Technology For The Best

BESTEC CO., LTD.

Information

Company Outline

Company Information

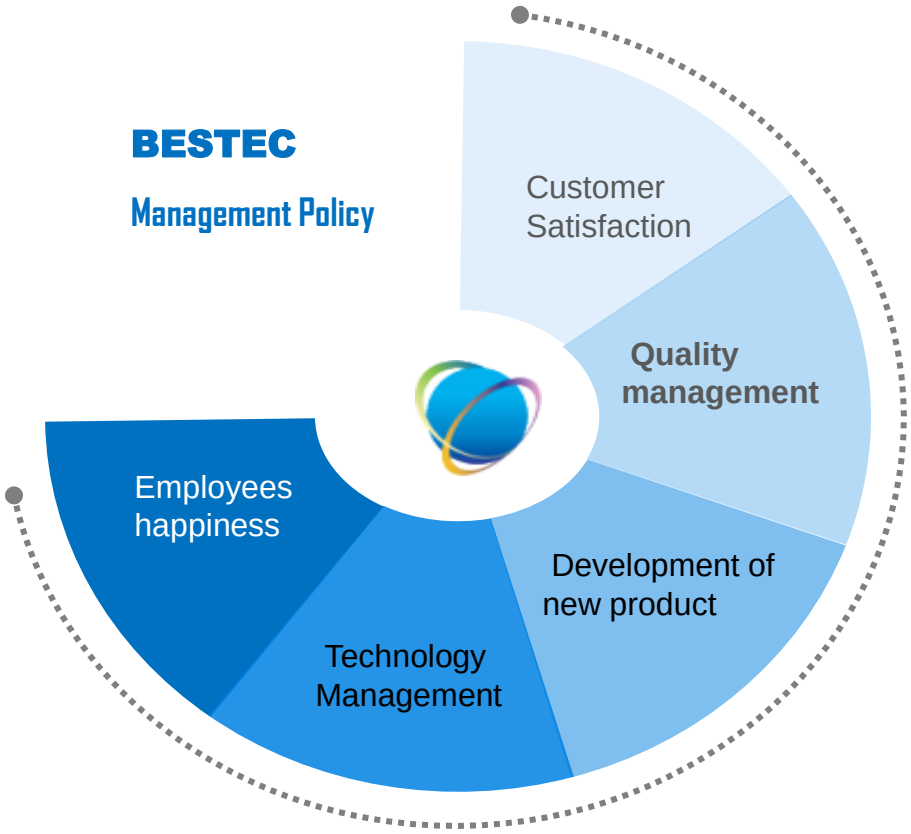
- **Company Name** : BESTEC CO., LTD
- **Establishment** : 01. 12. 1998
- **C.E.O** : KIM SUNG BONG
- **Address** : 390, cheomdan yeonsin-ro, Buk-gu

  Gwangju, Republic of Korea
- **MISSION**

  Making better products consistently
- **VISSION (Target for 2021yrs)**

  Bestec pursues employees happiness

Management policy



History & Certifications

- **Dec. 1998** Established Bestec Co. Ltd.
- **Mar. 2000** Started overseas sales (Japan, China, Asia)
- **Jul. 2005** Established a Chinese Corporation (Tianjin)
- **Oct. 2007** Acquired the Patents for “Gas Spring with built-in Gauge“
- **Aug. 2008** Recognition of the “R&D Center” from Korea Industrial Technology Association
- **Oct. 2008** Assigned the distributor in Taiwan “STAMPING MASTERS”
- **Mar. 2010** Assigned the distributor in Singapore, Malaysia “VCM”
- **Jul. 2010** Assigned the distributor in Malaysia “LOYALTOOLS”
- **Jul. 2010** Assigned the distributor in India “M/S Shri Balaji”
- **May. 2011** Assigned the distributor in Turkey “Delta”
- **Sep. 2011** Acquired the Patents for “Gas Filling apparatus for gas spring”
- **Dec. 2011** Acquired 1 Million Dollar Export Trophy (1.3Million Dollar)
- **Feb. 2012** Assigned the distributor in Japan “HAYASHI”
- **Mar. 2013** Recognized as a standard component in Mitsubishi
- **Dec. 2013** Moved & Expanded plant to Cheomdan Industrial Complex
- **Jul. 2014** Recognized as a standard component in Mazda
- **Apr. 2015** Recognized as a standard component in Suzuki
- **Jul. 2015** Assigned the distributor in Germany “Anchor Lamina”
- **May. 2016** Assigned the distributor in Thailand “K-Tech”
- **Mar. 2018** Assigned the distributor in Brazil “Hinge Tech”
- **Sep. 2018** Assigned the distributor in Vietnam “The Vietnam Industry Company”
- **Sep. 2018** Assigned the distributor in Indonesia “PT MYTEK”
- **Oct. 2018** Assigned the distributor in Vietnam “Hoang Lien”
- **Aug. 2019** Assigned the distributor in India “Deceler vibrotek controls”
- **May. 2020** Assigned the distributor in Indonesia “KNT21”
- **Nov. 2020** Assigned the distributor in USA “South”

