

The **Penny+Giles ICT080 Contactless In-Cylinder Linear Transducer** has been specifically designed for small bore mobile and static hydro-pneumatic actuators.

Designed primarily for the off-highway markets, the ICT080 linear transducer provides reliable, fit-and-forget position sensing of the cylinder rod in actuators with strokes up to 1000mm, with a body diameter of only 8mm.

It is a robust, non-contact transducer suitable for the harsh conditions of lifting and steering position applications and hydro-pneumatic active suspension systems. It works on an inductive coil principle, with virtually infinite resolution and is capable of withstanding temperatures down to -55°C and up to 200°C, with working pressures up to 670Bar (10,000psi).



## ICT080

## IN-CYLINDER LINEAR TRANSDUCER

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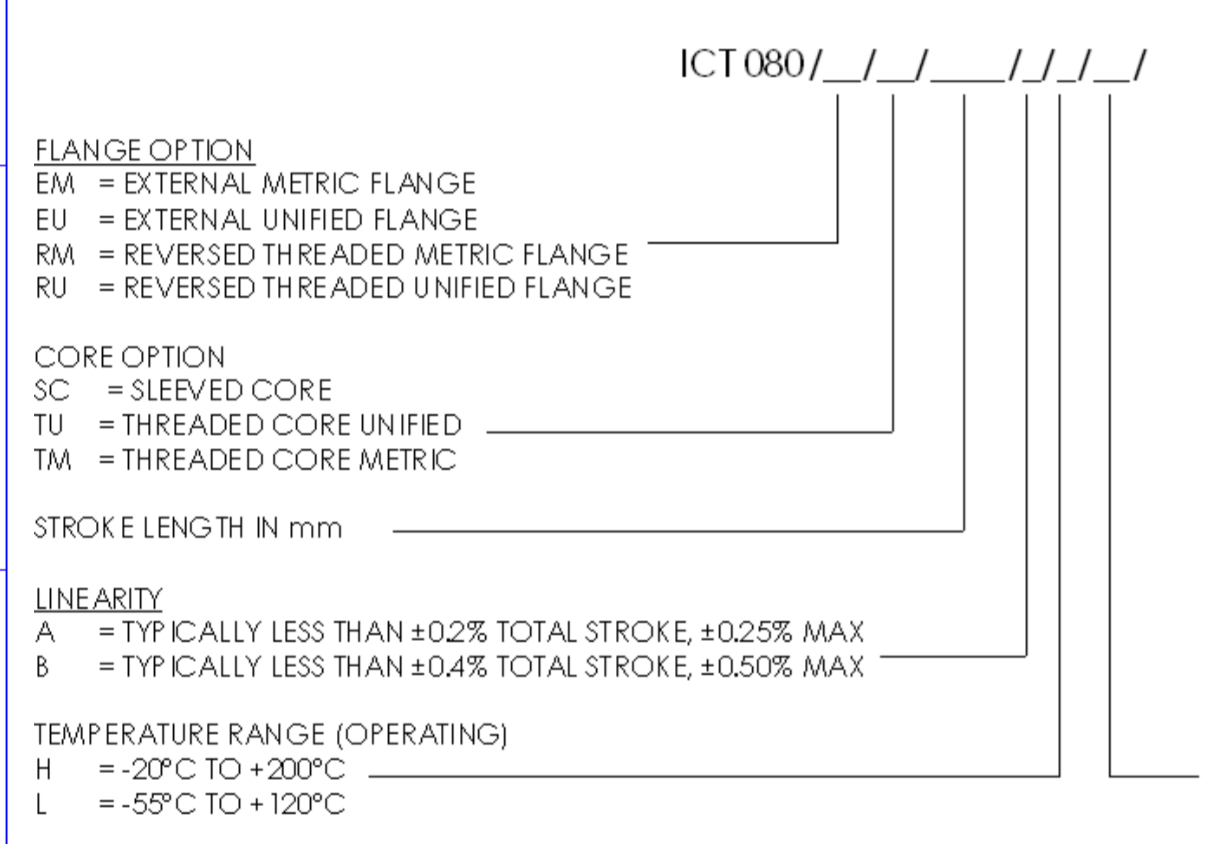
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METRIC IF IN DOUBT ASK	
<b>SPECIFICATION</b>	
ELECTRICAL STROKE LENGTH	25mm TO 200mm (IN 5mm INCREMENTS) 210mm TO 1000mm (IN 10mm INCREMENTS)
TEMPERATURE RANGE (OPERATING)	SEE ORDERING CODE
TEMPERATURE RANGE (STORAGE)	-55°C TO +200°C
TEMPERATURE PERFORMANCE	< ± 100ppm OF ELECTRICAL STROKE/°C (+20°C TO +60°C) < ± 200ppm OF ELECTRICAL STROKE/°C (-20°C TO +100°C) < ± 300ppm OF ELECTRICAL STROKE/°C (-20°C TO +200°C)
LEAST SQUARES LINEARITY	SEE ORDERING CODE
RESOLUTION	INFINITE
MAX. WORKING PRESSURE	670 BAR
INSULATION RESISTANCE	YELLOW/BLUE TO CASE >50MΩ @50Vdc SCREEN TO CASE >50MΩ @50Vdc
GREEN WIRE BONDING RESISTANCE	< 1 + (0.08 x CABLE LENGTH IN METRES)Ω, e.g. 20M CABLE = 1 + (0.08 x 20) = 2.60 Ω

