

FIG. NO. 350EC1 / ...



**APPROVAL No. 93/02 REV. 97/03**

### APPLICATIONS

MODEL 350EC1/2 IS DESIGNED FOR CRITICAL SERVICE APPLICATIONS INVOLVING LETHAL, TOXIC, CORROSIVE, INFLAMMABLE, VOLATILE, RADIATING, OR EXPENSIVE FLUIDS.

THE MOST COMMON APPLICATIONS ARE

- **DRY CHLORINE (CL<sub>2</sub>) SERVICE TEMPERATURE -40°C TO 120°C / -40°F TO 248°F**
- ANHYDROUS HYDROGEN CHLORIDE (HCL)
- ANHYDROUS HYDROFLUORIC ACID (HF)
- PHOSGENE (COCL<sub>2</sub>)
- VINYL CHLORIDE MONOMER (VCM)
- ETHYLENE DICHLORIDE (EDC)
- ISOCYANITES (MDI, TDI, HDI, ETC.) AND
- FLUIDS OF SIMILAR NATURE.

MODEL 350EC1 (UP TO DN50/2") AND 350EC2 (>DN50/2") ARE EURO CHLOR APPROVED FOR THEIR COMPLIANCE WITH GEST 89/140. DESIGN AND SELECTED MATERIALS ALSO MEET THE REQUIREMENTS OF CHLORINE INSTITUTE PAMPHLET 6 SERVICE CLASSES I THROUGH VI. THE UNIQUE VALVE DESIGN GUARANTEES RELIABLE AND EXCELLENT PROTECTION AGAINST LEAKS OR FUGITIVE EMISSIONS. THE STEM SEAL REQUIRES VIRTUALLY NO MAINTENANCE DUE TO LEAK FREE WELD CONNECTIONS OF THE BELLOWS WITH BONNET AND STEM. CONSTANT PACKING MONITORING AND RE-PACKING IS ELIMINATED. IN THE UNLIKELY EVENT OF A BELLOWS FAILURE THE BACKUP PACKING GUARANTEES SAFE VALVE PERFORMANCE UNTIL THE NEXT SCHEDULED SHUTDOWN.

### DESIGN FEATURES

#### BELLOWS AND PACKING

- BELLOWS PROTECTED IN EXTENDED BONNET AGAINST DIRECT IMPINGEMENT FROM PRODUCT FLOW
- MULTIPLE WALLS AND HYDROFORMED BELLOWS
- UP TO 50.000 BELLOWS OPERATIONS GUARANTEED

#### STEM

- TWO-PIECE STEM PROTECTS THE BELLOWS AGAINST TORQUE STRESS
- DESIGN ELIMINATES STEM BEARINGS ALONG WITH THEIR MAINTENANCE NEEDS
- GUIDED STEM ON TOP AND BOTTOM
- ONE-PIECE STEM DESIGN UPON REQUEST PER EURO CHLOR GEST 89/140 (MODEL 350EC11-12)

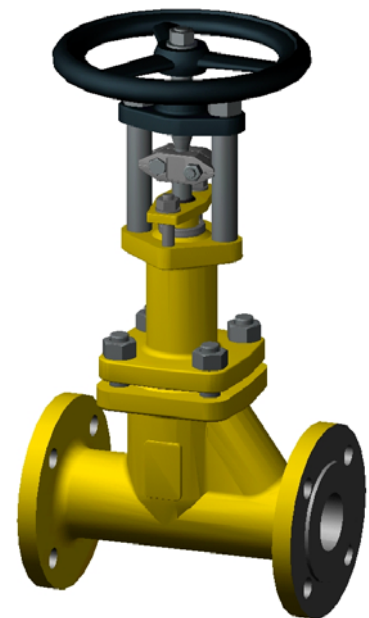
#### BODY AND BONNET

- BODIES ARE ONE-PIECE FORGINGS OR CASTINGS WITH LARGER THAN REQUIRED WALL THICKNESS AND INTEGRAL FLANGES
- EXTENDED BONNET PROVIDES FOR GOOD THERMAL INSULATION
- BODY BONNET JOINT GASKET IS FULLY CONFINED TO PREVENT GASKET FLOW OR BLOWOUT

#### SEATS

- SOLID HARDFACINGS FOR OUTSTANDING CORROSION AND WEAR RESISTANCE
- KNIFE EDGE METAL-TO-METAL SEAT FOR BUBBLE-TIGHT SHUTOFF
- REPLACEABLE DISC FOR INEXPENSIVE MAINTENANCE