Certificates: 5 / Patents : 6


ISO 9001

ISO 14001


Patent No.0314598


Patent No.100773590


CE

PED


Patent No.101066258


Patent No.101137998

RoHS


Patent No.101283675

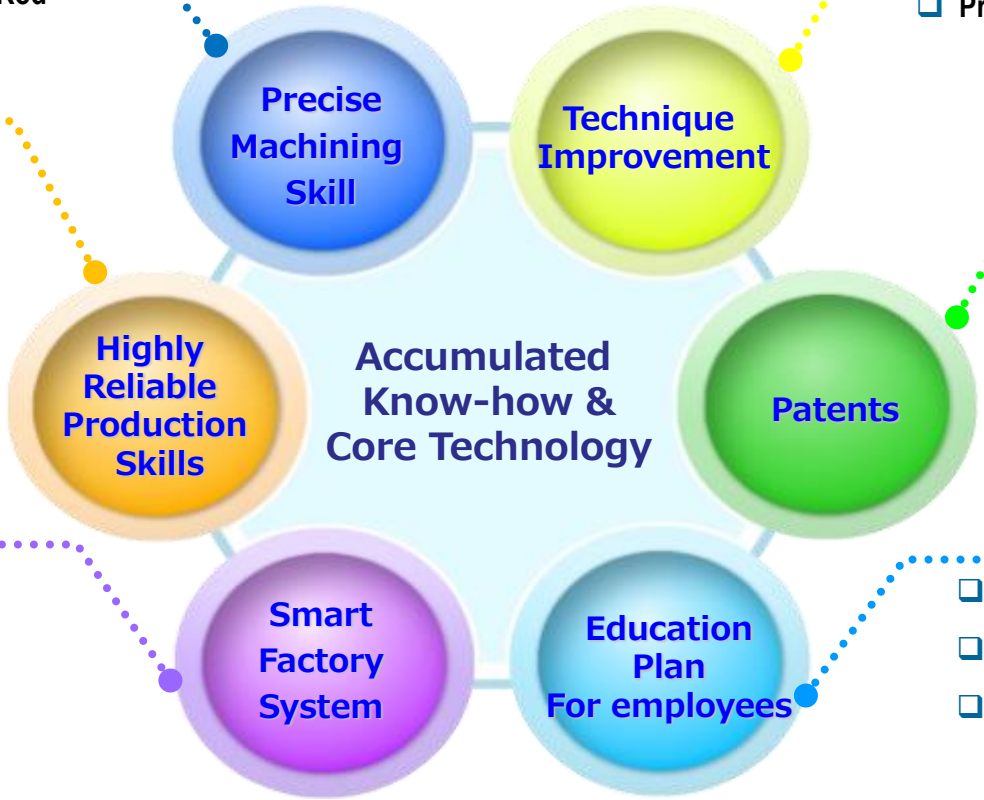

Patent No.101701994

Core Technology

- Gas spring rod finishing
  - Patent for manufacturing Rod (Super finishing)

- Certificates from international organization
  - ISO 9001
  - ISO 14001
  - CE (by TUV)
  - PED (by TUV)
  - RoHS (by TUV)

- Digitization project for Production site (Started from Oct. 2016)



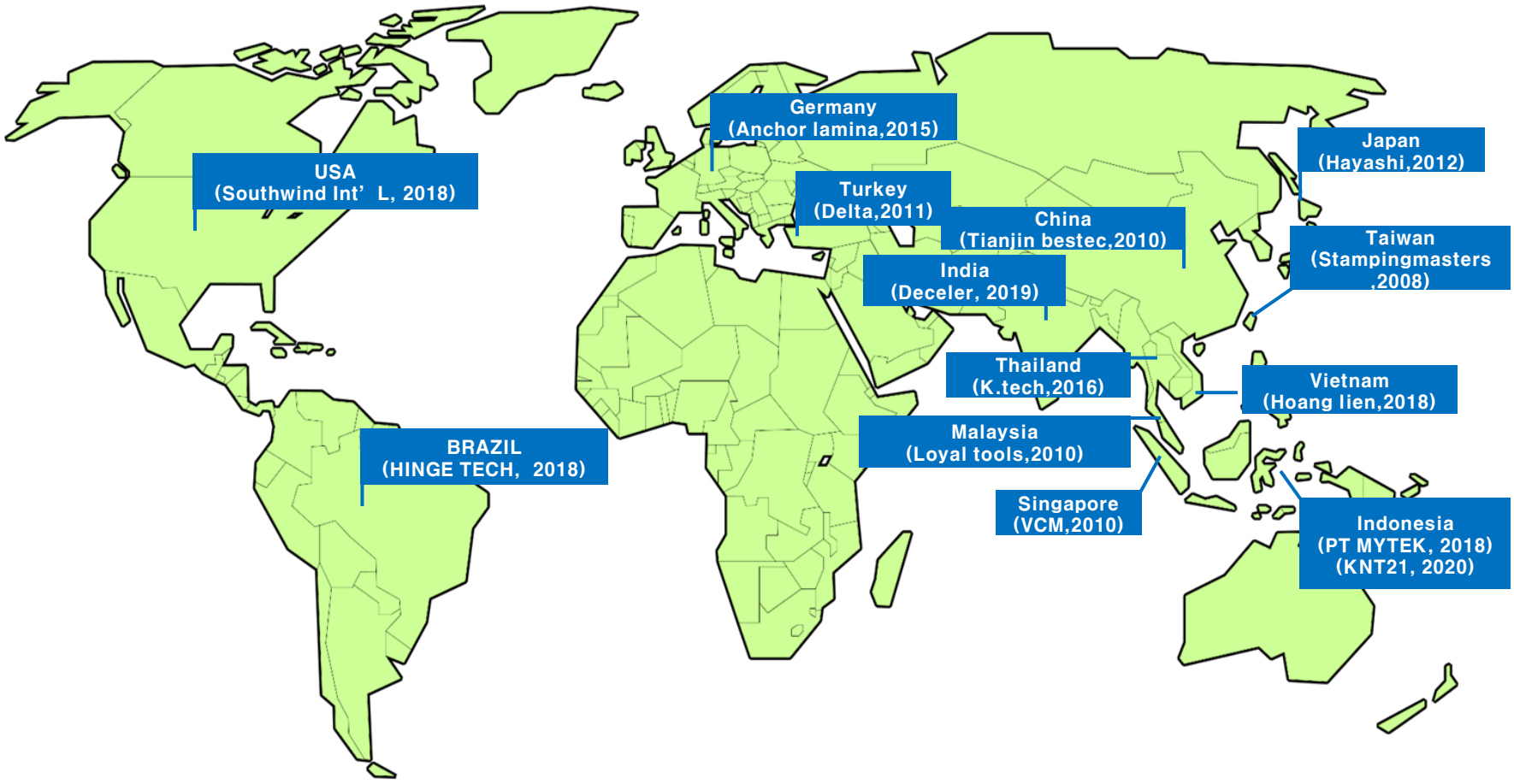
- R&D Center Function
- Developing Controllable Gas spring
- Production automation

