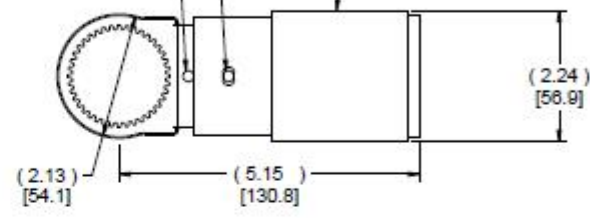
REACTION ARM, 52MM, YOKE AND TUBE ASSEMBLY

REV: A1	DATE: 11/07/18	DESIGNER: K.ZEMMER	DATE: 11/07/18
DRWING: A1	DATE: 11/07/18	CHKD: L.BORST	DATE: 11/07/18
APPV: A1	DATE: 11/07/18	APPV: D.BROCK	DATE: 11/07/18

WEIGHT: 0.0 kilogram
SCALE: 1:00

REV	NO.	DATE	DESCRIPTION	BY	CHKD	APPROVED
A	001	11/01/16	ORIGINAL RELEASE			

SPRING DETENT
STOP ROLL PIN
WELDED SLEEVE



ITEM	QTY.	PART NO.	NOMENCLATURE	DESCRIPTION	MATL.	SHT/2
2	1	NSP-766-52Y	NSP-766-52Y	REACTION ARM, 52mm, YOKE		
1	1	NSP-766-52-72YP	NSP-766-52-72YP	REACTION ARM, 52/72MM, YOKE TUBE AND PADDLE		

BOM FOR NSP-766-52YPA

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	18558 CONFIG. 2
MFR NAME	ADDRESS	PART NO.

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STANDARD TOLERANCES
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ANSI Y14.5M-1994
UNSPECIFIED TOLERANCES:
FRACTIONS: ± 0.10
DECIMALS: ± 0.05
ANGLES: ± 1°
HARDWARE: AS SHOWN
★ CRITICAL TO QUALITY
DIMENSIONS ARE UNLESS OTHERWISE SPECIFIED

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DATE	BY	CHKD
11/01/16	WTS	WTS
11/01/16	WTS	WTS
11/01/16	WTS	WTS

SOURCE CONTROL DRAWING

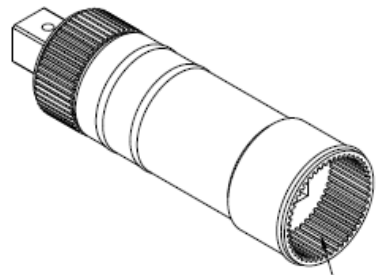
IR Ingersoll Rand

REACTION ARM, YOKE AND PADDLE ASSEMBLY

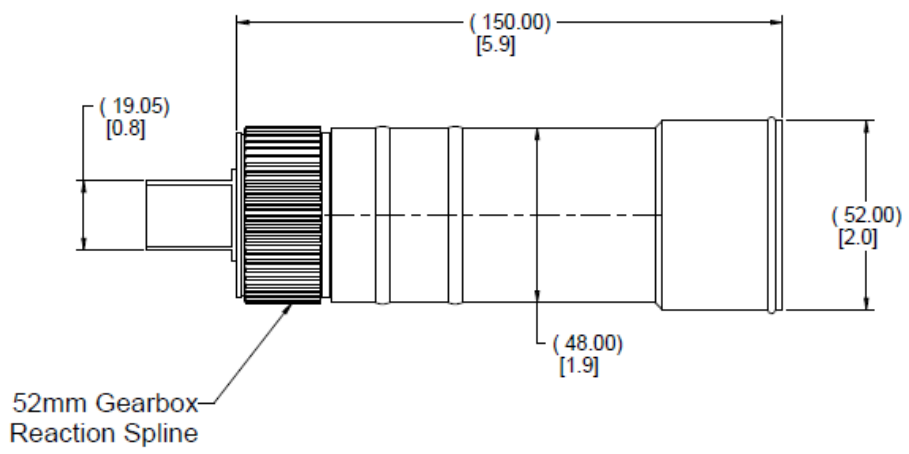
SIZE: A1
SCALE: 1:00
SHEET NO.: 1 OF 1

200 & 500 Nm TOOLS
52 mm SPLINE
EXTENSIONS

REVISIONS						
ZONE	REV	CH	DESCRIPTION	DATE	DRAWN	APPROVED
	A		ORIGINAL RELEASE	12/07/2016	KJZ	LWB



52mm Gearbox Reaction Spline



52mm Gearbox Reaction Spline

SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	19045.006
MFR NAME	ADDRESS	PART NO.

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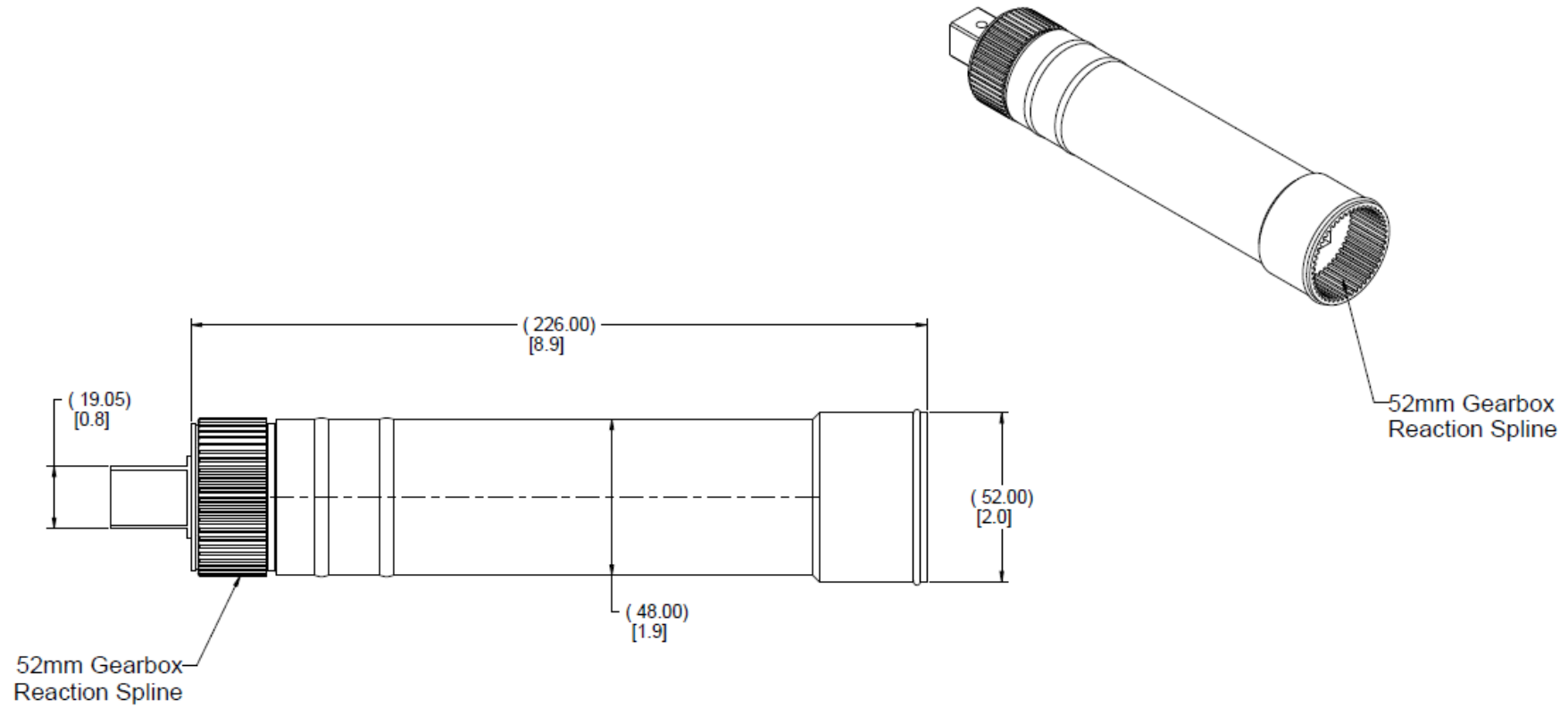
STANDARD TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994	WARNING: THE REPORT OR RECEIPT OF THIS DRAWING OR A PRODUCT PRODUCED BY THE DRAWING IS SUBJECT TO U.S. EXPORT ADMINISTRATION REGULATIONS AND OTHER APPLICABLE GOVERNMENT RESTRICTIONS OR REGULATIONS.	DO NOT SCALE DRAWING DRAWING CONFORMS TO ASME Y14.5M - 1994
UNSPECIFIED TOLERANCES: X +/- 1.0 XX +/- 0.5 XXX +/- 0.25 ANGLES +/- 1.0° MACHINED SURFACES 3.2 MAX * CRITICAL TO QUALITY	PROPRIETARY NOTICE THIS DRAWING CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION IS THE PROPERTY OF INGERSOLL-RAND CO. AND IS GIVEN TO THE RECEIVER IN CONFIDENCE. THE RECEIVER BY RECEPTION AND RETENTION OF THE DRAWING ACCEPTS THE DRAWING IN CONFIDENCE AND AGREES THAT, EXCEPT AS AUTHORIZED IN WRITING BY INGERSOLL-RAND CO. (IT WILL (1) NOT USE THE DRAWING OR ANY COPY THEREOF OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN; (2) NOT COPY THE DRAWING; (3) NOT DISCLOSE TO OTHERS EITHER THE DRAWING OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN; AND (4) UPON COMPLETION OF THE NEED TO RETAIN THE DRAWING OR UPON DEMAND, RETURN THE DRAWING, ALL COPIES THEREOF, AND ALL MATERIAL COPIED THEREFROM.	UNLESS OTHERWISE SPECIFIED: - REMOVE ALL BURRS AND SHARP CORNERS - WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/AWS A2.4
INGERSOLL-RAND: POWER TOOLS, METRIC	INGERSOLL-RAND © 2016 All Rights Reserved	Copyright © 2016 Ingersoll Rand All Rights Reserved

DESIGNER	DATE
K. ZIMMER	12/07/16
LIBORST	12/07/16
D. BECKER	12/07/16

IR Ingersoll Rand	
NOSE EXTENSION, 52MM, 6.0 INCH	
SCALE	1:1
WEIGHT	1.8 kilogram
PART NO.	NSP-766-52NX060
REV	A
SHEET	1 of 1

REVISIONS					
DATE	BY	CHK	DESCRIPTION	DATE	APPROVED
12/07/2016 <td>A <td></td> <td>ORIGINAL RELEASE <td>KJZ <td>LVB</td> </td></td></td>	A <td></td> <td>ORIGINAL RELEASE <td>KJZ <td>LVB</td> </td></td>		ORIGINAL RELEASE <td>KJZ <td>LVB</td> </td>	KJZ <td>LVB</td>	LVB

D
C
B
A



SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	19045.009
MFR NAME	ADDRESS	PART NO.
<small>ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE MANUFACTURER(S) LISTED HEREON IS WARRANTED TO CONFORM TO THE DIMENSIONS AND TOLERANCES SPECIFIED BY THE INGERSOLL-RAND COMPANY. THE BUYER SHALL BE RESPONSIBLE FOR SUPPLY</small>		

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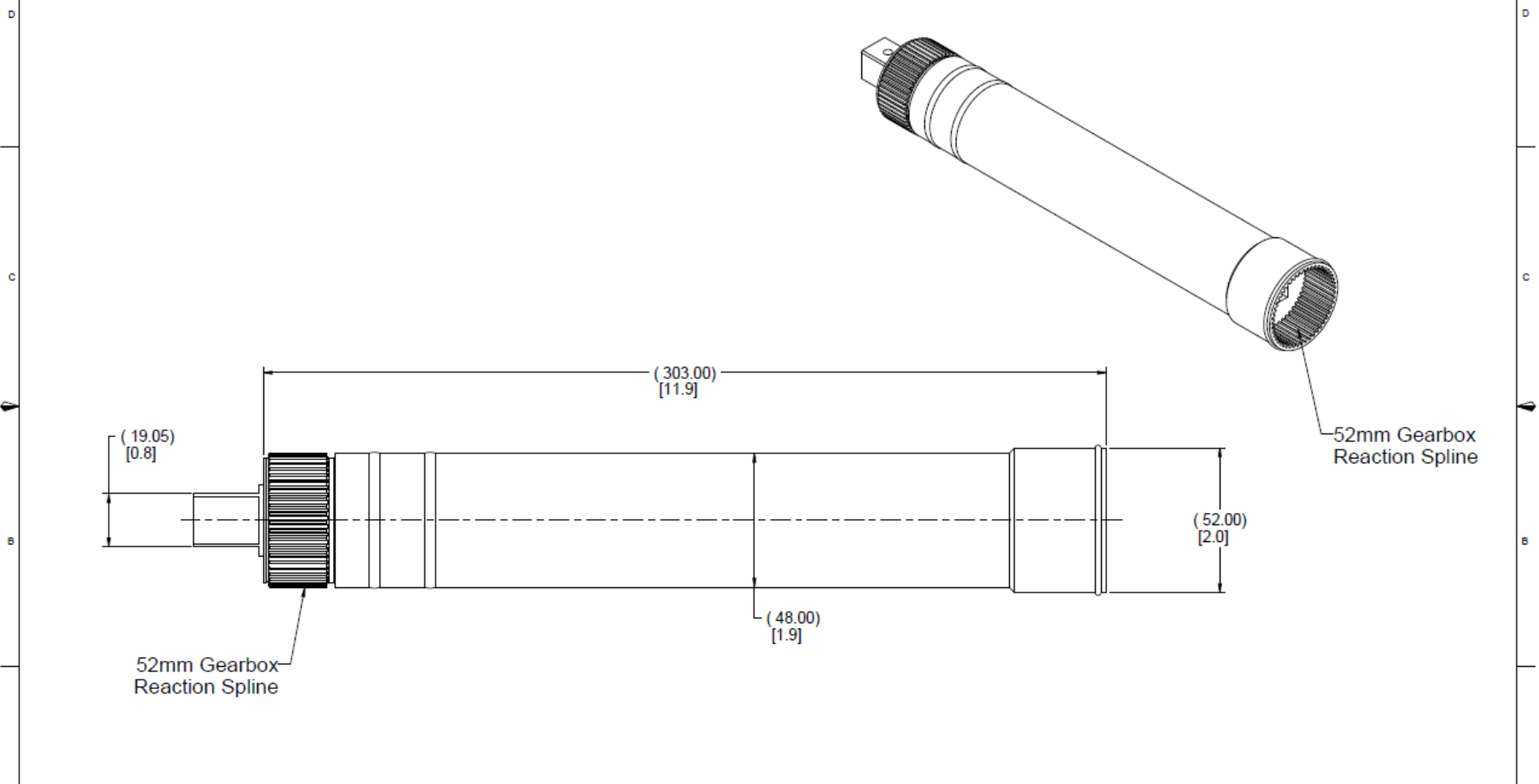
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DESIGNER	DATE												
H. ZIMMER	12/07/16												
DRAWN	DATE												
L. BOST	12/07/16												
CHECKED	DATE												
D. BECKER	12/07/16												

NOSE EXTENSION, 52MM, 9.0 INCH	
SIZE: A1 WEIGHT: 2.4 kilogram TYPICAL: 1.50	PART NO.: NSP-766-52NX090 REVISION: A SHEET: 1 OF 1

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REVISIONS						
ZONE	REV	CH	DESCRIPTION	DATE	DRAWN	APPROVED
	A		ORIGINAL RELEASE	12/07/2016	KJZ	LVS



SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	19045.012
MFR NAME	ADDRESS	PART NO.