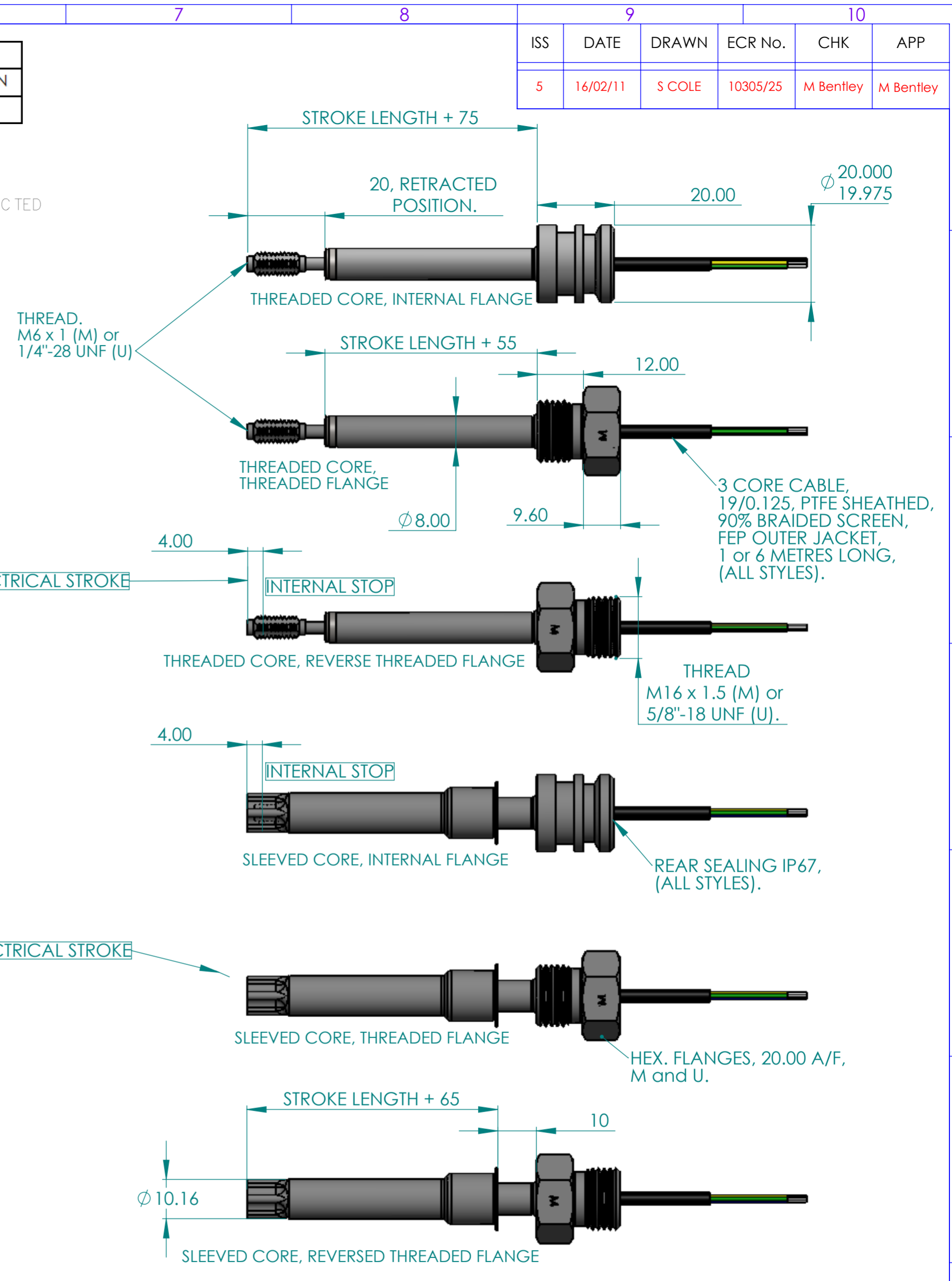
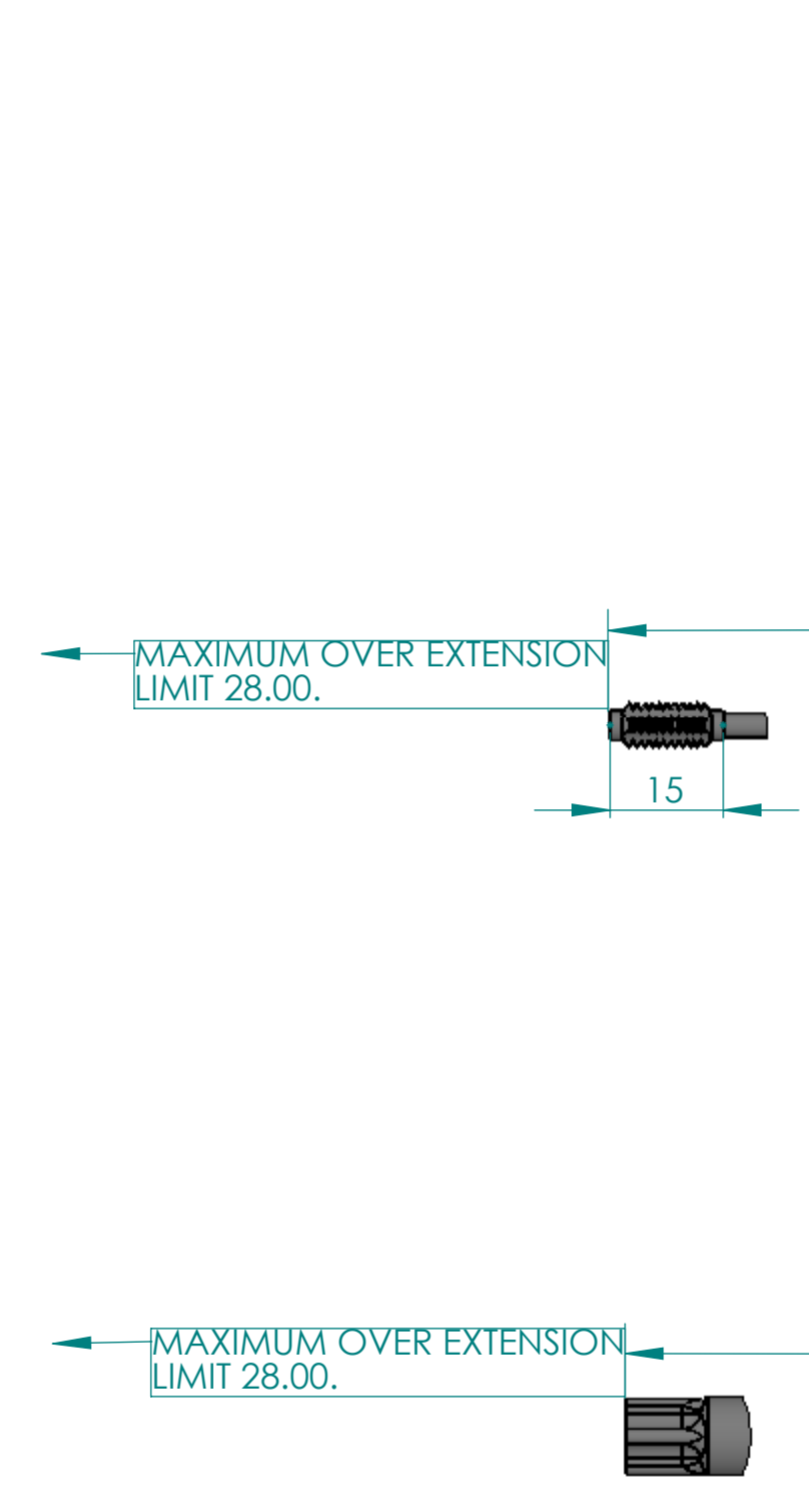
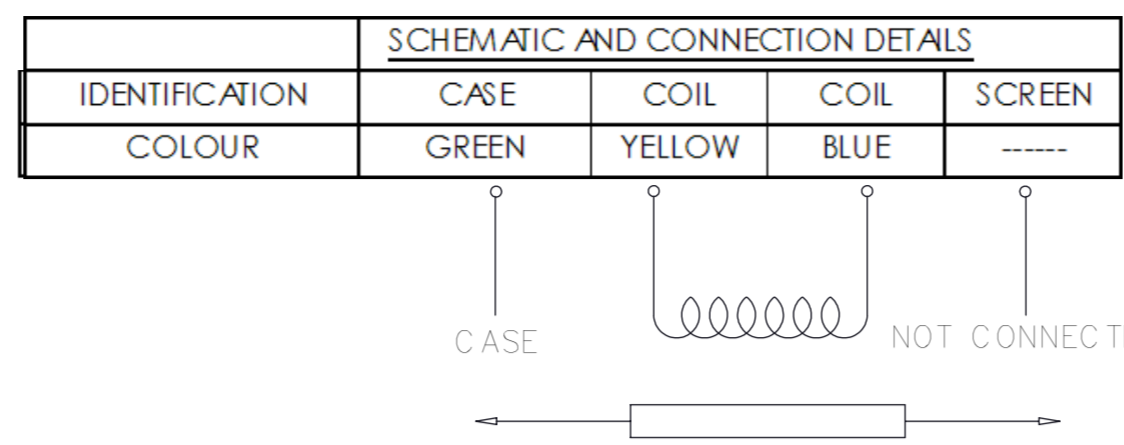
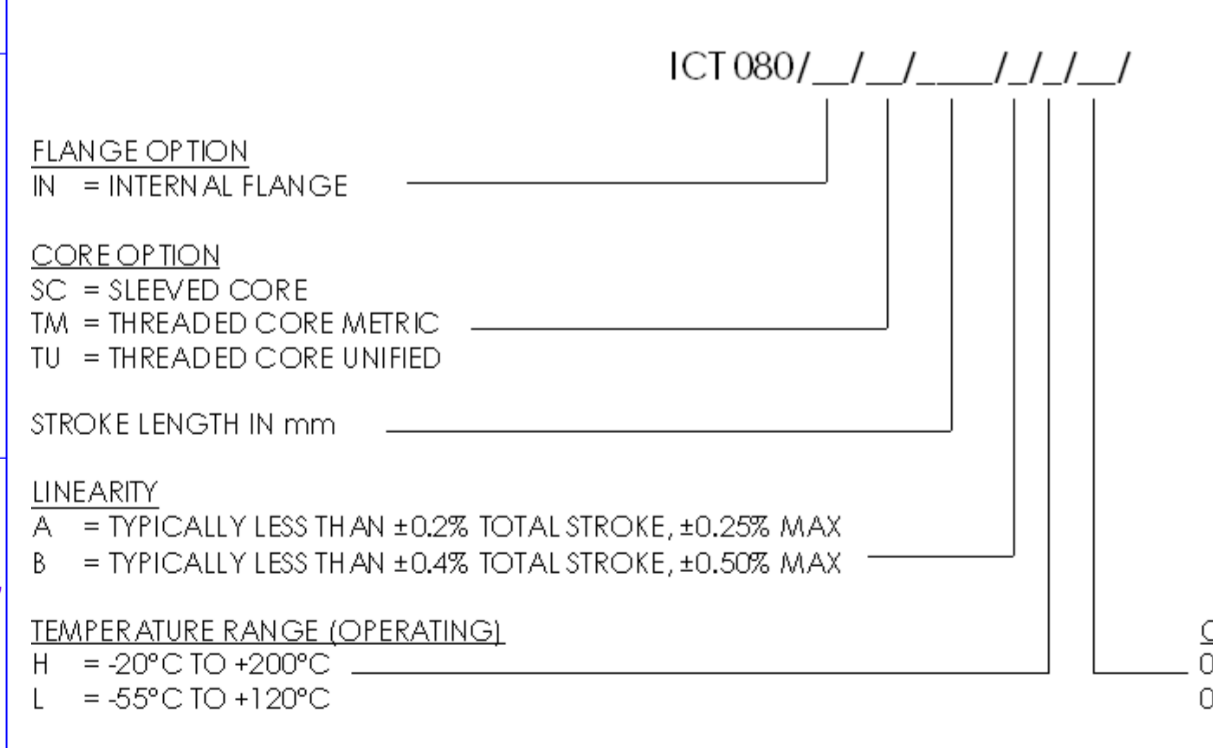
**NOTES**  
 1. STROKE LENGTH SPECIFIED BY CUSTOMER WITHIN RANGE 25mm TO 1000mm.  
 2. THESE SPECIFICATIONS APPLY ONLY WHEN THE ICT IS OPERATED IN CONJUNCTION WITH A Penny & Giles 'EICT' ELECTRONIC MODULE.  
 3. ELECTRONIC MODULES ARE ORDERED SEPARATELY, SEE APPROPRIATE Penny & Giles DATA SHEET(S)