**= ZERO EMISSIONS, ZERO SEAT LEAKAGE, LOW MAINTENANCE**



MODEL 350EC1

STRAIGHT WAY / PROTECTED BELLOWS

STANDARD MATERIALS OF CONSTRUCTION

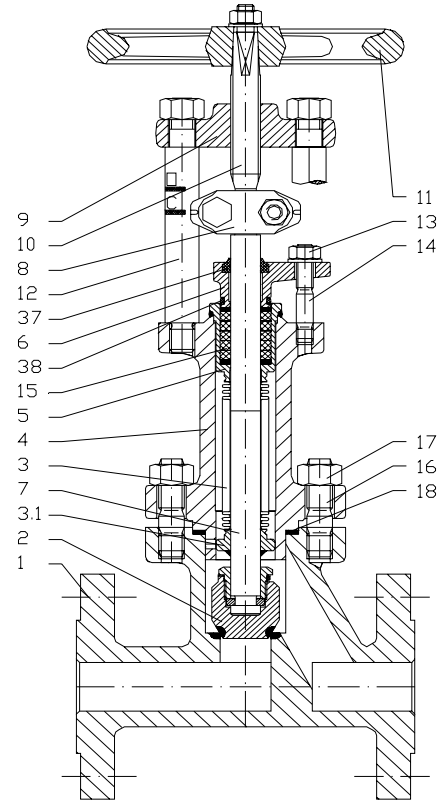
FIG. NO. 350EC1 / ...

OPTIONS

OTHER MATERIALS PER CUSTOMER REQUIREMENTS ARE AVAILABLE!

NOTES

PHÖNIX RESERVES THE RIGHT TO CHANGE PRODUCT DESIGN AND SPECIFICATION WITHOUT NOTICE!



MATERIALS

ITEM	PART NAME	LOW TEMP. CARBON STEEL	LOW TEMP. CARBON STEEL
		-40°C up to 120°C	-40°F up to 248°F
1	BODY SEAT OVERLAY	1.0566 / 1.1138 STELLITE 21 (≈ 32HRC)	A350 LF2 / A352 LCC STELLITE 21 (≈ 32HRC)
2	DISC OVERLAY	1.4571 / 1.0566 STELLITE 6 (≈ 42HRC)	A479 316Ti / A350 LF2 STELLITE 6 (≈ 42HRC)
3	BELLOWS	2.4819 <sup>1)</sup>	HASTELLOY C-276 <sup>1)</sup>
3.1	GUIDE RING	2.4819 <sup>1)</sup>	HASTELLOY C-276 <sup>1)</sup>
4	BONNET	1.0566	A350 LF2
5	STUFFING BOX BODY	2.4819 <sup>1)</sup>	HASTELLOY C-276 <sup>1)</sup>
6	GLAND FOLLOWER	1.5638	A352 LC3
7	LOWER STEM	1.4571 <sup>2)</sup>	A479 316Ti <sup>2)</sup>
8	COUPLING	1.4552	A351 CF8C
9	BRIDGE	1.0460 / QPQ nitrided	A105 / QPQ nitrided
10	UPPER STEM	1.4057	AISI 431
11	HANDWHEEL	CAST IRON	CAST IRON
12	PILLAR	1.4057	AISI 431
13	HEX. NUT	A194 GR. 4	A194 GR. 4
14	STUD BOLT	A320 GR. L7	A320 GR. L7
15	PACKING	PTFE-RINGS	PTFE-RINGS
16	STUD BOLT	A320 GR. L7	A320 GR. L7
17	HEX. NUT	A194 GR. 4	A194 GR. 4
18	GASKET	KAMMPROFIL / PTFE	KAMMPROFIL / PTFE
37	WIPER	EPDM	EPDM
38	O-RING	EPDM	EPDM

<sup>1)</sup> TRIM MATERIAL 1.4571 / 316Ti OPTIONAL

<sup>2)</sup> STEM MATERIAL 2.4819 / HASTELLOY C-276 OPTIONAL

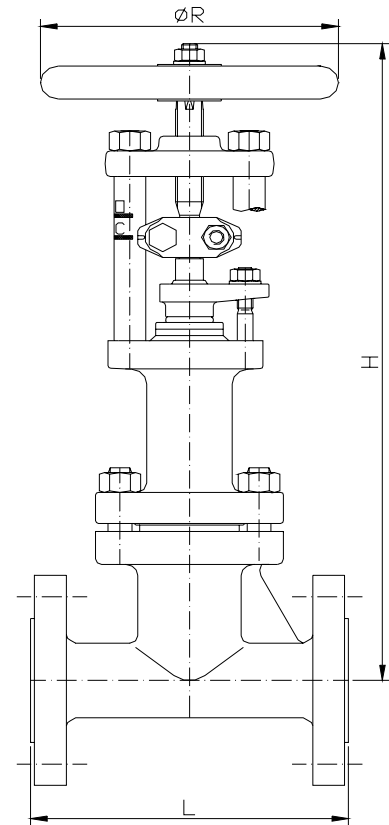
FIG. NO. 350EC1 / ...