- Manufacturing method of piston rod
- Gas spring (with built in gauge)
- Developed charging booster
- Gas spring Rod dust cover
- Cooling type gas spring

- Systematic education & training
- Standardization
- Daily video education (72h/year)

Customers

Overseas Distributors



Customers

Overseas Distributors

CHINA
Company Name : TIANJIN BESTEC
Adress : #15-1-302, Yihuali. Xianshuiguzhen, Jinnan District, Tianjin, CHINA. 300350
Tel : +86-022-28542171 / Fax : +86-022-28542172

USA
Company Name : SOUTHWIND INT'L USA
Contact person : Mr. John B. Graef
Tel : +1 786 292-3015 / Mobile : + 1 407 666-0236

GERMANY
Company Name : Anchor Lamina GmbH
Adress : Anchor Lamina GmabH 7 An der Wiesenmuhle 19 D-09224 Chemnitz, OT Gruna
Tel : +49 (0) 371/8 42 45-34 / Fax : +49 (0) 371/8 42 45-50

TURKEY
Company Name: DELTA
Adress : Tevfilk Fikret Sokak no: 29 Soqanlik 34880 Kartal Istanbul
Tel : +90 (216) 452 00 33 / Fax : +90 (216) 452 69 81

TAIWAN
Company Name : STAMPING MASTERS
Adress : NO.20 HSIN-BEI-YUAN ROAD CHUNG LI IND. ZONE, TAOYUAN HSIEN TAIWAN. ROC
Tel : +886-3-461-082 / Fax : +886-3-452-7515

INDIA
Company Name : Deceler Vibrotek Controls Pvt Ltd
Adress : No 38, 1st Floor, Arul Mary Street,Soosaiya Nagar, Noombal, Chennai 600077
Tel : +91-9500058831

Company Name : Select Exim
Adress : Wellington Society Estate, Opp. Ethiraj College No.1,2nd Floor, No. 53, Ethiraj Salai Egmore - 600 008
Tel : +44 - 28280013/14/15 & 16 / Fax : +44 - 28280017

Company Name : M/S Shri Balaji Industrial Products
Adress : C-94, Rishi Nagar, Chawla Colony, Ballabgarh FARIDABAD - 121004 State - Haryana (India)
Tel : +91-9891 45 1067 / Mobile : +91-9891 90 1067

http://www.jubestec.co.kr/p/outside

※Overseas Agency Information

Customers

Overseas Distributors

JAPAN
Company Name: HAYASHI
Adress : 3-6-1, Kigawa-Hlgashi, Yodogawa-Ku, Osaka-City
Tel : +81-6-6390-1544 / Fax : +81-6-6307-9670

THAILAND
Company Name : K.TECH EQUIPMENT
Adress : 225/221 Sintavee Greenville 2 VillageMoo 1, Bankhlongsuan, PhraSamutchedi Samutprakan 10290
Tel : +66 02 408 5154 / Fax : +66 02 408 5155

VIETNAM
Company Name : THT VIET NAM INDUSTRY COMPANY LIMITIED
Adress : Số 37/ 663 đường Lĩnh Nam,Q. Hoàng Mai, TP. Hà Nội
Tel : 0242-124-8518 / Fax 024-3224-7126

Company Name : Hoang Lien Engineering Service and Trading Company Limited
Adress : G903 The Manor Officetel, 91 Nguyen Huu Canh, ward 22, Binh Thanh Dist, HCMC
Tel : 028-6258-6457

MALAYSIA
Company Name : Loyal Tools
Adress : NO.5 JALAN USJ 1/33,TAMAN SUBANG PERMAI, 47500, SUBANG JAYA, SELANGOR,
Tel : 603-8024-7586 / Fax : 603-8024-8/7542