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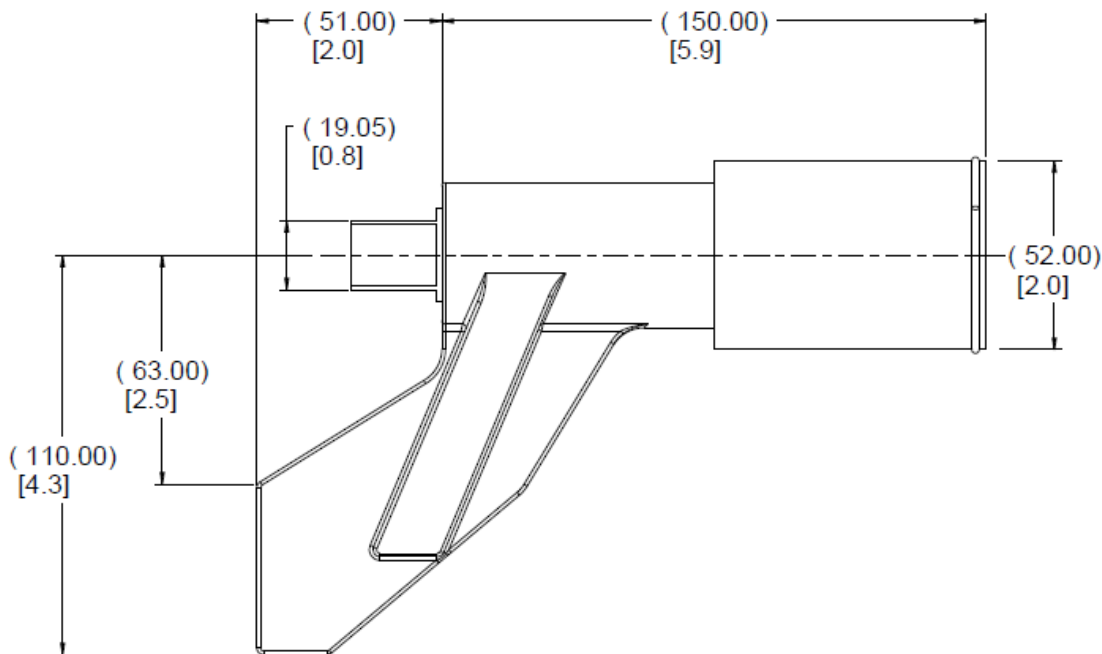
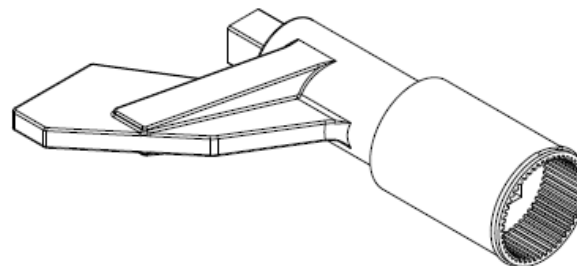
THIRD ANGLE PROJECTION	DATE: 12/07/16
DESIGNER: K.ZIMMER	DATE: 12/07/16
DRAWN: LIBORIT	DATE: 12/07/16
CHECKED: D.BECKER	DATE: 12/07/16
DESCRIPTION: Detail Drawing	SCALE: 1:50
QUANTITY: NSP-766-52NX120	WEIGHT: 3.2 kilogram

INGERSOLL-RAND	
NOSE EXTENSION, 52MM, 12.0 INCHES	
SIZE: A1	PART NO: NSP-766-52NX120
SCALE: 1:50	REV: A

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NOTES:

REVISIONS				DATE	DRAWN	APPROVED
NO	REV	BY	DESCRIPTION	12/07/2016	KJZ	LVB
A			ORIGINAL RELEASE			



SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	18601.006
MFR NAME	ADDRESS	PART NO.
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UNSPECIFIED TOLERANCES: X ±0.10 XX ±0.05 XXX ±0.25 ANGLES ±1.17	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994
MACHINED SURFACES 3.2 MAX	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994
* CRITICAL TO QUALITY	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994
INGERSOLL-RAND POWER TOOLS - METRIC	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994

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ASME Y14.5M - 1994
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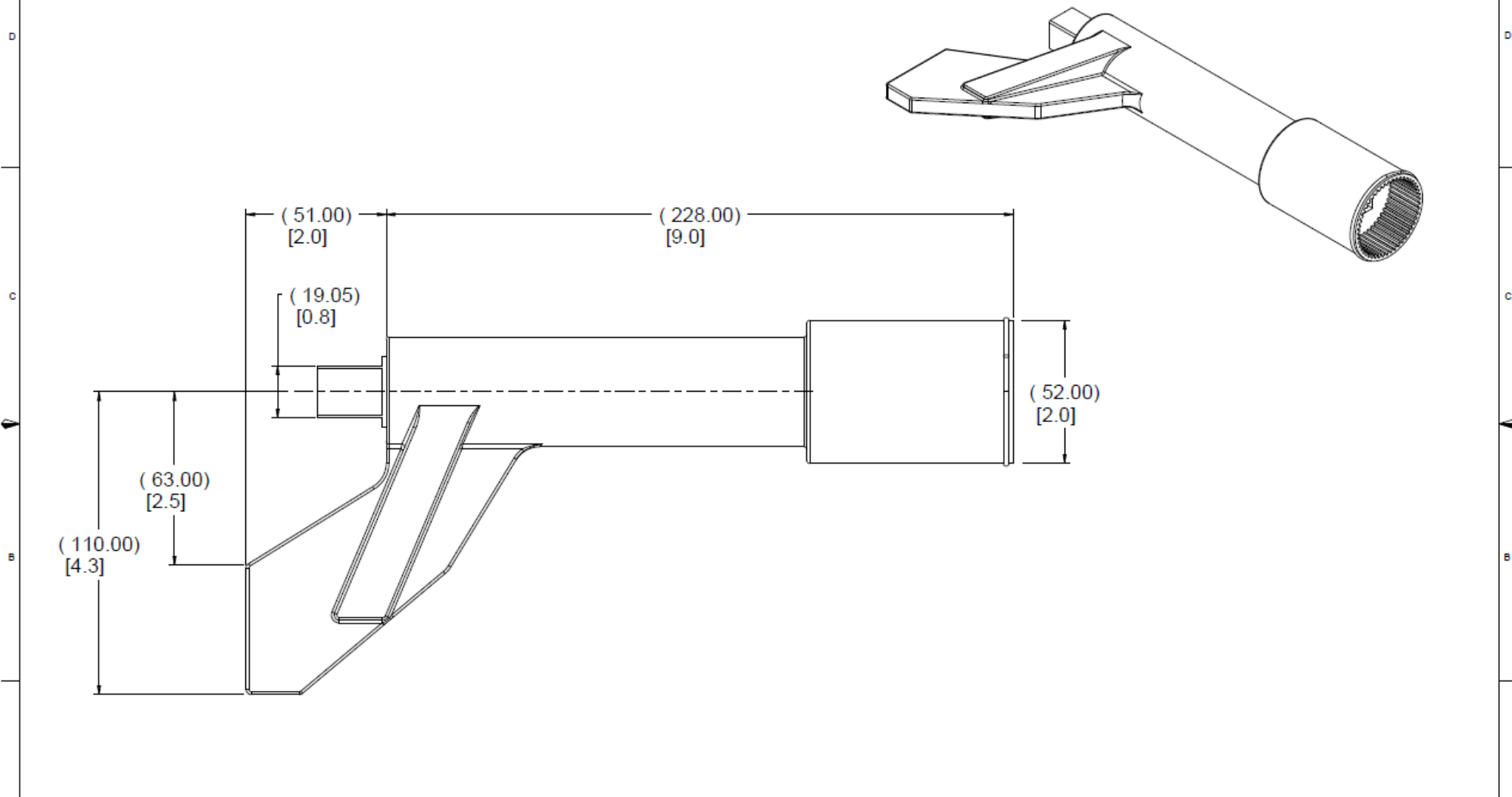
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DESIGNER	DATE
K. ZIMMER	12/07/16
D. BOECKER	12/07/16
D. BOECKER	12/07/16

SCALE	WEIGHT	PART NO.	REVISION
A1	3.1 kilogram	NSP-766-52NXW060	A
SCALE	WEIGHT	PART NO.	REVISION
1:50	3.1 kilogram	NSP-766-52NXW060	A

REVISIONS				DATE	DRAWN	APPROVED
REV	DESCRIPTION	DATE	DRAWN	APPROVED		
A	ORIGINAL RELEASE	12/07/2016	KJZ	LVB		



SOURCE CONTROL DRAWING

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MFR NAME	ADDRESS	PART NO.

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UNSPECIFIED TOLERANCES: X ±1.0 XX ±0.5 XXX ±0.25 ANGLES ±1.0°	DO NOT SCALE DRAWING DRAWING CONFORMS TO ASME Y14.5M - 1994 CAD GENERATED DRAWING, NO MANUAL REVISIONS ALLOWED UNLESS OTHERWISE SPECIFIED: - REMOVE ALL BURRS AND SHARP CORNERS - WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/ASME A2.4
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THIRD ANGLE PROJECTION	DATE: 12/07/16
DRAWN BY: K.ZIMMER	DATE: 12/07/16
CHECKED BY: L.SICHT	DATE: 12/07/16
APPROVED BY: D.BECKER	DATE: 12/07/16
DETAIL DRAWING	SCALE: 1:50
DESCRIPTION: NSP-766-52NXW090	WEIGHT: 3.5 kilogram

Ingersoll Rand	
NOSE EXTENSION ASSY, 52MM, 9.0 INCH, WHEEL	
SIZE: A1	REVISION: A
SCALE: 1:50	WEIGHT: 3.5 kilogram
DESCRIPTION: NSP-766-52NXW090	DATE: 12/07/16

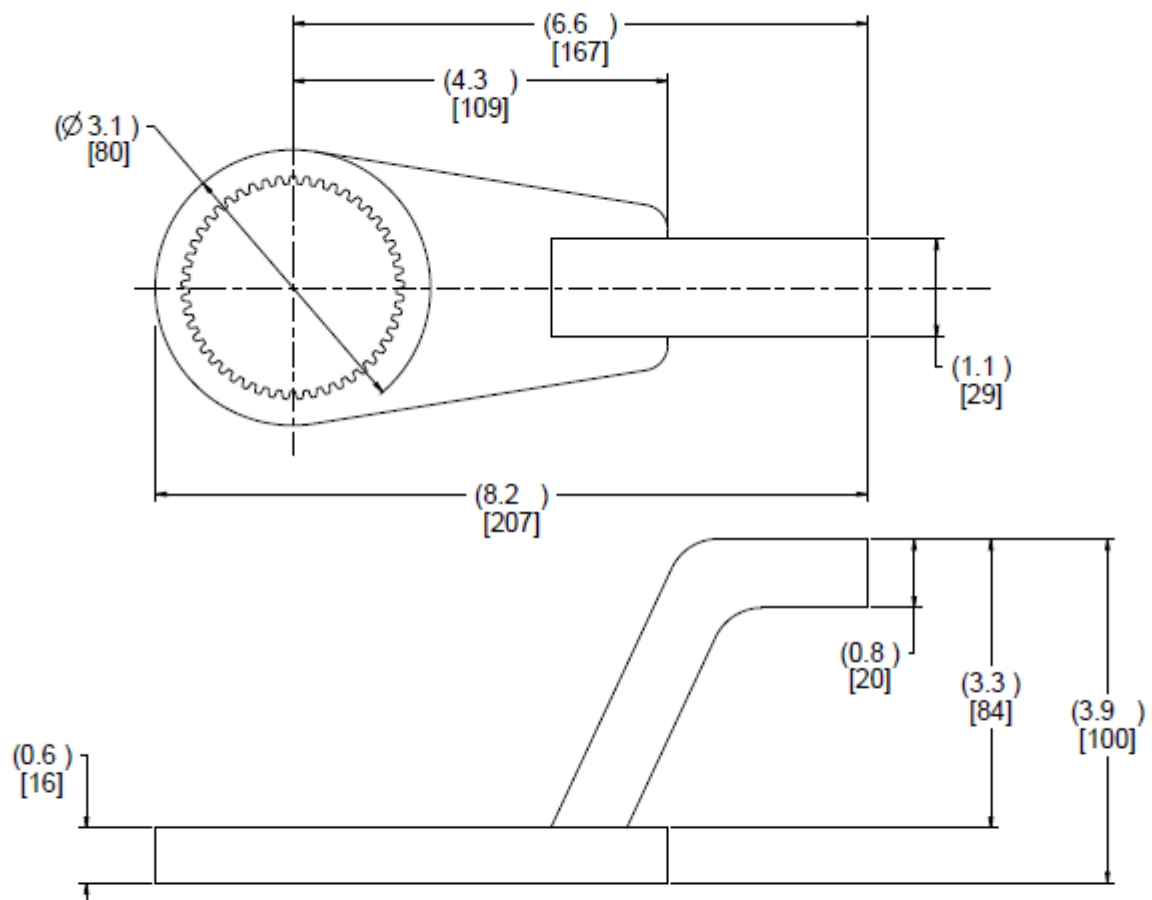
1000 , 1350, & 2000 Nm

TOOLS

72 mm SPLINE

REACTION ARMS

DATE	REV	BY	DESCRIPTION	DATE	DRAWN	APPROVED
	A	CH20376	ASSEMBLY RELEASE		K. Doolan	D. Bower



RELEASED

NORBAR TORQUE TOOLS	Widmore Road, Banbury, Oxfordshire OX16 3JU UNITED KINGDOM	19289
MFR NAME	ADDRESS	PART NO.

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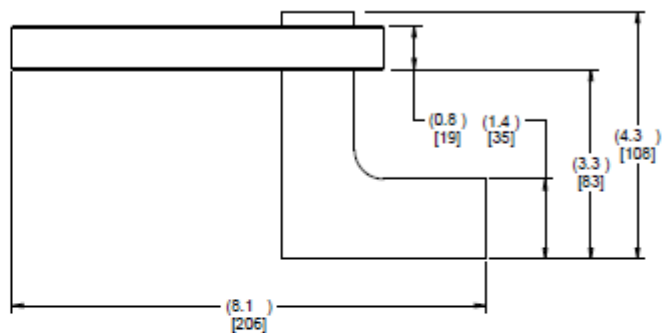
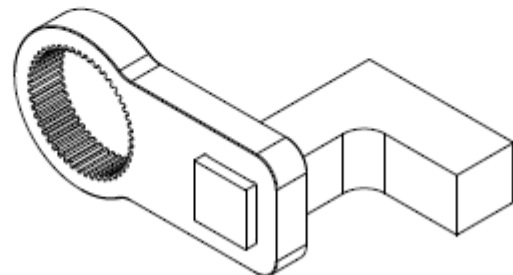
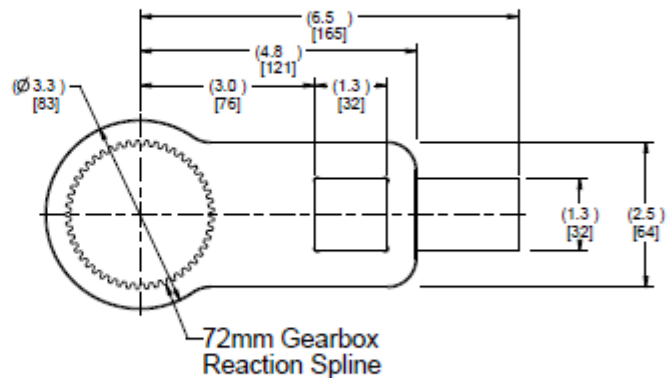
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UNFINISHED TO FINISHES S ±0.15 X.X ±0.25 Z.ZZ ±0.35 ANGLES ±1.1°	THIS DRAWING CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. IT IS THE PROPERTY OF INGERSOLL RAND CO. AND IS LOANED TO THE RECIPIENT IN CONFIDENCE. THE RECIPIENT BY ACCEPTANCE AND RETENTION OF THE DRAWING ACCEPTS THE DRAWING IN CONFIDENCE AND AGREES THAT IT IS TO BE KEPT IN CONFIDENCE BY THE RECIPIENT AND NOT TO BE DISCLOSED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN APPROVAL OF INGERSOLL RAND CO. IF ALL (1) NOT USE THE DRAWING OR ANY COPY THEREOF OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREON. (2) NOT COPY THE DRAWING. (3) NOT DISCLOSE TO OTHERS. (4) NOT REPRODUCE THE DRAWING OR ANY COPY THEREOF. (5) NOT REPRODUCE THE DRAWING OR ANY COPY THEREOF. (6) NOT REPRODUCE THE DRAWING OR ANY COPY THEREOF. (7) NOT REPRODUCE THE DRAWING OR ANY COPY THEREOF. (8) NOT REPRODUCE THE DRAWING OR ANY COPY THEREOF. (9) NOT REPRODUCE THE DRAWING OR ANY COPY THEREOF. (10) NOT REPRODUCE THE DRAWING OR ANY COPY THEREOF.
MACHINED SURFACES 3.2 MAX INGERSOLL RAND TORQUE TOOLS	DO NOT SCALE DRAWING DRAWING CONFORMS TO ASME Y14.5M-1994 CAD GENERATED DRAWING NO MANUAL REVISIONS ALLOWED UNLESS OTHERWISE SPECIFIED REMOVE ALL DIMS AND DIMM CHARACTERS UNLESS OTHERWISE SPECIFIED IN ACCORDANCE WITH ANSI/ASME Y14.5M-2018

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-2018	UNLESS OTHERWISE SPECIFIED REMOVE ALL DIMS AND DIMM CHARACTERS UNLESS OTHERWISE SPECIFIED IN ACCORDANCE WITH ANSI/ASME Y14.5M-2018
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-2018	UNLESS OTHERWISE SPECIFIED REMOVE ALL DIMS AND DIMM CHARACTERS UNLESS OTHERWISE SPECIFIED IN ACCORDANCE WITH ANSI/ASME Y14.5M-2018