**PROGRAMMING MODULE**  
 EACH TRANSDUCER IS SUPPLIED WITH A SENSOR LENGTH MODULE CALIBRATED TO MATCH THE ELECTRICAL STROKE LENGTH. THE MODULE IS PLUGGED INTO THE REQUIRED 'EICT' ELECTRONIC MODULE VIA MATING CONNECTORS. IT IS IMPORTANT THE TRANSDUCER STROKE LENGTH AND THE SENSOR LENGTH MODULE STROKE LENGTH ARE MATCHED.  
 E.G. SENSOR LENGTH MODULE SA203230/200  
 TRANSDUCER ICT080/EM/T/200/01

**ORDERING CODE THREADED FLANGE**



**ORDERING CODE INTERNAL FLANGE**



FOR SUGGESTED FITTING PROFILES AND DIMENSIONS, REFER TO AI202799 (H TEMP RANGE) OR AI 208510 (L TEMP RANGE).

SCALE UNLESS STATED	IF CONTROL DIMENSIONS (Kc) ARE SPECIFIED THEY ARE TO BE SUBJECT TO 100% INSPECTION OR STATISTICAL PROCESS CONTROL.	D No. <b>ICT080</b>	MATERIAL <b>STAINLESS STEEL</b>	TOLERANCES: IN-LINE WITH PENNY & GILES STANDARDS 55-301 SURFACE TEXTURE VALUES IN MICROMETRES (µm) TO BS1134:PT2. ALL MACHINED SURFACES TO BE 1.6	TITLE <b>IN CYLINDER TRANSDUCER</b>	<b>PENNY + GILES</b>	A2
THIRD ANGLE PROJECTION TO BS 8888	MASS (g)	VOL. (mm <sup>3</sup> )	REF.	FINISH <b>CLEAN</b>	ALL SCREW THREADS TO BS3643 PT.2: EXTERNAL CLASS: 6g INTERNAL CLASS: 6H ANGULAR ± 1° LINEAR (MACHINING) 0.0mm +/- 0.5mm 0.0mm +/- 0.2mm 0.00mm +/- 0.1mm 0.000mm +/- 0.01mm BREAK EDGE 0.05 - 0.15mm FILLET RADS 0.1 - 0.3mm UNLESS OTHERWISE STATED	PART NUMBER: <b>ICT080</b>	SHT 1 OF 1 SHTS

**METRIC**  
IF IN DOUBT ASK

**INSTALLATION KIT.**

PRODUCTION CONTROL TO ENSURE A COPY OF THIS DRAWING IS INCLUDED WITH EACH INSTALLATION KIT.

BECAUSE OF THE MULTIPLICITY OF POTENTIAL APPLICATIONS THE INSTALLATION DETAILS SHOWN ARE SUGGESTIONS ONLY. THE USER SHOULD ENSURE THAT THE DESIGN, METHOD OF ASSEMBLY AND MATERIALS USED ARE SATISFACTORY FOR THE INSTALLATION.