SINGAPORE
Company Name : V.C.M Precision
Adress : NO:39 JALAN PEMIMPIN #05-01 TAI LEE INDUSTRIAL BLDG SINGAPORE 577182.
Tel : 685-17582 / Fax : 685-17563

INDONESIA
Company Name : PT. MYTEK
Address : JALAN AKASIA 2 BLOK AE NO 49A KAWASAN DELTA SILICON 1 KELURAHAN CIBATU, KECAMATAN LEMAHABANG(CIKARANG SELATAN) KEBUPATEN BEKASI, 17530, INDONESIA
Tel : +6 2812 1985 6535
Company Name : KNT21
Address : BEKASI INTERNATIONAL INDUSTRIAL ESTATE Jl, Inti 3 Block C-7 No.12-12A Lemah Abang, Cikarang Bekasi
Tel : 021)897-3950 HP : 0815-916-6786

http://www.jubestec.co.kr/p/outside

※Overseas Agency Information

Customers

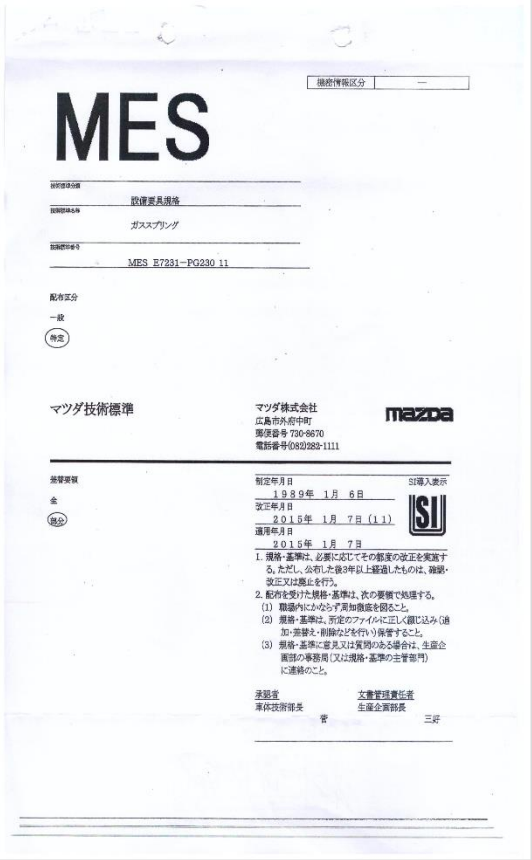
- Electronics -

- Automotives -

-Domestic Tier #1 Vendor-

Documents for standard part recognition

-MAZDA-



機密情報区分 | —

MES

技術標準分類: 設備要具規格

技術標準名称: ガススプリング

技術標準番号: MES E7231−PG230 11

配布区分

一般

(特定)

マツダ技術標準

マツダ株式会社
広島市外府中町
郵便番号 730-8670
電話番号(082)282-1111

差替要領

全

(部分)

制定年月日 1989年 1月 6日

改正年月日 2015年 1月 7日 (11)

適用年月日 2015年 1月 7日

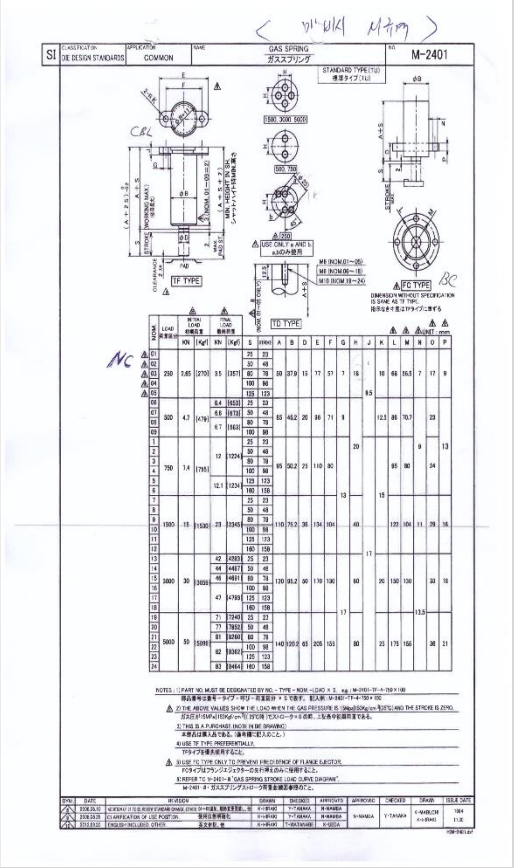
SI導入表示

1. 規格・基準は、必要に応じてその都度の改正を実施する。ただし、公布した後3年以上経過したものは、確認・改正又は廃止を行う。
2. 配布を受けた規格・基準は、次の要領で処理する。
   (1) 職場内にかならず周知徹底を図ること。
   (2) 規格・基準は、所定のファイルに正しく綴じ込み(追加・差替え・削除などを行い)保管すること。
   (3) 規格・基準に意見又は質問のある場合は、生産企画部の事務局(又は規格・基準の主管部門)に連絡のこと。