SOURCE CONTROL DRAWING	
REACTION PLATE, 72MM, CRANKED	
SIZE: A1	WEIGHT: 1.4 kilogram
SCALE: 1:00	PART NO: NSP-766-72CR
REV: A	DATE: 02/12/16

REVISIONS						
DATE	BY	OR	DESCRIPTION	DATE	DRAWN	APPROVED
A			ORIGINAL RELEASE			



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MATERIAL --- STEEL - 4140	INGERSOLL RAND CO. PROPERTY OF THIS DRAWING IS A TRADE SECRET AND IS UNCONTROLLED UNLESS OTHERWISE SPECIFIED. THIS DRAWING IS THE PROPERTY OF INGERSOLL RAND CO. AND IS LOANED TO THE RECEIVER IN CONFIDENCE. THE RECEIVER BY ACCEPTING AND REVIEWING OF THIS DRAWING ACCEPTS THE DRAWING IN CONFIDENCE AND AGREES THAT, EXCEPT AS AUTHORIZED IN WRITING BY INGERSOLL RAND CO. IT WILL NOT USE THE DRAWING OR ANY COPY THEREOF OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN, OR NOT COPY THE DRAWING, OR NOT DISCLOSE TO OTHERS EITHER THE DRAWING OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN AND TO UNDERTAKE PROTECTION OF THE NEED TO RETURN THE DRAWING OR LOANED DRAWING. RETURN THE DRAWING, ALL COPIES THEREOF, AND ALL MATERIAL, CORRECT THEREFROM.	DO NOT SCALE DRAWINGS DRAWING CONFORMS TO ASME Y14.5M - 1994 CAD GENERATED DRAWING NO MANUAL REVISIONS ALLOWED	UNLESS OTHERWISE SPECIFIED REMOVE ALL SURF AND FINISH CONDITIONS WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/AISA A3.4	Copyright © 2016 Ingersoll Rand ALL RIGHTS RESERVED
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DATE	BY
APPROVED	DATE
DATE	BY
DATE	BY

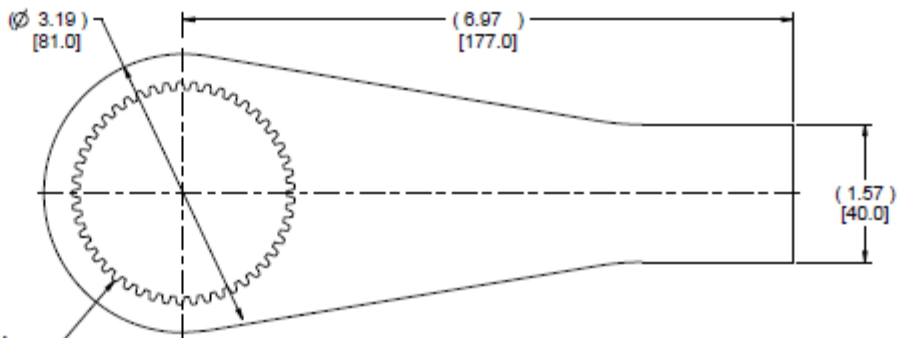
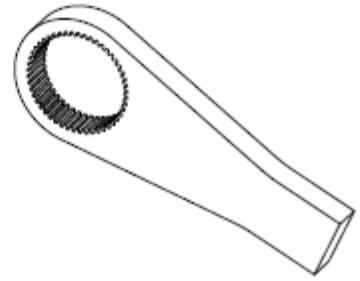
INGERSOLL RAND

REACTION BAR, CRANKED 90

SIZE	WEIGHT	PART NO.	REVISION
A1	2.31 kg	NSP-766-72CR90	A
SCALE	1:00		

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DATE	REV.	OR.	DESCRIPTION	DATE	BY	APPROVED
	A	CONTR	ORIGINAL RELEASE	11/20/16	ALJ	LVB



72mm Gearbox
Reaction Spline

SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	18292
MFR NAME	ADDRESS	PART NO.

MATERIAL	STEEL - 4140
ALTERNATE MATERIAL	

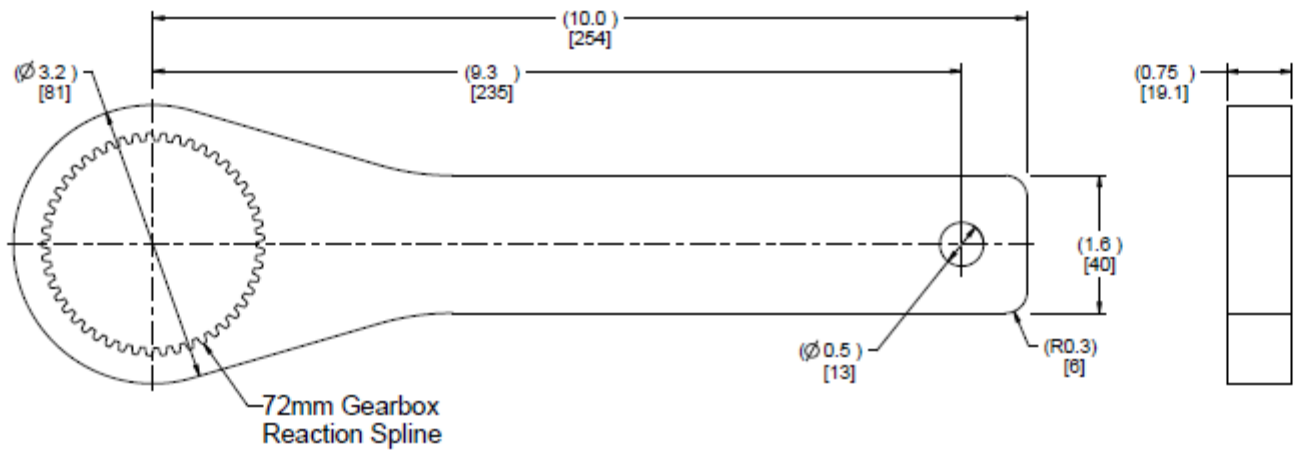
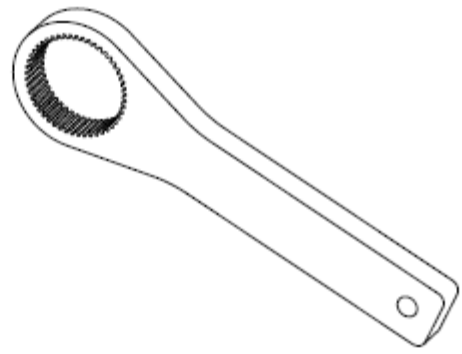
DO NOT SCALE DRAWING
DRAWING CONFORMS TO ASME Y14.5M - 1994
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DATE	11/20/16
BY	ALJ
CHECKED	11/20/16
APPROVED	11/20/16

REACTION ARM, 72mm, STRAIGHT STEEL 7"	
WEIGHT	1.90 Kg
PART NO.	NSP-766-72ST5070
REV	A
SCALE	1:50
DATE	11/20/16
BY	ALJ
APPROVED	LVB

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DATE		BY		DESCRIPTION		DATE	BY	APPROVAL
A		CONTROLLER		ORIGINAL RELEASE				



72mm Gearbox Reaction Spline

RELEASED

SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	W1184.S
MFR NAME	ADDRESS	PART NO.

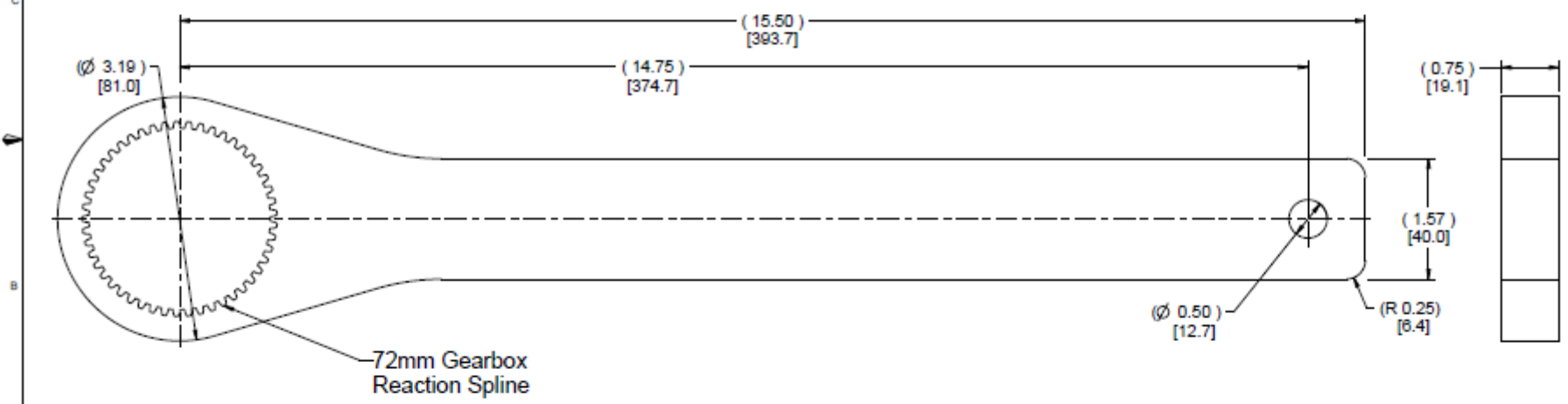
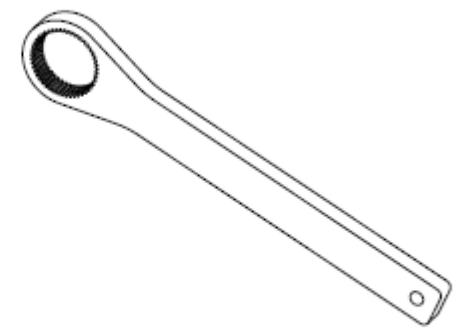
MATERIAL	STEEL - 4140
ALTERNATE MATERIAL	

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NO MANUAL REVISIONS ALLOWED	
UNLESS OTHERWISE SPECIFIED REMOVE ALL BURRS AND SHARP CORNERS WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/AISC A4	
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REACTION PLATE, 72mm FLAT											
<table border="1"> <tr> <td>SIZE</td> <td>A1</td> </tr> <tr> <td>WEIGHT</td> <td>1.00 Kg</td> </tr> <tr> <td>SCALE</td> <td>1:50</td> </tr> </table>	SIZE	A1	WEIGHT	1.00 Kg	SCALE	1:50	<table border="1"> <tr> <td>PART NO.</td> <td>NSP-766-72ST</td> </tr> <tr> <td>REV</td> <td>A</td> </tr> </table>	PART NO.	NSP-766-72ST	REV	A
SIZE	A1										
WEIGHT	1.00 Kg										
SCALE	1:50										
PART NO.	NSP-766-72ST										
REV	A										

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REV	NO.	OR	DESCRIPTION	DATE	DRAWN	APPROVED
A	001	10/2015	ORIGINAL RELEASE	11/05/15	KJZ	LVB



SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	W1184
MFR NAME	ADDRESS	PART NO.

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MATERIAL:
--- STEEL - 4140

REVISIONS:

ALTERNATE MATERIAL:

UNLESS OTHERWISE SPECIFIED:

DO NOT SCALE DRAWING
DRAWING CONFORMS TO ASME Y14.5M - 1994
NO MANUAL REVISIONS ALLOWED

UNLESS OTHERWISE SPECIFIED:
REMOVE ALL BURRS AND SHARP CORNERS WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/AWS A2.4

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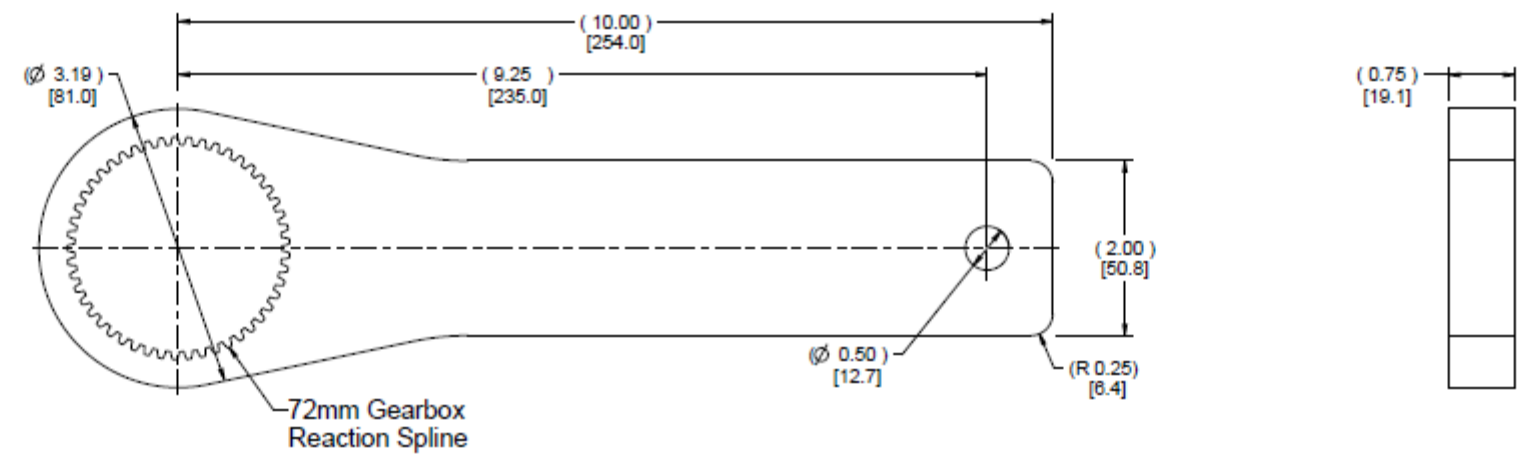
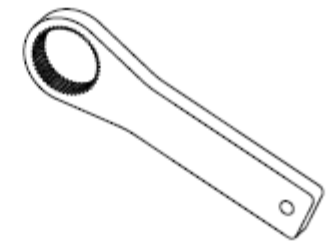
REACTION ARM, 72mm, STRAIGHT, STEEL, 15.5"

REV	REVISIONS	DATE	BY
A1	1.00 Kg	11/05/15	KJZ
DATE	1.50	11/05/15	DATE

NSP-766-72ST155

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DATE	BY	CHK	DESCRIPTION	DATE	BY	CHK	APPROVED
A	02/19/2017		ORIGINAL RELEASE	11/02/16			



SOURCE CONTROL DRAWING

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MFR NAME	ADDRESS	PART NO.
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<small>(Drawing printed for internal review 02-Dec-16)</small>		

MATERIAL: --- ALUMINUM - 6061	UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED
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<small>DO NOT SCALE DRAWING DRAWING CONFORMS TO ASME Y14.5M - 1994 CAD GENERATED DRAWING NO MANUAL REVISIONS ALLOWED</small>	<small>DATE OF APPROVAL: 11/02/16 CHECKED BY: JWF DRAWN BY: JWF APPROVED BY: JWF</small>
<small>UNLESS OTHERWISE SPECIFIED FINISHES: ALL SURFACES AND SHARP CORNERS UNLESS OTHERWISE SPECIFIED UNLESS OTHERWISE SPECIFIED UNLESS OTHERWISE SPECIFIED</small>	<small>DATE OF APPROVAL: 11/02/16 CHECKED BY: JWF DRAWN BY: JWF APPROVED BY: JWF</small>