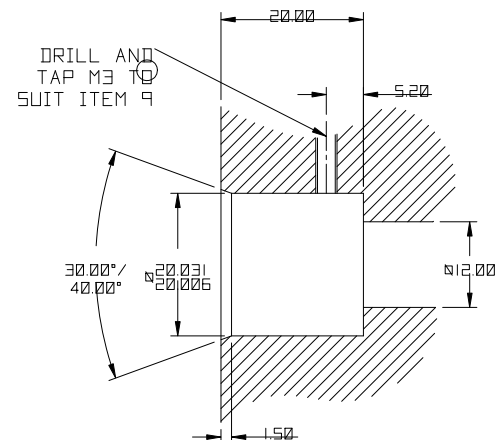
ISS	DATE	DRAWN	ECR No.	CHK	APP
3A	17/02/11	S COLE	10305/25	M Bentley	M Bentley

ITEM No.	DESCRIPTION	P+G PART No.	QTY.
1	FULL NUT M6 x 1.00.	X63-072-360	1
2	FULL NUT 1/4"-28 UNF.	X63-111-001	1
3	WAVEY WASHER	X63-112-005	3
4	SHIM WASHER	P202601	1
5	CIRCLIP	X69-005-106	1
6	'O' RING (14 x 2)	X64-194-006	1
7	'O' RING (16 x 2.5)	X64-194-008	1
8	ANTI EXTRUSION RING	X64-074-001	1
9	M3 CONICAL SET SCREW	X63-096-305	1
10	COPY OF AI202799	AI202799	1
11	LABEL (SUPPLIED LOOSE)	P200919	1
12	INSTALLATION KIT LABEL	P203232	1

ITEM 11 LABEL IS SUPPLIED FOR THE CUSTOMER TO RECORD ICT ORDERING CODE AND TO BE FITTED IN VISIBLE LOCATION ADJACENT TO SENSOR FOR RE-ORDERING REFERENCE.

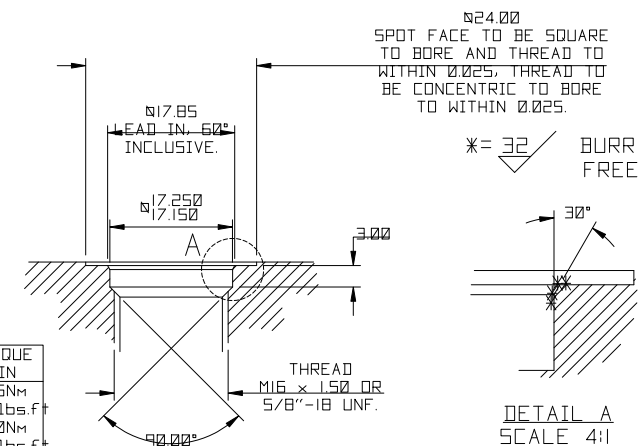
**INTERNAL FLANGE MACHINING DETAILS.**

TO SEAL USE ITEMS 7 & 8

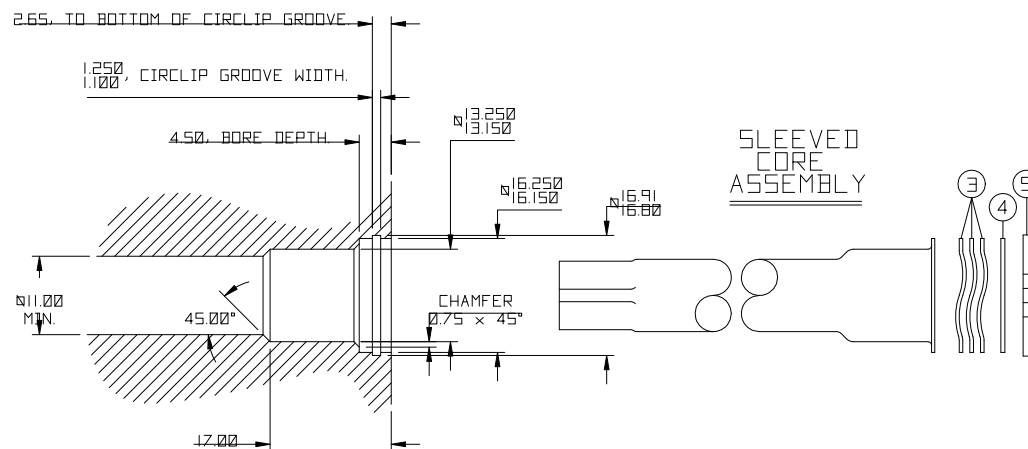
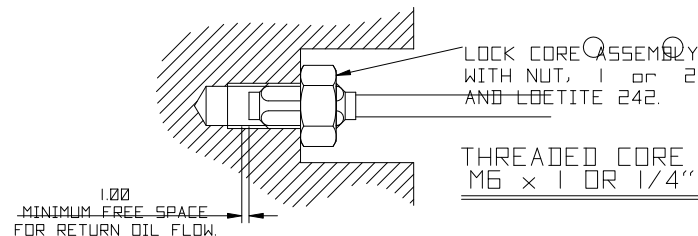