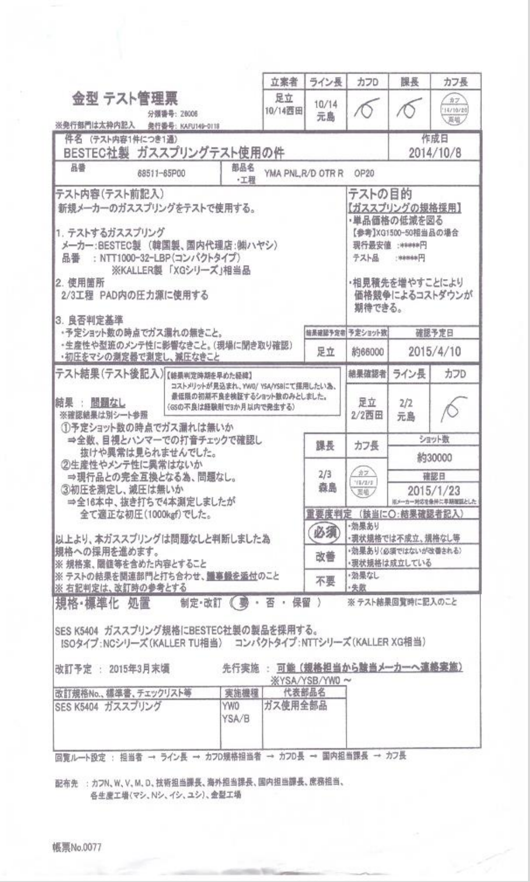
承認者: 車体技術部長 菅

文書管理責任者: 生産企画部長 三好

-MITSUBISHI-



-SUZUKI-



金型 テスト管理票

分類番号: 28006
※発行部門は太枠内記入 発行番号: KAFU149-0118

立案者	ライン長	カフD	課長	カフ長
足立 10/14西田	10/14 元島			'14/10/20

件名 (テスト内容1件につき1通): BESTEC社製 ガススプリングテスト使用の件

作成日: 2014/10/8

品番: 68511-65P00 部品名・工程: YMA PNL,R/D OTR R OP20

テスト内容(テスト前記入)

新規メーカーのガススプリングをテストで使用する。

1. テストするガススプリング
   メーカー:BESTEC製 (韓国製、国内代理店:(株)ハヤシ)
   品番 : NTT1000-32-LBP(コンパクトタイプ)
   ※KALLER製 「XGシリーズ」相当品
2. 使用箇所
   2/3工程 PAD内の圧力源に使用する
3. 良否判定基準
   ・予定ショット数の時点でガス漏れの無きこと。
   ・生産性や型班のメンテ性に影響なきこと。(現場に聞き取り確認)
   ・初圧をマシの測定器で測定し、減圧なきこと

テストの目的

【ガススプリングの規格採用】
・単品価格の低減を図る
【参考】XG1500-50相当品の場合
現行最安値 :*****円
テスト品 :*****円
・相見積先を増やすことにより価格競争によるコストダウンが期待できる。

結果確認予定者	予定ショット数	確認予定日
足立	約66000	2015/4/10

テスト結果(テスト後記入)

【結果判定時期を早めた経緯】
コストメリットが見込まれ、YW0/ YSA/YSBにて採用したい為、最低限の初期不良を検証するショット数のみとしました。
(GSの不良は経験則で3か月以内で発生する)

結果 : 問題なし
※確認結果は別シート参照
①予定ショット数の時点でガス漏れは無いか
⇒全数、目視とハンマーでの打音チェックで確認し抜けや異常は見られませんでした。
②生産性やメンテ性に異常はないか
⇒現行品との完全互換となる為、問題なし。
③初圧を測定し、減圧は無いか
⇒全16本中、抜き打ちで4本測定しましたが全て適正な初圧(1000kgf)でした。

以上より、本ガススプリングは問題なしと判断しました為規格への採用を進めます。
※ 規格案、閾値等を含めた内容とすること
※ テストの結果を関連部門と打ち合わせ、議事録を添付のこと
※ 右記判定は、改訂時の参考とする

結果確認者	ライン長	カフD
足立 2/2西田	2/2 元島	

課長	カフ長	ショット数
2/3 森島	'15/2/3	約30000
		確認日 2015/1/23 ※メーカー対応を条件に早期確認とした

重要度判定 (該当に○:結果確認者記入)

(必須)	・効果あり ・現状規格では不成立、規格なし等
改善	・効果あり(必須ではないが改善される) ・現状規格は成立している
不要	・効果なし ・失敗

規格・標準化 処置 制定・改訂 ((要)・否・保留) ※テスト結果回覧時に記入のこと

SES K5404 ガススプリング規格にBESTEC社製の製品を採用する。
ISOタイプ:NCシリーズ(KALLER TU相当) コンパクトタイプ:NTTシリーズ(KALLER XG相当)

改訂予定 : 2015年3月末頃 先行実施 : 可能(規格担当から該当メーカーへ連絡実施)
※YSA/YSB/YW0 ~

改訂規格No.、標準書、チェックリスト等	実施機種	代表部品名
SES K5404 ガススプリング	YW0 YSA/B	ガス使用全部品

回覧ルート設定 : 担当者 → ライン長 → カフD規格担当者 → カフD長 → 国内担当課長 → カフ長

配布先 : カフN、W、V、M、D、技術担当課長、海外担当課長、国内担当課長、庶務担当、各生産工場(マシ、Nシ、イシ、ユシ)、金型工場

帳票No.0077

Bestec Quality Control and Caution

The Bestec cylinders will last more than 100,000,000mm of total stoke working distance.