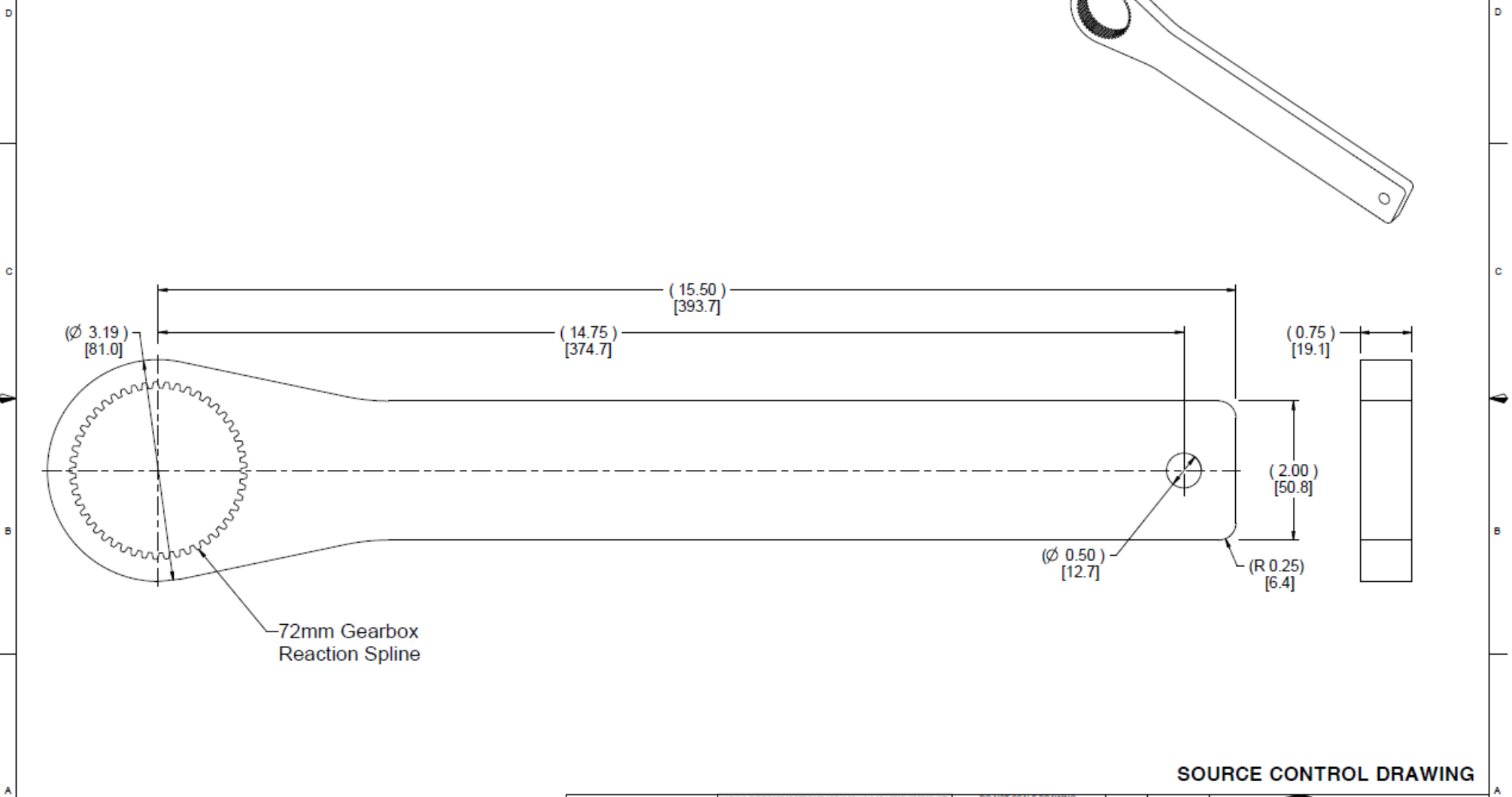
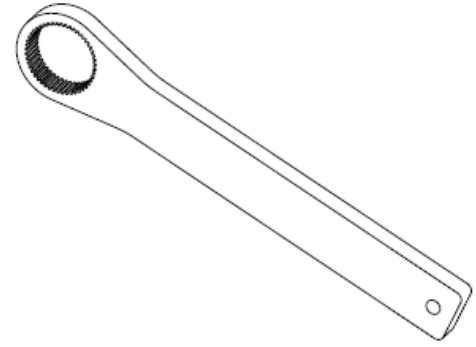
IP Ingersoll Rand	
REACTION ARM, 72mm, STRAIGHT, ALUMINUM, 10.0"	
<small>REV: A1</small> <small>DATE: 11/02/16</small> <small>BY: JWF</small> <small>CHK: JWF</small>	<small>REV: A</small> <small>DATE: 11/02/16</small> <small>BY: JWF</small> <small>CHK: JWF</small>
<small>WEIGHT: 1.00 kg</small> <small>VOLUME: 1.50</small>	<small>PART NO: NSP-766-72STA100</small> <small>REV: A</small>



FOR REVIEW ONLY

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(Drawing printed for internal review 02-Dec-16)

REVISIONS					
ZONE	REV	ON	DESCRIPTION	DATE	APPROVED
	A	ONT186231	ORIGINAL RELEASE	11/20/16	KJZ LVB



72mm Gearbox
Reaction Spline

SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	W1366
MFR NAME	ADDRESS	PART NO.

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THIS PART SHALL BE LABELED WITH THE I-R NAME AND PART NUMBER. NO SUPPLIER INFORMATION SHALL BE PLACED ON THE PART OR PART PRODUCTION. IF THE PART SIZE AND/OR SHAPE DIFFERS FROM THE ORIGINAL, THE PART SHALL BE LABELED WITH THE I-R NAME AND PART NUMBER ON THE PART.
FOR REVIEW ONLY

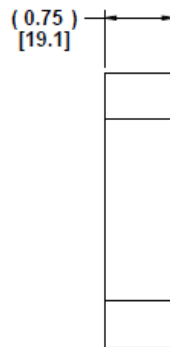
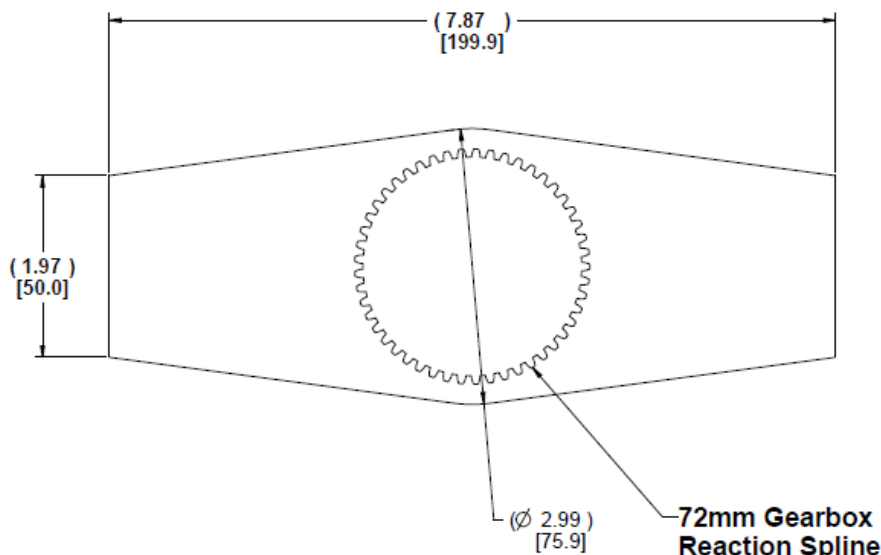
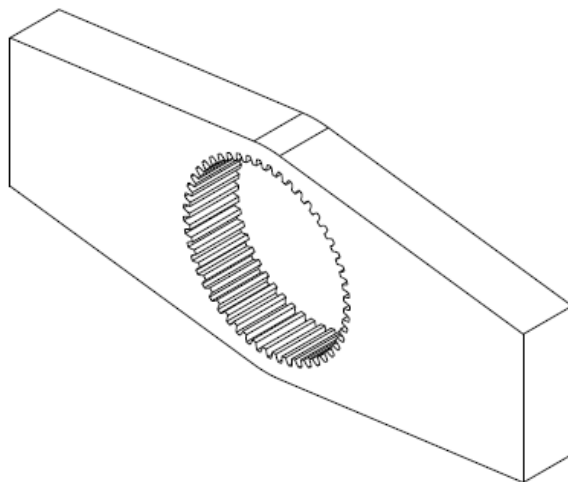
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MATERIAL: ALUMINUM - 6061	<small>WARNING: THE SUPPORT OR REPRODUCTION OF THIS DRAWING OR A PROJECT PRODUCED BY THIS DRAWING IS SUBJECT TO U.S. EXPORT ADMINISTRATION REGULATIONS AND OTHER APPLICABLE GOVERNMENT RESTRICTIONS OR REGULATIONS.</small>
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DO NOT SCALE DRAWING DRAWING CONFORMS TO ASME Y14.5M - 1994	THIRD ANGLE PROJECTION										
<small>CAD GENERATED DRAWING, NO MANUAL REVISIONS ALLOWED.</small>	<table border="1"> <tr> <td>DESIGNER</td> <td>DATE</td> </tr> <tr> <td>12MMER</td> <td>11/25/16</td> </tr> <tr> <td>LIBRIST</td> <td>11/25/16</td> </tr> <tr> <td>DRAWER</td> <td>11/25/16</td> </tr> <tr> <td>CHECKER</td> <td>11/25/16</td> </tr> </table>	DESIGNER	DATE	12MMER	11/25/16	LIBRIST	11/25/16	DRAWER	11/25/16	CHECKER	11/25/16
DESIGNER	DATE										
12MMER	11/25/16										
LIBRIST	11/25/16										
DRAWER	11/25/16										
CHECKER	11/25/16										
<small>UNLESS OTHERWISE SPECIFIED: - REMOVE ALL BURRS AND SHARP CORNERS - WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/AWS A2.4</small>	<table border="1"> <tr> <td>SCALE</td> <td>ESTIMATED WEIGHT IN ORDER TO ORDER PART</td> </tr> <tr> <td>A1</td> <td>1.68 Kg</td> </tr> <tr> <td>SCALE</td> <td>1:50</td> </tr> </table>	SCALE	ESTIMATED WEIGHT IN ORDER TO ORDER PART	A1	1.68 Kg	SCALE	1:50				
SCALE	ESTIMATED WEIGHT IN ORDER TO ORDER PART										
A1	1.68 Kg										
SCALE	1:50										
<small>COPYRIGHT © 2016 Ingersoll Rand ALL RIGHTS RESERVED</small>	<table border="1"> <tr> <td>DESCRIPTION</td> <td>PART NO.</td> </tr> <tr> <td>NSP-766-72STA155</td> <td>NSP-766-72STA155</td> </tr> </table>	DESCRIPTION	PART NO.	NSP-766-72STA155	NSP-766-72STA155						
DESCRIPTION	PART NO.										
NSP-766-72STA155	NSP-766-72STA155										

IR Ingersoll Rand.	
REACTION ARM, 72mm, STRAIGHT, ALUMINUM, 15.5"	
REVISION	DATE
A	11/25/16

REVISIONS					
DATE	BY	DESCRIPTION	DATE	DRAWN	APPROVED
11/23/16	A	ORIGINAL RELEASE		KJC	LVB



72mm Gearbox
Reaction Spline

SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	18293
MFR NAME	ADDRESS	PART NO.

ONLY THE ITEM DESCRIBED ON THIS DRAWING WHEN PROCURED FROM THE MANUFACTURERS LISTED HEREON SHALL BE ACCEPTED AS THE PROPERTY OF THE INGERSSOL-RAND COMPANY. APPROVED SOURCES OF SUPPLY

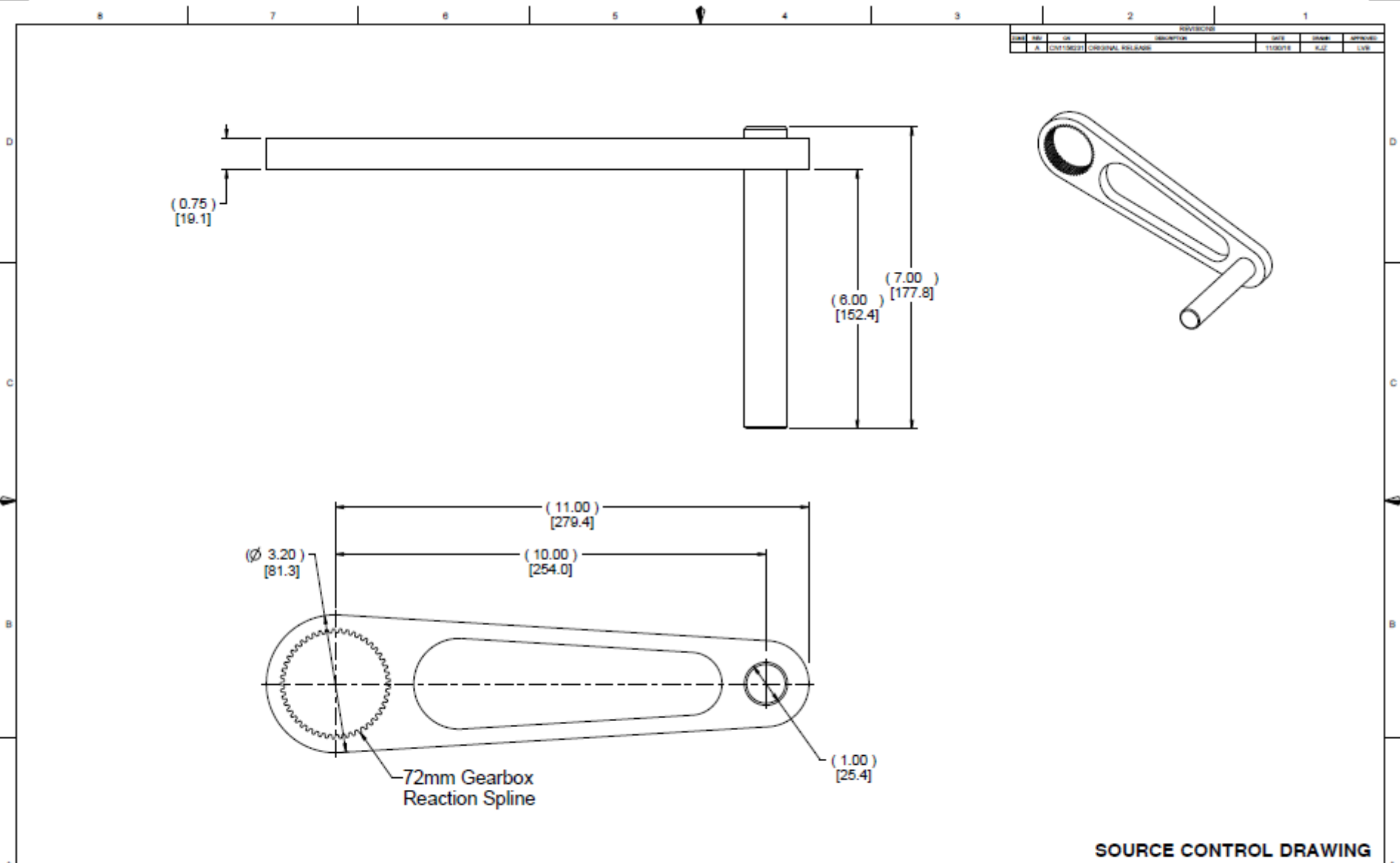
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MATERIAL: STEEL - 4140	WARNING: THE EXPORT OR REEXPORT OF THIS DRAWING OR A PRODUCT PREPARED BY THIS DRAWING IS SUBJECT TO U.S. EXPORT ADMINISTRATION REGULATIONS AND OTHER APPLICABLE GOVERNMENT RESTRICTIONS OR REGULATIONS.
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CAD GENERATED DRAWING, NO MANUAL REVISIONS ALLOWED	UNLESS OTHERWISE SPECIFIED: - REMOVE ALL BURS AND SHARP CORNERS - WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/MF A2.4
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DATE	11/23/16
DESIGNER	LIBRIST
DATE	11/23/16
DRAWN	DBECKER
DATE	11/23/16

IR Ingersoll Rand	
REACTION ARM, 72mm, STRAIGHT, STEEL, DOUBLE SIDED, 7.9"	
SIZE A1	QUANTITY/WEIGHT 0.45 Kg
SCALE 1:50	MODEL NSP-766-72STD079
REV A	REV A



REVISIONS					
REV	BY	DA	DESCRIPTION	QTY	ISSUED
A	CONTINUED		ORIGINAL RELEASE	11/20/18	KJJ LWB

SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	W1127.3
MFR NAME	ADDRESS	PART NO.

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 THE PART SHALL BE LABELED WITH THE LR NAME AND PART NUMBER. NO SUPPLIER INFORMATION SHALL BE APPLICABLE TO THIS PART. IF THE PART IS TO BE USED IN ANOTHER APPLICATION, THE USER SHALL OBTAIN THE NECESSARY APPROVAL FROM THE PART SUPPLIER.
 INSTRUCTIONS: SEE SUPPLIER'S DRAWING FOR DIMENSIONS AND TOLERANCES.