**TESTING / MARKING**

- TEST AND DESIGN ACC. TO GEST 89/140, GEST 86/128, GEST 86/129
- TÜV TYPE TEST APPROVAL TO VdTÜV-ARMATUR 100 AVAILABLE
- TÜV APPROVED STRENGTH CALCULATION ACC. TO DIN EN12516-2 AVAILABLE FOR BODY & BONNET
- STANDARD TESTS ACC. TO DIN EN12266, ISO 5208, RESISTANCE AND LEAK TEST ACC. TO ITEM BA/BQ
- LEAK TEST ON CLOSURE ACC. TO ITEM BO/BN (LEAKAGE RATE 1 = TIGHT)
- ASME B16.34 / MSS SP 61 / API 598 / BS 6755

**PRESERVATION**

- DRYING AT A TEMPERATURE OF 120°C (248°F) FOR AT LEAST 3 HOURS
- STUFFING OF DRYING AGENTS (SILICAGEL) INTO THE VALVE
- BLANKING OF INLET AND OUTLET ORIFICE WITH SUITABLE GASKETS AND BOLTED FLANGES TO AVOID ENTRY OF MOISTURE INTO THE VALVE
- DISC SECURED IN CLOSED POSITION
- UNFINISHED SURFACES PROTECTED AGAINST RUST
- LUBRICATION WITH CHLOROFLUORINATED GREASE


**DIMENSIONS & WEIGHTS & FLOW COEFFICIENTS**

DN	NPS	UNIT	L DIN	L RF ASME GLOBE	L RF ASME BALL	H	ØR	WEIGHT	Kv [m³/h]
									CV [USGal/min]
25	1"	[MM]	160	203	165	350	150	9 kg	8.3
		[IN]	6.3	8	6.5	13.8	5.9	20 lbs	9.65
40	1 1/2"	[MM]	200	229	190	415	200	18 kg	21
		[IN]	7.9	9	7.5	16.3	7.9	40 lbs	24.4
50	2"	[MM]	230	267	216	450	200	21 kg	31
		[IN]	9.1	10.5	8.5	17.7	7.9	46 lbs	36

- OTHER SIZES ON REQUEST

**PHÖNIX - POLE POSITION IN BELLOWS SEALED TECHNOLOGY**

PHÖNIX WAS ESTABLISHED AT THE BEGINNING OF LAST CENTURY IN 1910 IN FRANKFURT, GERMANY AS SMALL, PRIVATELY OWNED COMPANY. SINCE 1955 PHÖNIX IS WIDELY KNOWN FOR ITS HIGH QUALITY BELLOWS SEALED VALVES FOR SEVERE HAZARDOUS CHEMICAL SERVICES.



THROUGHOUT THE NEARLY ONE HUNDRED YEARS OF ITS EXISTENCE, PHÖNIX HAS ALWAYS STRIVEN TO DEVELOP A PRODUCT LINE EXCEEDING EVEN THE MOST STRINGENT REQUIREMENTS OF THE INDUSTRY.

PHÖNIX OFFERS A COMPLETE LINE OF HIGH QUALITY, FIRST CLASS PRODUCTS THAT GUARANTEE LONG LASTING SAFETY AND RELIABILITY IN OUR CUSTOMERS' PLANTS.



GLOBALLY, PHÖNIX OFFERS ITS CUSTOMERS VALVES CONFIRMING TO NATIONAL AND INTERNATIONAL DESIGN STANDARDS SUCH AS DIN, ASME, GOST ETC. IN ADDITION PHÖNIX OFFERS TECHNICAL ADVICE AND SERVICE FOR COMPLETE VALVE PACKAGES. TOGETHER WITH OUR QUALIFIED ENGINEERING STAFF AND STATE OF THE ART MANUFACTURING FACILITY, WE PROVIDE HIGH QUALITY PRODUCTS TO ENSURE A LONG VALVE LIFETIME WITH HIGH PLANT SAFETY.