-Warning-

 Charge only with N2 gas	 Mount with screws	 Avoid any mechanical modification
 Vertical installation (within less than 0.15°)	 Use lubricants only (NO WD-40)	 Keep operating temperature under 80 ℃

Advantages of Bestec products

#1	More Compact and More Powerful
#2	Space & Cost Saving
#3	Various Models and offers 100% drop-in replacement (Bestec’ s Cross Reference)
#4	Ensures for better longevity (100 million mm)
#5	Patent for piston rod finishing
#6	Better in Roughness
#7	Better Hardness (HV900 or higher)
#8	Better Safety Mechanism

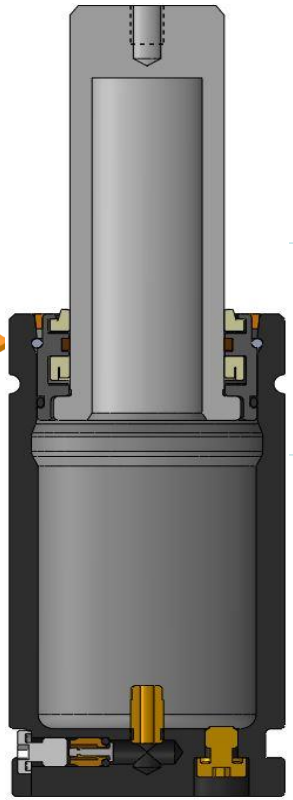
More Compact and More Powerful #1

Integral in cylinder with Rod

100% Safe
at any cases

Latch
Structure

Separate assembly in cylinder with Rod



Lock ring

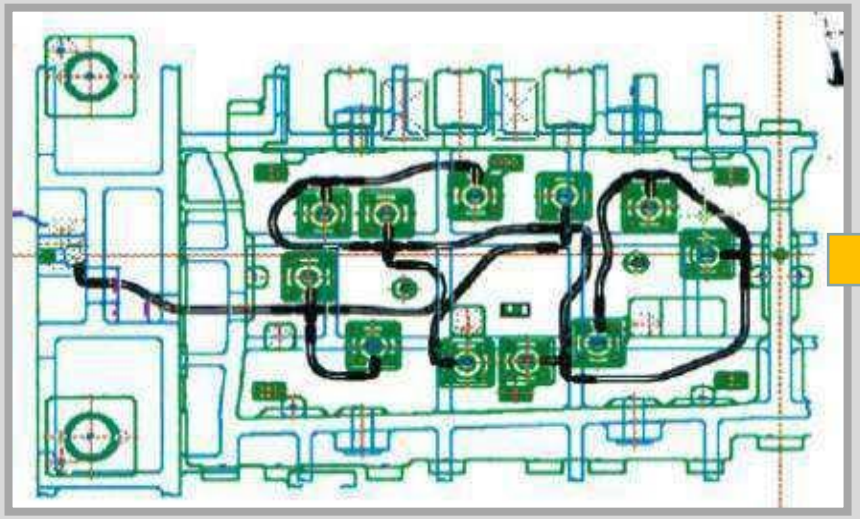
Gas Relief valve will prevent from damage caused by the over-stroke.

Gas Relief
valve

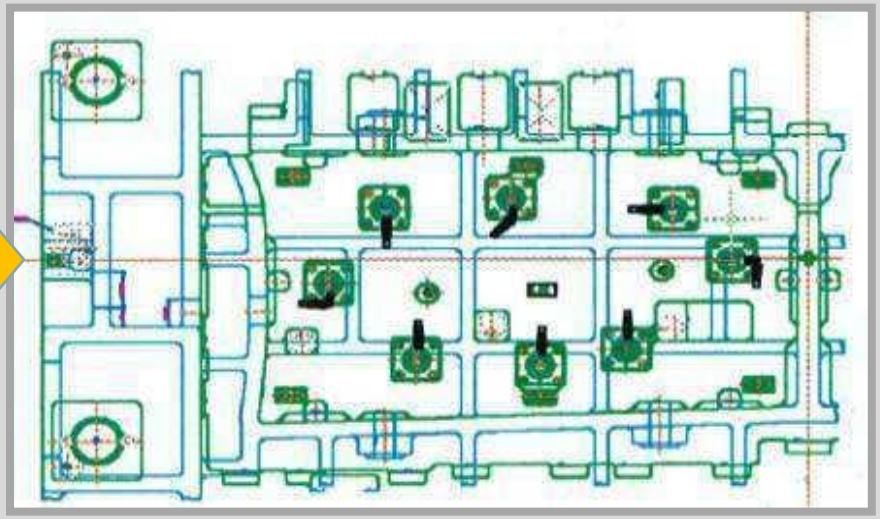
Space & Cost Saving #2

(For example of Renault adopted)

TU3000 SERIES Installation Example



N4000 SERIES Installation Example



- Space and cost saving.
- Only 4000 series 8 cylinders are enough to keep the 32ton!
  but competitor 3000series needs more than 11 cylinders (same diameter, ø 95)
- 4,000 x 8 =32ton **VS** 3,000 x 11 = 33ton → Save cost with Processing cost & Save Space