MATERIAL: -- STEEL - 4140	UNLESS OTHERWISE SPECIFIED, THIS DRAWING IS A PROPERTY OF INGERSSOLL RAND AND IS TO BE USED ONLY BY THE RECIPIENT IN CONFORMANCE WITH THE TERMS OF THE RECIPIENT'S ACCEPTANCE OF THIS DRAWING. NO OTHER REPRODUCTION OR DISTRIBUTION OF THIS DRAWING IS PERMITTED WITHOUT THE WRITTEN PERMISSION OF INGERSSOLL RAND. ALL RIGHTS RESERVED.
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DO NOT SCALE DRAWING DRAWING CONFORMS TO ASME Y14.5M - 1994 CAD GENERATED DRAWING NO MANUAL REVISIONS ALLOWED	<table border="1"> <tr> <th>REV</th> <th>DATE</th> <th>BY</th> </tr> <tr> <td>01</td> <td>11/20/18</td> <td>KJJ</td> </tr> <tr> <td>02</td> <td>11/20/18</td> <td>KJJ</td> </tr> <tr> <td>03</td> <td>11/20/18</td> <td>KJJ</td> </tr> </table>	REV	DATE	BY	01	11/20/18	KJJ	02	11/20/18	KJJ	03	11/20/18	KJJ
REV	DATE	BY											
01	11/20/18	KJJ											
02	11/20/18	KJJ											
03	11/20/18	KJJ											
UNLESS OTHERWISE SPECIFIED, FINISH ALL SURFACES AND SHARP CORNERS (WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/ASME A2.4)	<table border="1"> <tr> <th>REV</th> <th>DATE</th> <th>BY</th> </tr> <tr> <td>A1</td> <td>11/20/18</td> <td>KJJ</td> </tr> </table>	REV	DATE	BY	A1	11/20/18	KJJ						
REV	DATE	BY											
A1	11/20/18	KJJ											
COPYRIGHT © 2018 Ingersoll Rand ALL RIGHTS RESERVED	<table border="1"> <tr> <td>NSP-766-72PP100</td> <td>1.00</td> <td>1.00</td> </tr> </table>	NSP-766-72PP100	1.00	1.00									
NSP-766-72PP100	1.00	1.00											

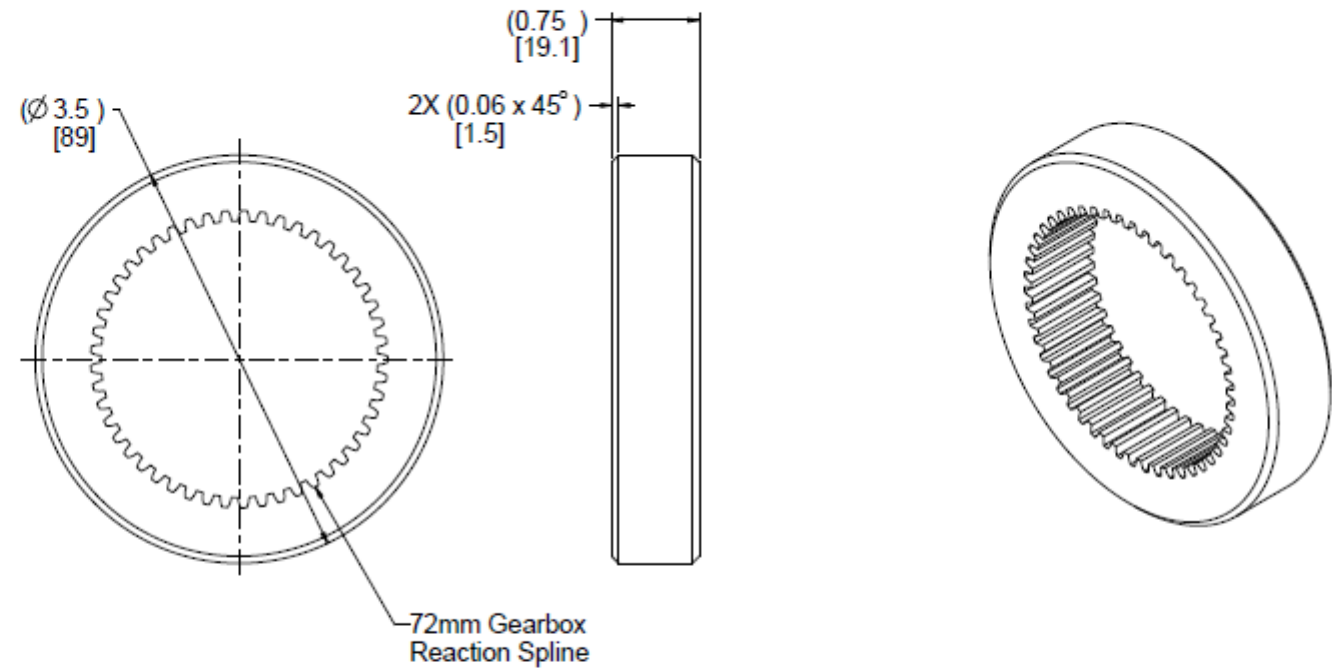
Ingersoll Rand

REACTION ARM, 72mm, PLATE AND PEG, 10"

WEIGHT: 1.00 kg
 PART NO: NSP-766-72PP100
 REV: A

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 (Drawing printed for internal review 02-Dec-16)

DATE	BY	OR	DESCRIPTION	DATE	BY	OR	APPROVAL
A	CONTORRENT	ORIGINAL RELEASED					



RELEASED

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	72WR
MFR NAME	ADDRESS	PART NO.

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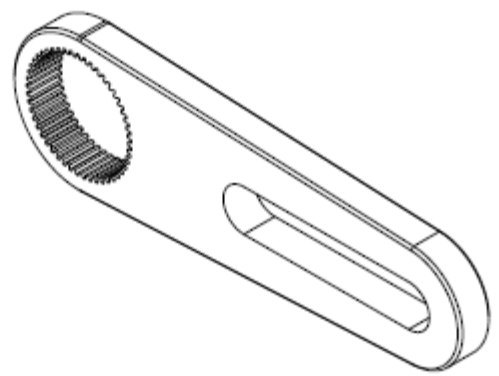
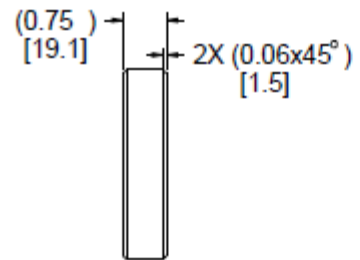
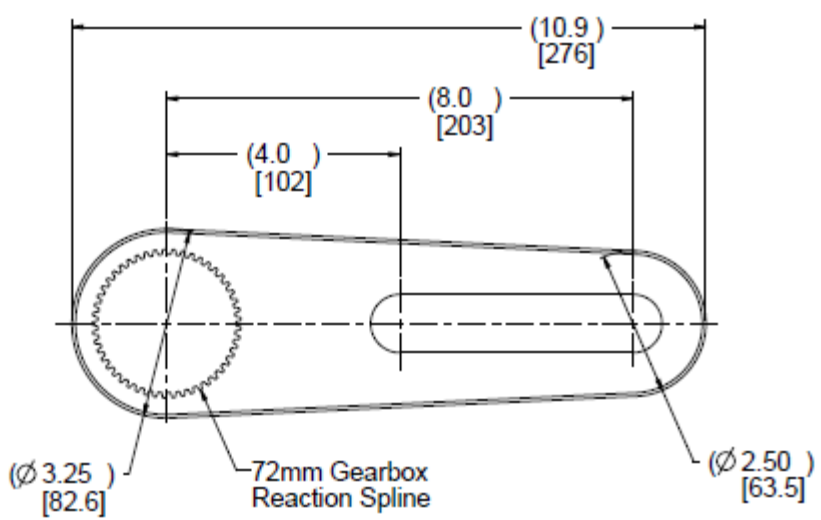
MATERIAL: --- STEEL - 4140	UNLESS OTHERWISE SPECIFIED, THE DRAWING IS A PROPERTY OF INgersoll Rand. IT IS TO BE USED ONLY FOR THE PURPOSES SPECIFIED ON THE DRAWING. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM. THE USER OF THIS DRAWING ACCEPTS THE DRAWING IN CONFORMANCE WITH THE TERMS AND CONDITIONS OF THE INgersoll Rand Terms and Conditions of Sale. THE USER OF THIS DRAWING ACCEPTS THE DRAWING IN CONFORMANCE WITH THE TERMS AND CONDITIONS OF THE INgersoll Rand Terms and Conditions of Sale. THE USER OF THIS DRAWING ACCEPTS THE DRAWING IN CONFORMANCE WITH THE TERMS AND CONDITIONS OF THE INgersoll Rand Terms and Conditions of Sale.	DO NOT SCALE DRAWING DRAWING CONFORMS TO ASME Y14.5M - 1994 NO MANUAL REVISIONS ALLOWED	<table border="1"> <tr> <td>DATE</td> <td>BY</td> </tr> <tr> <td>08/20/16</td> <td>08/20/16</td> </tr> <tr> <td>DATE</td> <td>BY</td> </tr> <tr> <td>08/20/16</td> <td>08/20/16</td> </tr> <tr> <td>DATE</td> <td>BY</td> </tr> <tr> <td>08/20/16</td> <td>08/20/16</td> </tr> </table>	DATE	BY	08/20/16	08/20/16	DATE	BY	08/20/16	08/20/16	DATE	BY	08/20/16	08/20/16
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08/20/16	08/20/16												
DATE	BY												
08/20/16	08/20/16												

SOURCE CONTROL DRAWING			
RING, WELD 72			
A1	REVISED WEIGHT 0.45 kg	REVISED PART NO. NSP-766-72WR	REVISION A
TOTAL	2.00	WEIGHT	1 of 1

UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED

DATE	REV.	BY	DESCRIPTION	DATE	DRWN.	APPROV.
	A	CONTOUR	ORIGINAL RELEASE		ELZ	LVB



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MFR NAME	ADDRESS	PART NO.
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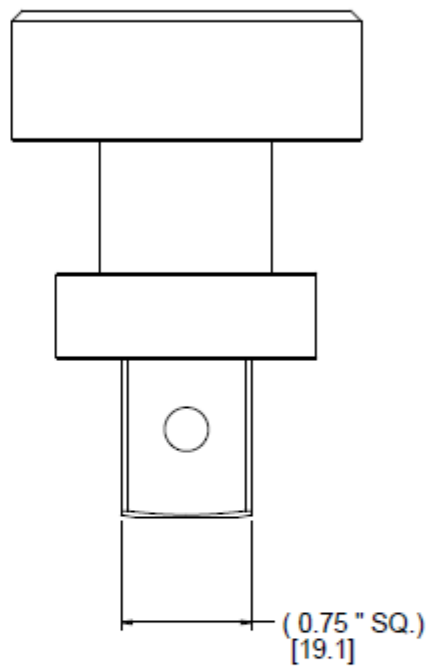
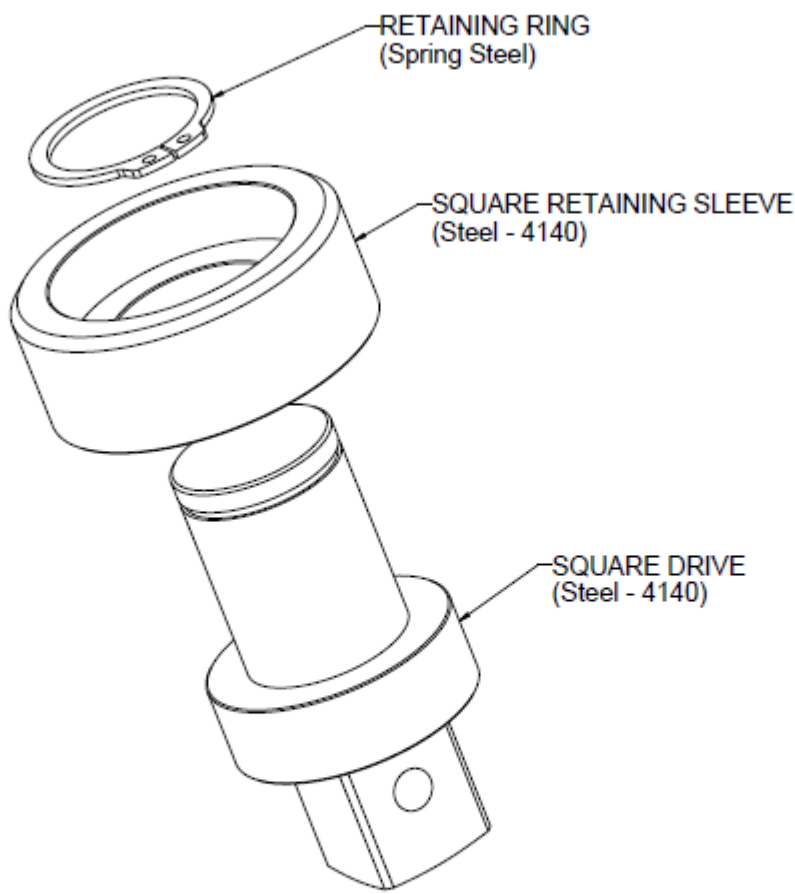
MATERIAL: --- STEEL - 4140	UNLESS OTHERWISE SPECIFIED, THE DIMENSIONS OF THIS DRAWING ARE IN INCHES AND DECIMALS THEREOF. UNLESS OTHERWISE SPECIFIED, THE DIMENSIONS OF THIS DRAWING ARE IN MILLIMETERS AND DECIMALS THEREOF.
ALTERNATE MATERIAL:	UNLESS OTHERWISE SPECIFIED, THE DIMENSIONS OF THIS DRAWING ARE IN INCHES AND DECIMALS THEREOF. UNLESS OTHERWISE SPECIFIED, THE DIMENSIONS OF THIS DRAWING ARE IN MILLIMETERS AND DECIMALS THEREOF.

DO NOT SCALE DRAWING DRAWING CONFORMS TO ASME Y14.5M - 1994	DATE: 08/20/16 BY: [Signature] CHECKED: [Signature] DATE: 08/20/16
NO MANUAL REVISIONS ALLOWED	UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS AND SHARP CORNERS SHALL BE SYMBOLIC TO IN IN ACCORDANCE WITH ANSI AS 14.4.
COPYRIGHT © 2016 Ingersoll Rand ALL RIGHTS RESERVED	Part Drawing NSP-766-72SL

SOURCE CONTROL DRAWING	
Ingersoll Rand	
REACTION PLATE, 72MM SLIDING	
SIZE: A1	WEIGHT: 1.9 Kg
SCALE: 1.00	REV: A
NSP-766-72SL	

8 7 6 5 4 3 2 1

REVISIONS							
DATE	BY	OR	DESCRIPTION	DATE	BY	OR	APPROVED
A			CUSTOMER ORIGINAL RELEASE				



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NORBAR TORQUE TOOLS INC	WILLOUGHBY, OHIO USA	W1862.06
MFR NAME	ADDRESS	PART NO.

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ALTERNATE MATERIAL:		COPYRIGHT © 2018 Ingersoll Rand ALL RIGHTS RESERVED

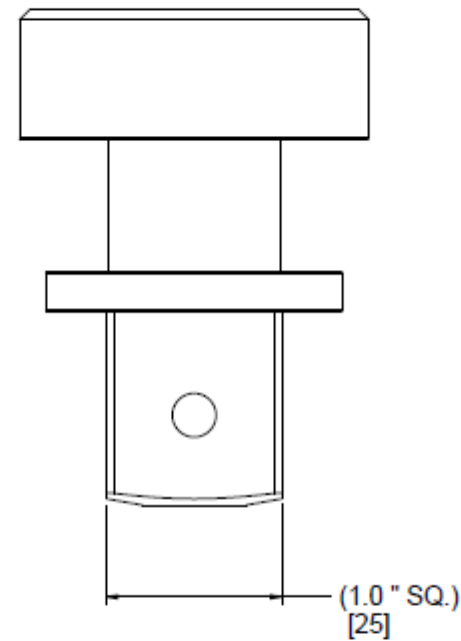
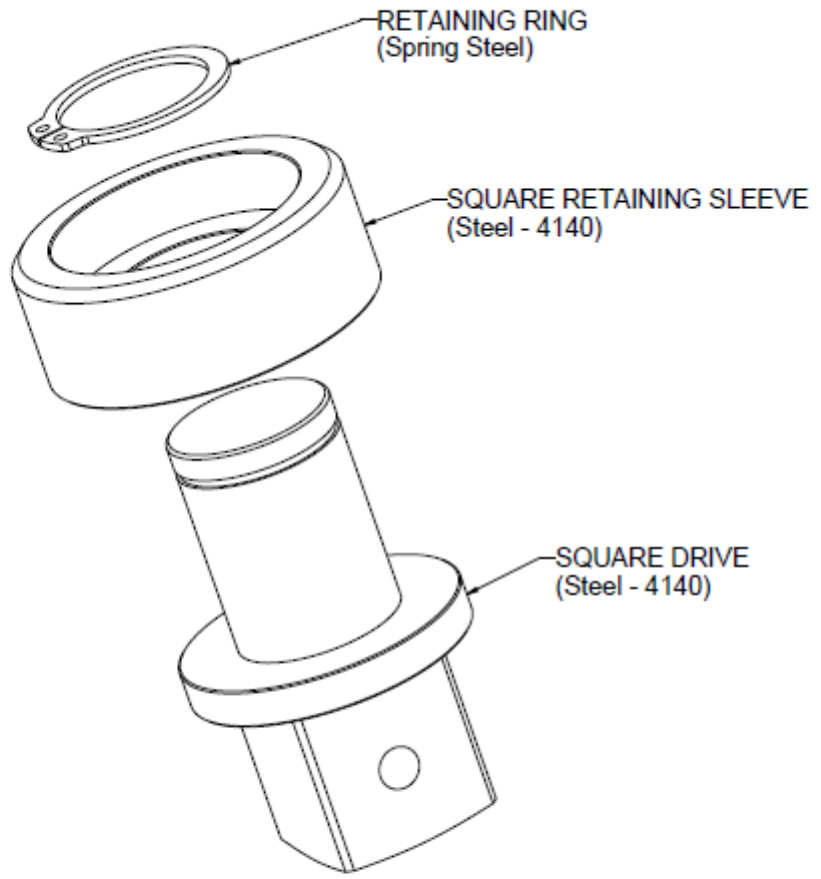
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09/01/18	09/01/18	09/01/18	09/01/18
09/01/18	09/01/18	09/01/18	09/01/18
Total Drawing		Total Drawing	
NSP-766-72SLK12		NSP-766-72SLK12	

SOURCE CONTROL DRAWING

**KIT, SLIDING REACTION
ARM 3/4" 72**

SIZE	WEIGHT	PART NO.	REV
A1	0.0 kilogram	NSP-766-72SLK12	A
SCALE	3:00		1 of 1

DATE		BY		DESCRIPTION		DATE	BY	APPROVED
A		CONT'D		ORIGINAL RELEASE				



RELEASED

NORBAR TORQUE TOOLS INC	WILLOUGHBY, OHIO USA	W1662.08
MFR NAME	ADDRESS	PART NO.