**THREADED FLANGE MACHINING DETAILS.**

TO SEAL USE ITEM 6



THREAD	TORQUE MIN
M16x1.5	40.5Nm
5/8"-18UNF	30 lbs.f
	38.0Nm
	28 lbs.f



SCALE 1:1 UNLESS STATED	IF CONTROL DIMENSIONS (K) ARE SPECIFIED THEY ARE TO BE SUBJECT TO 100% INSPECTION OR STATISTICAL PROCESS CONTROL	D No ICT080	MATERIAL -	TOLERANCES: IN-LINE WITH PENNY & GILES STANDARDS 33-501 SURFACE TEXTURE VALUES IN MICROMETRES (µ) TO BS1134PT2 TURNED: 0.8 MILLE: 0.8 GROUND: 4 ALL SCREW THREADS TO BS3643 PT.2 EXTERNAL CLASS: 6g INTERNAL CLASS: 6h	TITLE SUGGESTED ICT080 INSTALLATION DETAILS AND INSTALLATION KIT 'H' TEMPERATURE RANGE	<b>PENNY + GILES</b>	A 3
THIRD ANGLE PROJECTION TO BS 8888	REF.	FINISH -	ANGULAR ±1° LINEAR 0.05mm +/- 0.05mm (MACHINING) 0.02mm +/- 0.1mm BREAK EDGE 0.05 - 0.15mm FILLET RADS 0.1 - 0.3mm UNLESS OTHERWISE STATED		PART NUMBER: <b>AI202799</b>	SHT 1 OF 1 SHTS	

**METRIC**  
IF IN DOUBT ASK

**INSTALLATION KIT.**

PRODUCTION CONTROL TO ENSURE A COPY OF THIS DRAWING IS INCLUDED WITH EACH INSTALLATION KIT.

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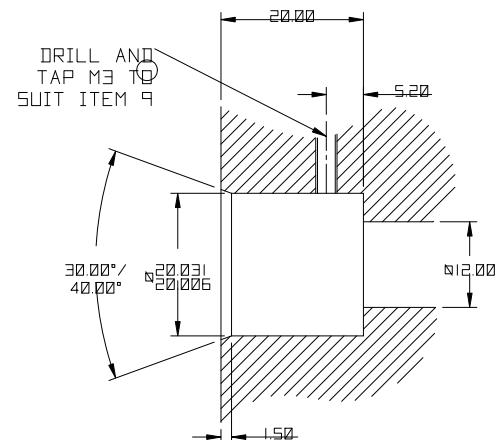
ISS	DATE	DRAWN	ECR No.	CHK	APP
1	17/02/11	S COLE	10305/25	M Bentley	M Bentley

ITEM No.	DESCRIPTION	P+G PART No.	QTY.
1	FULL NUT M6 x 1.00.	X63-072-360	1
2	FULL NUT 1/4"-28 UNF.	X63-111-001	1
3	WAVEY WASHER	X63-112-005	3
4	SHIM WASHER	P202601	1
5	CIRCLIP	X69-005-106	1
6	'O' RING (14 x 2)	X64-213-006	1
7	'O' RING (16 x 2.5)	X64-213-008	1
8	ANTI EXTRUSION RING	X64-074-001	1
9	M3 CONICAL SET SCREW	X63-096-305	1
10	COPY OF AI208510	AI208510	1
11	LABEL (SUPPLIED LOOSE)	P200919	1
12	INSTALLATION KIT LABEL	P208511	1

ITEM 11 LABEL IS SUPPLIED FOR THE CUSTOMER TO RECORD ICT ORDERING CODE AND TO BE FITTED IN VISIBLE LOCATION ADJACENT TO SENSOR FOR RE-ORDERING REFERENCE.