- Increase about 30% power efficiency compared to competitor's model
  (Except for compact model)

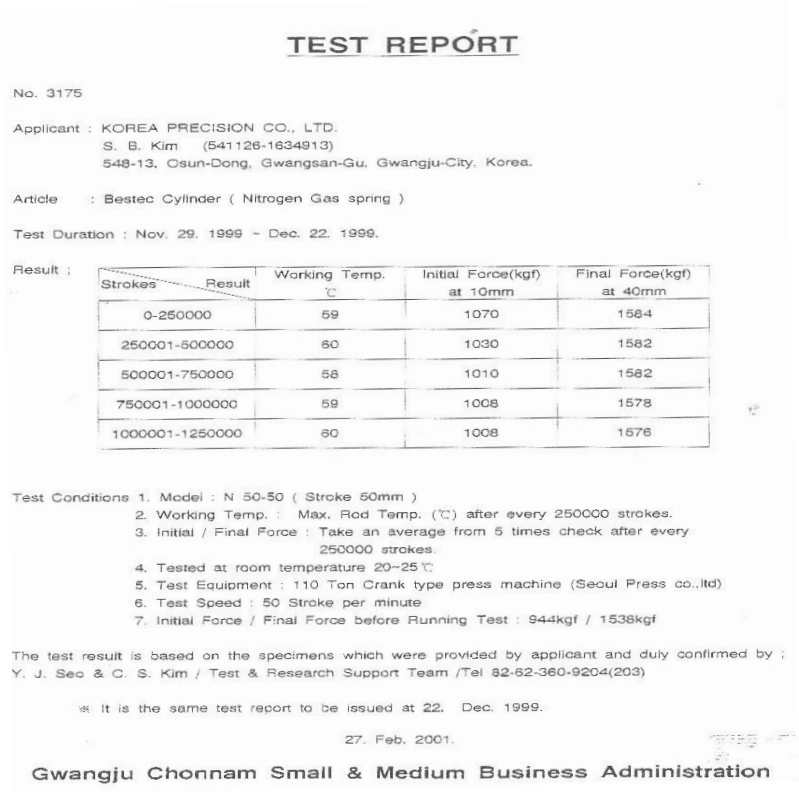
More variety of models and offers 100% drop-in replacement (Bestec's Cross reference)

#3

Maker \ Model	ISO Standard (The Same Model)	Super Compact (The Same Model)	Super Compact (The Same Model)	Compact (Considerable)
BESTEC	**NC**	**NT/BT**	**NTT/BTT**	**NK**
KALLER	TU	X	XG	K
FIBRO	2480	2487	-	-
MISUMI	GSE	GSV	GST	
SPECIAL	SC	RV		S
HYSON	T2	T3	T3T	-
PASCAL	DNA	DNR	DNT	-
DADCO	90.1	U	-	-
TOSS	TSL	TSP	TST	TSM

Ensures for better longevity (100 million mm) #4

- **Certificate of Small & Medium Business Administration**



TEST REPORT

No. 3175

Applicant : KOREA PRECISION CO., LTD.
S. B. Kim (541126-1634913)
548-13, Osun-Dong, Gwangsan-Gu, Gwangju-City, Korea.

Article : Bestec Cylinder (Nitrogen Gas spring)

Test Duration : Nov. 29. 1999 ~ Dec. 22. 1999.

Result ;

Strokes \ Result	Working Temp. ℃	Initial Force(kgf) at 10mm	Final Force(kgf) at 40mm
0-250000	59	1070	1584
250001-500000	60	1030	1582
500001-750000	58	1010	1582
750001-1000000	59	1008	1578
1000001-1250000	60	1008	1576

Test Conditions 1. Model : N 50-50 (Stroke 50mm)
2. Working Temp. : Max. Rod Temp. (℃) after every 250000 strokes.
3. Initial / Final Force : Take an average from 5 times check after every 250000 strokes.
4. Tested at room temperature 20~25℃
5. Test Equipment : 110 Ton Crank type press machine (Seoul Press co.,ltd)
6. Test Speed : 50 Stroke per minute
7. Initial Force / Final Force before Running Test : 944kgf / 1538kgf

The test result is based on the specimens which were provided by applicant and duly confirmed by ; Y. J. Seo & C. S. Kim / Test & Research Support Team /Tel 82-62-360-9204(203)

※ It is the same test report to be issued at 22. Dec. 1999.

27. Feb. 2001.

Gwangju Chonnam Small & Medium Business Administration

- **Ensures the longevity of 100,000,000mm working distance**
- Stronger Rod surface hardness
- Patent for Finishing rod surface

Criteria of Life	Pressure Reduce % after Test	
	BESTEC	Competitors
After 100,000,000mm of Stroke Working	Under 10%	Loose more than 20%

Patent for piston rod finishing

Patent for piston rod finishing

Patent : Manufacturing method of piston rod

특 허 증

특 허 제 0314598 호

출원 번호 제 1999-0028637 호
출 원 일 1999년 07월 15일
등 록 일 2001년 10월 31일

발명의명칭 가스 스프링의 피스톤 로드 제조방법

특허 권자 김성봉(541126-1634913)
광주 광산구 오선동 548-13번지 주 한국정밀

발 명 자 김성봉(541126-1634913)
광주 광산구 오선동 548-13번지 주 한국정밀

위의 발명은 특허법에 의하여 특허등록원부에 등록되었음을 증명합니다.