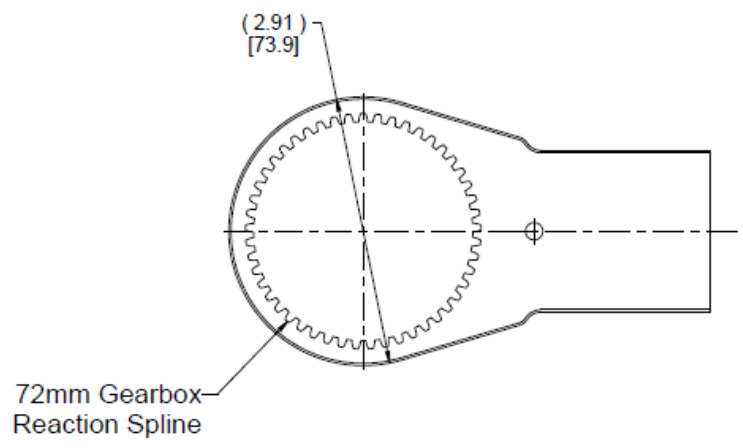
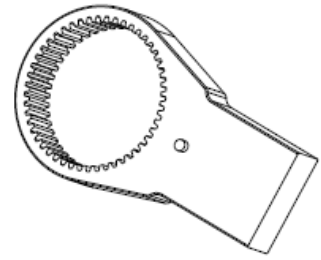
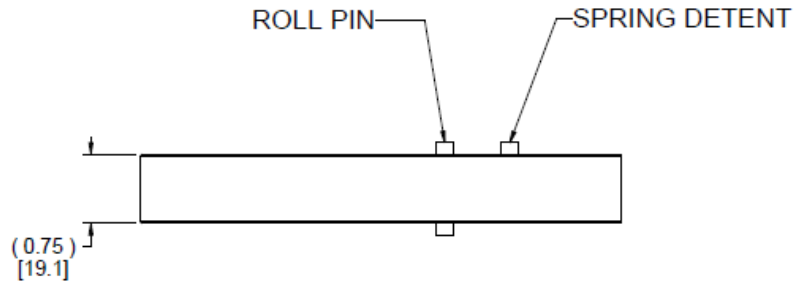
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UNLESS OTHERWISE SPECIFIED: FINISH ALL SURFACES AND SHARP CORNERS WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/ASME A2.4	
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SOURCE CONTROL DRAWING	
IR Ingersoll Rand	
KIT, SLIDING REACTION ARM 1"	
72	
REV A1	DATE 3.00
QTY 0.0 kilogram	PART NO. NSP-766-72SLK16
REV A	DATE 1 of 1

REVISIONS			
DATE	REV	BY	DESCRIPTION
11/01/16	A	CN1186231	ORIGINAL RELEASE



NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	18290
MFR NAME	ADDRESS	PART NO

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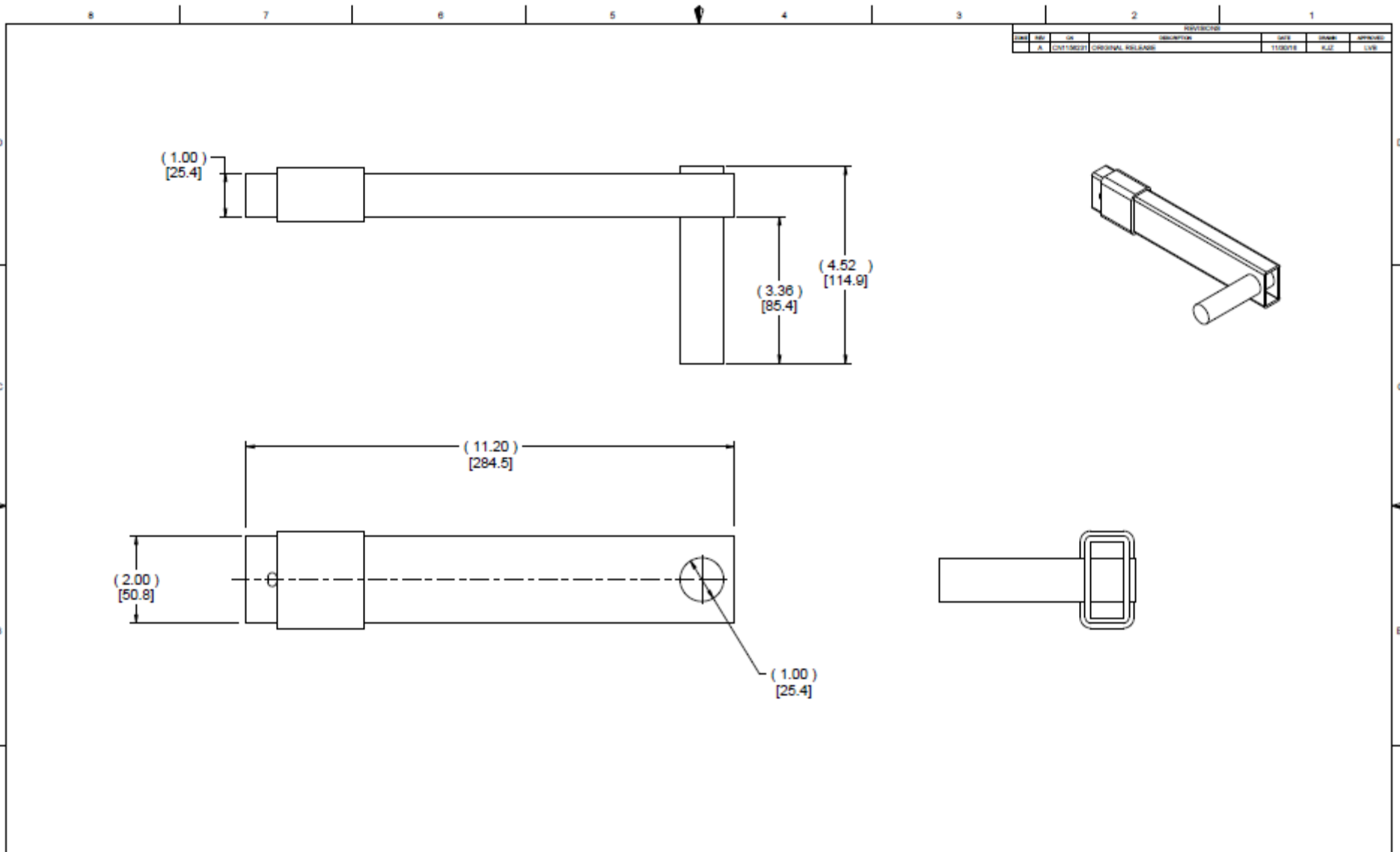
MATERIAL: --- CAST STEEL	WARNING: THE EXPORT OR REEXPORT OF THIS DRAWING OR A PRODUCT PRODUCED BY THIS DRAWING IS SUBJECT TO U.S. EXPORT ADMINISTRATION REGULATIONS AND OTHER APPLICABLE GOVERNMENT RESTRICTIONS OR REGULATIONS.	DO NOT SCALE DRAWINGS DRAWING CONFORMS TO ASME Y14.5M - 1994
ALTERNATE MATERIAL:	PROPRIETARY NOTICE THIS DRAWING CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION IS THE PROPERTY OF INGERSSOLL-RAND CO. AND IS GIVEN TO THE RECEIVER IN CONFIDENCE. THE RECEIVER BY RECEPTION AND RETENTION OF THIS DRAWING ACCEPTS THE DRAWING IN CONFIDENCE AND AGREES THAT, EXCEPT AS AUTHORIZED IN WRITING BY INGERSSOLL-RAND CO. IT WILL (1) NOT USE THE DRAWING OR ANY COPY THEREOF OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN; (2) NOT COPY THE DRAWING; (3) NOT DISCLOSE TO OTHERS EITHER THE DRAWING OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN; AND (4) UPON COMPLETION OF THE NEED TO RETAIN THE DRAWING OR UPON DEMAND, RETURN THE DRAWING, ALL COPIES THEREOF, AND ALL MATERIAL COPIED THEREFROM.	NO MANUAL REVISIONS ALLOWED UNLESS OTHERWISE SPECIFIED: - REMOVE ALL BURRS AND SHARP CORNERS - WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/ASME A2.4
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SCALE	DATE
1:50	11/01/16
SCALE	DATE
1:50	11/01/16

SOURCE CONTROL DRAWING

IR Ingersoll Rand.
**REACTION ARM, 72mm,
YOKE, CAST STEEL**

SIZE	WEIGHT	PART NO	REVISION
A1	0.45 Kg	NSP-766-72Y	A



REV	BY	DATE	DESCRIPTION	DATE	DRAWN	APPROVED
A	CDT138221		ORIGINAL RELEASE	11/05/18	RJT	LRB

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	18298
MFR NAME	ADDRESS	PART NO.

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MATERIAL: -- PEG - STEEL - 4140 -- TUBE AND SLEEVE - STEEL - 4130	STANDARD TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994
ALTERNATE MATERIAL: ---	UNSPECIFIED TOLERANCES Ø = ± 1.0 X.X = ± 0.5 X.XX = ± 0.25 ANGLES = ± 1/2°
	MACHINED SURFACES 3.2 MAX ★ CRITICAL TO QUALITY MINIMUM WELD: NOMI TOUGH METAL

UNLESS OTHERWISE SPECIFIED PRINTED DOCUMENT IS UNCONTROLLED

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UNLESS OTHERWISE SPECIFIED DIMENSIONS SHALL BE IN ACCORDANCE WITH AMERICAN AS14

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DATE	BY	DATE	BY
11/05/18	RJT	11/05/18	RJT
11/05/18	RJT	11/05/18	RJT
11/05/18	RJT	11/05/18	RJT

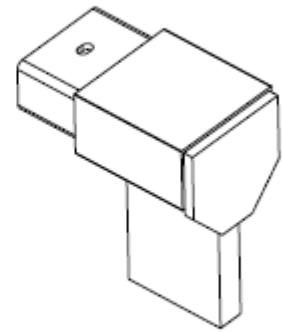
SOURCE CONTROL DRAWING

**REACTION ARM, 52/72M
 M YOKE TUBE AND PEG**

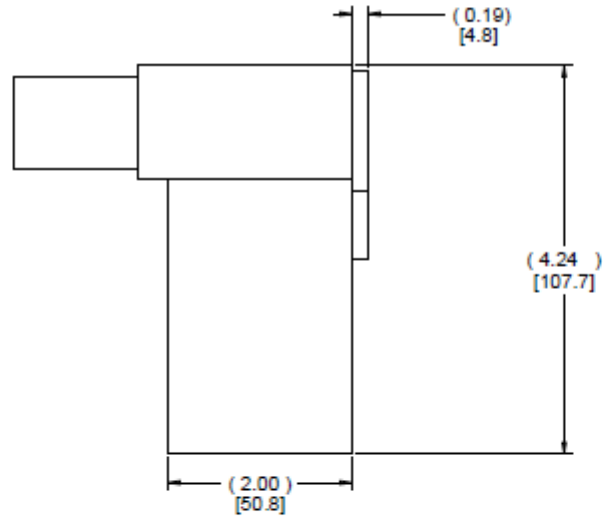
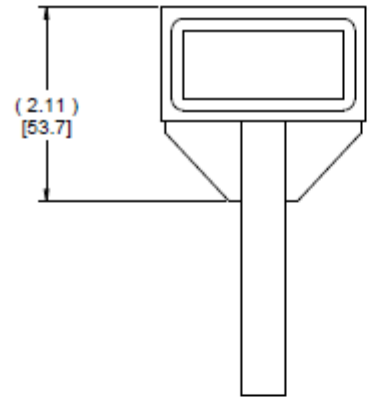
QTY	WEIGHT	UNIT
A1	0.0 kilogram	

NSP-766-52-72YTP A

REV	BY	CR	DESCRIPTION	DATE	ISSUED	APPROVED
A			ORIGINAL RELEASE	11/09/16	KJE	LVM



SCALE 1.000



NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	18241
MFR NAME	ADDRESS	PART NO.

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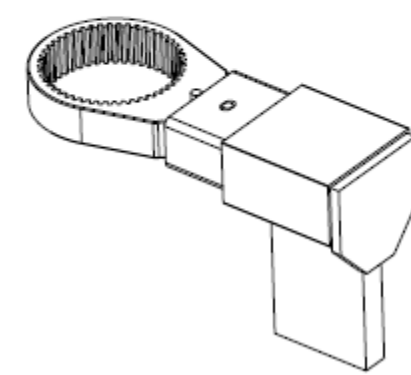
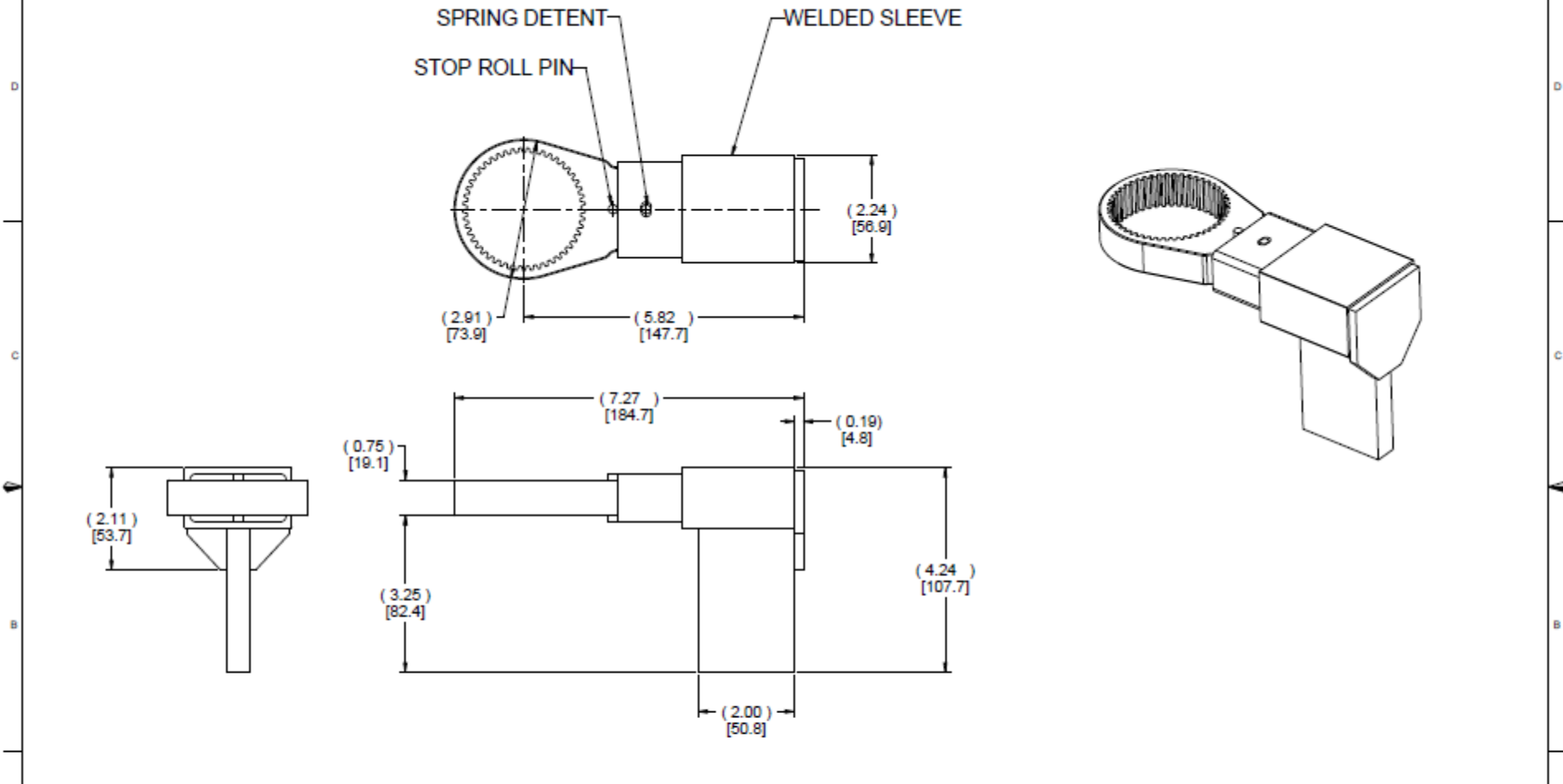
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MATERIAL: — TUBE AND SLEEVE - STEEL - 4130	STANDARD TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994 UNSPECIFIED TOLERANCES: X ±1.0 Z ±0.5 X, Y ±0.2 ANGLES ±1° MACHINED SURFACES ±0.2 MAX ★ CRITICAL TO QUALITY NORMAL END - TORQUE TOOLS - SUPPLY	THIS DRAWING IS THE PROPERTY OF INGERSOLL RAND CO. AND IS GIVEN TO THE RECEIVER IN CONFIDENCE. THE RECEIVER BY ACCEPTANCE AND REPRODUCTION OF THE DRAWING ACCEPTS THE DRAWING IN CONFIDENCE AND AGREES THAT, EXCEPT AS AUTHORIZED IN WRITING BY INGERSOLL RAND CO. IT WILL (1) NOT USE THE DRAWING OR ANY COPY THEREOF OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN; (2) NOT COPY THE DRAWING; (3) NOT DISCLOSE TO OTHERS ANY INFORMATION THEREIN; AND (4) UPON COMPLETION OF THE WORK TO WHICH THE DRAWING OR UPON RECEIPT THEREOF, RETURN THE DRAWING, ALL COPIES THEREOF, AND ALL MATERIAL COPIES THEREOF.	DO NOT SCALE DRAWINGS DRAWING CONFORMS TO ASME Y14.5M - 1994 NO MANUAL REVISING ALLOWED CAD GENERATED DRAWING UNLESS OTHERWISE SPECIFIED FINISH, ALL SURFACES AND SHARP CORNERS - WELD SYMBOLS TO AN IN ACCORDANCE WITH ANSI/ASME A2.4
---	---	--	--