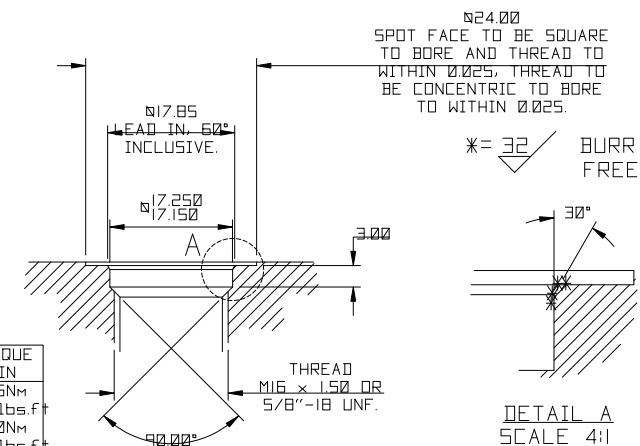
**INTERNAL FLANGE MACHINING DETAILS.**

TO SEAL USE ITEMS 7 & 8

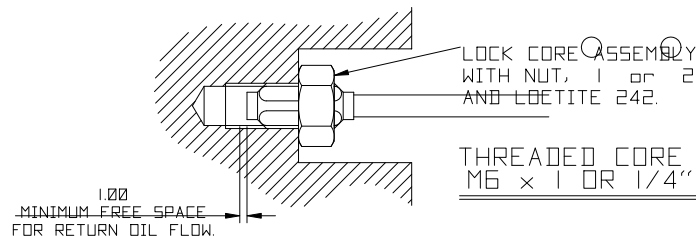


**THREADED FLANGE MACHINING DETAILS.**

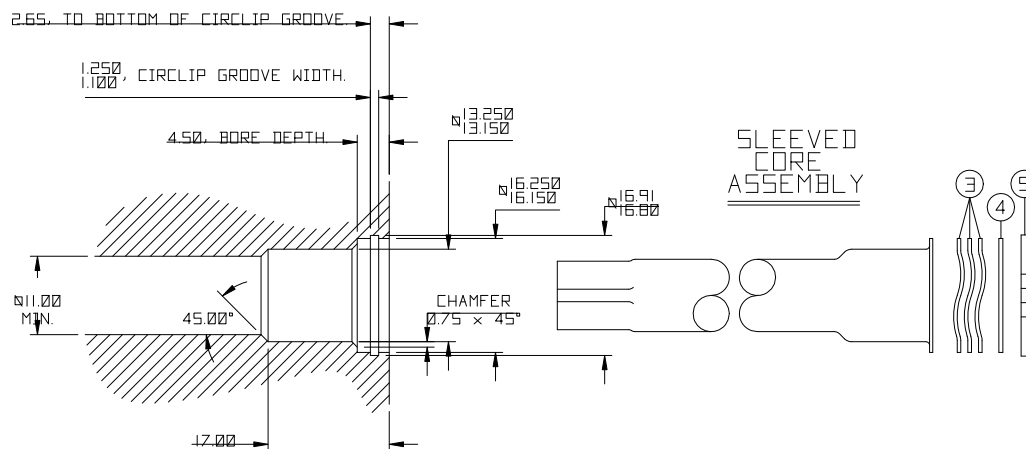
TO SEAL USE ITEM 6



THREAD	TORQUE MIN
M16x1.5	40.5Nm
5/8"-18UNF	30 lbs.f
	38.0Nm
	28 lbs.f



**THREADED CORE ASSEMBLY**  
M6 x 1 OR 1/4"-28 UNF.



SCALE 1:1 UNLESS STATED	IF CONTROL DIMENSIONS (K) ARE SPECIFIED THEY ARE TO BE SUBJECT TO 100% INSPECTION OR STATISTICAL PROCESS CONTROL	D No ICT080 FIRST USED ON	MATERIAL -	TOLERANCES: IN-LINE WITH PENNY & GILES STANDARDS 33-501 SURFACE TEXTURE VALUES IN MICROMETRES (µ) TO BS1134PT2 TURNED: 0.8 MILLE: 0.8 GROUND: 4 ALL SCREW THREADS TO BS3643 PT.2 EXTERNAL CLASS: 6g INTERNAL CLASS: 6h	TITLE SUGGESTED ICT080 INSTALLATION DETAILS AND INSTALLATION KIT 'L' TEMPERATURE RANGE	<b>PENNY + GILES</b>	A 3
THIRD ANGLE PROJECTION TO BS 8888	REF.	FINISH -	ANGULAR ±1° LINEAR 0.05mm CHAMFER 0.2mm MACHINING +/- 0.05mm BREAK EDGE 0.05 - 0.15mm FILLET RADS 0.1 - 0.3mm UNLESS OTHERWISE STATED		PART NUMBER: <b>AI208510</b>	SHT 1 OF 1 SHTS	