2001년 10월 31일

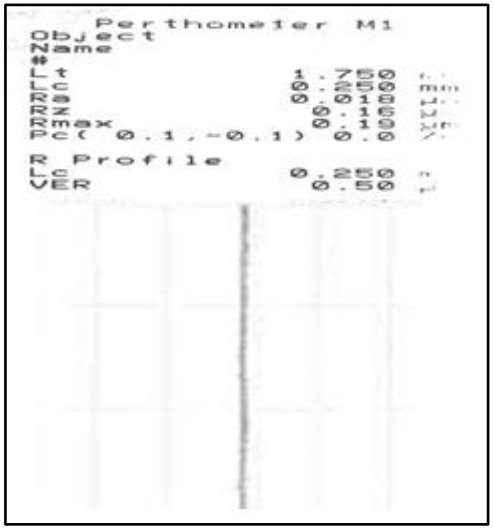
특 허 청

BESTEC ROD FINISHING PROCESS

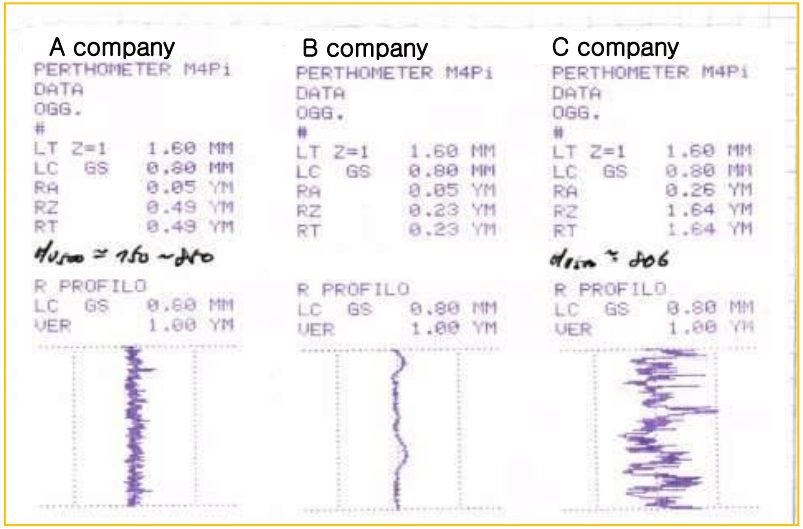
REGISTERED PATENT No.0314598 (Oct.2001)

Better in Roughness (Roughness Test sheets) #6

-BESTEC- <Roughness : Ra0.04>



-Competitor- <Roughness : Ra 0.05/0.26>



ARTICLES	GRIND PROCESS	SURFACE ROUGHNESS	REMARK
BESTEC	ULTRA FINE FINISHING	Under Ra 0.04 (Over 2times Competitors' Roughness)	Low friction of minimizes seal damage (Advantage for long life)
COMPETITORS	BUFFING	Ra 0.1~0.26	Risk of damage to the seal due to high friction (Probable leakage due to increased seal wear)

Better Hardness (HV900 or higher)

#7

Specially hardened surface over Hv 900 protects piston rod scratches from foreign particles.

Depth (mm)	Hardness ($Hv_{0.1}$)
0.01	1230
0.02	1168
0.05	1033
0.10	919
0.15	752
0.20	497
0.25	424
내부	393

ARTICLES	HARDENING PROCESS	HARDNESS
BESTEC CYLINDER	NITRIDING PROCESS	over Hv 900
COMPETITOR	HARD CHROMIUM PLATING	Hv 750~850

Better Safety Mechanism

#8

The integral gas spring is..

1. No risk of the Rod bouncing off even during slant working.
2. Utilizing full length of spring rod (Others recommend only 90%)
3. Screw assembly ensures stronger structure.

New upgrade model : Cartridge type with Relief Valve for safety.

New model upgraded by lock ring type

< Relief valve for prevention of accident >

Gas relief valve will prevent from the damage caused by the over stroke

Charging Booster (BCB-300, BCB-400)

◎ BCB-300(Medium) / BCB-400(large) BOOSTER

BCP315 Control panel
(charging for hose piping)

BCB Adaptor & Gas spring
(charging for single gas spring)

- Developed with 100% domestic technology !
- Safer and faster pressure charging !
- Improved maneuverability with rotating wheels !
- Reasonable price !
- Charging for single gas spring and hose piping common use !
- Simple and easy to use !

◎ Target charging pressure (On 150Bar basis)

Model	Pressure Ratio	Minimum Pressure	Maximum Pressure
BCB-300 / BCB-400	1:40	40Bar	250Bar

● BCB300 Specification : 180 x 220 x 440(mm) weight: 18Kg
● BCB400 Specification : 230 x 220 x 490(mm) weight: 28Kg

Model	박형실린더(Cm2)	Compressor (kg/Cm2)	Boosting force (kg)	Cylinder forces (Cm2)	Maximum charging pressure(Bar)
BCB300	153.9	6	646.4	2.83	250Bar
BCB400	314.1	6	1319.4	6.15	250Bar

※ BCB400 : 50% increase in charging capacity compared to BCB300 / Significantly shorter charging time than gas spring 5000 series!

Thank you For Your time

BESTEC