PROPRIETARY NOTICE	DATE	TIME
COPYRIGHT © 2016 Ingersoll Rand ALL RIGHTS RESERVED	K. ZIMMER	11/09/16
	L. KROST	11/09/16
	W. H. H.	11/09/16
	D. BROWN	11/09/16
Drawn by	Checked by	DATE
NSP-766-52-72YP		11/09/16

SOURCE CONTROL DRAWING	
REACTION ARM, 52/72MM, YOKE TUBE AND PADDLE	
Part No.	REV
NSP-766-52-72YP	A
Weight	Scale
0.0 kilogram	1:50
Sheet	Total
1 of 1	1 of 1

DATE	REV.	BY	DESCRIPTION	DATE	BY	APPROVED
	A	11/02/11	ORIGINAL RELEASE	11/02/11	AJJ	UVB



ITEM	QTY.	PART NO.	NOMENCLATURE	DESCRIPTION	MATL.	SHTZ
2	1	NSP-766-72Y	NSP-766-72Y	REACTION ARM, 72mm, YOKE, CAST STEEL		
1	1	NSP-766-52-72YP	NSP-766-52-72YP	REACTION ARM, 52/72MM, YOKE TUBE AND PADDLE		

BOM FOR NSP-766-72YPA

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	14290
MFR NAME	ADDRESS	PART NO.
		CONFIG. 2

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STANDARD YOU REQUEST
 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994

UNSPECIFIED TOLERANCES:
 F ± 0.13
 M ± 0.25
 H ± 0.50
 ANGLES ± 1.0°

MACHINED SURFACES: 3.2 MAX
 * CRITICAL TO QUALITY

INGRESSOL RAND

REVISIONS

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DO NOT SCALE DRAWING

DRAWING CONFORMS TO ASME Y14.5M-1994

NO MANUAL REVISIONS ALLOWED

UNLESS OTHERWISE SPECIFIED REMOVE ALL BURRS AND SWAMP CORNERS WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/AWS A2.4

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SOURCE CONTROL DRAWING

REACTION ARM, 72mm, YOKE AND PADDLE ASSEMBLY

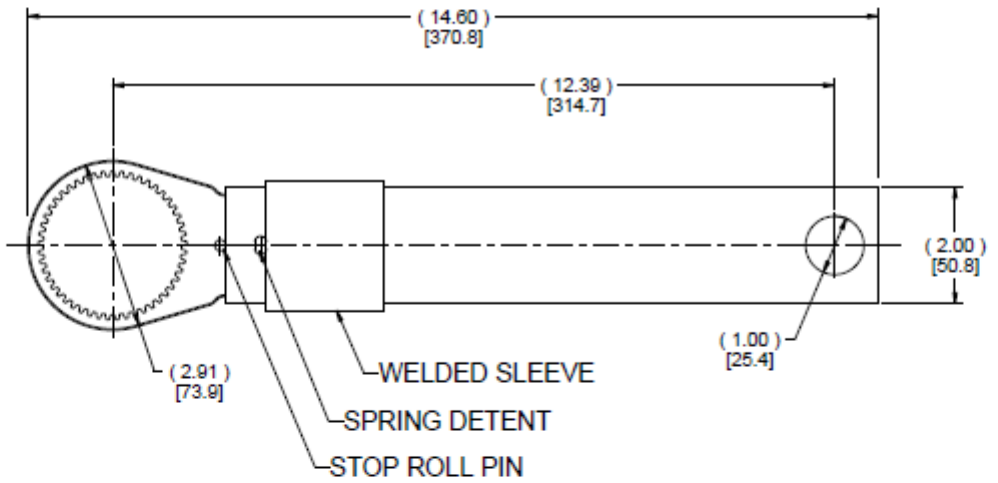
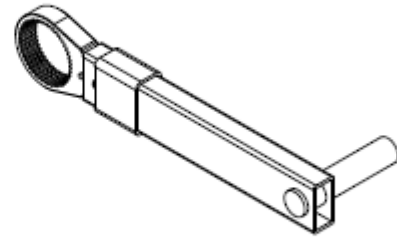
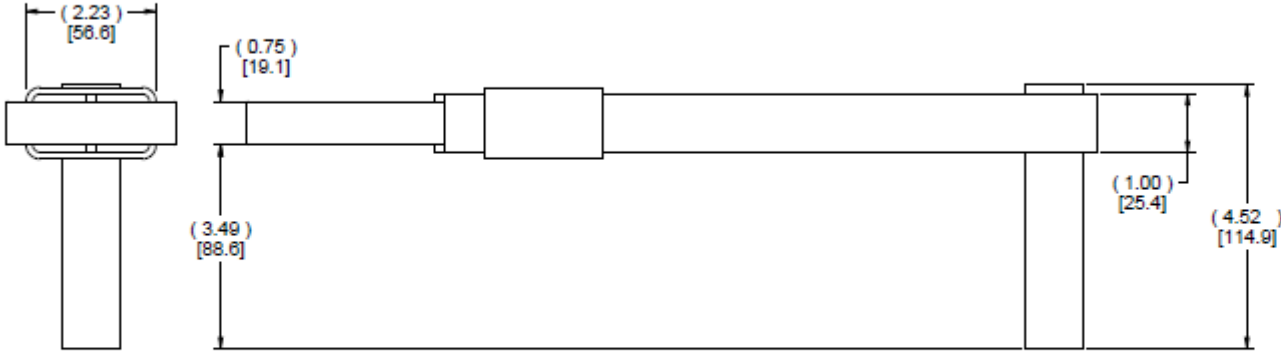
NSP-766-72YPA

0.0 kilogram

1.00

1 of 1

REV	NO.	DATE	DESCRIPTION	BY	CHKD	APPROVED
A	1	11/08/15	ORIGINAL RELEASE		AJZ	LUB



ITEM	QTY.	PART NO.	NOMENCLATURE	DESCRIPTION	MATL.	SHTZ
2	1	NSP-766-72Y	NSP-766-72Y	REACTION ARM, 72mm, YOKE, CAST STEEL		
1	1	NSP-766-52-72YTP	NSP-766-52-72YTP	REACTION ARM, 52/72MM YOKE TUBE AND PEG		

BOM FOR NSP-766-72YTA

SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	14290
MFR NAME	ADDRESS	PART NO.
		CONFIG. 1

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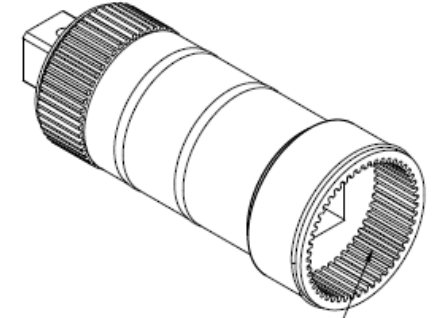
1000 , 1350, & 2000 Nm

TOOLS

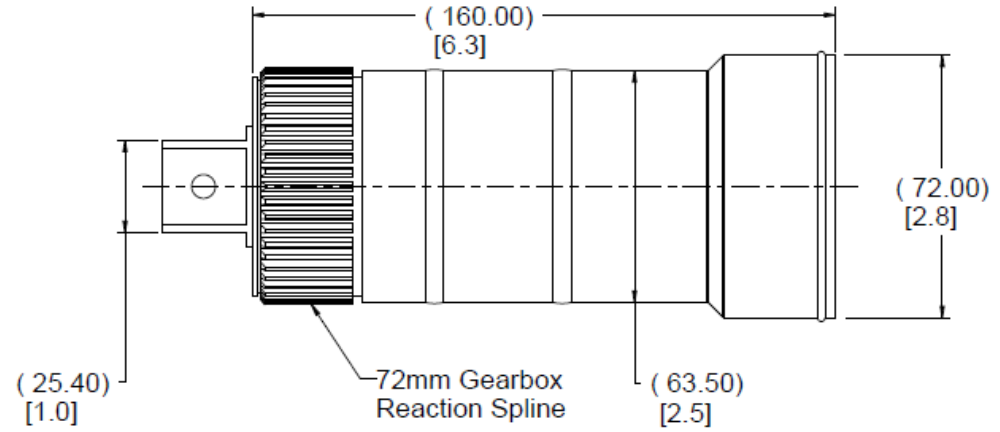
72 mm SPLINE

EXTENSIONS

REVISIONS			
NO.	REV.	BY	DATE
1	A		12/07/2016



72mm Gearbox
Reaction Spline



SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	19046.006
MFR NAME	ADDRESS	PART NO.

STANDARD TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS PER ASME Y14.5M-1994	WARNING: THE REPORT OR REPORT OF THE DRAWING OR A PRODUCT PRODUCED BY THIS DRAWING IS BEING ISSUED WITHOUT ASSUMPTION OF LIABILITY AND OTHER APPLICABLE REGULATIONS
UNSPECIFIED TOLERANCES: Ø ±0.10 XX ±0.05 XXX ±0.25 ANGLES ±1.0° MACHINED SURFACES: 3.2 MAX * CRITICAL TO QUALITY	SECRETARY NOTICE THIS DRAWING CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION IS THE PROPERTY OF INGERSOLL-RAND CO. AND IS LOANED TO THE RECIPIENT IN CONFIDENCE. THE RECIPIENT BY ACCEPTANCE AND RETENTION OF THE DRAWING ACCEPTS THE DRAWING IN CONFIDENCE AND AGREES THAT, EXCEPT AS AUTHORIZED IN WRITING BY INGERSOLL-RAND CO. IT WILL (1) NOT USE THE DRAWING OR ANY COPY THEREOF OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN; (2) NOT COPY THE DRAWING; (3) NOT DISCLOSE TO OTHERS EITHER THE DRAWING OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN; AND (4) UPON COMPLETION OF THE NEED TO RETAIN THE DRAWING, OR UPON DEMAND, RETURN THE DRAWING, ALL COPIES THEREOF, AND ALL MATERIAL COPIED THEREFROM.

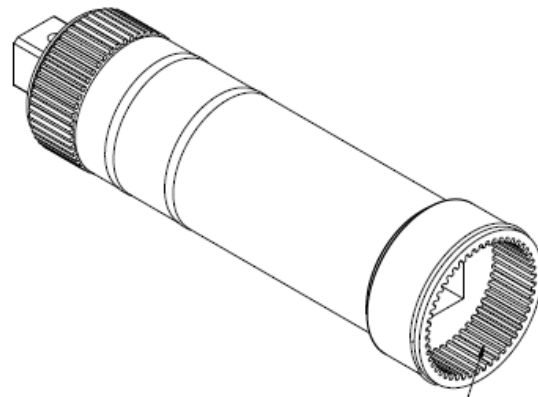
DO NOT SCALE DRAWING DRAWING CONFORMS TO ASME Y14.5M - 1994 CAD GENERATED DRAWING, NO MANUAL REVISIONS ALLOWED	DATE 12/07/16
UNLESS OTHERWISE SPECIFIED: - REMOVE ALL BURRS AND SHARP CORNERS - WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/AWS A2.4	DATE 12/07/16

DESIGNED BY K. ZIMMER	DATE 12/07/16
CHECKED BY L. BOST	DATE 12/07/16
APPROVED BY D. BECKER	DATE 12/07/16

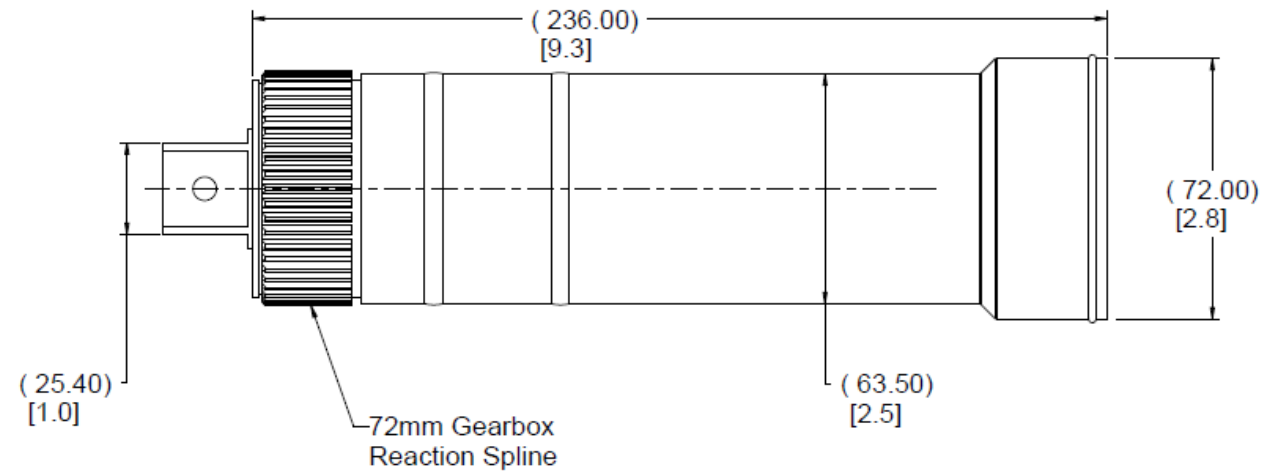
IR Ingersoll Rand	
NOSE EXTENSION, 72MM, 6.0 INCH	
SIZE A1	WEIGHT 2.5 kilogram
SCALE 1:50	PRINT NSP-766-72NX060

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REVISIONS			
REV	DATE	DRAWN	APPROVED
A	12/07/2016	KJZ	LVB



72mm Gearbox Reaction Spline



72mm Gearbox Reaction Spline

SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	19046.009
MFR NAME	ADDRESS	PART NO.

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 APPROVED SOURCE OF SUPPLY

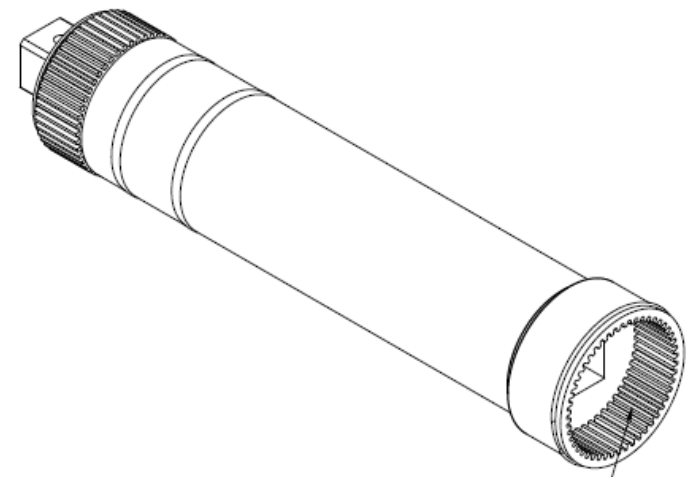
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STANDARD TOLERANCES UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS SEE ASME Y14.5M-1994	WARNING: THE EXPORT OR REEXPORT OF THIS DRAWING OR A PRODUCT PRODUCED BY THE DRAWER IS SUBJECT TO U.S. EXPORT ADMINISTRATION REGULATIONS AND THE APPLICABLE GOVERNMENT RESTRICTIONS OR REGULATIONS.	DO NOT SCALE DRAWING DRAWING CONFORMS TO ASME Y14.5M - 1994
UNSPECIFIED TOLERANCES: X +/- 1.0 XX +/- 0.5 XXX +/- 0.25 ANGLES +/- 1.0°	PROPRIETARY NOTICE THIS DRAWING CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION, IS THE PROPERTY OF INGERSOLL-RAND CO., AND IS GIVEN TO THE RECEIVER IN CONFIDENCE. THE RECEIVER BY RECEPTION AND RETENTION OF THIS DRAWING ACCEPTS THE DRAWING IN CONFIDENCE AND AGREES THAT, EXCEPT AS AUTHORIZED IN WRITING BY INGERSOLL-RAND CO. IT WILL (1) NOT USE THE DRAWING OR ANY COPY THEREOF OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN; (2) NOT COPY THE DRAWING; (3) NOT DISCLOSE TO OTHERS EITHER THE DRAWING OR THE CONFIDENTIAL OR TRADE SECRET INFORMATION THEREIN; AND (4) UPON COMPLETION OF THE NEED TO RETAIN THE DRAWING, OR UPON DEMAND, RETURN THE DRAWING, ALL COPIES THEREOF, AND ALL MATERIAL COPIED THEREFROM.	CAD GENERATED DRAWING. NO MANUAL REVISIONS ALLOWED
MACHINED SURFACES 32 MAX ● CRITICAL TO QUALITY INGERSOLL-RAND - POWER TOOLS - MEXICO		UNLESS OTHERWISE SPECIFIED: - REMOVE ALL BURRS AND SHARP CORNERS - WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/AWS A2.4

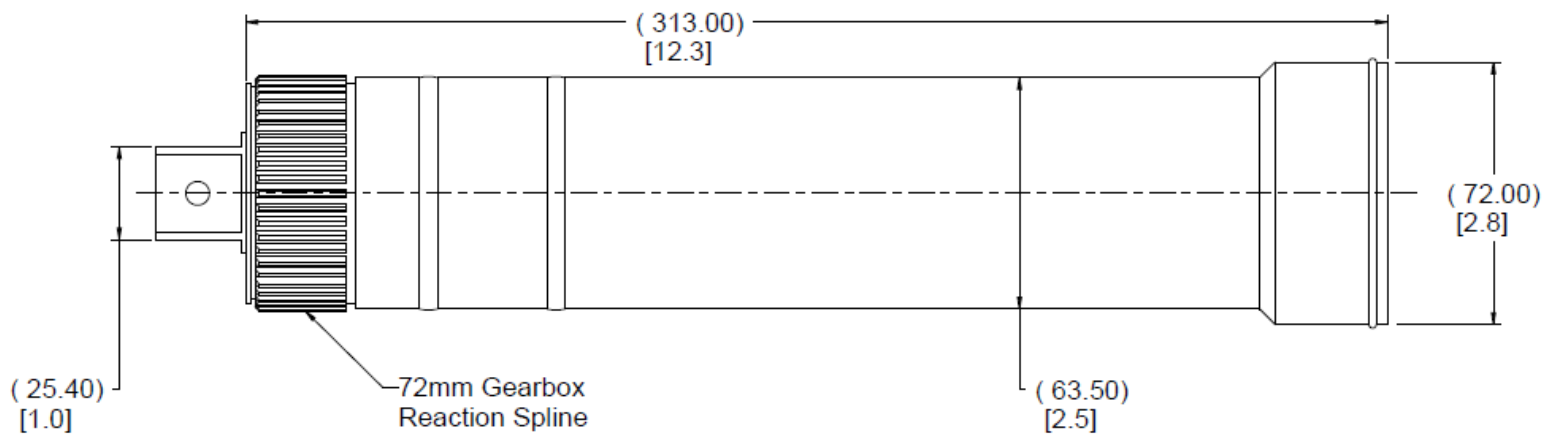
DESIGN K.ZIMMER	DATE 12/07/16
DRAWN L.BORST	DATE 12/07/16
APPROVED D.BECKER	DATE 12/07/16
DETAIL DRAWING	
SCALE 1:50	QUANTITY NSP-766-72NX090

INGERSOLL-RAND	NOSE EXTENSION, 72MM, 9.0 INCH
WEIGHT 3.8 kilogram	REVISION A
SCALE 1:50	DATE 12/07/16

REVISIONS				
DATE	DESCRIPTION	DATE	DRAWN	APPROVED
12/07/2018	ORIGINAL RELEASE		KJZ	LVB



72mm Gearbox
Reaction Spline



72mm Gearbox
Reaction Spline

SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	19046.012
MFR NAME	ADDRESS	PART NO

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STANDARD TOLERANCES
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN MILLIMETERS
PER ASME Y14.5M-1994

UNSPECIFIED TOLERANCES:
H: +0.10
X.X: +0.25
X.XX: +0.50
ANGLES: H: 1/2°

MACHINED SURFACES: 3.2 MAX

* CRITICAL TO QUALITY

INGERSOLL RAND: POWER TOOLS - METRIC

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DO NOT SCALE DRAWING
DRAWING CONFORMS TO
ASME Y14.5M - 2004

CAD GENERATED DRAWING,
NO MANUAL REVISIONS ALLOWED

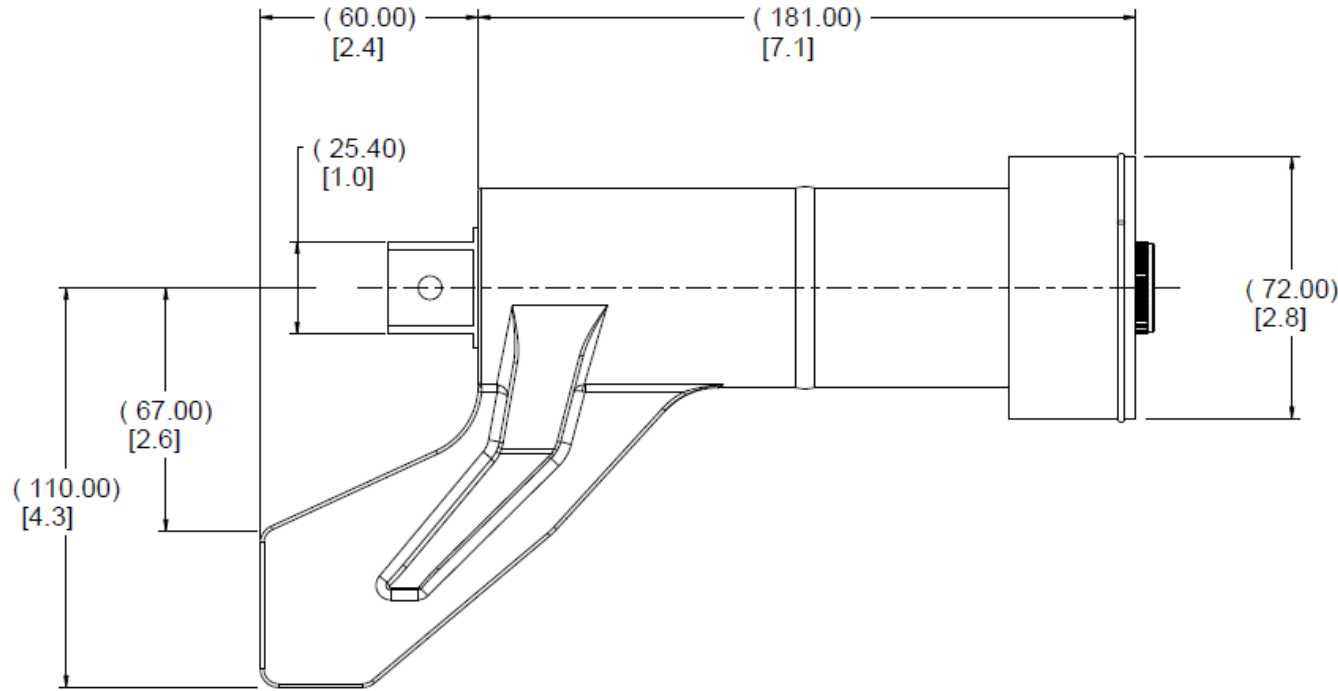
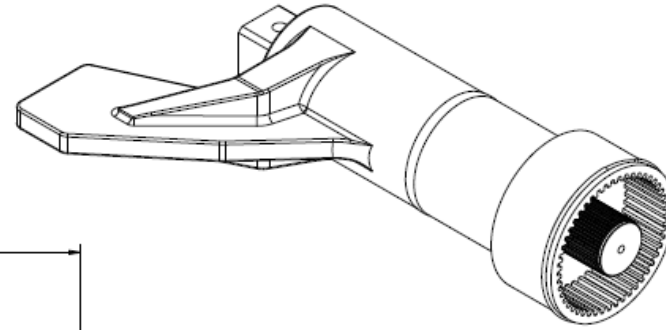
UNLESS OTHERWISE SPECIFIED:
- REMOVE ALL BURRS AND SHARP CORNERS
- WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/AWS A2.4

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DESIGNED BY	DATE
H. ZIMMER	12/07/18
DRAWN BY	DATE
L. BORST	12/07/18
CHECKED BY	DATE
D. BECKER	12/07/18

NOSE EXTENSION, 72MM, 12.0 INCH	
SIZE: A1 SCALE: 1:50	WEIGHT: 4.8 kilogram PART NO: NSP-766-72NX120 REV: A

REVISIONS					
DATE	REV	BY	DESCRIPTION	DATE	APPROVED
	A		ORIGINAL RELEASE	12/07/2016	KJZ LVB



SOURCE CONTROL DRAWING

NORBAR TORQUE TOOLS INC.	WILLOUGHBY, OHIO USA	19007.006
MFR NAME	ADDRESS	PART NO.

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ASME Y14.5M - 1994

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UNLESS OTHERWISE SPECIFIED:
- REMOVE ALL BURS AND SHARP CORNERS
- WELD SYMBOLS TO BE IN ACCORDANCE WITH ANSI/ASME A2.4

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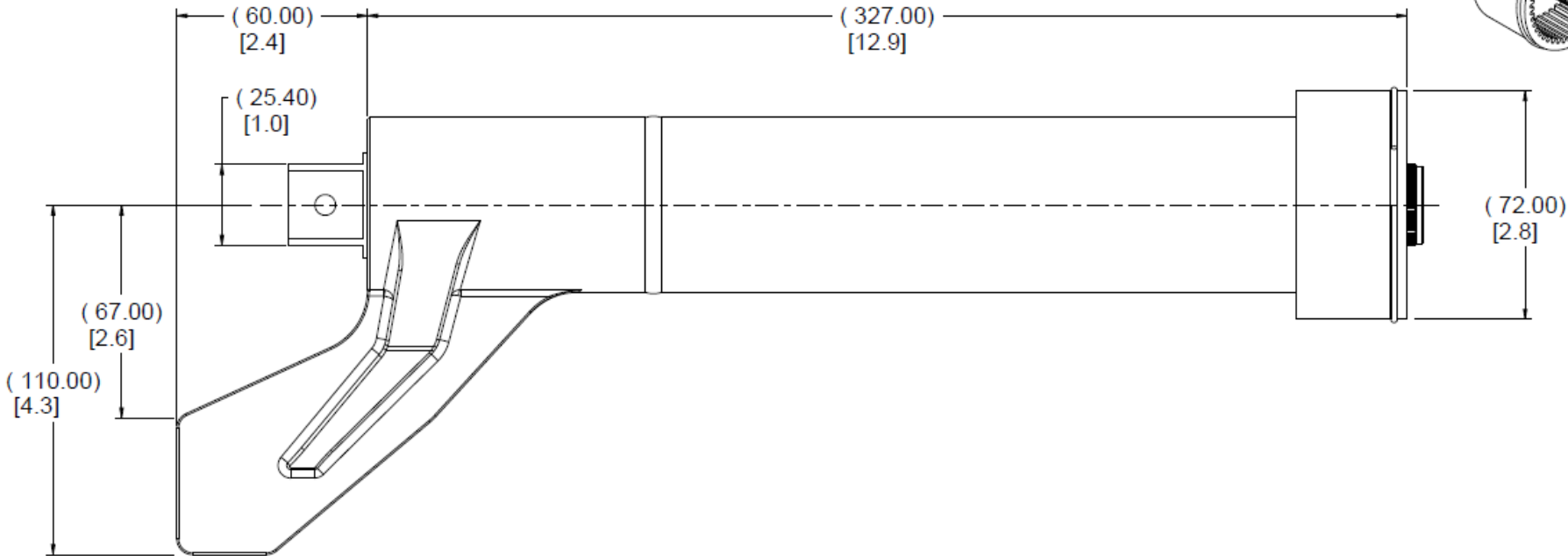
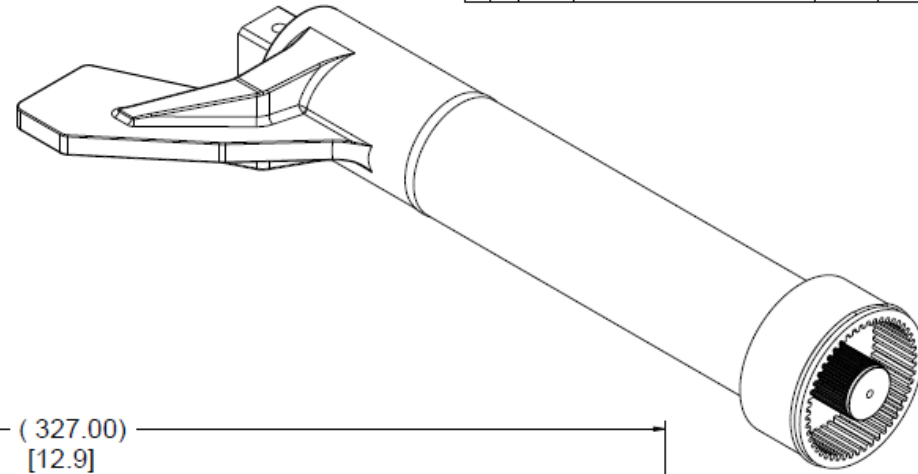
DESIGNED BY	DATE
K.ZIMMER	12/07/16
DRAWN BY	DATE
L.ABREST	12/07/16
CHECKED BY	DATE
D.BECKNER	12/07/16
APPROVED BY	DATE
DETAILS	DATE
NSP-766-72NXW060	

SIZE	ESTIMATED WEIGHT (AS SHOWN - UNLESS SPECIFIED)	PART NO.	REVISION
A1	3.0 kilogram	NSP-766-72NXW060	A
SCALE	1:50	DRAWN	1 of 1



**NOSE EXTENSION ASSY, 72MM,
6.0 INCH WHEEL**

REVISIONS					
DATE	REV	CHK	DESCRIPTION	DATE	APPROVED
	A		ORIGINAL RELEASE	12/07/2016	KJZ LVB



SOURCE CONTROL DRAWING



**NOSE EXTENSION ASSY, 72MM,
12.0 INCH WHEEL**

NORBAR TORQUE TOOLS INC. WILLOUGHBY, OHIO USA 19007.012

MFR NAME ADDRESS PART NO.

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UNIT: MILLIMETER	SCALE: 1:1
UNIT: INCH	SCALE: 1:1
UNIT: KILOGRAM	SCALE: 1:1
UNIT: METRIC	SCALE: 1:1

DETAIL DRAWING	SCALE: 1:1	PART NO.	REVISION
NSP-766-72NXW120	1:1	NSP-766-72NXW120	A